

BRIDGWATER TIDAL BARRIER

Somerset



The Van Elle piling team was appointed to install foundations for slabs that will support heavy plant machinery used in the construction of the Bridgwater Tidal Barrier scheme on the River Parrett. This project will protect Bridgwater and surrounding communities from flooding, reducing tidal flood risk for 11,300 homes and 1,500 businesses.

PROJECT BACKGROUND

- Appointed by Kier
- The scope of works included the installation of 835No. pre-cast concrete piles, including pile cap/enlarged head follow-on works.

CHALLENGE

Strict environmental controls were implemented due to the site's close proximity to the river, including protective measures around hydraulic hoses and additional plant nappies to prevent oil spills. Adherence to the client's environmental plan ensured the river remained protected from pollution.

To ease congestion, deliveries were restricted to between 10am and 4pm, with police escorts required for transport, necessitating careful planning to minimise disruption.

Piezometers, installed by the client, were used to monitor underground water pressure and ensure river or groundwater activity didn't affect the stability of the pile mat. The rig had to be carefully maneuvered to avoid damaging the instruments and maintain accurate readings.

SOLUTIONS

The original design specified 300mm square piles. However, following the installation of 4No. preliminary test piles, a reduction to 250mm was made, resulting in cost savings while ensuring the required structural integrity was maintained.

We installed 835No. pre-cast concrete piles on the east bank of the River Parrett, reaching depths of up to 14m, using the Junttan PMX22 rig. Driven piling was chosen to minimise ground disruption and maintain site stability.

These piles provide essential support for the foundation slab and the approach to the tidal barrier, ensuring long-term stability and the necessary load-bearing capacity for heavy plant machinery.

Our teams then completed the follow-up works for the pile cap and enlarged heads.

The installation of the final phase at the west abutment, including 479No. driven piles, is imminent.

AT A GLANCE

Sector: Infrastructure

Solution/Techniques: Driven Piling/engaged heads/pile caps

Client: Kier

Van Elle Division: General Piling, Housing (Civils)

EQUIPMENT

- Junttan PMX22

