

Commercial Quay, Wisbech, Cambridgeshire



PROJECT PROFILE

► Concrete repair & protection of marine structure

Background

The Commercial Quay in Wisbech, Cambridgeshire, was built in the 1950's and is approximately 1,000 metres long. In the early days the port at Wisbech imported and exported corn and rapeseed oil, and other similar food and beverage goods. Today, it is used for the import and temporary storage of brick and timber building materials to await shipment to UK buyers. Wisbech sits on either side of the River Nene which is tidal and brackish. Its port is one of Cambridgeshire's only gateways to the sea and Fenland District Council is the harbour authority for most of the River Nene.

The Commercial Quay is of reinforced concrete construction and over the years, the structure had deteriorated due to the harsh marine environment. Repairs were necessary to extend the service life of the structure. The first phase of the concrete repair and protection programme extended to 130 metres and comprised the repair of 36 bays.

The Solution

Flexcrete products were specified on the basis of their proven performance in coastal and marine environments. The repairs were very challenging as 95% of the work was overhead working from a mobile underbridge access unit. All damaged concrete was mechanically removed back to a sound core before the steel reinforcement was treated with 2 x 1mm coats of **Steel Reinforcement Protector 841** applied by brush. For areas of high porosity concrete, **Bonding Bridge 842** was used to enhance the bond between the concrete and the subsequent Flexcrete repair mortars.

Monomix, a Class R3 waterproof cementitious repair mortar, was applied to provide exceptional bond strength, excellent tensile and abrasion resistance and high diffusion resistance to acid gases and chloride ions. It was able to be applied up to thicknesses of 80mm in a single application. For areas requiring additional abrasion resistance, **Monomix HD**, a class R4 structural repair mortar, was used.

Marine Mortar was also used for structural repairs in marine and tidal areas. It provides excellent wash-out resistance and can withstand immersion as little as 60 minutes after placing. On completion of the repairs, all areas were treated with a 2mm application of **Cementitious Coating 851** to provide long-term chloride protection, thus significantly extending the service life of the structure. Flexcrete products were chosen in conjunction with CP-Tech anodes.

Project:

- Commercial Quay, Wisbech

Products:

- Steel Reinf. Protector 841, Bonding Bridge, Monomix, Monomix HD, Marine Mortar, Cementitious Coating 851

Client:

- Fenland District Council

Contractor:

- Prestec UK