

Eastbourne Wastewater Treatment Works

Case study 2018

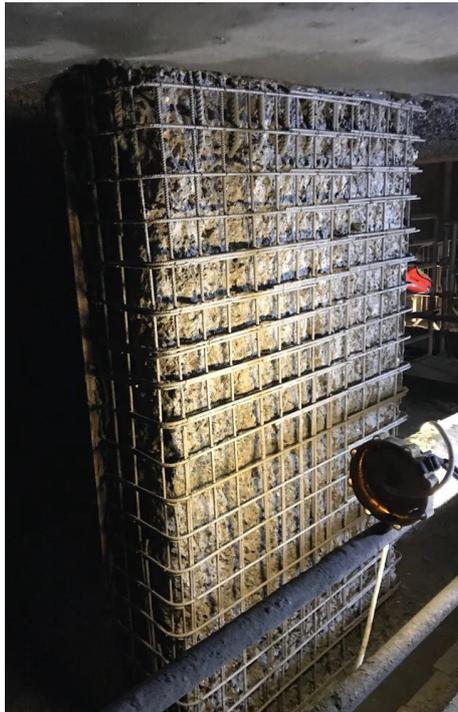
Focus products: Intercrete® 4801, Intercrete 4840

Location: Eastbourne, UK

Type of asset: Wastewater Treatment Works

Client: CMDP (Joint venture between Costain and MWH) on behalf of asset owner Southern Water

Contractor: Concrete Repairs Limited (CRL)



As part of a major £16 million upgrade of Eastbourne Wastewater Treatment Works, Intercrete concrete repair materials were chosen to refurbish an underground inlet chamber at the plant. Almost 140 tonnes of Intercrete 4801 was applied over a six month period by specialist asset maintenance contractor, Concrete Repairs Limited.

Problem

Dating back to 1997, Eastbourne Wastewater Treatment Works is located on the seafront at Langney Point in East Sussex. Serving a population of circa 140,000 people across the Eastbourne area, the vast majority of the works is located underground, beneath a fortress-style building. Up to 74 million litres of wastewater is pumped in and treated every day almost entirely out of sight.

The concrete repair work was carried out beneath ground level in extremely arduous conditions. The project involved the refurbishment of the underground inlet channel that receives wastewater flows, as the concrete had deteriorated due to attack from hydrogen sulphide (H₂S) gas and sulphuric acid. The Intercrete application was carried out at night when flows were low.

The solution

An Intercrete system was devised for the project comprising a dry spray application of Intercrete 4801 repair mortar followed by a final coat of Intercrete 4840 cementitious coating. The system minimises environmental impact due to the fact that both products are water-based, ultra-low odour and solvent-free, making them safe to apply even whilst facilities are in operation.

Concrete Repairs Limited used hydro demolition methods before a dry spray application of Intercrete 4801 - a high strength, waterproof, class R4 mortar which exhibits extremely low rebound when applied either by dry or wet spray techniques for the structural repair, rendering and profiling of vertical, overhead and horizontal surfaces. With excellent resistance to abrasion, Intercrete 4801 is a single component cementitious repair mortar requiring only the addition of clean water.

Following the application of Intercrete 4801, Intercrete 4840 - a high performance, two component, water based cementitious coating - was applied. This combined Intercrete 4801/4840 system was chosen on the basis of the rapid curing properties and speed of reinstatement between application of the mortar and coating as there is no need for a skim coat due to the high quality finish of the mortar.