

Project Profile - Utilities

PROJECT

Wet Well, Colchester Supply Area

SUMMARY

Concrete repair and relining of wet well

PRODUCTS

Monomix HD, Monolevel 844SP, Cemprotec E942

CLIENT

Anglian Water

CONTRACTOR

CSC Services

BACKGROUND ►

Wet wells are underground pits which store sewage. They require periodic maintenance and cleaning in order to avoid blockages, as concrete is highly susceptible to erosion from bacteria found in domestic sewage. Bacterial organisms oxidise gasses in the atmosphere and produce sulphuric acid which readily attacks concrete.

Refurbishment of wet wells is often challenging, as they can be difficult to both locate and access. Problems can also be caused by external factors such as vegetation and root ingress. This was the case with this project in a residential area in Colchester, whereby Anglian Water contacted specialist contractor CSC Services to remove all vegetation and reline the wet well in order to prevent future blockage problems and to ensure structural integrity was retained. Upon initial inspection of the wet well, tree roots were found to be entering the well through joints and pipe entry. Ring joints and grout holes were leaking and there were holes to the base and cracks to the wall. Between 5-10mm of concrete had been lost from the walls and soffit areas.

THE SOLUTION ►

A Flexcrete repair and protection system was chosen for this project due to its outstanding track record of use in wastewater applications. CSC Services initially inserted pipe access bungs into the wet well and set up over-pumping to an intermediate bulk container. Confined space entry was then established whereby CSC Services entered the wet well via a secure ladder with operatives attached to the rescue winch cable. Once the atmosphere was tested and forced ventilation was set up, the tree roots were cut out and removed. The concrete substrate was prepared using high pressure water jetting and grinding equipment.

All joints, grout holes, cracks and voids were sealed using **Monomix HD** - a high strength, waterproof, class R4 structural repair mortar which has outstanding abrasion resistance, is easily trowellable, has excellent low sag properties and can be applied up to thicknesses of 80mm in a single application. The high bond strength of **Monomix HD** exceeds the tensile strength of concrete and its dense matrix offers low permeability to water, even at 10 bar pressure, and very high diffusion resistance to acid gasses and chloride ions.

Monolevel 844SP - a waterproof, engineering quality fairing coat - was then applied to bring the concrete back to profile prior to the application of two 1mm coats of **Cemprotec E942**, an innovative, two component, water-based cementitious coating that benefits from modification with both a thermoplastic polymer as well as an epoxy resin to provide a hard-wearing surface with greatly enhanced chemical and abrasion resistance. The product exhibits excellent resistance to sulphuric acid attack and is very versatile with the ability to be applied to both concrete and ferrous metals without a primer. It has a long track record of successful use in digester tanks where the most onerous conditions are found. Just 24 hours after application, a physical check was made to ensure that the coating was fully cured and bungs were removed before the wet well was returned to normal service.



FM 41091
EMS 597350
OHS 597351

Quality
Environmental
Health & Safety

Flexcrete Technologies Limited
Tomlinson Road • Leyland
Lancashire • United Kingdom
PR25 2DY

Tel: +44 (0) 845 260 7005 • Fax: +44 (0) 845 260 7006
Email: web@flexcrete.com • Web: www.flexcrete.com

