

Project Profile - Civil Engineering & Infrastructure



PROJECT

**London Bridge Railway Station,
London**

SUMMARY

Enhancing concrete durability and
extending design life

PRODUCTS

**Monomix
Monolevel FC**

CLIENT

Crossrail Ltd

CONTRACTOR

Costain

BACKGROUND ►

London Bridge station, built in the 1830's, is one of the oldest railway stations in the world. Located South East of London Bridge on the River Thames, it is the fourth busiest station in UK, bringing some 50 million passengers into the capital each year.

A £400m redevelopment of the station is being carried out, involving the provision of a new concourse at street level and improving the entrance and exit points to ease access. The aim is to help enhance the capital's infrastructure, improve the journeys of thousands of passengers who pass through the station every day and to increase passenger capacity to 75 million passengers annually.

The work is said by Network Rail to be the most ambitious redevelopment of any London station in a generation and one of the most technically demanding projects ever undertaken on the UK railway.

THE SOLUTION ►

The amount of fresh concrete being cast is high volume and Flexcrete products were used to enhance the concrete finish and increase the durability of the construction. **Monomix**, an advanced, waterproof, low density, class R3 structural mortar, was specified and has helped contribute to rapid construction - a critical factor as the station is remaining open and fully operational throughout the works.

Monomix is pre-packaged, only requiring the addition of clean water on-site, to give an easily trowellable mortar with application thicknesses up to 80mm. It develops exceptional bond strength, excellent tensile and abrasion resistance, high diffusion resistance to acid gases and chloride ions and low permeability to water, even at 10 bar pressure. The ability to apply Flexcrete products to green concrete also led to the selection of **Monolevel FC** for application to the concrete where a fair faced finish was required. **Monolevel FC** is an engineering quality fairing coat which can be used in thin screed applications to level concrete surfaces and to reinstate cover, whilst providing an anti-carbonation finish.

Like **Monomix**, **Monolevel FC** is also non-toxic when cured and releases no hazardous solvents or heavy odours during application, a critical consideration for a high profile project such as this in the public arena. **Monolevel FC** is suitable as an exposed finish without needing further protection or coating. For this project, it was important that the fairing coat matched the existing colour of the freshly cast concrete so it was specified in white.



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