



SIKA AT WORK

HULL NORTH BRIDGE

REFURBISHMENT: Sika® Ferrogard®, Sika® MonoTop®, Sikagard® and Sika® Armorcrete

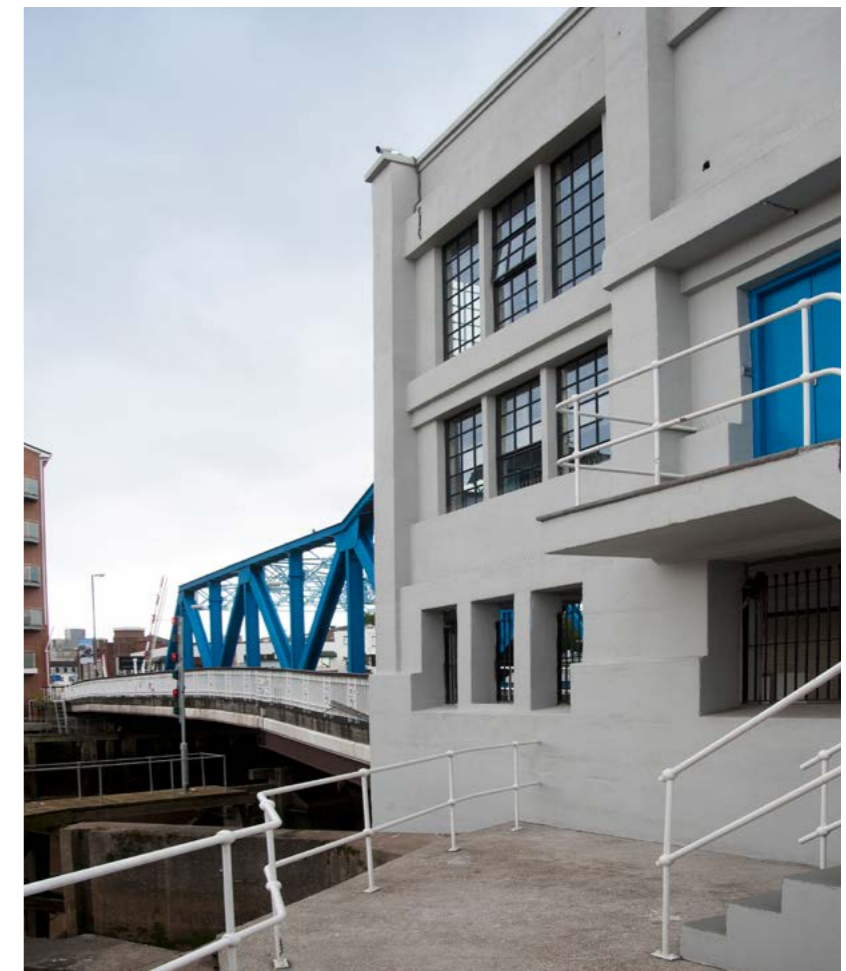
HULL NORTH BRIDGE



SIKA ENSURES GRADE II LISTED BRIDGE IS FIT FOR THE FUTURE.

With 21,000 daily vehicle crossings as well as opening several times a day for waterway traffic, the Grade II listed North Bridge in Hull was in need of refurbishment due to corrosion of the reinforcement taking place and spalling concretes. To bring the control building for the bridge up to 21st century specifications, a solution was found in a reliable combination of specialist structural repair products from global manufacturer of construction materials, Sika.

Reconstructed in the late 1920's from a design by American William Scherzer, the historic steel framed North Bridge incorporates a large concrete filled tank to create the counter-weight, with the lifting mechanism located in a reinforced concrete machine room. This concrete control building had suffered from years of exposure to



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from the marine environment and the deicing salts used on the road coupled with carbonation attack.

The main type of attack on the control building came in the form of carbonation of the concrete. This was able to penetrate the concrete because of the coarse aggregate finish, reducing the alkalinity of the concrete and the protection this provides to the reinforcement where the cover was low.

After meeting with Hull City Council's engineers, Sika's Field based Technical Team analysed the problems facing the control building and specified a solution - meeting the council's brief for a cost effective, reliable and long lasting system that would address the spalling concrete and underlying reinforcement corrosion as well as meet the town planners' aesthetic requirements.

Refurbishment works undertaken by specialist contractor Lingard Ltd were required across the entire control building and its two towers. Following hammer testing and a full technical survey to identify areas of delaminating concrete, the team grit blasted, primed and then carried out the reinstatement using [Sika® MonoTop®-615](#).

All concrete surfaces were then covered by a spray applied coat of [Sika® Ferrogard®-903](#). An essential part of Sika's concrete repair system, the migrating corrosion inhibitor delays and slows the rate of steel corrosion, extending the maintenance and service life cycles of concrete for up to fifteen years. Easily applied and economic, it is simply sprayed onto surfaces and does not alter the water diffusion properties of concrete. For its many desirable qualities, [Sika® Ferrogard®-903](#) is often chosen for use on heritage projects and aesthetically valuable structures.

This was followed by an overall levelling coat of [Sika® MonoTop®-620](#) to improve the overall concrete cover and provide the client with the finish they desired.

A cementitious two-component system, [Sika® MonoTop®](#) comprises polymer modified mortars, to repair the damaged substrate. With its excellent resistance to water and chloride penetration, whilst repairing the concrete it also helps to prevent future damage to the building's substrate.

As the structure has a large aggregate imprint to it which had become more defined over the years due to weathering, the Hull City Council planners wanted to return the structure back to its original 'art deco' appearance which necessitated a smooth surface. The [Sika® MonoTop®-620](#) levelling render achieved the desired finish. For the large reinstatement of beams, the specialist team applied [Sika® Armocrete](#), a flowable, cementitious, micro-concrete repair system.

Finally the team applied an anti-carbonation protective coating in the form of [Sikagard®-550W Elastic](#) to provide additional protection on all areas of repaired concrete as well as existing unrepaired concrete to provide additional protection. With excellent resistance against weathering and ageing, [Sikagard®-550W Elastic](#) is ideal for exposed concrete surfaces at risk of cracking.

Following extensive testing, Sika's entire range of concrete repair products is certified to BS EN 1504, the European standard for concrete repair. This accreditation applies not only to the production quality of the products themselves but also to the guidance issued with them. The accreditation ensures users of the high quality nature of Sika's concrete repair systems.

The completed renovation will now ensure that this critical part of the city's infrastructure will provide continuity access across the River Hull and is fully protected by Sika's market leading concrete repair system for years to come.

For further information call 0800 112 3863

BUILDING TRUST

