

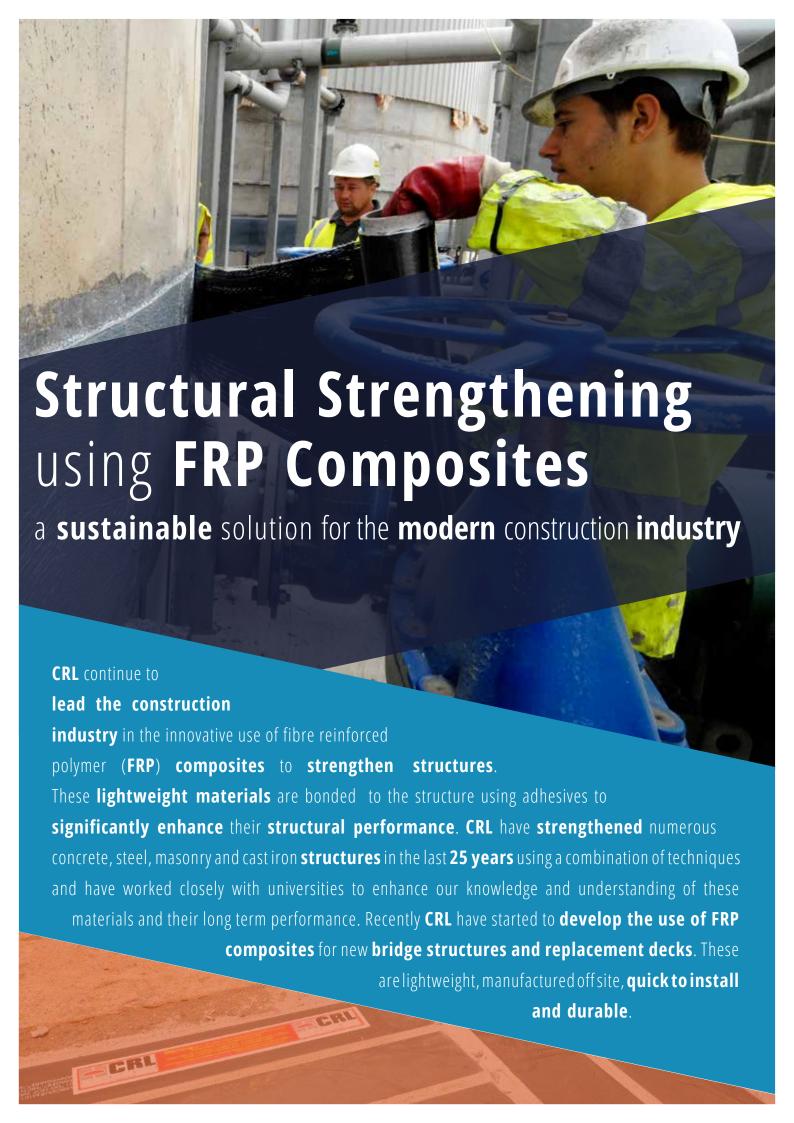
Sustainable Structural Maintenance Services











CRL in the Water Industry

supplying best value solutions since 1955



cost-effective

latest refurbishment

techniques and materials to clients in both the clean & dirty water

the

solutions, using

industries. We are well versed in the use of **DWI** materials and understand the importance of

IFU's. As well as specifying work practises consistent with **best value solutions**, CRL understand the importance of maintaining water quality and supply, programming of the works and the utilisation of the assets being repaired. These factors are always foremost in mind when deciding on the materials and repair **methodology** to be used. As such we endeavour to work with the water companies to determine the cause of the problems at an early stage, quantifying the repairs to be carried out and the timescale for the refurbishment works.



Break out the concrete using hand tools (or hydro demolition for large scale repairs) ensuring the edges of the repairs are square cut

BS EN1504 Part 10

Prepare the surface & **clean** and **treat** the exposed reinforcement

BS EN1504 Part 9 Principle 11

Fix a **shutter** to the required profile and reinstate the concrete using hand placed mortars, flowable microconcretes or sprayed repair mortar

EN1504 Part 9 Principle 3

Trowel **finish** the concrete repair (if required) to match the existing concrete. Cure the repair material as per the manufacturer's instructions

BS EN1504 Part 10

Apply a **protective coating** to enhance the durability and appearance of the concrete

BS EN1504 Part 9 Principles 1 & 8











Corrosion Control Systems

extending the life of the structure

To significantly enhance the durability

of concrete structures CRL can advise on

the **design** and installation of **cathodic protection** systems

which provide cost effective sustainable solutions. For marine facilities we use

galvanic CP systems to protect the reinforced concrete, steel piles and sheet piling below the mid-tide level utilising either zinc or aluminium alloy anodes. For reinforced concrete structures and steel framed buildings **CRL** use **impressed current CP systems** with a range of anode types (depending on the exposure and layout).

Our systems are **designed** in **accordance** with the European Standards **BS EN ISO 12696** and

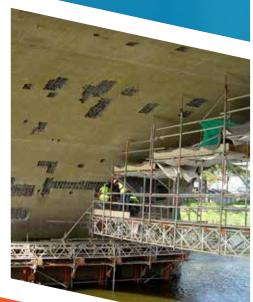
BS EN12473 & installed by our qualified and experienced CP Engineers

and **Technicians** who are certified in accordance with

BS EN15257.







Masonry and concrete

tunnels often have water ingress which can cause structural

and operational problems. CRL are experienced and skilled in the management of

water ingress using a variety of techniques to stop or control the water flow. After repairing the existing tunnel lining we use resin injection, grouting and tunnel liners to manage any future water ingress. CRL are approved applicators for a wide range of epoxy, polyurethane and acrylic resins which can be used to seal cracks and voids in the tunnel lining. Masonry tunnels can be strengthened and lined with a

sprayed mortar to **strengthen** the structure and **enhance future durability**.



Waterproof membranes,

both sprayed and hand applied, when fully

bonded to the substrate can **dramatically reduce** the chances

of leaking on roofs, car park decks, balcony walkways and bridge decks.

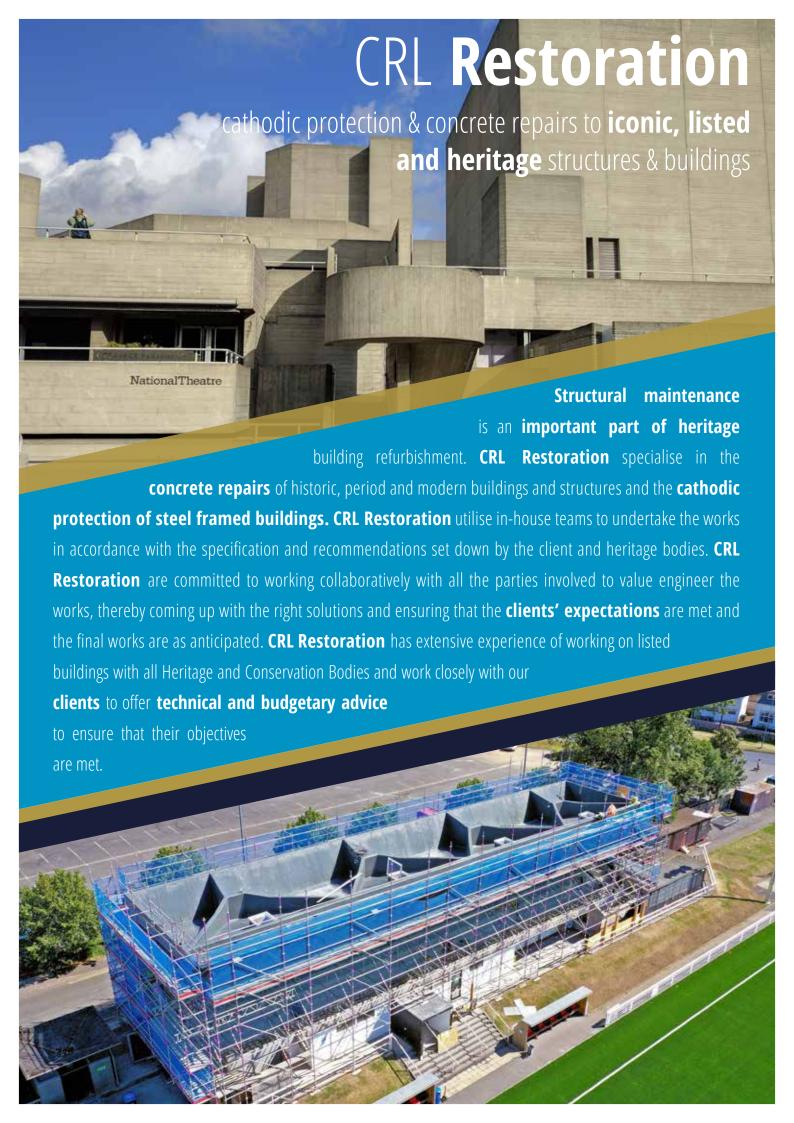
Supplied and installed by CRL, waterproof membranes are also used to line tanks and bunds to protect the concrete and prevent fluids leaking out and polluting the environment. Unlike sheet membranes they do not have joints or seams which might fail and are fully bonded, so water cannot travel underneath the membranes. **Waterproof membranes** can help protect concrete decks from

de-icing salts (which are a major cause of the concrete deterioration), as

well as dramatically improve the aesthetic appeal of buildings & car parks.



The calibre of **people CRL employ** are our main reason for **maintaining** the **quality** and **reputation** that we have **achieved** over the last 65 years. The Board of Directors (some of whom joined as young Engineers in the 1980's) provide a wealth of experience and knowledge to the business. On average **our employees** undertake **6 days training per annum** to maintain and **develop** the **standards** of service which our clients expect.





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