

# MARINE STRUCTURE REFURBISHMENT



- concrete repair ■
- steelwork repair ■
- cathodic protection ■
- protective coatings ■
- guniting ■
- grouting ■

CRL IS A SPECIALIST contractor for the inspection and repair of marine structures both in the UK and overseas based on 60 years' experience in the industry. We provide a comprehensive service as a main contractor for projects up to the value of £10M supporting owners and operators of marine infrastructure both on-shore and off-shore.

Our survey division, CRL Surveys Ltd, is UKAS accredited to undertake the initial condition surveys to identify the nature and extent of any structural deterioration. This allows us to then provide professional and informed advice on how to repair the defects in a cost effective and sustainable manner.

We are a multi award winning company, renowned for providing professional, innovative engineering solutions.

- Condition surveys
- Concrete repairs
- Steelwork repairs
- Sprayed concrete
- Grouting
- Resin injection
- Cathodic protection systems
  - Impressed current
  - Galvanic
- Fender repairs/replacement
- Protective coatings
- Waterproofing membranes
- FRP composite strengthening



MARINE STRUCTURES suffer from deterioration due to corrosion of the steel reinforcement, exposed steel piles and sheet piling.

Corrosion of the reinforcement is initiated by high chloride ion levels in the

concrete from the saline environment. The corrosion can

be rapid and cause major loss of steel section with cracking

and spalling of the surrounding concrete. We use hydro

demolition to remove the defective areas of concrete and clean the exposed steel reinforcement.

The concrete is then repaired to reinstate the structural integrity using a range of repair techniques in

accordance with the European Standard EN1504.

## STRUCTURAL CONCRETE REPAIR



REPAIRING THE CONCRETE and damaged steelwork will not stop the problem reoccurring in the future. Coatings can be used to protect the concrete and steel which will slow down the rate of corrosion but it is often expensive to install and maintain coatings in an exposed marine environment. Our specialist Chartered Engineers can provide technical advice on suitable coating systems for an aggressive marine environment in tidal conditions.



TO SIGNIFICANTLY ENHANCE the durability of marine structures CRL can design and install cathodic protection systems which provide cost effective sustainable solutions. We use galvanic cathodic protection systems to protect reinforced concrete, steel piles and sheet piling below the mid tide level using



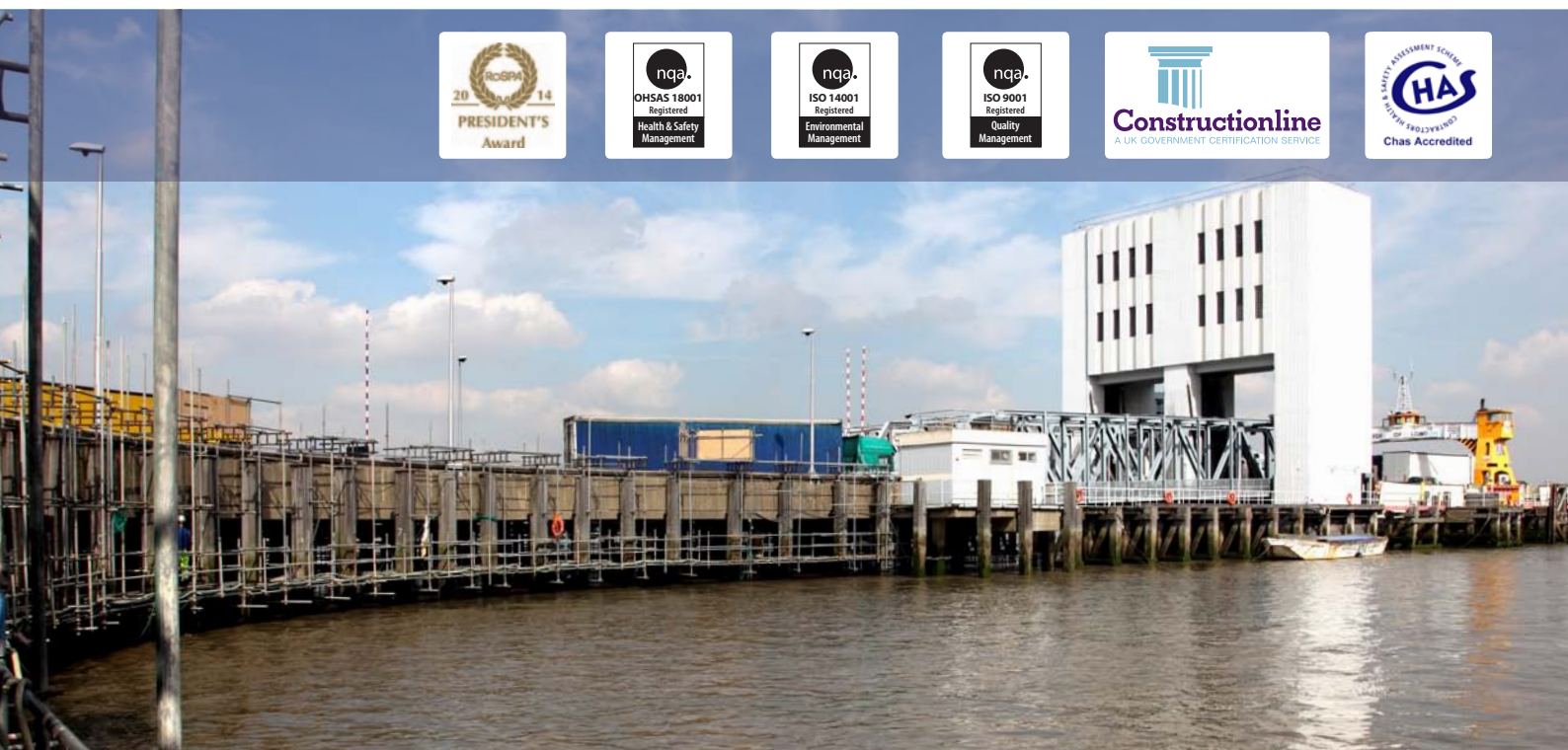
zinc or aluminium alloy anodes. For the reinforced concrete which is atmospherically exposed we often use impressed current cathodic protection systems using a range of anode

## CORROSION CONTROL SYSTEMS

systems depending on the exposure and layout. For accelerated low water corrosion of steel piles and sheet piling we use a combination of cathodic protection below mid tide level and protective coatings above. Our systems are designed in accordance with the European Standards EN12696 and EN12473 and installed by our CP Engineers and Technicians who are Certified in accordance with EN15257.

Argyll & Bute Council	Ministry of Defence
Associated British Ports	Northern Lighthouse Board
Babcock International Group	Port of Felixstowe
BAM Nuttall Ltd	Port of Tyne Authority
Birse Coastal	RNLI
Bournemouth Borough Council	Shell UK
Briggs Marine	Shetland Islands Council
Brighton Marina Estate Management	States of Guernsey
Dover Harbour Board	States of Jersey
May Gurney Ltd	The Environment Agency
Milford Haven Port Authority	Transport for London

[www.concrete-repairs.co.uk](http://www.concrete-repairs.co.uk)



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