

Structural Maintenance Services

Concrete **Repair**

Condition **Surveys**

Coatings

Corrosion **Control**

Bearing Replacement

Membranes

Anchors/Remedial Ties

Structural Strengthening

Cleaning & Preparation

Grouting & Injection

Early Contractor **Involvement**

External Façade **Refurbishment**



The background is a black and white photograph of a brick building. A large, semi-transparent blue banner is overlaid across the middle of the image. In the bottom right corner, a sign for 'CONCRETE REPAIRS Ltd' is visible, with the address '34, Millbank, Westminster, S.W.1' and the telephone number 'Tel: VICTORIA 1701'.

Quality and **innovative**
engineering underpinned by a
commitment to **safety** and
sustainability since **1955**

**CONCRETE
REPAIRS Ltd**
34, Millbank, Westminster, S.W.1
Tel: VICTORIA 1701

protecting your **vital infrastructure assets**

CRL (part of the Centura Group) are a **specialist asset maintenance contractor** for the **inspection, repair & refurbishment** of **buildings and structures**. Established in 1955, **CRL** have a network of six regional offices in the UK **providing a comprehensive refurbishment service**. CRL Surveys (who are UKAS Accredited) 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**. CRL are a multi-award winning company, renowned for providing professional, **innovative engineering solutions**.

Multi-disciplined **specialist contractor** working across **various sectors** in the construction industry.

CRL Surveys

structure & building assessment

It is **essential** with all **refurbishment** schemes that the **structure is inspected** to assess the nature and extent of the deterioration so that a repair specification and bill of quantities can be prepared. **CRL Surveys**, with **over 20 years experience**, are able to undertake the **initial investigation** works using the latest NDT techniques. **CRL Surveys** are qualified for confined space working and rope access if required to access all areas of a structure. A detailed report can be provided with CAD drawings which will identify the condition of the structure and assist with any further structural analysis. **CRL Surveys** can also use this information to recommend **suitable methods of repair** and **provide budget costs** for the work which **allows clients to plan their maintenance activities**.

Visual, hammer test & make **safe**

Covermeter & Ferroskan

Carbonation testing

Corrosion investigations

Chloride analysis

Resistivity

Core sampling

Half cell potential surveys

ASR & HAC analysis

Borescope inspection

Corrosion rate measurements

Load testing

Thermal imaging


Electro magnetic scanning

Structural analysis

3D scanning

Ground penetrating radar

Fire & other accidental damage



FRP Composites

a Sustainable solution for the modern construction industry

CRL continue to **lead the construction industry** in the innovative use of fibre reinforced polymer (**FRP**) **composites** to **strengthen structures**. These **lightweight materials** are fixed to structures using adhesives to **significantly enhance** the **structural performance**. **CRL** have **strengthened** many concrete, steel, masonry and cast iron **structures** in the last **20 years** using a combination of techniques and worked closely with universities to enhance our knowledge and understanding of these materials and their long term performance. Recently **CRL** have started to **develop the use of FRP composites** for new **bridge structures and replacement decks**. These are lightweight, manufactured off site, quick to install and durable.



FRP Bridge Installation

lightweight, durable, **sustainable**



CRL have over
20 years experience

in using **FRP composites** in the construction industry (primarily for structural strengthening). **Lifespan Structures**, a subsidiary of Centura Group, is able to **design** and **supply FRP composite bridge decks** for both pedestrian and vehicle access. **CRL** provide a full installation service for the bridges if required. Lifespan Structures use pultruded and moulded composite manufacturing depending on the design requirements. The bridges are designed for full Eurocode loadings and comply with BD standards. These bridges **provide significant advantages** when compared to traditional materials such as timber, steel and concrete.

The Art of Concrete Repair

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 micro-concretes 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 coatings** to enhance the durability and appearance

BS EN1504 Part 9
Principles 1 & 8



Corrosion **Control** Systems

structure & building **assessment**

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 using 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 EN12696** and **BS EN12473** and **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 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 **enhance future durability**.

Waterproof Membranes

protecting our bridges, multi-storey car parks, buildings & tanks

Waterproof membranes,

both **sprayed** and hand **applied**, when fully

bonded to the substrate can **drastically improve** the chances

of **roofs, car park decks, balcony walkways** and **bridge decks not leaking**.

Supplied and **installed** by **CRL**, they are also used to line tanks and bunds to protect the concrete and prevent fluids leaking out from the structures. Unlike sheet membranes they do not have joints or seams which might leak 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 Engineers in the 1990'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.

CRL Restoration

cathodic protection & concrete repairs to listed buildings

Structural maintenance is an **important part of heritage** building refurbishment.

CRL Restoration specialise in the **cathodic protection of steel framed buildings** and the **concrete repairs** of historic, period and modern buildings and structures. **CRL Restoration** utilise in-house teams to undertake the works in accordance with the specification and recommendations set down by the client and heritage bodies. **CRL Restoration** are committed to working collaboratively with all the parties involved to value engineer the works, thereby coming up with the right solutions and ensuring that the **clients' expectations** are met and the final works are as anticipated. **CRL Restoration** have extensive experience of working on listed buildings with all Heritage and Conservation Bodies.

CRL Restoration's

mission is to restore our clients' and the nation's **heritage buildings** utilising all the **combined experience** of our **directly employed managers, skilled operatives** and reliable supply chain. **CRL Restoration** constantly **exceed** our **clients' expectations** by completing projects **on time, within budget** and to our **clients' satisfaction**.



External Wall Insulation

- keeping you **dry & warm**



External Wall Insulation

(EWI) and **Rainscreen Cladding** can dramatically

transform the **visual appearance** of buildings and have a

beneficial **impact** on the **thermal efficiency**. **CRL** have **extensive experience** in

installing all major types of **EWI** and **Rainscreen Cladding** systems (including high-pressure laminate

boards, terracotta tiles, composite aluminium faced boards as well as other cement faced boards). **CRL** can **advise**

on the different insulation options available, as well as look at specific details in conjunction with the preferred

manufacturer, all to **meet the clients needs**.

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