

This news bulletin is brought to your desktop by the UK Concrete Repair Association (CRA).

It provides brief and easy-to-digest updates, supplied by CRA members on recent concrete repair developments, new advances and other initiatives occurring in the industry.

To obtain further information on any of the stories, click the email links below.

RA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN

TIPNER BRIDGES REFURBISHED BY APA

Principal Inspection reports on the two bridges at Tipner Interchange, which carry the M275 motorway over Tipner Lane in Portsmouth, revealed leaking joints above the two intermediate piers on each structure and subsequent testing work confirmed the presence of very high chloride concentrations in the piers.

Portsmouth City Council decided to repair the affected piers and CRA member, **APA Concrete Repairs Ltd**, was chosen as one of the preferred partners and a member of the Design Team for the Early Contractor Involvement (E.C.I.) phase of the scheme.

A 'mesh and overlay' type, impressed current Cathodic Protection (CP) system, involving the installation of an expanded titanium mesh anode, overlaid with a 25-30mm thick layer of dry-sprayed concrete, was chosen. The CP System was commissioned in December 2008 and in just the short 4-hour period following initial energisation, 91% of the installed reference cells achieved protection criteria. The Tipner installation can, therefore, be considered a model CP system.

SEND AN E-MAIL: info@apaconcreterepairs.co.uk **LINK TO WEBSITE:** www.apaconcreterepairs.co.uk



RA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN

NEW BUSINESS COURT REFURBISHED BY CEMPLAS

May 2008 witnessed the commencement of a £70m, two-and-a-half year construction scheme, to redevelop Rolls House as London's new Business Court. The new Court is set to replace the existing Commercial Court and Technology Court currently operating at St Dunstan's House.

The construction scheme involves the demolition No. 8 Breems Building in Fetter Lane (whilst retaining the building's façade) and the construction of a new high spec eight-storey building over twin level basements.

CRA member **Cemplas Waterproofing and Concrete Repairs Ltd** was awarded the contract to undertake remedial repairs within the basement and the lower floors of the building. Works undertaken included resin injection into cracks in the concrete structure, concrete repairs, the installation of more than 2,300m² of waterproof slurry to the pits, trenches and pile caps, as well as over 6,300m² of cavity drain membrane to the floors and walls between the basement and the lower ground floor.

SEND AN E-MAIL: paul.stacey@cemplas.co.uk **LINK TO WEBSITE:** www.cemplas.co.uk



RA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN

MAJOR RESIDENTIAL PROJECT COMPLETED

CRA member **Concrete Repairs Ltd (CRL)** has completed an extensive £1.6m external upgrade of 90 apartments at the 15-storey Dalmuir Court, in Clydebank, despite some challenging problems that demanded innovative thinking and several unique solutions.

The project, carried out for West Dunbartonshire County Council, proceeded whilst each apartment remained fully occupied, even though it involved each apartment's 1.2m deep external balcony being incorporated as part of the internal living areas.

Work, involving the installation of 3,300 square metres of external wall insulation (EWI), a new insulated roof, a new stainless steel glazed roof balustrade, new glazed balcony balustrades, the replacement of 60 balcony window sets, new common entrance doors and the upgrade of the external fabric on the ground floor, is being carried out from mast climbing platforms.

The Dalmuir Court project is typical of the type of multi-disciplined structural renovation work carried out by CRL on residential buildings over the past few years.

SEND AN E-MAIL: jdrewett@concrete-repairs.co.uk **LINK TO WEBSITE:** www.concrete-repairs.co.uk



RA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN

STRUCTURAL STRENGTHENING ADVICE FROM THE CRA

The first reaction of most people when asked about structural strengthening with fibre reinforced polymers (FRP) is 'what are they and what are they used for?' This is exactly why the CRA originally produced its **Advice Note No. 3** and also why it has just completed a review and updated its content. It is designed to give the reader an overview of structural strengthening.

Thanks to FRP composites, rapid, cost effective and relatively simple structural strengthening techniques are now available to the specifier and given the high capital costs of demolition and reconstruction, it makes sound economic sense to upgrade a building or structure, rather than to knock it down.

The deployment of FRPs has been driven due to the upgrading of vehicle weights and/or changes in the design codes, which have resulted in the need to strengthen bridge structures. In addition, changes-of-use in buildings have led to the need to upgrade or strengthen structural components.

Copies can be obtained free of charge by clicking below and entering Enquiry No: 1026

ADVICE NOTE: www.cra.org.uk/info **LINK TO WEBSITE:** www.cra.org.uk



RA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN

FOSROC REPAIR SOLUTION BEATS THE TIDE

The South Hook LNG development has seen a disused Esso oil refinery at Herbrandston, South Wales, undergo a massive refurbishment and refit to become the biggest natural gas terminal in Europe. A key element was the substantial repairs to the 40-year old jetty, including strengthening of existing piles and large amounts of concrete reinstatement.

Due to the harsh marine environment, windows of opportunity for application were subject to weather and tidal conditions. To resolve the problem, main contractors CB&I John Brown and partners, Besix-Kier, required a concrete repair solution that could be applied quickly and easily with rapid strength gain and low water absorption.

CRA member **Fosroc Ltd** provided a bespoke dry-spray system specifically designed for large area repairs. The technology was based on a well established product Renderoc DS, which was developed for large structures such as bridges, tunnels, retaining walls and dams. Like Renderoc, DS it was supplied as a pre-bagged ready-to-use single component product. More than 1600 tonnes of material were used to complete the project, ready to receive the first tanker in March this year.

SEND AN E-MAIL: uk@fosroc.com **LINK TO WEBSITE:** www.fosroc.com



RA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN

QUADRIGA COMPLETES EXTENSIVE CONCRETE REPAIR PROJECT

Extensive concrete repairs, as well as the design and installation of electro-chemical works (permanent monitoring and cathodic protection trials) have been carried out at Cliff Gardens Bridge, Old Colwyn, North Wales by CRA member **Quadriga Concepts Ltd**.

Damage to the reinforced concrete, from corrosion of the embedded steel reinforcement, had been recorded over time and the suspicion that the airborne marine salts had played a major role in its initiation and progression was confirmed following the completion of an in-depth condition survey during 2008.

The cathodic protection work was achieved using a ribbon anode system embedded in either the repaired areas or chases cut into the wall itself.

To examine the state of corrosion, a permanent monitoring system using linear polarisation resistance probes, together with a series of embedded half cells and a permanent low voltage power supply, was designed and installed using that equipment, information will be gathered over time to enable valued engineering judgements to be made.

SEND AN E-MAIL: TDavies@quadrigaltd.com **LINK TO WEBSITE:** www.quadrigaltd.com



RA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN

REMMERS GO WITH THE GRAIN!

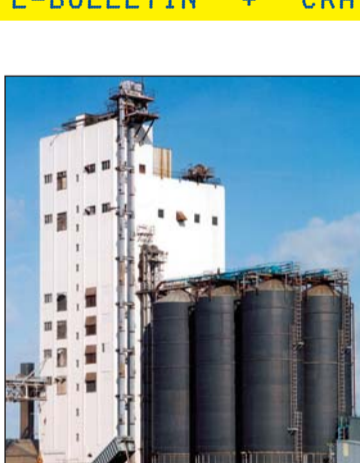
Due particularly to the chloride containing marine atmosphere, the 75 metre high, 13,500 tonne capacity, monolithic concrete grain silo at Lowestoft Docks had been suffering from cracking and spalling, with the consequent water ingress accelerating the deterioration.

Using their in-house powered cradle access equipment, Folcrete Restoration Services Limited, the UK's premier refurbishment specialists to the milling industry, surveyed, repaired and protected the structure using the concrete repair and protection system manufactured by CRA member **Remmers (UK) Ltd** throughout; exactly as they had done on numerous other grain and powder silos around the UK.

Damaged concrete was removed, corroding steel reinforcement exposed and treated and all surface defects repaired with Remmers' repair and fairing mortars. Finally, the whole structure was protected with Remmers concrete acrylic and Elastoflex anti carbonation coatings.

Today the structure is not only as good as the day it was built, but is now fully protected with a greatly increased service life.

SEND AN E-MAIL: clairemitchell@remmers.co.uk **LINK TO WEBSITE:** www.remmers.co.uk



RA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN

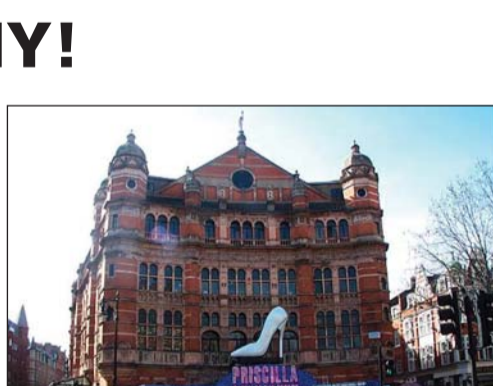
STRUCTURAL RENOVATIONS LTD - A REALLY USEFUL COMPANY!

Working in the 'dark' periods between performances and productions, CRA member **Structural Renovations Ltd** has been working in a number of London theatres on behalf of Sir Andrew Lloyd Weber's Really Useful Group, employing a variety of concrete and other repair techniques.

At the London Palladium, external cleaning was carried out to the building's façade, prior to the application of a protective coating, whilst liquid applied membranes were applied to waterproof the theatre's roof.

At the Palace Theatre, the problem of water ingress in the basement areas has been solved by the application of a waterproof render and resin injection techniques have been used to repair brickwork to the proscenium arch. Whilst at the Theatre Royal in Drury Lane, cementitious and polyurethane grouts have been injected to stabilise the rubble fill to the theatre's brick arches.

SEND AN E-MAIL: a.muirhead@structren.com **LINK TO WEBSITE:** www.structren.co.uk



RA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN

NEW RIBA APPROVED BS EN1504 CONCRETE REPAIR CPD FROM WEBER

Tough new regulations governing the repair of reinforced concrete are now in force in the UK and have been in effect for all forward projects several months.

The BS EN1504 standard has been adopted throughout Europe and this is the first time that a British Standard, detailing not only the performance criteria for the protection and repair of concrete structures, but also guidelines to repair methodology, has been available for concrete refurbishment in this country.

The **Weber** range of proven specialist mortars for civil engineering, concrete and crack repair in buildings meet the new Standard and the CRA member company is providing technically compliant data. Weber also provides a comprehensive advisory service to assist surveyors, structural engineers and architects to work within the new regulation and a new RIBA approved CPD training module is also now available to enhance the understanding of this complex set of regulations.

To arrange a CPD presentation at your business location, e-mail or register online.

SEND AN E-MAIL: mira.popovic@netweber.co.uk **LINK TO WEBSITE:** www.netweber.co.uk



RA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN

HOW USEFUL IS THIS?

The popular one-third A4 sized **CRA Members Directory** for 2009 has been published. It includes updated information on each of the CRA's nineteen contractor, seven product manufacturer, four distributor and three Associate members.

A handy pocket-sized, 52-page booklet has been specifically designed to be of practical, every-day use to Clients, Specifiers, Consultants, Surveyors and Local Authorities seeking established companies involved in the practice of concrete repair and allied activities. Each CRA member's page includes a description of the company's specialist concrete repair capabilities (or products, in the case of manufacturers and distributors), as well as third party accreditations.

To facilitate company selection, when compiling tender lists for concrete repair work, each contractor's entry includes details of contract values catered for, the company's largest contract to date, its total turnover, the value of its concrete repair related business and its geographical area of operation.

Copies can be obtained free of charge by clicking below and entering Enquiry No: 1025

DIRECTORY: www.cra.org.uk/info **LINK TO WEBSITE:** www.cra.org.uk



RA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN + CRA E-BULLETIN