



THE JOURNAL OF THE CONCRETE REPAIR ASSOCIATION

ISSUE NO. 16

# HAVE WE GOT NEWS FOR YOU!

AS SEEN ON TV!

‘Cracking Matters’, the journal you are currently reading, achieved fame at last when it was recently featured as the guest publication on the BBC’s popular television programme ‘Have I got new for you’.

The CRA’s well established bi-annual journal, now in its eighth year of publication, received rave reviews from the panel of jokers, who were asked to fill in the missing words from the journal’s story headlines, in the time honoured manner.

The Editor of Cracking Matters claimed that his ‘phone did not stop ringing for some time after the broadcast illustrating, according to him, both the programme’s popularity and its significant numbers of viewers. “If you were to ask to be featured on any programme on TV” he commented, “this would probably be the one. It was obviously included for comic appeal since because of its specialist nature Joe Public would not normally come across it. The fact is” he

continued, “the programme appeals to discerning people such as consultants, architects, surveyors and the like – just the people at which the publication is targeted”.

Unless this is the first issue you have come across, Cracking Matters is published twice yearly in May and November. It carries stories relating to important issues in the concrete repair and related sectors of the construction industry, as well as developments within the CRA, and is circulated to approximately 6,500 individuals who have previously requested information from the Association. As you will see, most issues also carry invited ‘comment’ articles from third parties.

If you would like to ensure you receive future editions, contact Association House, 99 West Street, Farnham, Surrey GU7 7EN. Tel: 01252 739145. Fax: 01252 739140. Email: [cra@associationhouse.org.uk](mailto:cra@associationhouse.org.uk) Website: [www.cra.org.uk](http://www.cra.org.uk)



## ANDREW MUIRHEAD ELECTED CRA CHAIRMAN



Andrew Muirhead of Slough based specialist contractor Structural Renovations Ltd, has been elected Chairman of the CRA. Previously Deputy Chairman of the Association, he assumed the position from Mike Hackett of specialist contractor Makers UK Ltd at the Association’s recent Annual General Meeting.

Andrew Muirhead becomes the twelfth individual to Chair the Association since its inception in 1989. The post is usually held for a two-year period. Mike Hackett will act as Deputy Chairman for an interim period.

The Chairman serves as part of a nine-man CRA Executive Committee, which

comprises of the Chairman and the Deputy Chairman, Bob Berry of Concrete Repairs Ltd, Nigel Cox of Dew Construction Ltd, Tom King of Alfred Bagnall & Sons Ltd, Tony Hansard of Weber Building Solutions, Vince O’Malley of Renocon Ltd, Mike Threadgold of Degussa Construction Chemicals and one other manufacturer member yet to be appointed.

Also at the AGM, Nigel Cox was appointed as Chairman of the newly formed CRA Technical Committee and Tony Leach of Makers UK Ltd, was confirmed as Chairman of the recently set up CRA Health & Safety Committee.

Also at the AGM, Bob Berry of contractor member Concrete Repairs Limited and a previous CRA Chairman, was presented with the Kevin Coulman Memorial Award for outstanding services to the Association and the industry.



**INSIDE**

▶ Repaired concrete - a sure fired success?

▶ Tea and Sympathy

▶ Crisis concrete

[www.cra.org.uk](http://www.cra.org.uk)

# TEA AND SYMPATHY ... or something more cost-effective?

Recently, when our trainee said to us that he felt unwell, reaction was mixed. The gentler sex prescribed tea, sympathy and paracetamol, while certain others among us claimed that the danger of bird flu demanded immediate dispatch followed by incineration of the remains.

Being unable to find a method statement and risk assessment for human cremation, we were forced to opt for the first option – secure in the knowledge that tea making is Method Statement 001 in our Q/A manual.

Seriously though, with the winter months upon us, it is probably as good a time as any to consider the cost of illness and poor health on the industry and what we can do to reduce it. Over the past twenty years our perception and practice regarding Health and Safety has changed out of all recognition from the ‘fingers crossed’ procedures that existed when some of us grey haired individuals joined up. But, while we now fully understand the dangers and inherent costs of poor safety, do we pay enough attention to the health aspect?

It has been estimated (by the London Business School no less) that colds, chills and flu cost British industry in excess of five billion pounds a year through people taking time off, or performing below par. The latter being the most costly, as the martyr dragging round the office usually manages to infect everyone else!

Yet the solution is so simple. Proper wet weather gear is fairly cheap, as are fleeces and other garments that should be part of the standard protective clothing issue to site staff and operatives, along with the usual hardhat and boots. Some companies have even gone as far as arranging for flu jabs; regarding the investment worth the payback in sick leave reduction.

Of course, most large companies already provide a range of branded clothing. In fact, if you are involved in a long term partnering scheme, branded workwear is

probably one of your contract conditions. But for smaller contractors in particular, the initial cost can be seen as a barrier and yet if you work it out, the cost of one day’s delay on site because of absence, outweighs a serious amount of cost!



And finally, at a building site somewhere off the M25, a concrete repair supervisor is about to challenge two strangers in white overalls who have just turned up out of nowhere.

“Who are you?” asks the supervisor.

“Health & safety inspection,” says one, “I’m Mike and this is Gabe.”

So for the next hour the two H&S men go round the site with a fine tooth comb checking ladders, scaffolding and all the documentation. Finally they conclude that everything is in order.

“Right,” says Mike “this is a very well run site, the last thing to check is the gravity”, upon which he shins up a ladder into a hoist, rides up ten floors, walks to the edge of the scaffold, shouts “TESTING!” and steps into space.

He plummets earthward until six feet from the ground he miraculously slows and drifts gently to stand in front of the gobsmacked supervisor.

“That’s amazing!” says the supervisor.

“Standard practice these days,” says Mike.

“It’s a new EU ruling,” chips in Gabe, “Would you like to try it?”

“OK” says the supervisor, so he shins up the ladder, goes ten floors up in the hoist, walks to the edge of the scaffold, shouts “TESTING” and steps into space.

Needless to say he plummets earthward then six feet from the ground he miraculously keeps going and splatters all over the ground.

Mike turns to his companion and says “You know Gabriel, for Archangels we’ve got a nasty sense of humour sometimes!”

## Concrete repair market back in growth

Survey findings, produced by the CRA and relating to the concrete repair market for January to December 2004, show that the market increased by more than 7% on the previous twelve month period.

During 2004 the contract sales value of this specialist construction sector is estimated to have been worth £217m, compared to £202m in 2003 and £230m in 2002. CRA contractor members also reported that more than 1,600 new orders for concrete repair work, worth approximately £82m, had been won during the twelve month period.

For the second six-month period in a row, however, the figures indicate that whilst CRA members were successful in winning significantly more contracts, their total value had fallen slightly, indicating a continued marked trend towards smaller contracts being let.

In addition, 38% of CRA contractor members reported that they had experienced an increase in the number of work enquiries being received in the final six months of 2004, with a further 38% advising they had received the usual number.

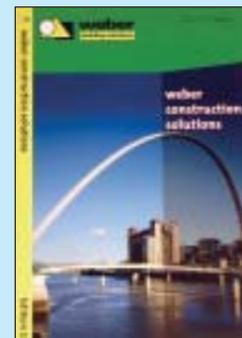
The survey also revealed that contractor members were buoyant about anticipated concrete repair work volumes for 2005. 50% expected the number of contracts to increase and the same number were anticipating a rise in the value of the work. Most, however, predicted no change or a reduction in margins.

## NEWS from CRA Members

Use the enclosed Fax-Back to obtain more information

### WEBER CONSTRUCTION SOLUTIONS

weber building solutions is an international leader in the manufacture and application of innovative and practical construction mortars; areas of activity include Bedding Mortars, Concrete Repair and Precision Grouting.



Providing solutions for all markets with a well-established product range, weber is pleased to announce the launch of the new construction solutions handbook, ‘weber construction solutions’. Aimed at specifiers, the handbook provides a complete overview of weber’s product range and service support along with detail selectors which have designed to guide the specifier to the most suitable product for a particular application.

To reserve your copy of the weber construction solutions handbook please contact us on 01525 722110.

ENQUIRY NO: 1601

### WATERPROOFING – AS MUCH AN ART AS A SCIENCE



The varying types and often unusual configuration of liquid retaining structures, makes the stopping of leaks as much an art as a science.

Nation-wide multi-disciplined refurbishment Contractor, **Concrete Repairs Limited (CRL)**, part of the MJ Gleeson Group plc, has been repairing such structures throughout the UK and overseas since 1955. The experience has enabled the company to establish a range of proven waterproofing options using the latest developments in materials and techniques, or tried and tested traditional methods. A new brochure, entitled ‘Professional Structural Waterproofing’, reveals the extent of the techniques employed, including inspection and reporting, identifying the causes of failure and providing a range of costed repair options.

For your copy telephone 020 8288 4848

ENQUIRY NO: 1602

# REPAIRED CONCRETE ...a sure-fired success?

**By: Graham Ellicott, Chief Executive,  
Association for Specialist Fire Protection (ASFP)**

**So, the job's finished.**

Was it a polymer modified mortar patch or perhaps beams strengthened with carbon fibre on the tension face? Well, whatever the job ... did you or the engineer that commissioned the work consider the effect of fire on the renovated concrete?

But, I hear you say, concrete doesn't burn. Well that's true, but it can spall explosively in a fire and that can lead to weakening of the structure, as well as acting like showering shrapnel for the fire and rescue services ... just ask the guys that fought the Channel Tunnel fire!

So, is that system that you've had installed located in a situation that could be vulnerable to fire? If so, are you sure the reinstatement will survive a fire? If not, then perhaps you should be considering the use of a proprietary passive fire protection (PFP) treatment to protect the concrete in question.

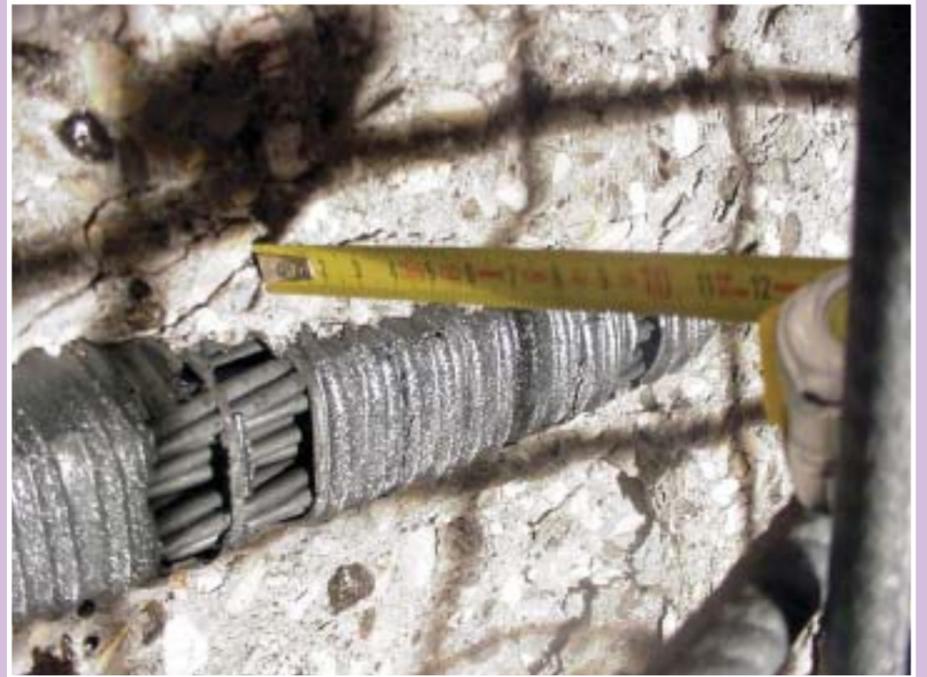
Typical proprietary systems include spray applied cementitious products and autoclaved calcium silicate boards utilizing inert fillers. The mechanism for the protection of the concrete by cementitious and calcium silicate products is twofold. Firstly, they contain trapped moisture, which in a fire situation will boil and keep the concrete temperature around 100 Celsius until all the water has disappeared. Secondly, the product then acts as an insulator.

But what are the benefits of these passive fire protection materials?

Firstly, the added extra insulation that they give will mean that in the event of a fire no further repairs to the concrete will be needed, since the concrete temperatures will not have reached a high enough level. Fire temperatures as low as 160 Celsius, can mean that repairs will be required. For example, concrete containing polypropylene fibres will need reinstatement, as the fibres will have melted. Once temperatures reach 300 Celsius the bond between the concrete and the rebar will also have significantly reduced. At 380 Celsius it is generally accepted that all concrete that has been exposed to these temperatures will need removal and subsequent repair. Even smouldering fires can dehydrate the surface of concrete and if a serious hydrocarbon follows, the level of explosive spalling is likely to be even greater.

PFP products do not impinge upon the long term durability of concrete as they have no affect on the porosity of the material, nor do they cause the formation of any cracks or channels that can admit harmful agents such as sulphates or chlorides that can attack the rebar. Similarly, as proprietary PFP products are placed between the concrete and the fire, they have no effect on the properties of the concrete during placement or in its lifetime. In comparison, additives used to infer extra levels of fire

**Explosive spalling can  
act like showering  
shrapnel  
... just ask the guys  
that fought the  
Channel Tunnel fire!**



*Above: Typical depth of spalling following a fire.*



*Left: Aftermath of the Channel Tunnel fire.*

protection to concrete, can result in materials with complex mix designs that are difficult to pump or pour and that give poorer pull out strengths for anchors.

The use of proprietary passive fire protection products, applied over repaired concrete, where there is a perceived threat of fire, will mean that you have discharged your obligation of duty of care. Now that is a sure fire success!!

READER ENQUIRY: 1603

## PHENOMENAL SUCCESS OF CRA CD-ROM AND ROAD SHOW SEMINARS

Following its introduction in 1997, the CRA's CD-ROM has proven a runaway success with more than 5,000 copies having been requested and issued. The seemingly never-ending demand continues unabated.

The CD was introduced in line with the Association's commitment to promoting and developing the practice of concrete repair and advancing education and technical training in the concrete repair industry. The original disk contained the audio-visual programme entitled 'The route to a successful concrete repair' only, but it has since been supplemented with a new 'Structural strengthening with composites' programme. Copies remain available free of charge and can be requested via the Fax-Back enclosed with this issue of Cracking Matters.

Just after the introduction of the original CD, the CRA also began presenting personalised CPD Seminars to groups of interested Consultants, Authorities, Surveyors and Engineers and recently completed its 132nd event!

Both Seminar Road Show programmes, to take place at your offices, can still be arranged provided a minimum of 4 delegates are able to attend. Each programme is about 45/60 minutes in duration and is presented by a specialist contractor and/or a specialist product manufacturer member of the CRA. Road Show presentations are also free of charge and arrangements can be set underway by completing and returning the fax-Back. We look forward to hearing from you!

# Extra... Ordinary!

## Unusual installations & developments reported by CRA members

### 'STICK TO IT' FOR PUBLIC ART TRAIL

Sculptures of a life size handbag, teapot and pot of paint, the latest additions to the Bolton Public Art Trail, have been bonded in place using specialist high strength, rapid-hardening materials.



To provide a bond of high compressive and shear strength, a self-mixing cartridge-applied polyester resin anchor system was applied to the pre-drilled dowel holes in the plinths, around the fixing bars and on the base of the sculptures to provide a rapid-setting weatherproof bond. Bolton's art trail is designed to celebrate the historical connections of Mawdsley Street in Bolton town centre as a centre of business and commerce. Each piece of artwork reflects the ranges of trades and businesses which have existed in the area over the years.

### ADDED-VALUE CONCRETE REPAIR

Making good a damaged, spalled and/or worn concrete floor, deck, hard standing, balcony, or other horizontal concrete surface, is normally an everyday job. When adopting conventional mortar mixes, however, difficulties arise both in respect of the 'down time' created between application and re-trafficking; due primarily to the very slow curing time of such mortars, as well as the long-term performance of the patch repair; in particular its adhesion to the damaged substrate.

Any material that overcomes both inconveniences provides added-value benefits to the contractor carrying out the job and to the client who wants to re-deploy his surface as quickly as possible and look forward to a lasting repair. It was for exactly these reasons that a new fast set patching concrete has just been developed.

It comes in two grades, one incorporating 4mm aggregate and the

other containing 10mm aggregate in order to accommodate both small and large volume repairs of between 10mm and 150mm depths. Its high early strength gain capabilities means that, subject to ambient temperatures, repaired areas can be opened to foot traffic in just four hours, by which time it has developed a compressive strength of 10N/mm<sup>2</sup>. After 24 hours this increases to 15N/mm<sup>2</sup> and after seven days the 4mm grade reaches 45N/mm<sup>2</sup>. Adhesion to the damaged substrate is assured through the use of a slurry primer.

### MODERN STRENGTHENING TECHNIQUE FOR NEO CLASSICAL STRUCTURE

A carbon fibre reinforcing polymer (CFRP) structural strengthening system has been employed to fortify the ornate stairwells and stone landings at Buscot Park, a grand, neo-classical, eighteenth century property located in Oxfordshire.

The mansion house, bequeathed to the National trust in 1956, is home to the Faringdon Collection of works by contemporary artists. Its stairwells were suffering from deflection, caused in part by alterations to the support for the cantilever landings and the repair solution was required to impart the necessary strength and to be virtually invisible upon completion.



CFRP systems comprise pultruded carbon fibre plates of various widths, thicknesses and strengths, bonded into place with a specially formulated two-component, cold-cure, epoxy-based structural adhesive. Whilst their employment is well-established and used widely for the upgrading of all types of structures in the Civils market, domestic and residential installations are much rarer. Nevertheless, the system proved ultimately ideal for the task in hand and the project provided a perfect example of how correctly installed modern materials and techniques can be utilised to maintain old and listed buildings.

## CRISIS CONCRETE!



Imagine the CRA contractor's face when he discovered the real reason why spalling concrete had crashed through the false ceiling at this UK swimming pool ... Reinforcement cover has never been so good !!!

### Contractors: Telephone:

APA CONCRETE REPAIR SPECIALISTS	01422 379640
ASL CONTRACTS	01264 335564
ALFRED BAGNALL & SON	020 8311 3910
BALVAC LTD	01773 542600
CEMPHAS WATERPROOFING & CONCRETE REPAIRS LTD	020 8654 3149
CONCRETE REPAIRS LIMITED	020 8288 4848
CONNAUGHT PROPERTY SERVICES LTD	01293 649200
DEW CONSTRUCTION LTD	0161 624 5631
FREYSSINET LTD	01952 201901
GUNITE (EASTERN) LTD	01480 466880
INTERSERVE PROJECT SERVICES LTD	0121 344 4888
KAFFTEN LTD	01787 237980
MACKENZIE CONSTRUCTION LTD	0141 633 5555
MAKERS LTD	01462 477333
MCGARVEY CONSTRUCTION LTD	0141 848 7555
QUADRIGA CONCEPTS LTD	01606 330888
QUICKSEAL SPECIALIST CONTRACTORS	020 8530 6808
RENOCON LTD	020 7538 5492
REPEX LTD	01435 866666
ROK STONECARE LTD	01908 679222
STRUCTURAL RENOVATIONS LTD	01753 825511
TOPBOND PLC GROUP	01795 414050

### Manufacturers: Telephone:

DEGUSSA CONSTRUCTION CHEMICALS	0161 794 7411
EXCHEM MINING & CONSTRUCTION	01773 540440
FOSROC LTD	01827 262222
INSTARMAC GROUP PLC	01827 872244
MC BUILDING CHEMICALS	0121 789 8333
RONACRETE LTD	01279 638700
SIKA LIMITED	01707 394444
TECROC PRODUCTS LTD	01827 711755
WEBER BUILDING SOLUTIONS	01525 718877

### Distributors: Telephone:

ADAWALL CONSTRUCTION CHEMICALS	0117 986 1766
BBM	01234 268452
BUILDSPAN LTD	01252 527000
RESAPOL LTD	01942 609001

### Associates: Telephone:

BIRMINGHAM CITY LABORATORIES	0121 303 9300
THE CONCRETE CONSULTANCY 2000 LTD	01707 647266

The CRA CD-ROM contains the Association's hugely successful audio-visual programmes entitled 'The route to a successful concrete repair' and 'Structural strengthening with composites', together with other useful CRA guidance notes. The CRA's Method of Measurement for concrete repair is also included as a 'Word' document to enable Bills of Quantities to be produced as required.



Copies are available free of charge via the enclosed Fax-Back form, or from Association House, 99 West Street, Farnham, Surrey GU9 7EN. Tel: (01252) 739145. Fax: (01252) 739140. Email: cra@associationhouse.org.uk

'CRACKING MATTERS' is published by the Concrete Repair Association (CRA), Association House, 99 West Street, Farnham, Surrey GU9 7EN. Tel: (01252) 739145 Fax: (01252) 739140 Email: cra@associationhouse.org.uk Website: www.cra.org.uk

Comments and opinions expressed in the articles provided are those of the Author and not necessarily of the CRA.

Rights reserved. No part of this publication may be reproduced or transmitted in any form, without prior written consent of the publishers. Sixteenth edition: 30. 11. 05

CURRENT CRA MEMBERS