



THE JOURNAL OF THE CONCRETE REPAIR ASSOCIATION

ISSUE NO. 14

The best ideas are the most uncomplicated

CONCRETE REPAIR ASSOCIATION
The Home of Concrete Repair

HOME | LIST OF MEMBERS | PUBLICATIONS | STANDARDS | CRACKING MATTERS | PR & ARTICLES | INFORMATION | CODE OF PRACTICE | NEWSLETTER | LINKS | TRAINING | CRA MEMBERS' AREA | **SUBMIT TENDERS**

The Concrete Repair Association - promoting excellence in concrete repair.
Click on the links above for details of CRA Members (in a searchable database), downloadable documents and other information, sign up for our newsletter to get the latest technical updates and news.

CRA: the Concrete Repair Association 01/06/2004
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Thumb through the back pages of most construction journals and you will find advertisements and notices, primarily from Local Authorities and Housing Associations, advising of forthcoming repair and refurbishment works and inviting tenders from interested companies. It has been the conventional method of nationally publicising upcoming projects.

In order to augment this exposure and to ensure that such announcements are not missed by the 'specialists' when specific to concrete repair work, the CRA has restructured its web site to allow clients to also post their tender notices on it.

The innovative idea is intended to supplement, not to replace, conventional methods of publicising such information and is currently available to all Clients,

Authorities and Housing Associations. The facility is completely free of charge and since the pages are regularly visited by CRA contractors and material manufacturer members, clients can be assured that their messages will be directly received by interested companies specialising in this market sector.

The on-line 'tender placing procedure' is very simple and those interested should visit www.cra.org.uk

The idea was first proposed in Issue 10 of Cracking Matters, when we asked readers to give us their opinions, positive or negative, on the accompanying Fax-Back. The response was overwhelmingly in favour of the idea and the Association has since restructured its site to accommodate the tenders.

It is said that the best ideas are the simple ones and the CRA is now fulfilling a need at no extra cost to the advertising organisation and at very little cost to itself.

The recently updated CRA web site also now includes member companies' product development news and project news stories. Interested visitors can access the information directly from the CRA 'Home Page'. The facility will be continuously updated to provide an interesting insight into the members many and varied activities.

CRA MEETING SPECIFIER NEEDS

As most construction professionals will know, attempting to pre-determine the depth and area of deteriorated concrete before 'breaking out' is not a precise science, making it extremely difficult to accurately quantify the volume of work and time needed to complete a concrete repair project.

It was recognised some time ago that this was a notoriously difficult area of construction measurement, which is why the CRA produced its 'Standard Method of Measurement for Concrete Repair' (MOM) publication.

The detailed 44-page document was specifically devised to provide a uniform basis for measuring concrete repair, to facilitate full itemising of all aspects of the work involved and enable the production of clearer Bills of Quantity.

The publication deals with the measurement of surface cleaning; surveying; concrete repairs; crack repairs; pore/blow hole fillers; levelling mortars/fairing coats; coatings and resin injection. It also itemises time-related elements such as provision of access and site facilities and includes a useful specimen Bill of Quantities, with space for contract details to be added.

Since its launch, the publication and its contents have been extensively adopted, but users found that they needed to photocopy the document's specimen Bill of Quantities pages for each and every project.

In an effort to reduce the inconvenience, the CRA included the MOM on its first CD-ROM, which enabled users to run as many copies as necessary from their PC. Whilst

this assisted, it still required the user to type the contract details onto the copied pages and remained laborious. But now the forward-thinking CRA has cracked the problem.

The most recent version of the Association's CD-ROM includes the Bill of Quantities section as a 'Word' document. Those in receipt of a copy are able to download the all-important pages on to their computer's hard drive and simply type in the necessary information for each and every project, time and time again.

The CRA's new CD-ROM also contains the Association's hugely successful audio-visual programmes entitled 'Structural strengthening with composites' and 'The route to a successful concrete repair', together with its latest Members Directory, other useful CRA guidance notes, a bibliography of allied publications and a list of useful addresses.



Copies are available, free of charge, from Association House, 99 West Street, Farnham, Surrey GU9 7EN
Tel: (01252) 739145. Fax: (01252) 739140.
Email: cra@associationhouse.org.uk
Web site: www.cra.org.uk

INSIDE

- TR55 revised
- Distributor membership
- Why the wrong people
- New CRA Chairman
- Duffels & Smoothies
- Repair market

TR55 REVISED

John Clarke, of The Concrete Society, explains the developments behind the revision of Technical Report 55, the design guidance for strengthening concrete structures using fibre composite materials.

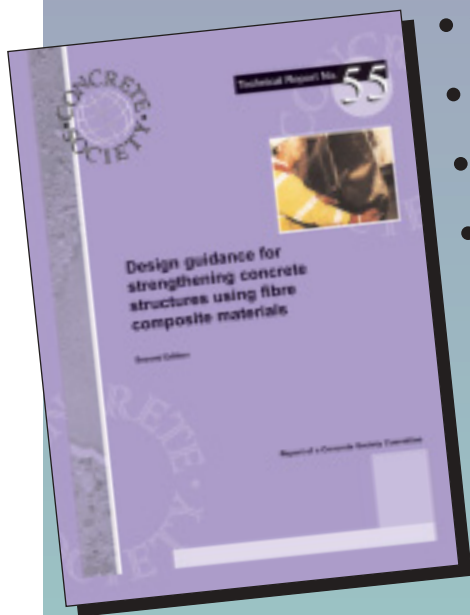
The use of fibre composites using carbon, glass or aramid fibres, for the repair and strengthening of concrete structures has been growing rapidly over the past few years and many types of structures have been strengthened including bridges, commercial and industrial buildings, car parks and marine structures.

In December 2000 the Concrete Society published Technical Report 55 entitled 'Design guidance for strengthening concrete structures using fibre composite materials', which was the first document to give guidance in line with British design codes. This Report has since been widely accepted as the 'Standard', not just in the UK but in many countries around the world such as Australia, New Zealand and Singapore.

Following the publication of TR55, however, it became clear that some of the key aspects leading to the successful application of fibre reinforced polymer (FRP) strengthening included workmanship and the long-term performance of the materials. This led to a further project and the publication, in February 2003, of Technical Report 57 entitled 'Strengthening concrete structures using fibre composite materials: acceptance, inspection and monitoring'.

Whilst it should be emphasised that there was no suggestion that the current design guidance in TR55 is in any way unsafe, further research had been undertaken and a number of significant developments had occurred since its original publication and hence it was decided that a second edition should be prepared.

Publication of the second edition is imminent. It follows the same format as the first edition, but expands on specific areas. It is intended that it should be used in association with Technical Report 57 and hence it does not cover aspects of inspection and maintenance in any great detail. Specific topics addressed in the revision include:



- Updated review of applications of FRP strengthening in the UK and elsewhere
- Guidance on strengthening concrete structures available elsewhere, e.g. the American ACI 440
- Review of developments in materials, e.g. manufacturing processes for plates
- Review of developments in new techniques, e.g. near-surface-mounted reinforcement and shear strengthening
- Reference through to methods for strengthening other types of structures, e.g. metallic structures or masonry
- Revision and updating of the design chapters in the light of experience and recent research work, including identifying any limitations to the approaches identified
- Development of guidance on near-surface-mounted reinforcement.

As with the first edition, the revision was carried out with financial support from major bridge owners and suppliers of strengthening materials. Technical input was supplied from across the industry by academics, consultants, suppliers and specialist contractors.

Copies of TR55, Edition 2, can be obtained from The Concrete Bookshop (www.concretebookshop.com or E-mail enquiries@concretebookshop.com). For further information, contact John Clarke at The Concrete Society (j.clarke@concrete.org.uk). READER ENQUIRY: 1401

CARMARTHEN BRIDGE - as good as new!

Within weeks of being allotted listed structure status, Carmarthen Town Bridge, which carries the A484 Llanelli to Carmarthen county road over the tidal River Towy and the local flood plain, has received a £500,000 refurbishment package carried out by Concrete Repairs Limited (CRL), the UK's leading specialist main contractor. The challenging and multi-disciplined 20-week contract incorporated CRL's core business activities of hand and spray applied concrete repairs to both external and internal areas of the bridge structure. CRL carried out a 'concrete defects' survey of all structural elements, which included a full visual inspection and hammer tests, before employing a hydro-demolition technique to remove deteriorated concrete. In addition to managing traffic, CRL installed sacrificial anode units, buried asphaltic plug deck joints, bridge deck waterproofing and blacktop surfacing. For more details, telephone 020 8288 4848. Email: mail@concrete-repairs.co.uk Visit: www.concrete-repairs.co.uk



ENQUIRY NO: 1402

CRA agrees new 'distributor' membership category

The thirty-three members strong CRA has recently agreed to extend membership of the Association to specialist distributors of concrete repair materials and already nationally based construction chemicals company, Resapol Ltd, has become the Association's very first member in this category.

The CRA was originally formed in 1989 by specialist contractors to set high standards of workmanship and technical competence in a hitherto fragmented and unregulated industry and in the mid '90s specialist material manufacturers were also invited in to full membership.

The new 'Distributor' membership category is open to all organisations able to demonstrate that a significant proportion of its business is in the Concrete repair industry. Other entry criteria includes having a sound financial base, maintaining appropriate levels of staff training, technical and on site support services (if required). New members must also operate with due regard to the transportation and storage (i.e. temperature controlled warehousing) requirements set out by the relevant manufacturer, demonstrate a commitment to maintaining a specified product range and to take a proactive role in the supply chain of a Concrete Repair project. Distributor members will have no voting rights but member's representatives are able to take an active role in the activities of the association.

"Distributors are playing an ever-increasing and important role in the concrete repair products supply chain" commented CRA Chairman Mike Hackett. "I am certain that their involvement and contribution will help develop the market sector to the benefit of clients and customers".

NEWS from CRA Members

Use the enclosed Fax-Back to obtain more information

A NEW LEASE OF LIFE

These redundant Thorn EMI buildings have been given a new lease of life and transformed into desirable office accommodation thanks to the wide range of solutions available from **weber building solutions**. Specialist contractor Yoldings inspected the existing concrete structure and carried out necessary repairs with components from weber's multifix BBA approved concrete repair system.

Future protection was combined with upgrading of the thermal performance of the building by the installation of weber's External Wall Insulation System weber.therm XM (expomesh).

It was desirable to retain some existing surface features. In these areas, on the staircase columns, the external insulation was omitted and the continuity of finish maintained by carrying the same **weber** synthetic finish weber.plast TF (troweltex) employed on the main wall areas over onto the concrete surface. Further information: weber building solutions 08703 330070



ENQUIRY NO: 1403

INFORMATIVE CD-ROM IN FOUR LANGUAGES

An extensively illustrated and fully narrated introduction to the **Instarmac Group plc**, the UK's fastest growing manufacturer of concrete repair, highway maintenance,



flooring, adhesives and grouting products, has just been produced by the company in CD-ROM format. In addition to English, the informative 'voice-over' can be accessed in French, German and Spanish. The combined pictorial and 'voice over' programme reveals the award-winning company's origins, its underlying principles and values, its market-led research and development operations and current state-of-the-art manufacturing facilities. It also details Instarmac's 'Cemtec' concrete repair and flooring materials, 'Ultracrete' highway maintenance systems and Ultra tile adhesives and grouts, as well as the company's associated value-added services of training, technical and site support.

For a copy, contact 01827 872244, or Email: email@instarmac.co.uk

ENQUIRY NO: 1404

FANCY WORKING ON THIS WALL? ... WE DID!



From the most common concrete repair to something a bit more unusual - give us a call and we might just surprise you! Catering for all aspects of external refurbishment, **Kafften Ltd** are your one stop shop for concrete, brickwork and stonework repair, external wall insulation and remedial wall ties.

For more information call 01787 237980. email sarah@kafften.co.uk or visit our website www.kafften.co.uk

ENQUIRY NO: 1405

WHY DO THE WRONG PEOPLE SO OFTEN DO THE WORK?

Is there a light at the end of the tunnel?

By David Bowen Bravery
Consultant, Alan Conisbee and Associates

Having been involved in concrete repairs and associated works for so long, it has always been interesting to note how trends have changed, from time to time, in the past 25 years.

I came into the concrete repair industry when 'epoxy repairs' were the flavour of the month. In those days, most repairs seemed to be either epoxy, or 'sand and cement just bunged in, willy-nilly'. It was a rare occasion if anybody knew what the term carbonation meant. Indeed, 'carbonization(!)' was commonly used erroneously for many years. Now, thanks to such organizations as the BRE and specialist contractors, not to mention the role of the CRA and Institutional CPD courses, etc., most people are reasonably au fait with the mechanisms of concrete deterioration and best-value repair solutions.

So why is it, in this day and age, that we are still removing tons of dangerously loose 'concrete' from buildings, only to discover that often 50% of this so called 'concrete' is, in fact, failed attempts at repair carried out less than 8 years ago? The problem mostly appears to be the result of poor specification, workmanship and materials. Why? Because the culture of 'cheapest is best' remains in many organisations and the advantages of the 'best value' approach is ignored in favour of short term gain.

The real advantage to the client of the best value approach (both in the initial engineering appraisal of the problem and the remedial specification and repair) lies not only at construction

stage, but more significantly at the post construction stage, where the long term performance of the repair has a major

impact on future life costings. Yet future life costings are seldom considered in a serious manner, even in such matters as key performance indicators, which seem to concentrate on the short period of time at design and construction (say 18 months), rather than the long term maintenance of the

... future life costings are seldom considered in a serious manner ...

building (say 30 years). The CRA and others have been championing quality workmanship and materials for many years, but unfortunately the message is rarely getting through.

In today's business environment, two recent initiatives appear to be driving the concrete repair market. One is the I.C.E. document 'Inspection, Maintenance and Management of Car Park Structures (2000)' and the other is the government's 'Decent Homes Standard (2000)'. They have created two big markets in car park appraisal and repair and local authority housing stock repair. The ICE document promotes a much improved, logical engineering approach to the appraisal and repair of car parks and will probably (without the benefit of a crystal ball!) prove to be a milestone in providing better maintained and safer car

parks. It will, of course, also provide a source of work for Engineers and concrete repair contractors for many years to come. Indeed, many of the larger contractors already have specialist car park divisions

within their organisations to provide such services.



Concrete repair and protection work should always be entrusted to specialist contractors such as CRA members. (Pic by kind permission of Concrete Repairs Limited)

On the other hand, the Decent Homes Standard should have a major positive impact on the lives of thousands of council tenants currently living in old deteriorating housing stock. The real thrust of the Decent Homes Standard, however, primarily revolves around insulation, windows, roofs, kitchens and bathrooms, with concrete repairs being a decidedly secondary issue, which is not specifically mentioned. Many of the first rank concrete repair contractors have, therefore, geared up to act as main contractors and to handle the complete package of repairs needed in the social housing market. One only has to look at the figures of some of the major players to see that concrete repair is becoming a smaller percentage of their turnover year by year. Stand alone concrete repair contracts are now extremely rare in the housing sector. In addition, it is more and more apparent that the larger concrete repair contractors are becoming less and less competitive in the subcontract market because of overheads and the maintenance of in-house expertise, etc.

This situation not only leaves the subcontracting market open to the smaller concrete repair contractors (who do not necessarily have the expertise and/or ability to act as main contractors), but also to less specialist companies (some might call them 'cowboys') who would not meet the membership requirements of the CRA.

Therefore, because of its 'poor relations' standing in social housing refurbishment

works, the specification of the concrete repair element is often cursory in the extreme (often with no workmanship clauses whatsoever!) and often simply added to the window replacement contract! Value for money criteria is certainly not considered. The main contractor simply hawks the concrete repair component of the works around to all and sundry.

Accordingly, it is no surprise that the 'wrong people' often carry out the work to totally inadequate specifications, using second rate materials and workmanship, with the obvious result of premature failure, thus adding to the tons of dangerously loose material now being removed from many blocks to reduce risks to passers-by.

Many clients, unfortunately, are still unwilling to pay a premium for the employment of good specialist Engineers to appraise and specify the repairs, to use top quality repair materials and good contractors to carry out the works. Latent problems are often simply ignored. When is this going to change?

Let's hope that the recent emergence of Council Framework/Partnering Agreements, with Engineers and Contractors alike, will go some way to remedying this situation. There may be some light at the end of this particular tunnel after all!

READER ENQUIRY: 1407

ROK STONECARE OPENS NORTH EAST BASE

Rok, the UK's fast growing property solutions provider, is opening a base in the North East for its specialist concrete repair team - Rok Stonecare. With more than 40 years' experience in this niche sector, Rok Stonecare offers concrete strengthening, protection and repair services nationwide. It will be moving into the Teesside Rok Centre from which the Group already provides a wide range of property services from construction through to life-cycle maintenance. Rok Stonecare is no stranger to the region, having already successfully completed a number of projects in partnership with Middlesbrough Council, including the refurbishment of the town's Captain Cook Car Park, structural waterproofing of the Town Hall and extensive repairs to tower blocks. It has also worked on Your Homes and Bede House in Gateshead. As well as structural strengthening, specialist refurbishment of high-rise structures and concrete removal, Rok Stonecare also offers surveys and testing of external envelopes.



ENQUIRY NO: 1406



MIKE HACKETT ELECTED CRA CHAIRMAN

Mike Hackett, of Hitchin based specialist contractor Makers UK Ltd, has been elected Chairman of the CRA. Previously Deputy Chairman of the Association, he assumed the position from Bob Berry of specialist contractor Concrete Repairs Limited at the Association's recent general meeting.

Mike Hackett becomes the eleventh individual to Chair the Association since its inception in 1989. The post is now held for a two-year period. Andrew Muirhead, of Slough based specialist contractor Structural Renovations Ltd has accepted the post of Deputy Chairman.

Mike Hackett will serve as part of a nine-man Executive Committee, which in addition to Andrew Muirhead, comprises Nigel Cox of Dew Construction Ltd, Phil Deller of Balvac Ltd, Chris Fellows of

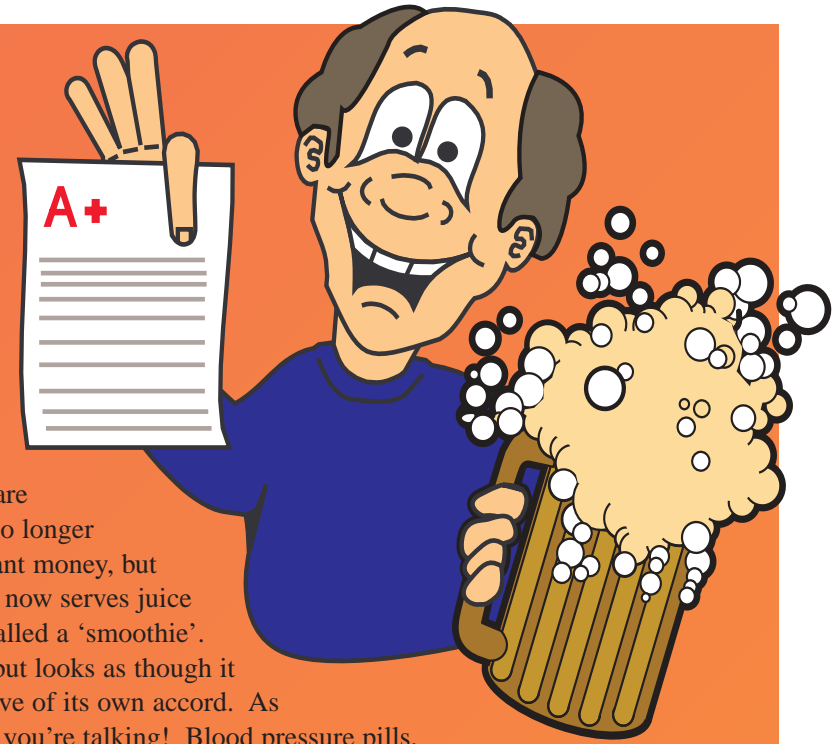
Stonecare Ltd, Bob Berry of Concrete Repairs Ltd, Martin Richardson of Sika Ltd, Mike Threadgold of Degussa Construction Chemicals and Tony Hansard of Weber Building Solutions.

Further details can be obtained from Association House, 99 West Street, Farnham, Surrey GU9 7EN. Tel: (01252) 739145. Fax: (01252) 739140. Email: cra@associationhouse.org.uk Web site: www.cra.org.uk

Dig out those duffels and discover the smoothies!

Recently, I rejoined the educational process. Having first made sure that I would not have to retrieve my old duffel coat from its place of pride - lagging some indeterminate pipes in the garage, I duly enrolled.

I don't know about the readers of 'Cracking Matters', but my original student days were something of a disappointment. At the time, the general consensus (at least as far as the newspapers in our house were concerned) was that student life consisted of a three year extravaganza of drink, drugs and sexual excess. So it was with some disappointment to discover that even with the subsidised Students Union bar, grant money did not fuel a jet set life style. The nearest I got to drugs was Alka Seltzer, as a by-blow of the wretched diet that we followed and as for the other thing? ... well let's just say that an impoverished youth with indigestion has never been in the top rank of the lothario stakes!



In the 24/7 world of the twenty first century, however, things are different. I am no longer dependent on grant money, but sadly the SU bar now serves juice and something called a 'smoothie'. It tastes alright, but looks as though it can probably move of its own accord. As for drugs ... now you're talking! Blood pressure pills, cholesterol reducers and lipid balancers, I've got the lot. As for the other thing ... well let's just say that middle-aged men with blood pressure have also never been in the top rank of the lothario stakes!! I feel that I must have missed a trick somewhere!

However, the reason for this return to academe is quite simple. Like many people, I have had to come to terms with the fact that the world has moved on and that the good old days are, as ever, behind us. There used to be a prevailing idea that once you started work you may attend the odd 'course', preferably somewhere pleasant where you could spend time in the bar of an evening. But that was it - you knew everything you needed to. If you went on too many courses and training sessions you were looked down upon as something of a skiver. But that has all now changed.

Laws set by the UK parliament and the European Union, as well as all manner of Health and Safety directives have made it impossible to sit back and simply absorb what comes along ... it's impossible. Add to this legislative changes and top it all up with technical innovations and other developments that stem from manufacturers and suppliers and you are heading toward a classic case of information overload. But education and training is necessary.

Being aware of this, the CRA has written a commitment to train, and be trained on an ongoing basis, into its constitution. Seminars are given free of charge and are available by arrangement with the contact numbers on the website, or via the attached Fax-Back. They are of course CPD accredited and can be tailored to fit in with the host's requirements.

Training matters! Without it you run the risk of being left behind in a changing world and once left behind, it takes major time, effort and resource to get back up to speed. So take the plunge and get into the training habit. I'll see you in the queue for the 'smoothies', I'm the one **without** the duffel coat!

CONCRETE REPAIR MARKET DOWN BUT BUOYANT

Survey findings, produced by the CRA, relating to the concrete repair market for 2003, indicate that the market decreased by approximately 15% on the previous year.

During 2003 the contract sales value of this specialist construction sector is estimated to have been worth £200m, compared to £230m in 2002. CRA contractor members also advised that just over 1,000 new orders for concrete repair work, worth approximately £90m, had been won during the twelve months.

In addition, 67% of CRA contractor members reported that they had experienced the same, or an increase, in the number of work enquiries being received in the final six months of 2003.

The survey also revealed that contractor members were more buoyant about anticipated concrete repair activity during 2004. Almost 45% expected the number of contracts to increase, with the same number anticipating a rise in the value of work.

Figures provided by the CRA's product manufacturer members, showed increases in volume sales of flowable repair mortars, but decreases in sales of hand-applied mortars, sprayed mortars, fairing coats and anti-carbonation coatings, in comparison to the previous twelve months.

Returns also indicated that two-thirds of manufacturer members anticipated an increase in sales volume during the current year, whilst the same number expected prices and business margins to remain unchanged.

Between them, CRA members account for the majority of concrete repair work carried out in the U.K. All are listed on the Association's CD-ROM, or alternatively can be accessed on www.cra.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: info@associationhouse.org.uk Website: www.cra.org.uk

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