



THE JOURNAL OF THE CONCRETE REPAIR ASSOCIATION

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CRA CELEBRATES 20th ANNIVERSARY

CRA TO HIGHLIGHT NEW STANDARDS AT CIVILS 2008

The new 'British Standards for Concrete Repair' (BS EN 1504) will be the primary topic of discussion on the Concrete Repair Association stand (No. E20) at this year's Civils 2008, which is scheduled to take place at Earls Court, London, between November 18th and 20th.

For the first time, the UK concrete repair industry has a comprehensive set of standards, both for the process of concrete repair and for the majority of the products it uses.

Now that the Standards are in place as BSI publications, the clock is ticking on the introduction of CE marking. Whilst not applicable to the UK (since they have not previously existed) all conflicting standards throughout Europe are to be withdrawn before the end of 2008.

As of January 2009 CE marking will be mandatory in most parts of Europe. Also as of January, all specifications for public works will be required to conform to BS EN 1504. Materials intended for export (excepting to Finland, Portugal and Ireland) are to be CE marked. Those intended for UK consumption only need not be CE marked, but materials must comply with the Construction Products Directive (CPD) as a legal requirement.

There are six essential requirements that construction products need to satisfy and in

simple terms, products are to be demonstrably fit for purpose. In practice this is easily demonstrated by compliance with the British Standard and hence CE marking.

As clients become aware of the standards, they will expect them to be used as the basis of the work to be carried out. This means that they will want products and specifications that meet the standard and that they will expect manufacturers, engineers, designers, specifiers, contractors and specialist consultants to follow the various parts from design through to site execution of concrete repair works.

As experience of the standards is gained, it is almost inevitable that some problems may emerge. The CRA intends to monitor the market to assess how it approaches the new Standards. The Association is represented on the BSI Committee and as such, it is ideally placed to bring evidence of problems to the fore and additionally to put forward appropriate solutions.

Full details of the new Standard can be obtained from the CRA on Stand No E20. Alternatively, information can be requested, free of charge, from the Secretary, Concrete Repair Association, Tournai Hall, Evelyn Woods Road, Aldershot GU11 2LL. Tel: 01252 357835. Fax: 01252 357831. Email: admin@cra.org.uk or visit www.cra.org.uk



“Welcome to Portcullis House, Westminster”, was Tony Hansard, CRA Chairman’s welcoming remark to members at the Association’s 20th anniversary AGM, on Friday 10th October.

The AGM meeting launched a momentous week-end of celebration for the Association. In addition to meeting in the imposing ‘Thatcher Room’ at Portcullis House, officially part of the House of Commons, fifty-two Association members and guests also attended a tour of the Palace of Westminster and in the evening, a black tie dinner in the Churchill Room.

“Whilst this is a significant occasion for the CRA” commented Tony, “for many in the construction industry, 2008 has proved a difficult year. Fortunately, the

repair and refurbishment sector of the industry has withstood the worst of the downturn, but winning business is becoming tougher and the industry may not have seen the worst of it yet. Let us hope that recent measures taken by government will release some extra liquidity into the economy”.

Despite the general downturn, the CRA has enjoyed a reasonably successful year. The Association continues to grow, is well respected in the industry and is financially sound. To name but a few of the significant developments, between July 2007 and June 2008 the Association replied to hundreds of requests for its BS EN 1504 advisory document; in conjunction with the Sprayed Concrete Association (SCA) and the Corrosion Prevention Association (CPA) the CRA set up a ‘Concrete Clinic’ at Civils 2008

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CRA CELEBRATES 20th ANNIVERSARY

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and will be at the event again in November. The Association has again presented many CPD presentations to Consultants and Authorities on the subjects of concrete repair and composite strengthening and the CRA Technical Committee is currently working on updates to the entire suite of Association advice notes. The new documents will begin coming on stream in early 2009.

AGM dinner

"I'd like to thank Gordon Brown for his assistance in helping organise this event ... but I can't. He's rather busy with other things at the moment" began Tony Hansard's speech.



"One man the Association genuinely has to thank, however, is Sion Simon, Labour MP for Erdington in Birmingham, who not only made arrangements for our tours and dinner here tonight, but also kindly arranged our AGM meeting room".

"None of us would be here this evening had it not been for a meeting called in

the autumn of 1988, when the Concrete Repair Association was founded. Robert Jenkins became the new Association's first Chairman. Others at this first meeting included John Fairley, (still the CRA Secretary), Mike Derby, Dave Pepler, Graham Brown, Jamie Wimpenny, David Abrahams and Roland Tomlin. At the second meeting they were joined by notables such as Gerry Otter, Mark Tincknell, Pat Quarton and Jim Maker".

Contractors actively involved in those early days included Wimpenny, Gunac, Hydra, Connaught, Stonecare, Lelliots, Balvac Whitney Moran, Makers and Delta Steeplejacks.

The Association started life as a contractor-led organisation only, but as early as its second year, invited manufacturers into full membership. "Twenty years on" said Tony "Contractors, manufacturers and specialist distributors all now play their part within the association".

He welcomed some of the past Chairman in attendance and ran through the role of honour for the 20 years. "Following the first Chairman, Robert Jenkins, Graham Brown took over in 1991. He was followed by Jim Maker. In 1994 Chris Martin took the reins and then, for a brief spell Pat McArdle took office. This was followed by a 3-year period by Mike Gibb. The new millennium saw Bob Berry as Chairman and Tom McCulloch became the CRA's first Scottish Chairman in 2002. He was followed soon after by Mike Hackett and more recently by Andrew Muirhead, followed last year by yours truly".

"So much for the history of the CRA", he said, "I would now like to wish the Association continued success over the coming years"

ENVIRONMENTAL OK, but what is the

By: Mark Woods, Managing Director of Staius Management Services Ltd

There is obviously considerable debate around the issue of climate change and its causes, which often overshadows the bigger debate about how individuals, governments and companies might live and work more sustainably.

Essentially, many believe (and I would count myself amongst them), that there is irrefutable evidence that concludes we need to live more lightly upon the earth.

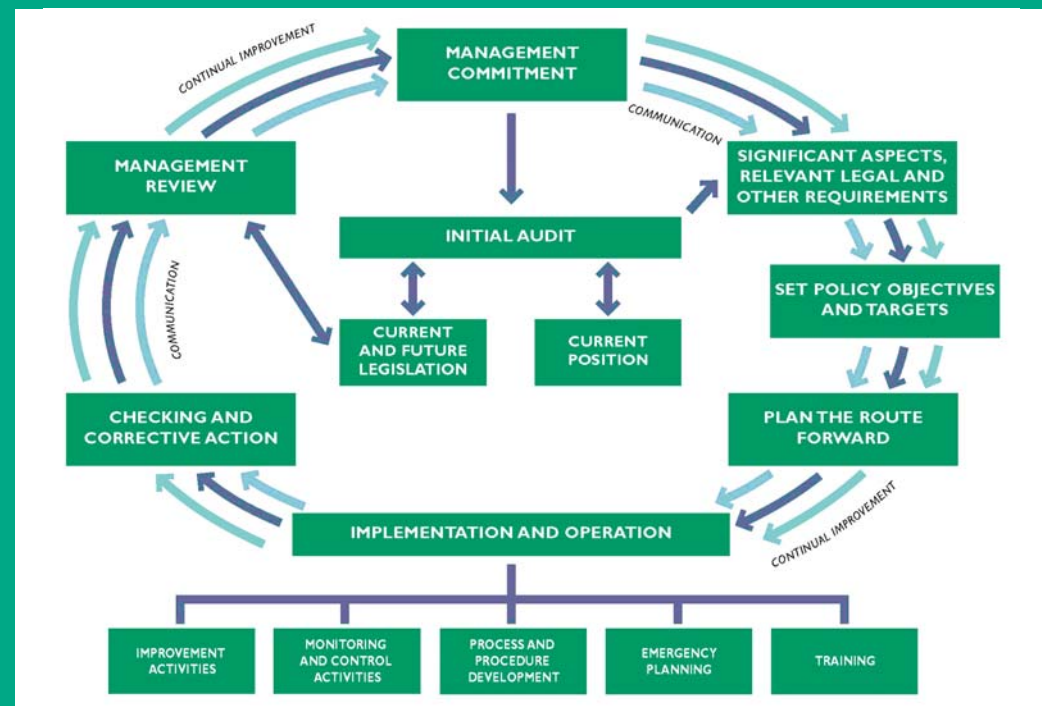
Pressure is now being applied at the international level across the globe to make this happen. This results directly in increasing pressure from central and local governments and 'blue chip' organisations for them and their supplier base to improve their environmental performance. In fact, many organisations are now beginning to use environmental management systems as a means of excluding suppliers from potential contracts and the concrete repair construction sector is no exception.

As the diagram shows, all management systems, environmental systems included, will start with management commitment. If top managers are not committed the benefits that an organisation is able to derive from concentrating on their environmental effects, benefits will not be realised.

The next stage, shown at the centre of the diagram, is to undertake an initial audit or benchmark review against the 'as is' situation within the organisation. This initial audit stage will require the organisation to review its operations against the organisation's environmental effects. These are different for different organisations and are likely to vary depending on:

- The responsibility for waste removal
- The types of services offered
- The preparation methods, e.g. grit blasting, chemical treatment, power washing etc
- The type of system and processes employed, e.g. single coat, 2 part, cathodic protection.

This list is obviously not exhaustive, but at this stage it is also necessary to undertake a preliminary review of the current and future



legislation and regulations that the company may have to comply with.

One objective of the review is to identify the 'significant' environmental aspects. At this stage we start to proceed clockwise around the diagram. Any significant aspects should feed into the environmental policy and where possible objectives and targets should be set to reduce the significant effects. At this point it ought to be realised that it is usually better to 'normalise' any objectives or targets. As a company expands it would be very unusual for say, its energy usage, or the materials consumed, or the number of miles an operative drives, to go down. A ratio is therefore normally a better indicator; energy usage per member of staff; materials consumed per contract value; number of miles driven per pound invoiced, are usually better metrics.

Once the significant aspects have been identified and the policy set, the route forward can be planned. This is likely to include:

- Improvement actions. Where improvements can be made they obviously should be. This might relate to changing the processes employed, changing materials, changing processes and changing working practices; some of which might obviously take time

NEW CRA INITIATIVES

The CRA is to ballot its members with regard to ensuring that all full member companies become BS EN 14001 accredited by July 2010.

The decision to comply with the environmental Standard was taken at the Association's recent general meeting, where the initiative was fully accepted by those in attendance. Provided the ballot receives an affirmative reaction, accreditation it will eventually become an essential requirement to full membership of the Association.

BS EN ISO 14001 specifies the requirements for an environmental management system (EMS), which provides a framework for an organisation to control the environmental impacts of its activities, products and services and to continually improve its environmental performance (see article opposite). It applies to those environmental aspects that the organisation can control and over which it can be expected to have an influence. It does not itself state specific environmental performance criteria.

BS EN ISO 14001 is applicable to any organisation that wishes to (1) Implement, maintain and improve an environmental management system, (2) Assure itself of its conformance with its stated environmental policy, (3) Demonstrate such conformance to

others, (4) Seek certification/registration of its environmental management system by an external organisation and (5) Make a self-determination and self-declaration of conformance with this international standard.

DISTRIBUTORS NOW FULL MEMBERS

The CRA has also accepted its Distributor members into full membership of the Association. All current and future Distributor member companies will therefore also have to meet the essential requirements of membership.

In addition to Distributors, the CRA represents the UK's specialist concrete renovation contractors, product manufacturers and associated organisations. Each full member company must demonstrate a proven track record and overall proven ability in this specialist construction sector, be Q.A. Accredited to ISO 9000 and to conform to the Association's Codes of Practice and Training requirements. By setting such self-regulating standards and procedures, engineers, authorities, clients and other specifiers are able to select from established professional organisations for concrete repair projects.

L MANAGEMENT procedure?

- Monitoring and control activities. Some activities won't necessarily need improving but they will need monitoring, simply to ensure that they don't get any worse. In most cases activities that need to be controlled will already be occurring; for instance dust control and noise control (there is sometimes a bit of crossover between environmental and health and safety issues)

- Process and procedure development. For those companies that have an ISO 9001 system there is a lot of cross over too. It is usually necessary to update many of the ISO procedures to cover environmental activities; for instance purchasing as a policy to source more environmentally friendly products is perhaps introduced; plant and equipment might now be maintained with a view to reducing environmental effects and training as the induction processes modified to make new staff aware of the importance of environmental considerations.

- Emergency planning. Potential emergencies need to be identified so that plans can be drafted to ensure an appropriate response is developed; emergencies might include accidental discharges to water or land and specific environmental and eco system effect of these

- Training. It is necessary to ensure that all staff are fully aware of their environmental responsibilities; some companies link this with how they manage job descriptions, competencies and appraisal.

Once the implementation activities have taken place and environmental improvement can be demonstrated, an audit will be required to check that the system is functioning as intended, that objectives and targets are being met and that significant impacts are being reduced.

The results of the audit are then fed into the management review process where a view is

taken on how well the whole system is functioning and the process starts again. This time it is obviously not necessary to conduct the initial audit but management commitment will be required to update the significant aspects and the associated policy.

Managed properly, robust environmental management systems offer a number of advantages:

- Significantly reduced risk of environmental litigation, fines and even imprisonment arising from infringement
- Improvements in productivity, waste management and pollution prevention
- Decreased energy costs
- Enhanced image.

In one independent study conducted by Aspects International, respondents confirmed that organisations had:

- Improved market share 80%
- Improved financial performance 60%
- Improved legal compliance 81%
- Improved customer satisfaction 78%
- Achieved payback in one year 60%.

Not bad! In addition to contributing toward living a little more lightly on the earth, the exercise is proving beneficial from a business and company profile point of view.

ENQUIRY NO: 2201

Notes from Ed:

- The CRA has agreed that all its members should work towards achieving ISO14001 by 2010 – see article on page 2
- Status Management Services Ltd is a consultancy practice specialising in raising standards and optimising organisational performance.

SWMP - what are your responsibilities?

Are you aware of the Site Waste Management Plans (SWMP) Regulations 2008?

SWMPs came into force in early April 2008 and will be enforced by the Local Authorities and the Environment Agency. Whilst they aim to reduce the amount of waste produced on construction sites and prevent fly-tipping, they should also result in greater resource efficiency in the construction industry and a reduction in site accidents.

So, what are the implications?

SWMP Regulations will affect the following:

- Anyone planning a construction project costing more than £300,000 (total value of materials and labour)
- Any construction project clients or architects that produce, manage or dispose of waste
- Suppliers to the construction industry
- Environmental regulators, i.e. Local Authorities and the Environment Agency.

There are two levels of SWMP. The 'Standard' level involves projects costing between £300,000 and £500,000 and the 'Detailed' level, which affect projects costing over £500,000.

One individual, usually the principal contractor, is responsible for writing and implementing the SWMP and penalties will be imposed for failure to make, keep or produce one. If a project is started without a SWMP, the person in charge of the project and the principal contractor (if there is a contractor) are both guilty of an offence.

Fixed penalties may be issued for the failure to produce a SWMP, although a person (or in the case of a Company, a Director, Manager, Secretary, or similar) if found guilty of any offence under the SWMP Regulations, is liable to a maximum of 2 years in prison, a fine, or both.

SWMPs should contain the following information:

- Details of the person who drafted it
- Details of the person in charge of the project
- The principal contractor (if there is one)
- Description of the construction works, including the location of the site and the estimated value of the project
- Records of any decisions made to minimise the quantity of waste produced on site
- Description and volume of each waste type produced during the course of the project

- Details of the re-use, recycling, recovery or disposal of each different waste type
- Declaration that each person in charge of the project and the principal contractor will take all reasonable steps to ensure that all waste is dealt with in accordance with the Duty of Care and all materials will be handled efficiently and waste managed appropriately.

When updating Standard SWMPs (for projects costing between £300,000 and £500,000), whenever waste is removed from the site, the principal contractor must record.

- The identity of the waste management contractor removing the waste
- The types of waste removed
- The site that the contractor is taking the waste to.

Within one month of the work being completed, he must add to the plan

- Confirmation that the plan has been monitored on a regular basis to ensure that work is progressing according to the plan
- A description of any changes in circumstances between first draft and subsequent versions.

When updating Detailed SWMPs (for projects costing in excess of £500,000), whenever waste is removed from the site, the principal contractor must record.

- The identity of the waste management contractor removing the waste
- A copy of, or reference to, the waste carrier registration of the carrier
- A copy of, or reference to, the duty of care transfer note.

In addition, the principal contractor must update the SWMP to ensure that it accurately reflects the progress of the project. At least every 6 months, he must:

- Review the plan
- Record the types and quantities of waste produced
- Record the types and quantities of waste that have been re-used on or off site, recycled on or off site, sent to a recycling facility or sent for disposal
- If necessary, produce a further plan making changes to reflect the progress of the project.

Within one month of the work being completed, he must add to the plan:

- Confirmation that the plan has been monitored on a regular basis to ensure that work is progressing according to the plan

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CONTRIBUTIONS REQUESTED

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

Given this scenario, Bills of Quantities can only be regarded as approximate, with the accuracy of the quantities depending upon the degree of initial survey, sampling and other test data available prior to the contract documents being produced. It is only following a thorough assessment of the extent of structural deterioration, as well as accurate diagnosis of its causes, that a true quantification of concrete repair work is possible. This, however, continues to be a notoriously difficult area of construction measurement.

It was to assist the origination of clearer Bills of Quantities for concrete repair work that the CRA originally produced its now well established 'Standard Method of Measurement for Concrete Repair'. The detailed 44-page document is specifically devised and structured to provide a uniform basis for measuring concrete repair and for fully itemising all aspects of the work involved.

The document has proved of enormous benefit to construction professionals over the past decade and continues to do so. During this time thousands of hard copies have been issued and many more continue to be downloaded from the CRA website. It 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.

Like all documents, however, new and modern methods, practices and standards make it necessary to review the content in order to bring it in to line. This task is currently being taken on board by the CRA's Technical Committee, who has suggested that users of the document may wish to contribute to the assignment. They are, after all, the people currently using the document and as a result, will be aware any shortcomings and/or where the document could be improved.

If you have any comments to make, please contact Trevor Box, CRA Technical Chairman, at Trevor.Box@birmingham.gov.uk or alternatively via the CRA office at Tournai Hall, Evelyn Woods Road, Aldershot GU11 2LL.
Tel: 01252 357835. Fax: 01252 357831. Email: admin@cra.org.uk

INDUSTRY Developments

Use the enclosed Reader Enquiry form to obtain more information

FRP – NOW THE PREFERRED STRENGTHENING METHOD

Specialist main contractor **Concrete Repairs Limited (CRL)** has just produced a brand new brochure on the subject of structural strengthening using Fibre Reinforced Polymer (FRP) Plates.

FRP composites can be used for a variety of strengthening scenarios including increased load capacity, fire damage, blast containment, physical damage, change of use and for structural alterations. The minimal dead load, durability and speed of installation make composites the preferred material choice for structural strengthening.

Over the past decade, CRL has completed many contracts both in the UK and overseas using a variety of composite strengthening techniques to suit the needs of concrete, steel, cast iron and masonry structures.

CRL provides a comprehensive design/installation package and is an approved contractor for the leading material suppliers.

Tel: 020 8288 4848 www.concrete-repairs.co.uk

ENQUIRY NO: 2202



IMPRESSED CURRENT CATHODIC PROTECTION PROJECT COMPLETED



CRA Member **Brookes Specialist Contractors Ltd** has recently completed a major impressed current cathodic protection (ICCP) project at 22 Hanover Square in London.

The steel framed building, located just off Oxford Street, was constructed in the early 20th century and is clad with a decorative weatherproof material. The building had begun to display numerous signs of distress typical of those caused by corrosion of the steel frame members, including cracking and displacement of the decorative cladding. These were not only unsightly, but dangerous as well.

In order to prevent further deterioration of the façade, an ICCP system was installed to the areas at highest risk from corrosion. Repairs were also carried out to various areas on the façade where the cladding had already begun to crack and spall.

BROOKES - Tel: 0161 789 0901

BRINGING BRISTOL'S HARBOURSIDE HISTORY BACK TO LIFE



Faced with the task of the £25m renovation of the Museum of Bristol, made possible due to a £11.3m Heritage Lottery Fund grant, HBG Construction Ltd appointed CRA specialist contractor member **Cemplas Waterproofing and Concrete Repairs Ltd** to undertake in excess of £100,000 of remedial concrete repairs and protective coatings work to the concrete surfaces, including beams, columns, soffits and fascias.

Cemplas chose Sika Ltd repair products for the work, which involved jet washing/grit blasting, breaking out of defective concrete, application of levelling mortars, anti-carbonation coatings and resin injection.

The landmark 1950s transit sheds at Princes Wharf, home of the former Industrial Museum and quayside, form part of one of the last remaining complete 20th century docksides in the UK. The harbourside sheds, a key part of Bristol's industrial dockside heritage, are being sympathetically renovated to preserve their historic character and will open in 2011.

CEMPLAS - Tel: 020 8654 3149

SIKA OPEN BESPOKE TRAINING ACADEMY



John Hayes MP, Shadow Minister for Higher, Further and Vocational Education, has opened a bespoke Training Academy at **Sika Ltd's** head office in Welwyn Garden City.

Stephen Hearn, general manager of the CRA manufacturer member commented "Sika has four different business units, each with its own set of training requirements and some that need to be tailored to individual requirements. What they all share is a commitment to provide training that aims to set the highest standards possible".

John Hayes commented, "The formula for this training academy is a model I would like to see replicated not only in construction but also in industry as a whole. We all share an admiration of what Sika has achieved and we hope that many more companies follow the example.

SIKA LTD - Tel: 01707 394444

FASCINATING ARNUSSI BUILDING NOW AS NEW



Built in 1923 the Arnussi, located in Sunbury-on-Thames, is homage to Egyptian and middle-eastern architecture.

The intriguing property, built mainly in concrete with render and a decorative coating, includes an Egyptian gateway, straddled by two kneeling camels, roof top domes and minarets. A 3,000 year old mummified cat is buried in a glass sarcophagus in the domed entrance vestibule.

Rooms added since the 20s have proven detrimental due to the variety of materials employed. Rendered surfaces began to crack and coatings failed, allowing water ingress.

CRA contractor member, **Structural Renovations Ltd**, removed existing coatings by grit blasting and water jetting. Remedial works included traditional hand placed, high-build, mortar repairs, resin injection to cracks, render repairs with modified sand and cement mixes and the application of a fairing coat prior to a decorative, elastomeric, anti-carbonation protective coating.

Structural Renovations Ltd
- Tel: 01753 825511

IMPERMAX AND CRL TO THE RESCUE



To solve the problem of severe water ingress, more than 1500 square metres of the external surface plaza area at Foster Wheeler's premises in Reading, Berkshire, have been treated with a liquid applied resin waterproofing system.

The plaza, part of the building's main structure, also acts as a roof for the car park facility located directly below. To solve the problem, Foster Wheeler chose Krypton Chemicals' Impermax waterproofing system, a liquid applied polyurethane resin, which was applied by CRA specialist contractor member **Concrete Repairs Ltd (CRL)**.

Following removal of the in situ block paving and decorative pebbles, a humidity primer was applied to the concrete substrate prior to the application of two layers of Impermax. The final 1.6mm thick membrane was further protected through the installation of a geotextile, before the block paving was reinstated.

CRL - Tel: 020 8288 4848

SYMPATHETIC REPAIRS FOR GRADE TWO LISTED BUILDING



CRA contractor member, **Rok Stonecare**, has recently completed concrete repair and associated external works to the sea front bus station in the resort of Seaton Carew, near Hartlepool. The 1930s building, which includes a grade two listed clock tower, is one of the area's local popular landmarks and has featured in a local film.

To maintain the character of the building, the client was keen to retain the original authentic stippled finish, art deco, 'look'. The innovative repair solution was therefore designed to reinstate the concrete as needed, whilst retaining the existing texture of the building.

Since the bus station is situated in a public area, noise, dust and disturbance during the project was kept to a minimum. The works were fenced off from public access, public and transport segregation was introduced.

ROK STONECARE - Tel: 01709 720602

REMMERS SPARKLE IN MORECAMBE



Mortars manufactured by CRA manufacturer member **Remmers UK Ltd**, have helped revive the iconic 1930's Art Deco Hotel in Morecambe, which was originally designed by Oliver Hill and recently renovated by Urban Splash.

The concrete frame was repaired with Bofix fast curing mortars, the corroding steel protected with a corrosion inhibitor and the entire façade rendered with a bespoke glass render system.

The four types of recycled crushed coloured glass, within the render system, gives the impression that the building is glistening in the sunshine.

The render also contains a waterproofing agent which provides long term protection from driving rain and yet allows the facade to continue to breathe.

Remmers - Tel: 0845 373 0103

SWMP

- what are your responsibilities?

Continued from page 3

- A description of any changes in circumstances between first draft and subsequent versions
- A comparison of the estimated quantities of each waste type against the actual quantities of each waste type
- Where relevant, an action plan to address any lessons learned for the next project
- An estimate of the cost savings that have been achieved by implementing the SWMP.

The principal contractor must also ensure that:

- The SWMP is kept at the site office, or if there is no site office, at the site
- Every contractor knows where the plan is located
- The plan is available for any contractor carrying out work described in the plan
- The SWMP is kept for a minimum of 2 years after completion of the project at his principal place of business or at the site of the project.

You have been warned!

CURRENT CRA MEMBERS

Contractors:	Telephone:
APA CONCRETE REPAIRS LIMITED	01422 379640
ALFRED BAGNALL & SONS (RESTORATION) LTD	020 8311 3910
BALVAC LTD	0151 650 0184
BROOKES SPECIALIST CONTRACTORS LTD	0161 789 0901
CEMPLAS WATERPROOFING & CONCRETE REPAIRS LTD	020 8654 3149
CONCRETE REPAIRS LIMITED	020 8288 4848
CONCRETE RESTORATION LTD	020 8994 8860
CONNAUGHT PARTNERSHIPS LTD	01293 572200
FREYSSINET LTD	01952 201901
GUNITE (EASTERN) LTD	01480 466880
LASER SPECIAL PROJECTS LTD	01905 742750
MACKENZIE CONSTRUCTION LTD	0141 633 5555
MAKERS PARKING LTD	0845 899 4444
ORBUS BUILDING SERVICES LTD	0141 647 7677
QUICKSEAL SPECIALIST CONTRACTORS	01234 354198
RENOCON LTD	020 7538 5492
REPEX LTD	01435 866666
ROK STONECARE	01709 720602
STRUCTURAL RENOVATIONS LTD	01753 825511
TOPBOND PLC GROUP	01795 414050
Manufacturers:	Telephone:
BASF CONSTRUCTION CHEMICALS	0161 794 7411
FOSROC LTD	01827 262222
REMMERS (UK) LTD	0845 373 0103
RONACRETE LTD	01279 638700
SIKA LIMITED	01707 394444
TECROC PRODUCTS LTD	01827 711755
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Distributors:	Telephone:
BBM	01234 268452
EPMS SUPPLIES	01132 760037
W.T BURDEN LTD	0117 941 5495
RESAPOL LTD	01942 609001
Associates:	Telephone:
BIRMINGHAM CITY LABORATORY	0121 303 9300
THE CONCRETE CONSULTANCY 2000 LTD	01707 647266
MARTECH TECHNICAL SERVICES LTD	01487 832288

Design co-ordination awards



The Nominees

And the winner is ...

'CRACKING MATTERS' is published by the Concrete Repair Association (CRA), Tournai Hall, Evelyn Woods Road, Aldershot, Hampshire GU11 2LL Tel: 01252 357835 Fax: 01252 357831 Email: admin@cra.org.uk Website: www.cra.org.uk

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