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## **ISO 9001:2000 QUALITY MANAGEMENT SYSTEMS ... the new standard for the new millennium**

**By: Jack Dunn, Director, QMI Scotland Ltd**

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The much-heralded new ISO 9001:2000 standard came into being in January 2000 and opinions are now being formed as to exactly what the major changes encompass and how they will affect the way in which organisations manage their business.

The first and most obvious change is in the documentation itself. The new standard comes as a coherent set comprising three separate documents:

- ISO 9000 – Fundamentals and vocabulary (Replacing ISO 8402)
- ISO 9001 – Quality Management System Requirements (ISO 9002 and 9003 are dropped!)
- ISO 9004 – Guidelines for Performance Improvement

From a certification point of view, it will be the ISO 9001 standard that will still form the basic set of requirements. The dropping of the ISO 9002 and 9003 standards means that ALL organisations will be approved to ISO 9001, but will be allowed “exclusions” such as Design and Development, if the organisation does not undertake any such activities. The approved scope will then be stated on the certificate.

There is, however, a caveat that the organisation shall ONLY exclude those requirements that DO NOT affect their ability to meet the customer or applicable regulatory requirements.

The standard is now based on fundamental principles. They are listed in the introduction of the ISO 9000 document as the ‘8 Quality Management Principles’ and are:

- ***Customer focus***
- ***Leadership***
- ***Involvement of people***
- ***Process approach***
- ***System approach to management***
- ***Continual improvement***
- ***Factual approach to decision making***
- ***Mutually beneficial supplier relationships***

It should now be possible to relate the “requirements” contained in the ISO 9001 document to one or more of these eight principles.

### **So what are the main differences?**

Firstly, at first glance we will see that the original twenty key elements, which we have all either grown to love or hate, have disappeared. They have been replaced by just eight sections, of which the first three are introductory, including Scope, References and Terms & Definitions. The remaining sections, headed Quality Management System, Management Responsibility, Resource Management, Product Realization and Measurement, Analysis and Improvement contain (in effect) most of the requirements of the old standard, but with a few notable additions!

One of the most significant additions is the requirement, under Measurement, Analysis and Improvement, for there to be systems for planning and monitoring improvement. There are also additional requirements

relating to Customer Focus, Internal Communications, Human Resources, Customer Communication and the provision of a suitable working environment.

Another change is the introduction of a requirement to 'monitor information relating to customer perception as to whether the Organisation has met customer requirements'. This means that the traditional approach of recording customer complaints will need to be modified to include more pro-active methods of determining customer satisfaction.

To balance the additions, there are areas where the requirements have become less stringent or prescriptive. A welcome change (for some!) in this respect is the reduction in the requirement for 'documented procedures'. There are now only SIX instances where a documented procedure is specifically required. The emphasis on documentation has changed in that it will now be down to the Organisation itself to decide which processes need documenting in order to maintain effective control. Another area where the specific controls have been dropped is in calibration; the often emotive subject of 'calibration stickers' will now be a thing of the past!

### **So is the new Standard just a facelift?**

Whilst the structure and layout has been changed, it could be argued that most of the old requirements are still there although some may have been re-worded or watered down slightly. There are certainly additions that will need to be addressed.

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### ***No longer will management be able to simply delegate the responsibility for quality***

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The fundamental difference between the new standard and its predecessor is FOCUS! In the first instance the emphasis has moved very much toward the 'process view' as identified in one of the Quality Management Principles. The other very significant change is the emphasis on 'Top Management' and their roles and responsibilities. No longer will management be able to simply delegate the responsibility for quality. It will be 'Top Management' who will have to show they have established clear policies for quality along with supporting, measurable quality objectives. Management will have to demonstrate how they intend to achieve these objectives and how they will monitor improvement.

The auditing of management systems will move away from pure 'compliance' auditing to auditing against the quality policy and objectives set by management. Gone are the days when the bulk of the audit will be spent on the shop floor or in the offices worrying about whether the correct form had been used, or the logbook filled in. Much more time will be spent interviewing top management and following policy trails.

### **Certification**

Many Organisations are now making the transition to the new standard. Accredited Third Party Organisations are providing assistance by helping to develop action plans that will complete the transition by the DEADLINE OF DECEMBER 2003. After this date the 1994 version of the standard will be withdrawn.

An initial (and necessary) step will be to complete a 'Gap Analysis' that compares existing systems with the requirements of the new standard and identifies areas where changes are needed or additional process steps are required.

In conclusion, the new standard meets its critic's head on! It is more generic and can be applied to any type of Organisation. It is less prescriptive and now provides a sound basis for business improvement. It focuses on process management and drives towards improvement through the setting of objectives.

ISO 9001:2000 is going to make things tough for some 'Top Managers', who will be much more visible, as well as the die-hard 'Compliance Auditors' who might not be able to modify their auditing techniques. But overall it hails a giant leap forward toward real business improvement.

In short, the new ISO 9000 series is being seen by those who are adopting it as a real business tool that can help to improve the effectiveness and efficiency of the key processes in an Organisation. This in turn will lead to enhanced customer satisfaction, increased market share and increased profitability. ISO 9000:2001 is as much about Business Management as it is about Quality Management and this fact alone makes it a more meaningful and valuable standard than its predecessor.

### **NOTE FROM ED.**

*It is a condition of CRA membership that each full specialist contractor and product manufacturer member is Q.A. accredited to ISO 9001, as well as complying to the Association's Codes of Practice and Training requirements.*

## IS IT ANY WONDER THINGS GO WRONG ?

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David Bowen Bravery, Partner, Mitchell, McFarlane & Partners

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*The fourth in a regular series of articles covering various aspects of concrete repair work.  
This piece highlights how many clients often fail to obtain best value for their concrete repair investment.*

On the assumption that representative independent concrete testing and engineering appraisal has been undertaken by specialist engineers and the causes and scope of the deterioration have been clearly identified, it is often assumed that the actual concrete repair work will be 'plain sailing'. Unfortunately, however, this is seldom the case. Available budgets are very often inadequate, forcing compromises to be taken throughout the specification and tender process. The likely long-term effects of such compromises need to be clearly appreciated.

It is a very common occurrence on projects such as public housing and car park structures for the major part of the available budget to be spent on 'cosmetic' refurbishment rather than on much needed 'structural' repairs. While frustrating for concrete repair contractors and Engineers alike, such attitudes seem unlikely to change in the near future (albeit there are some notable exceptions I am pleased to say).

On many housing refurbishment schemes, the scope of works is frequently driven by the need to satisfy 'political' demands and thus, new kitchens, windows and decorations take huge precedence over 'structural' repairs. On car park refurbishment work, the common expressed desire is to 'demonstrate an improved return for expenditure', which means that long-term preventative measures and often much needed repairs, are simply not undertaken. Accordingly, concrete repair is often seen as last on the 'shopping list' and the budget for such work is regularly determined well before any concrete testing or engineering appraisal is undertaken!

It is not surprising in such situations that the whole concrete repair strategy, carefully devised by the appraising Engineers, is dramatically reduced and weakened, resulting in inadequate specifications being accepted. The problem is then compounded by the employment of a totally unsuitable, so-called, specialist concrete repair contractor who just happens (by coincidence!) to have tendered the lowest price to carry out the work. Design and Build type projects appear to be particularly vulnerable.

Even on traditional contracts these practices continue mainly because it is the Main Contractor that receives the tender. The concrete repair sub-contract is subsequently hawked around the industry with complete disregard to any named/approved specialist concrete repair contractors in the tender document. This practice seldom ever leads to disqualification. Often such seemingly cheap tenders are dramatically lower than the reputable contractors who have gone to a lot of trouble to meet CRA membership requirements, in obtaining ISO 9001 accreditation and in properly training their operatives to an approved standard. What a surprise! A saving of £30,000 on the concrete repair budget - (for some reason it always seems to be £30,000) - appears to be far more attractive than getting the job done properly!

Such cost cutting practices are often supplemented by further 'savings' on proper supervision and monitoring of the repair work itself. This sometimes extends to completely ignoring the already minimised specification and is exacerbated by some woeful preparation and workmanship. Is it any wonder that 5 years down the line we are looking at the same problems again?

On some recent survey work my company found that many areas of dangerous spalled and cracked concrete were, in fact, previous repairs that had failed. Of a total of some 487 defective areas of concrete, in a group of high-rise housing blocks, 53% were found to be failed past repairs undertaken less than 6 years ago as part of a major window replacement/decoration contract. Specification, preparation and general workmanship were found to be abysmal. I am afraid that repair of repairs is becoming a major part of my company's workload and yet the basic procurement practices remain unchanged. Thus the problem is self-perpetuating.

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***It is surely time that people started to properly consider the long-term implications of short-term decisions***

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It is surely time that people started to properly consider the long-term implications of short-term decisions. I am very much aware that many members of the CRA, with whom I work on a fairly regular basis, go to great lengths to explain such matters to clients, as do many knowledgeable, hands-on Consulting Engineers. Unfortunately, such advice often appears to fall on deaf ears. Surely it has to be sensible and cost-effective

to proceed with repairs based on durable repair specifications and competent specialist contractors, combined with meaningful independent site monitoring as the work proceeds.

Unless this approach is adopted, it would be better to consider carrying out 'holding repairs', to render the structures safe, whilst waiting until such time as adequate budgets are available to do the job properly. Failure to do so will mean a lot more money being wasted and the building's occupants having to suffer yet more inconvenience whilst the structure is scaffolded yet again.

I am not sure if the Eurocode on concrete repair, soon to be introduced into the UK, will make any real difference. The Code certainly emphasises all the necessary sound principles to effect properly designed durable repairs, but its acceptance and implementation can still be ignored if there is no real will to improve current practices.

This whole subject is very close to my heart, as indeed I am sure it is to many concrete repair contractors and clients alike. After 20 years of active participation in the concrete repair industry, the availability of monies and the political impact in carrying out repairs is well appreciated. This is even more so nowadays, since for the building's occupants it often results in nothing very much to show for the expenditure at the end of a very noisy and disruptive contract.

A radical re-think of past and current practice is long overdue.

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**The author**

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## **DELVING DINGOBOYS**

Having been subjected to a particularly nasty email virus a while back, it was with some trepidation that I saw message from the 'Dingoboy of Wollogong' in my inbox recently.

However, having used my newly purchased anti-virus software to perform the cyber equivalent of poking it with a stick to see if it went bang, I opened the said missive.

The Dingoboy of the title turn out to be a group of postgraduate students in Australia who are studying 'Concrete in the 21<sup>st</sup> Century'. Their project for this term is to prepare a thesis on the possible way ahead for concrete repair in the coming decade.

Now probably most of us can recall being set similar projects by lecturers, who then immediately retire to study the racing pages in peace and quiet. So, in a gesture of fellow feeling, I agreed to take part in a fact-finding survey. A questionnaire duly arrived, and I set to.

The theory under test was that of a holistic approach to repair problems. Several pages of yes/no questions later and after several profound wishes that they had included a 'possibly but' option, I got my chance to have a say.

In common with my efforts with insurance forms, where the same tactic of questions followed by a small box to input your own views are commonplace, this caused an immediate mental blank. After some thought, however, I wrote that whilst the theory sounded quite complex and in my experience complexity equals cost, at the end of the day that will be the deciding factor. Unless; and this is the crux, their research could show a benefit and therefore a reason for the additional expense, putting it bluntly, the client will always ask, "what's in it for me?"

Sadly, the Dingoboy were unable to pass this test and admitted that it would probably mean an increase in the cost of repair of between 30% and 50%, but with no visible effects for some time (perhaps more than 20 years).

In the future we may all become advocates of Holistic Repair Systems, in which case remember, you read it here first! But somehow, I doubt it.

Despite this it was an enjoyable experience to be part of this foray into the future and the boys did send me a 'cyberhug' in gratitude. Subsequently, a message was received from Wollogong formally thanking me and attaching a picture of a young lady of what might be termed 'Andersonesque' proportions.

Whether she is a member of the research team, is alas, shrouded in mystery.

## **THE 'ROUTE' NOW ON DISK AND VIDEO**

The continuous deterioration of concrete structures and a seemingly endless demand for knowledge of repair procedures has prompted the CRA to produce its seminar presentation, entitled **'The route to a successful concrete repair'**, in both CD-ROM and video versions.

The programme, which clarifies the essential procedures necessary to conclude a successful concrete repair project, has just been produced. It follows a similar format to the well-established existing personalised presentation.

**'The route to a successful concrete repair'** is based upon the Association's publication of the same name. It has been specifically designed to enhance awareness and understanding of this specialist activity among construction professionals, to highlight the various aspects to be taken into account when faced with the repair of reinforced concrete and to provide guidelines as to the best approach to be adopted.

Whilst it includes details regarding types of repair product, alternative repair techniques, the causes of concrete deterioration and methods of carrying out concrete repairs, these are not the primary focus of the programme. It concentrates more on aspects of overall project control such as: safety of the structure and environmental hazards; assessment of damage, deterioration and diagnosis of its cause; definition of the clients objectives; design of the repair work and choice of methods and materials; preparation of contract documents, specification and Bill of Quantities; contractor selection and evaluation and supervision of the work.

The CD-ROM version also includes copies of the Association's publications, including its popular 'Standard Method of Measurement for Concrete Repair' working document and other publications, as well as the current list of CRA members with cross-links to their various web sites and email addresses.

The transfer of the programme into the new formats does not signal the end of personalised CPD presentations available to professional groups and organisations. The CRA is prepared to present the programme at no charge, provided 12 or more delegates are able to attend.

Both the CD and/or video are available free of charge. Those wishing to obtain copies, or in organising a personalised presentation, should contact the CRA Secretary at Association House, 235 Ash Road, Aldershot, Hants GU12 4DD. Tel: (01252) 321302. Fax: (01252) 333901. Email: [info@associationhouse.org.uk](mailto:info@associationhouse.org.uk)

## **CRA FULLY ON LINE**

Construction industry research indicates that property owners, consultants, engineers, surveyors and contractors etc. consider that one of the most important functions of Trade Associations and Professional Bodies is to keep them fully informed of developments.

For the Concrete Repair Association such findings are not new.

The Association is in regular communication with its various contacts ensuring that they are aware of improvements in standards, training initiatives, directory and documentation updates and other 'happenings' – hence this publication, which is produced on a six-monthly basis

The Association has not been slow in the internet stakes either and has just further developed its interactive web site at [www.concreterepair.org.uk](http://www.concreterepair.org.uk) to make it as useful as possible to specifiers on a job to job basis.

The web site contain details of all CRA members; information about the Association; its technical advisory services; publications produced; its Code of Practice; training for its members' operatives and its latest press statements.

The site is interactive inasmuch as it allows visitors to directly access particular contractors or material suppliers able to cater for specific requirements. Choice can be made via a selection page showing types of installation and product application, as well as contract value. For example, by clicking in the boxes directly related to your requirements, the site will list all those contractors able to provide, say, roof/deck waterproofing, investigation and survey, or corrosion inhibiting services and those geared up to handle contract values of up to £500k, £2m, £5m, or above.

In addition, the Association has built-in a facility for visitors to download its extremely useful 'Standard Method of Measurement for Concrete Repair' document, free of charge, as and when required. Other Association publications, including 'The Route to a successful concrete repair', can also be accessed in the same manner.

Remember, [www.concretereport.org.uk](http://www.concretereport.org.uk)

## **NEW SIGN OF EXCELLENCE**

As from January 2002, readers will notice a new CRA logo beginning to appear on Association Guidance Notes, Directories, letterheads and other communications. The same change will also be noted on correspondence and literature emanating from the CRA's members. A copy of the new image is reproduced here.



Remember it is only CRA member companies that are permitted to exhibit this logo. It is effectively a quality mark that demonstrates a proven track record and overall proven ability in this specialist construction sector. All full specialist contractor and product manufacturer members must be Q.A. accredited to ISO 9001. In addition, they are obliged to comply with the Association's relevant Codes of Practice and Training requirements.

## **SOME CONCERN OVER BUSINESS OUTLOOK**

Findings from a 'State of trade' survey, carried out by the CRA and relating to the concrete repair market for the six months – January to June 2001, indicate that during the period the contract sales value of this specialist sector is estimated to have been worth approximately £110m.

When compared with the first 6-month figures of 2000, the findings indicate that the UK concrete repair market has increased by around 17% year on year.

Concerns regarding the immediate future of this specialist market sector are, however, beginning to appear. CRA contractor members reported that just over 500 new orders for concrete repair work, worth approximately £40m, had been won during the period. This compares with approximately 550 new orders, worth around £61m, last year.

Most CRA contractor members reported that the trend in enquiries received for concrete repair work was about the same as the latter six months of 2000. Figures for the first six months of 2000, however, showed most members reporting a significant increase in enquiries being received at that time.

The returns also showed that whilst members were split evenly with regard to anticipated workload volume over the next twelve months, fewer expected increases in contract values and business margins, with approximately fifty percent expecting reductions in both.

Other figures, compiled from returns provided by the CRA's product manufacturing members for the same period, indicate increases in volume sales of fairing coats and carbonation coatings, but decreases in sprayed mortars, hand placed and flowable repair mortars, compared to the same period in 2000. Manufacturer returns also showed that most companies (71%) anticipated sales volume to remain static over the coming twelve-months. The majority also expected prices and business margins to remain unchanged, or to decrease.

## NEWS FROM CRA MEMBERS

### FLEXCRETE LAUNCHES INTERACTIVE CD-ROM

**Flexcrete**, one of Britain's leading manufacturers of concrete repair and protection systems, has recently launched an interactive CD-ROM. Intended to provide easy access to product, company and market information, the CD-ROM is essentially aimed at civil and consulting engineers, specifiers and contractors.

The CD-ROM provides immediate interaction and links to references that are not possible with conventional hard copy and features extensive information regarding Flexcrete and its innovative concrete repair systems.

The CD-ROM is available on request and anybody wishing to obtain a copy can do so by the following methods: email: info@flexcrete.co.uk Tel: 01772 255065. Fax: 01772 882016

### BRAND NEW POWER FREE CP

Established electrochemical system design and installation contractor, **Makers UK Ltd**, has introduced an entirely new galvanic cathodic protection (GCP) concept for repairing steel in reinforced concrete. The new technique, known as 'Galvance', is suitable for all structures, but unlike conventional impressed current cathodic protection systems, Galvance has absolutely no reliance whatsoever on electrical power.

It functions by suppressing reinforcement corrosion through the action of an activated zinc anode and a humectant called 'Enhance™'. The humectant maintains the moisture level in the concrete pores, thereby reducing resistance to the current flow and ensuring that the chloride ions are attracted to the anode rather than the steel reinforcement. The system is based upon proven technology, is compatible with coatings, durable and economic to install and maintain. For more details telephone: 01487 832288.

### HUGE MIDLAND LINKS CONTRACT FOR INSTARMAC

After many years of development, testing and re-testing, Cemflow MC manufactured by the **Instarmac Group plc**, has recently been selected for carrying out deck end and cross beam repairs on Contract MM102 - part of the major refurbishment project being carried on the Midland Links in Birmingham. The order, for nearly 600m<sup>3</sup> of material, was won via competitive tender and is the largest ever awarded on this pre-eminent project.

Cemflow MC is now fully compliant with the tough specification demanded by the Midlands Links project. It contains an additive that is able to control the rate of hydration and tests have revealed that shrinkage has been dramatically reduced, particularly in the important early stages. The super-fluid micro concrete also complies to model requirements for highways works, clause 1704.6 – control of alkali-silica reaction, is compatible with cathodic protection techniques and will not segregate or bleed. For more information telephone: 01827 872244.

### PROFESSIONAL PROPERTY RENOVATION

Successful property restoration and refurbishment work demands the ability to pre-determine structural condition, assess specific problems and understand their root cause. Only companies with the capability, resource and experience to undertake such works should be consulted. That is why you should be talking to **CRL Refurbishment**.

CRL Refurbishment, part of the M.J. Gleeson Group plc., is a multi-faceted professional, Main Contractor with over 45 years experience in social housing, health, education and commercial refurbishment work. Services include:- Building Surveys, Contract Recommendations and Budget Costings, Roofing, Window Replacement, External Wall Insulation, Overcladding, Concrete Repair and Protection, Security Systems, Soft Landscaping, Mechanical and Electrical Services, Drainage Works and Environmental Improvements. Our new brochure explains all. Contact John F. Drewett, Head Office, Tel: 020 8288 4848, or e-mail: mail@concrete-repairs.co.uk.

### FIRST AID FOR REINFORCED CONCRETE AND MASONRY STRUCTURES

**Quickseal Specialist Contractors** has expanded to become one of the leading companies specialising in the repair, strengthening and protection of reinforced concrete and masonry structures. The company offers a wide range of services including:

- Sprayed concrete for structural repair and strengthening using hand-held and robotic equipment
- Application of polymer modified mortar for patch repairs
- Strengthening of structures using bonded carbon fibre strips and wrapping techniques
- Water infiltration control using the RASCOR flexible injection system
- Hydrodemolition – both manual and robotic – to remove defective concrete
- Railfix systems to minimise vibration and thereby reduce structural deterioration
- Application of protective coatings and corrosion inhibitors

For more information contact: 020 8530 6808

## **FREYSSINET**

**Freyssinet's** recently completed M62 J21 Ashfield Bridge project was a showcase for some of the many repair and strengthening techniques that Freyssinet is able to offer. These include: Concrete repair, carbon fibre strengthening, steel plate bonding, external post-tensioning, lifting/jacking/propping, bearing replacement, cathodic protection, silane & other coatings, pressure & vacuum resin & grout injection, slab connectors, wax injection. An in-house design service complements this range of products and services.

For more information, technical; advice, or a quote for your next project, contact Philip Deller:- Freyssinet Ltd, 6/7 Hollinswood Court, Stafford Park 1, Telford TF3 3DE. Tel: 01952 201901. Fax: 01952 201753. Email: info@freyssinet.co.uk www:freyssinet.co.uk

## **TRAFFIC UPTURN PROMPTS MSCP UGRADE**

The Channel Tunnel Rail Link has caused a significant upturn in traffic in the market town of Ashford, placing the town's parking facilities under pressure and prompting the District Council to commission an in depth study of the proposed upgrade of Edinburgh Road MSCP. After considerable deliberation, Hailsham based contractor **Yoldings Ltd** was appointed to carry out the refurbishment programme.

Repairs to the concrete structure were completed using Weber SBD specialist mortars. Support pillars and walls were protected with Weber SBD anti-carbonation coating, which also produced a lighter and more welcoming effect. The colour-coded parking bay and traffic management system was created using the Don Construction Chemicals decking system.

Yoldings Managing Director, San Bohloulzadeh commented, 'This was a major project carried out to high standards in a relatively short time (8 weeks). What mattered was that we delivered the project on time and to our exacting standards.' For more information contact: 01323 442288

## **CONTINUING PROFESSIONAL DEVELOPMENT**

**Brookes** would like to offer you a FREE educational lunchtime seminar that qualifies for one hour of CPD. The modern agenda covers all aspects of concrete repair from survey through to electrochemical techniques including Cathodic Protection.

If you would like to arrange a seminar or receive further details of the agenda please contact Lynne on 0161 789 0901

## **CRACKING BROCHURE FROM MBT**

MBT has produced a new brochure covering all aspects of its range of products for structural repair and protection. Covering everything from fibre-reinforcement systems for structural strengthening to permanent cathodic protection solutions and corrosion inhibition, the brochure also details concrete replacement systems, protective coatings and solutions for facade refurbishment.

All MBT products described are integrated and compatible with European Standard EN1504, and are supported by the company's nationwide team of technically trained specification and area sales managers. For more information, contact the Marketing Department, MBT Feb, Albany House, Swinton Hall Road, Manchester, M27 4DT. Tel 0161 794 7411, Fax 0161 727 8881, e-mail mbtfeb@mbt.com, www.mbtfeb.co.uk

## **SIKA PROOF OF QUALITY & DURABILITY!**

**Sika** is a world leader in proven, high performance construction chemicals.

Our market-leading portfolio of systems for concrete repair and protection offers the following:

- MAINTENANCE-FREE PROJECTS OVER 20 YEARS OLD
- PROTECTIVE COATINGS – Unrivalled Durability
- CORROSION INHIBITORS – Worldwide Track Record
- COLOUR COMPUTER – Special Colours Possible
- FULL PORTFOLIO – Complementary Products Available, e.g. Structural Strengthening

We offer a free and comprehensive technical support service. Please contact Jimi Fadayomi on 01707 394444 for assistance.

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