Institute of Corrosion Training & Certification Scheme

Approved Courses

- **Painting Inspector** Levels 1, 2 & 3
- **Pipeline Coatings Inspector** Level 2
- **Insulation Inspector** Level 2
- **Fire Proofing Inspector** Level 2
- **Cathodic protection of re-enforced concrete structures**
- **Cathodic protection of buried and submerged structures**

These two new CP courses are compliant with BSEN 15257

For further information or administrative details, costs and bookings for courses and examinations or detailed information packages **free of charge**, please contact:

**Martin Dawson** or **David Betts** on:
Tel: +44 (0)1709 560459  Fax: +44 (0)1709 557705
Email: enquiries@ruanetpo.com
Internet: [http://www.ruanetpo.com](http://www.ruanetpo.com)

Technical and eligibility enquiries can be made direct to **Dave Griffiths** the ICorr Scheme Manager on:
Tel: +44 (0)1709 550999

Ruane & T P O’Neill       Argyll-Ruane Ltd.
Meadowbank Road, Rotherham S61 2NF, United Kingdom

---

**Reader Enquiry Service**

For further information on any of the products and services featured in this issue simply fill in the Reader Enquiry Service slip opposite and return to us FREEPOST (no stamp required):

Corrosion Management
FREEPOST
RRXZ-TCUU-TUSY
SHEFFIELD
S17 3QT
UK

**READER ENQUIRY SERVICE**

For further information on any of the items featured in this edition of Corrosion Management, please write the appropriate Reader Enquiry Service number(s) in the spaces below.

<table>
<thead>
<tr>
<th>C</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>M</td>
</tr>
<tr>
<td>C</td>
<td>M</td>
</tr>
<tr>
<td>C</td>
<td>M</td>
</tr>
</tbody>
</table>

Name: ______________________ Position: ______________________

Company: ______________________

Address: ______________________

_________________________________________ Postcode: ______________________

Tel: ______________________ Fax: ______________________

Email: ______________________
CONTENTS

Institute News
The President Writes . 4
New Sustaining Member Profile:
Brewers Protective Coatings . 4
Technical Topics . 7
UK Corrosion Conference 2009 . 8-9

Technical Article
Modelling the electrochemical remediation
of steel framed heritage structures . 10-13

Company News
Denso Ltd . 14
R J Herbert . 15
Hankinson Group . 16

Sustaining Members . 17-24
ICATS Registered Companies . 25-27
Diary and Branch Contacts . 28
The President Writes...

One of the things I like about corrosion (apart from its ability to give me and many others a good living) is the enormous range it covers. Yesterday illustrated it to me as well as any. In the morning I had the honour of presenting Professor Christofer Leygraf of the Royal Institute of Technology in Stockholm with the Institute’s U. R. Evans Award at the 50th Corrosion Science Symposium held at Manchester University. Afterwards, this worthy award winner fascinated the audience with an explanation of his work on atmospheric corrosion at the molecular level using state-of-the-art in situ analytical techniques. In the afternoon, someone sent me a set of photographs of one of the sorriest looking steel and reinforced concrete structures I have ever seen and asked if it would be possible to repair it. Let’s put it this way, it was the equivalent of a vet being presented with a bloody dog collar and asked if Rover would pull through. Both myself and Prof. Leygraf were ‘doing corrosion’, but that’s probably where the similarity ends.

Another example would be explaining the principles of cathodic protection. You can do it essentially numerically employing Pourbaix diagrams developed from chemical thermodynamics – or, as I prefer, bung a lump of steel, a zinc bar and a reference electrode into a box full of damp sand and get busy with a DVM. I’ll tell you what, the latter is a darned sight better at explaining IR drop, ‘instant offs’ and potential decays, but I suppose it depends who your audience is and what their needs are. Vive la diversité!

Just as the summer holiday season grinds to a halt, the autumn conference season fires up and no one event is more eagerly awaited than Correx 2009 (see, product placement has already arrived in ICorr). As if Birmingham wasn’t exciting enough, from 27th to 29th October the ICorr’s premier corrosion conference hits the NEC with parallel sessions on protective coatings and cathodic protection. Details should be found elsewhere in this issue – if not, something has gone terribly wrong at the printers. Seriously though, a really excellent programme of speakers and exhibitors has been pulled together and I hope to see as many of you as possible in Brum this October.

I’ve been inundated (i.e. more than two) with expressions of interest regarding my proposed rust safari venture – although, to date, no good-will deposits. With that in mind, this edition’s photo is the first of a new series I call ‘Where’s that Wally Standing Now?’, along the lines of the popular book-based observation games, but without the red and white stripey shirt and scarf. You will note, not surprisingly, that the parapet casting to my side is somewhat afflicted with rust. But where am I and what building am I standing in front of? First person with the correct answer gets a crisp tenner from me for the charity of their choice and if no-one gets it, I choose one. Sound fair?

Terms and conditions apply. Not open to employees of ICorr or Square One or anyone I’ve bored to death with my holiday pics.

Bon chance!

NEW SUSTAINING MEMBER PROFILE

Brewers Protective Coatings

A division of Brewers Decorating Merchants dedicated to providing specialist service, support and paint systems in the potentially confusing high performance coatings sector of the industry.

Our Protective Coatings Centre and team of ICorr trained and qualified, locally based Painting Inspectors are able to offer the following services;

- Free technical advice.
- Free site visit.
- Free written specifications.
- Free product literature and data sheets.

Full sales, and after sales support.

We offer impartial and independent advice, allowing us to recommend the best products and systems from a range of manufacturers for each individual project.

From conception to completion our team is available to advise, recommend and support you to a successful finish.

Brewers Protective Coatings, Reform Rd, Maidenhead, Berkshire, SL6 8DA
Tel : 01628 784964
Fax : 01628 672578
E-mail: info@brewersprotectivecoatings.co.uk
Web: www.brewersprotectivecoatings.co.uk
50TH CORROSION SCIENCE SYMPOSIUM AND UR EVANS AWARD

The 50th Corrosion Science Symposium was held in Manchester on the 16th and 17th of September running in conjunction with the Royal Society of Chemistry’s annual Electrochem conference. Following the successful collaboration of the two meetings in Southampton in 2003, this was another well attended meeting, with over 210 attendees. Discussions on our next link up with the RSC in a few years are already underway.

The chance to meet up and exchange ideas with the electrochemists and electrochemical engineers who form the core of the RSC’s Faraday and Electroanalysis groups is always a useful exercise for those of us working on the electrochemical side of corrosion studies. In particular, the scheduling of the plenary lectures to run across the whole timetable ensures that not only do those of us in corrosion get to hear about the most exciting developments in the electrochemistry world, but also that the RSC audience are lucky enough to attend the Evans Award plenary lecture on corrosion.

The winner of the Evans Award for 2009 was Professor Christofer Leygraf of the Royal Institute of Technology, Stockholm in Sweden, who received the sword from Paul Lambert, president of the Institute of Corrosion. Professor Leygraf has led his group over the last 25 years to develop techniques to investigate atmospheric corrosion mechanisms at the molecular level. His work to integrate different techniques, such as the use of the quartz crystal microbalance and infrared spectroscopy to measure the surface chemistry of processes and combine this information with traditional electrochemical techniques has added greatly to the theoretical basis of atmospheric corrosion.

In the Corrosion Science Symposium the winner of the prize for the best student presentation in the Corrosion Science Symposium was Majid Ghahari, from Alison Davenport’s group at the University of Birmingham, who spoke on his work on ‘Synchrotron studies of Stainless Steel Pitting Corrosion’, and showed some very interesting videos taken of pit growth changing under restricted current supply.

Next year’s meeting is to be held in Southampton in the first week of September, organised by Julian Wharton, so expect to see a flyer in these pages very soon.
Surface World 2009 will run alongside Correx - the national corrosion conference and exhibition, which will be re-launched in 2009.

Correx 2009 will be a major event in the UK corrosion industry - aimed at everyone interested in coatings and cathodic protection: engineers, specifiers and practitioners.

Conferences, workshops, courses and seminars will run in tandem with the exhibitions.

It’s the finish that helps sell your product - come and see the UK’s only international showcase for the product finishing, surface engineering and for the first time the corrosion control markets. All the leading surface finishing suppliers all under one roof over 3 days.

All this will ensure that Surface World 2009 with Correx 2009 will be the biggest event in the surface treatment, coatings and finishing industry for many years.

For more information contact Nigel Bean on:
Tel: +44 (0)1442 826826
E-mail: nigelbean1@aol.com or visit the website at: www.surfaceworldshow.com

FREE ENTRY

www.surfaceworldshow.com
Technical Topics No 22:

BIMETALLIC EFFECT – CAN IT PREVENT AS WELL AS PROTECT?

by Technical Secretary, Douglas J Mills

Before we start just let me make a plug for the Correx conference taking place in Birmingham from Oct 27th - 29th (see other publicity in this issue). One of the sessions is on coatings and the other on CP, both areas dear to the heart of many (over half) our members and both of which get some coverage within this article. The conference is very reasonably priced and the CED workgroups hope to meet there.

Anyway in this month’s TT, I am returning to the topic of bimetallic corrosion, a subject area that constitutes the greatest proportion of the technical queries that I receive.

We will start by reminding ourselves how devastating this can be with an example of a gantry sign sent to me eighteen months ago by Rob Poulton and which I have already published in an article on aluminium.

This picture shows aluminium bars welded to aluminium matrix frame with plastic/ PVC sheet on front of the sign attached with galvanised bolts. Not nice at all! But this month’s article has really been inspired by my listening recently to a couple of papers about use of powdered magnesium as a cathodically protecting pigment for aluminium at the Advances in Corrosion Protection by Organic Coatings Conference in Cambridge.

The story in a nutshell is that for protection of their aluminium alloys the American Air Force relied heavily on the use of chromate pigment and passivation treatment. Both very effective- but no longer allowed! So the group at North Dakota State University have been working on an alternative based on magnesium pigment dispersed in an epoxy binder. This has now has reached a state where it seems to work pretty well in the lab and is going to tried out on an actual aeroplane. It is the theory behind the use of this pigment that interests me.

Both talks used the term cathodic protection to describe the action of the magnesium (at least in the early stages of its operation- the potential does rise with time - see graph) This was based on the observation that the potential taken up by the system was below the galvanic potential taken up by the bare aluminium alloy (typically 2024 or 7075) in, say, 0.1M NaCl. Thus if the latter had a potential of say -0.6V (SHE), the potential of the system (coated with the magnesium containing paint) might be -1.0

Now there is a problem with using the term cathodic protection to describe this situation. This is because the thermodynamic potential of aluminium that you would need to get below to achieve true CP is -1.67 volt. This would be impractical with magnesium (and indeed even impractical using impressed current CP as it would generate vast quantities of hydrogen). The concrete people have encountered this before in applying CP to protect steel rebar. They have found that quite effective prevention can be achieved by getting the potential into the region where it is below the natural potential but still above the true protection potential (in iron’s case maybe between -0.5 and -0.3V). Note applying any amount of negative voltage tends to drive positive ions towards the metal surface and negative ions away thus reducing chloride and generating alkali. In iron’s case this would induce some level of passivation because magnetite is stable (work by the late Geraint Thomas confirmed this).

This brings me to a related observation that I made when testing zinc dust loaded paints on steel in sea water. As with the magnesium “paint”, the potential rose within a week or so to above the protection potential of the steel. (In fact by the end of the test the potential was close to the unprotected steel value). But although there was some white zinc corrosion product observed on the outside, there was no attack on the steel at all (note this paint system was too porous (confirmed by Resistance measurements using EIS and ENM) to be working by resistance inhibition). In this case the zinc ions may well be contributing to the inhibition.

Similarly in the case of magnesium on aluminium a magnesium hydroxide film may well be being laid down. Of course the reason that the aluminium alloy itself has a much higher voltage (nearly a volt higher than expected) is because of the excellent aluminium oxide film. But in certain environments (eg the M-way gantry sign) that oxide can (and does) break down (mercury compounds cause this ). I wonder what value of potential would have been needed to effectively protect the gantry sign? Quite possibly well below that which could have been achieved by just connecting it to magnesium.

So like many corrosion situations one needs to know all the facts before being able to predict what will happen. That is what keeps the subject fascinating. Returning to the example in the last TT of selective corrosion, this has generated interest with one correspondent sending in a very good example of selective corrosion and another proffering an alternative (and no doubt better!) explanation for what happened to the zinc coated barbed wire. I will return to those next month.

Any comments, as usual, please contact Douglas@ harrbridge.freeserve.co.uk

INSTITUTE NEWS
UK Corrosion Conference 2009
National Exhibition Centre, Birmingham, 27-29 October 2009

PROTECTIVE COATINGS FOR STEELWORK

DAY ONE - 27TH OCTOBER 2009

MORNING:

PROTECTING STEEL & IRON BRIDGES – CHAIRMAN BARRY COLFORD, BRIDGEMASTER, FORTH ROAD BRIDGE

Plenary Talk - Maintaining the Forth Road Bridge – Chris Tracey, FETA

Specifications for Protecting Steel Bridges – Roger Hudson, Consultant

Protecting Bridges – A Contractor’s Viewpoint - Brendan Fitzsimons, Pyeroy

Coatings for Steel Bridges – A Supplier’s Viewpoint - Gordon Bell, Leigh’s Paints

AFTERNOON:

PROTECTING STEEL STRUCTURES – CHAIRMAN MARTIN EARLAM, ASSET MANAGER, THAMES BARRIER

Protecting Steel Structures – Successes and Failures – David Deacon, Consultant

A 40 year Life Coating for the Thames Barrier –Derek Gillings, PPG

Protecting Structures by Hot Dip Galvanizing – Iqbal Johal, Galvanizers Association

Refurbishing the Cutty Sark for a 50 year Life – Speaker to be confirmed

DAY TWO – 28TH OCTOBER 2009

MORNING:

ICATS WORKSHOP – CHAIRMAN - DAVID EYRE, CORREX LTD

Trainers - Review of Programme – David Eyre, Correx Ltd

Technical Audit Procedures – Terry Mundy, Lloyds Register

Insurance Backed Painting Guarantees – John Meadows, MRSL

AFTERNOON:

COATING INSTRUMENTATION WORKSHOP – CHAIRMAN - JOHN FLETCHER, ELCOMETER

Use and Misuse of Instruments – practical demonstration by a range of suppliers.

DAY THREE - 29TH OCTOBER 2009

MORNING:

PROTECTING STEEL FRAMED BUILDINGS – CHAIRMAN IAIN WESLEY, ASSOCIATE DIRECTOR ATKINS

Long Life Corrosion Protection of Buildings – Roger Hudson, Consultant

Painting of Buildings – Failures and How to Avoid Them – David Deacon, Consultant

Intumescent Coatings for Steel Framed Buildings – Ian Stewart, Building Research

Protection of Buildings – A Contractor’s Viewpoint – Speaker to be confirmed

AFTERNOON:

CED COATINGS WORKSHOP: SURFACE PREPARATION – NEW REPORTS – CHAIRMAN, JEREMY TWIGG, RGL

Launch of CED report on water jetting – a ‘state of the art’ presentation

Discussion on wet abrasive cleaning to remove soluble saltsB lasting standards – which are important?
DAY ONE - 27TH OCTOBER 2009: CP WORKSHOPS & OPEN FORUM

MORNING:
Offshore Cathodic Protection Workshop – Chairman Dr Gareth John, Intertek-CAPCIS

What’s new in Offshore CP? • New BS EN standards from CEN TC 219/WG3 – CP of ships; Galvanic anodes for offshore apps • Revisions to existing standards • Integration of BS EN, NACE and ISO offshore pipeline CP standards

AFTERNOON:
Cathodic Protection of Steel in Concrete – Chairman Dr Chris Atkins, Mott MacDonald

New developments in anode systems for concrete • Hot topics in concrete repair • New standards from the East • CP and sustainability for concrete repair vs preventing corrosion by initial design • Revisions to Concrete Society TR 36 and 37 Cathodic Protection of Steel in Concrete • Revisions to BS EN 12696 Cathodic Protection of Steel in Concrete (to include Buried and Submerged) and other CEN documents in draft

Invited case studies & examples of interesting problems, followed by an open forum discussion.

DAY TWO - 28TH OCTOBER 2009: CATHODIC PROTECTION PAPERS

MORNING:
PLENARY LECTURE From Sir Humphry Davy to Sustainability – 185 years of Cathodic Protection – Prof Paul Lambert, ICorr President

Session One: CP of Steel in Concrete – Chairman Paul Lambert

AFTERNOON:
Session Two: CP Offshore – Chairman Brian Wyatt, Corrosion Control

Cathodic Protection of Offshore Wind Farm Foundations – Ross Fielding, Impalloy Ltd

Cathodic Protection Monitoring in Deep or Remote Locations – Richard Holt, iicorr Subspection

Control Of Potentials In Galvanic Anode Cathodic Protection – Dr Robin Jacob, The Corrosion Consultancy

Cathodic Protection of Ships External Hulls – Speaker to be confirmed

DAY THREE - 29TH OCTOBER 2009: CP WORKSHOP & PAPERS

MORNING:
CATHODIC PROTECTION PERSONNEL COMPETENCE: Workshop on BS EN 15257: 2006 and its Impact on CP Companies and the Delivery of Services to Clients – Chairman; Chris Lynch, Corrpro Companies Europe Ltd

The new BS EN 15257 ‘Cathodic Protection-Competence Levels and Certification of Cathodic Protection Personnel’ is now in place. What does it mean for CP service companies? What Certification should Clients require? Which Clients now demand Certification? What are the impacts on Professional Indemnity Insurance or Third Party Insurance if non Certificated personnel undertake critical tasks incorrectly and damage occurs? Q&A session with a panel of experts.

AFTERNOON:
Session Three: Cathodic Protection General – Chairman Ross Fielding, Impalloy Ltd

Review of CP Modelling Techniques: Advantages and Problems – Dr Nicholas Stevens, Materials Performance Centre, The University of Manchester

Cathodic Protection of the Thames Barrier – Brian Wyatt, Corrosion Control

Close Interval Pipeline Surveys – Neil Webb, Isinyithi Cathodic Protection (Pty) Ltd

Mitigation of AC on Buried Pipelines – Dr David Eyre, Penspen Ltd
Abstract: The problem of damage to historic steel framed structures as a result of corrosion is now widely recognised in Western Europe, America and Australia. Structures built in the late 19th or early 20th century are at greatest risk, together with earlier buildings that have received modifications or structural interventions during this period. Traditional methods of repair are often too intrusive and too expensive to consider. As a consequence a number of important structures are at risk of incurring extensive damage to their stone and faience finishes that may require replacement with new, non-original elements. Cathodic protection (CP) has been seen as a possible electrochemical solution to the problem of steel frame corrosion and has been in use in the UK and elsewhere for several years. In the absence of formal guidance and standards, most installations rely on the skill and experience of the designers and installers to ensure effective remediation.

To assist in the development of such guidelines, the Royal Society has supported a four year research programme into the use of CP on historic structures, carried out at the Centre for Infrastructure Management at Sheffield Hallam University. This paper describes the completed study, its results and conclusions and shows how modelling of the processes has helped identify the key factors in the successful application of this technique to achieve maximum protection with minimum disruption to the original structure.

Keywords: steel framed structures, metallic corrosion, numerical modelling, cathodic protection.

1. Introduction

The identification of "Regent Street Disease" in the late 1970’s first highlighted the problems of steel frame corrosion occurring on the grand and often listed structures in the centres of many cities. This form of construction, first employed in Chicago and subsequently used in most major western cities in the first two decades of the 20th century, has resulted in serious consequences with respect to serviceability, sustainability, safety and aesthetics. Cathodic protection, originally developed by Humphry Davy [1] and later employed widely on buried and submerged structures, was first considered for reinforced concrete in the late 1950’s. It was not until the development of improved anode systems based on catalysed titanium and titanium oxide in the early 1980’s and the considerable advances in digital operating systems that it became a serious commercial solution.

The transfer to steel framed buildings was somewhat slower and it was not until 1997 that full structures such as Gloucester Road Underground Station [2], were protected by such systems. Even now, with several sizeable installations in the UK and others appearing worldwide, there are no formal guidelines for the design, installation and operation of such systems. Most of the knowledge is based on empirical observation, lacks depth of understanding and is in the hands of a very small number of specialists.

The aim of the Royal Society funded research programme was to return to first principals in the evaluation of the corrosion processes involved in the disruption of structures incorporating steel frames and how it can be controlled through the use of cathodic protection. Numerical modelling of the cathodic protection currents was developed in parallel with practical studies employing sand to represent the electrolytic properties of masonry. From these models it has been possible to both better understand the processes occurring and develop optimised designs for the protection of such structures with minimal intervention.

2. Corrosion processes in steel framed structures

Steel framed masonry clad construction became popular around the turn of the 20th century and many of the grand commercial and municipal buildings found in European city centres constructed between 1900 and 1940 employed this form of construction (see Figure 1). The steel frames were generally dependent upon the quality of their encapsulation to prevent corrosion. Often they would have a cement wash or bitumen emulsion coating but this was only intended to be a holding primer to prevent corrosion during transport. Over the last 75 to 100 years, the protection has broken down and the steel has corroded, resulting in cracking and displacement of masonry as the high volume corrosion has filled up the gaps between the frame and the cladding, as shown in Figure 2.
depends on alloy composition, environmental factors, design and the presence of additional protection.

Aqueous corrosion requires two reactions to be sustained simultaneously. One reaction results in metallic iron being converted to iron ions with an associated release of electrons, this is the ‘anodic’ reaction. At the same time in an adjacent area, these electrons are combined with water to produce hydroxyl ions which protect the steel, this is the ‘cathodic’ reaction. Dissolved metal ions react with hydroxyl ions to form the familiar corrosion products and the anodic areas gradually lose section. [3]. Traditional methods of repair require the displaced masonry to be removed and the corroded frame to be cleaned and recoated prior to reinstating the cladding. This is not only disruptive and expensive, but generally leaves large areas of corrosion where no displacement of the masonry has occurred untreated and the level of damage to the masonry will commonly require new material to be employed in the reconstruction, thereby undermining the authenticity of the structure.

Cathodic protection of such structures, introduced toward the end of the last century, has provided a technically feasible and commercially viable alternative to the repair and maintenance of such structures and continues to gain favour in such applications. In simple terms, cathodic protection works by making all the steel to be protected a cathodic with respect to a system of installed anodes. These can be self-powered galvanic or, more commonly inert anodes powered by a low voltage DC supply. Details of such systems have been described in detail elsewhere [4].

3. Sand box studies

The experimental and numerical studies on cathodic protection systems for steel framed masonry structures were initially conducted employing sand as a model for masonry [5]. The arrangement for such tests is shown in Figure 3 and an example of a sand box test representing a stanchion is shown in Figure 4. Similar tests were carried out with the steel section laid horizontally to represent a beam. The sand, dampened with tap water, represents a homogeneous electrolyte with a consistent resistivity.

This approach allowed the distribution of protective potential and current to be studied on the relatively complex geometry of the steel sections. Figure 5 shows the potential distribution for a beam provided by two anodes (indicated by the white dots). All potentials are in millivolts versus a copper/copper sulphate electrode (CSE). From this stage of the study it was possible to make the following conclusions.

- There is a significant variation of protective potential and current density in different regions of the steel surface. This variation is related not only to the resistivity of electrolyte and the anode locations but also to the geometry of the steel section.
- The distribution of CP potential and current density is directly related to the resistivity of the electrolyte. Under the same applied current density and anode location, the distribution of the protective potential and current density is more uniform in a low resistivity electrolyte. A higher resistivity electrolyte results in a lower protective current density on the steel.
- The anode position has a significant effect on the distribution of CP potential and current density. The potential and current density distributions along the surface of steel section become more uniform as the anode distance from the steel increases.

4. Numerical modelling

Having established a practical method of representing steel in masonry under the influence of cathodic protection, it was necessary to review the various numerical methods available for modelling the CP protection currents and resulting potentials. The finite element method and boundary element method have been used to analyse the protective current and potential distribution of cathodically protected reinforced concrete structures and offshore or marine structures respectively [6, 7]. More recently, the latter has been introduced to analyse cathodic protection systems for steel-framed masonry structures [8]. By employing the boundary element method, it has been possible to model the theoretical distribution of potential and current for a number of typical configurations and compare the results with those measured in the sand box experiments. There is generally good agreement, as shown in the comparison of line scan results shown in Figure 6.

As can be seen, the results follow the same trend although the experimental results are typically 100mV more negative. The cause for this variation could be related to a number of reasons. For example, in boundary element modelling, the sand resistivity is assumed to be uniform whereas in reality, the sand resistivity will not be precisely the same in each experiment and there will be some
variation between different areas of the sandbox. It is also possible that the formation of the passive film on the steel section, the desired consequence of applying CP, does not occur evenly leading to some variability. Despite these errors the boundary element method provides sufficiently accurate results to produce potential and current distribution maps for the surface of buried steel elements and identify areas of excessive or inadequate polarisation, as shown in Figure 7.

5. Stray current effects

Steel-framed masonry buildings contain a variety of metallic elements. In addition to the frame itself, metal window frames, drain pipes and fixings such as wall ties and clamps are commonly encountered. Generally electrical continuity between structural members is rarely a problem [9] since the structural connections are typically bolted or riveted. However, other elements are more likely to be electrically discontinuous and this must be taken into account when designing a CP systems. Failure to ensure the electrical continuity of all metallic elements could result in stray current interactions between the various elements of the structure, resulting in accelerated corrosion of the discontinuous items.

By employing the boundary element method, it has been possible to model the effect of discontinuous steel on stray current corrosion and the results have been compared with weight loss measurements from sand box tests, as shown in Figure 8. The model predicts the steel between the anode and the steel section will pick up current on the face nearest the anode and release current on the face nearest the steel section, the latter resulting in a loss of metal. For the other bar, while there is some pick up, there is relatively little loss and consequently little or no corrosion [10]. Estimated weight losses based on the modelled currents compared well with actual weight loss measurements obtained from the bars, demonstrating the validity of the boundary element method for assessing the effects of stray current on discontinuous metallic items.

6. Design implications

Having demonstrated the adequacy of the model, it has subsequently been employed to assist in the detailed design of cathodic protection systems for historically significant steel framed structures. The model can assist in the optimisation of anode locations in two ways. Firstly, it can help identify the best locations for anodes so as to achieve full protection from the least number of anodes,
this in turn reduces the number of holes that have to be made in the structure and saves both money and resources. The second way in which the model can be of benefit is where there are preferred locations for anodes, for example at joints, and the adequacy of the protection afforded by these anode locations can be assessed prior to installation.

7. Future work
The model generated from this work also has potential as a development tool for improving the performance of CP systems and overcoming a number of the practical problems presently encountered. The ability of the model to accommodate stray current effects should make it possible to improve the present methods of dealing with discontinuous metallic items, such as clamps and wall ties. It should also be possible to develop more efficient systems with savings in both the cost of installation and the long-term running costs.

One area considered worthy of further investigation with the assistance of the model is the employment of pulsed power supplies which have only previously been employed commercially in oil and gas applications [11]. Such systems, if found to be workable, could increase the efficiency of the CP installations and reduce both the number of anodes required and the extent of stray current effects on discontinuous items to provide more practical and sustainable solutions for the preservation of steel framed heritage structures.

8. Conclusions
By employing the sand box technique, an approach more commonly used in the study of pipeline CP, it has been possible to verify the validity of numerical modelling based on the boundary element method for optimising electrochemical remediation systems for historic steel framed structures.

Laboratory tests on simple masonry encased steel samples have further confirmed the accuracy of the method in predicting the distribution of cathodic protection on actual structures. Such modelling has subsequently been employed in the design of CP systems for major heritage structures and has proved valuable in allowing the location and number of anodes to be optimised, thereby reducing both the costs and level of damage to the original building fabric.

It is hoped that further studies on pulsed power supplies will result in simpler systems and permit more widespread application of this remediation technique.

9. Acknowledgements
The role of the Royal Society, Sheffield Hallam University and Mott MacDonald in the support of this study is gratefully acknowledged.

10. References


DENSO VOID FILLER PROTECTS JETTY CRANES

A recent joint venture contract completed for the Ministry of Defence by Morgan Est AMEC was the construction of the Valiant floating jetty for servicing Astute Class submarines at Faslane. The jetty was towed to Faslane from the construction site at Port Glasgow.

The 200 metre long, 28 metre wide, Valiant jetty is equipped with eight Service Logistic Derricks (cranes). In order to give maximum anti-corrosion protection to the mounting bases that fix the cranes to the jetty, all voids around the bolts were filled with Winn & Coales’ Denso Void Filler. In total, 750 litres of Denso Void Filler was used on the jetty.

Denso Void Filler is based on a microcrystalline petrolatum containing corrosion inhibitors and moisture repellents. It forms a permanently flexible medium for the encapsulation and protection of bearings, tendons, stay cables etc. It has been used on a variety of major civil engineering projects, including both Severn Bridges.

APPLYING DENSO PROTECTION IN A CONFINED SPACE

A challenging contract recently completed by Advanced Engineering Solutions of Cramlington, Northumberland, was the application of a Denso protection system to water pipelines enclosed within a 300m brick tunnel. The work was carried out for Northumbrian Water as part of its ongoing programme of upgrading its potable water supply system.

Constructed in the 1920s, the tunnel is in a remote part of Northumbrian Water’s area. The first problem to be met by Advanced Engineering Solutions was to transport the pipeline protection materials across rough boggy terrain approximately one mile from the nearest road.

Entry to the tunnel was via a manhole at either end of the 300 metre tunnel carrying sections of the two 18 inch diameter pipelines. The materials therefore had to be manhandled for up to 150 metres from either end within this tunnel. Additionally, as it was confined space the protection materials could not contain any hazardous substances such as solvents.

The Winn & Coales Denso system chosen consisted of Denso Paste, followed by Denso Hi-Tack Tape and Denso Self Adhesive PVC. Prior to application the AES confined space specialist team cleaned the pipe surfaces from any loose residues of the former bitumen wash coating and wire-brushed areas showing signs of surface corrosion.
RJ Herbert Engineering has opted for metal spraying, using Metallisation equipment, as an alternative to hot dip galvanising, to improve customer service, reduce costs and save time.

The decision to opt for metal spraying was made following a request from a Belgian customer, a potato processing and packaging line export company, to protect the walkways and handrails of the potato processing equipment. Herbert is a British manufacturer of handling equipment for the vegetable industry and environmental waste and recycling industries. Its client base includes European fresh produce pack houses, major international processors as well as many well-established growers and industrial companies.

With constant use of the walkways and handrails running alongside the process and packaging equipment, as well as cleaning and pressure washing, a sturdy surface protection is crucial to the longevity of the equipment. The customer specified a zinc coating should be applied prior to a powder coating finish using either hot dip galvanising or metal spraying. Herbert had extensive experience of galvanising, but was unhappy with the downsides of this process, in this instance, and decided to explore metal spraying options.

The reasons behind Herbert looking at metal spraying, as an alternative to hot dip galvanising, were based on the logistical cost and lead times associated with the off site process. Herbert needed to find an in-house alternative that had equal, or better, corrosion preventative properties. Having looked at all the processes available it was decided that not only did metal spraying meet this criteria, but also meant that there was no post spraying operations such as re-drilling holes or cleaning of metal drips. The pre-spraying process was also simplified, as no special preparation, such as designed for heat distortion and holes for hot air expansion, was required. The main factors for the acquisition of the metal spray equipment, were that the process is now done on site, no transport costs, no sub-contractor lead time, less product build time and no post spray operations are required.

Ken North, Operations Director at RJ Herbert Engineering, says: “Our decision to opt for metal spraying, as an alternative to hot dip galvanising, was made much easier once we made contact with Metallisation. We knew that metal spraying could be an ideal alternative for us, but Metallisation’s understanding of what we were trying to do was ideal. We are so pleased with the metal spray equipment we have purchased from Metallisation. The outstanding results of the potato processing plant has encouraged us to offer the enhanced corrosion protection as an option to other customers across our full product range. So we are very happy all round.”

In addition, Herbert use wet paint as well as powder coatings and hope to use the new metal spray process for these applications too. It’s hoping to reap the benefits of improved adhesion of paint to metal spray without the need to etch primers, as they currently do when painting on to galvanised steel. The thickness of the metal sprayed coatings will vary depending on the environment in which the sprayed item is located and on the customers’ specific requirements.

The operator has found it easy to use and is happy to work with the system. Herbert also purchased a 20m supplies package, which allows its operators to locate the spray unit outside the spray room and provides flexible access around the items they are spraying without having to stop to move equipment. Metallisation provided an onsite training course to maximise the efficiency of the equipment and ensure operators are totally familiar with the system. Herbert also opted for the Metallisation, Metserve preventative maintenance contract, which provides two visits per annum by a Metallisation service engineer to keep the system in excellent working order.

Herbert spray zinc at this time but is currently considering spraying with aluminium for certain applications. Future considerations include offering a robust, non-slip metal sprayed coating on walkways, stairs and inspection areas, to its clients.

Established in the UK in 1922, Metallisation is synonymous with metal spraying to a diverse range of industries around the world. Metal spraying is a technology, which protects and greatly extends the life of a wide variety of structures, equipment and vessels, in the most hostile environments and in situations where protective surface coatings are vital for longevity. The variety of metallised coatings is vast, but can be broken down into two main categories. These include anti-corrosion and engineering coatings.

For more information on Metallisation, please call Stuart Milton, Sales and Marketing Manager, on 01384 252 464 or visit www.metallisation.com.
AWARD SUCCESS FOR SUSTAINING MEMBER

The Group Chief Executive of one of the UK’s leading painting contractors said investment in training is paying dividends after scooping three major awards.

In less than 72 hours Sustaining Members of the Institute of Corrosion, the Hankinson Painting Group were awarded both the Painting Decorating Association of Great Britain’s Industrial Painting Contract of the Year award and the industry’s highest accolade – the Premier Trophy Award. The awards recognised the outstanding work undertaken on Silver Jubilee Bridge in Runcorn for Halton Borough Council.

They then went on to win the Johnstones’ Painter of the Year Awards and an £18,000 van.

Group chief executive Stephen Hankinson this success was in part due to the company’s response to changing policy and their commitment to meeting new competency levels required by the Highways Agency.

He said: “Hankinson became the first contractor in the UK to achieve the National Highway Sector Scheme 19A (NHSS 19A).

“Financial results were improved immediately with turnover and profit increasing. I have always been a great believer that our people are our biggest asset and I have always recognised that they must be given the necessary skills to achieve.

“And while our commitment to training is nothing new, we have faced some significant and unique challenges in 2008 relating to training requirements.

“In particular our Industrial Painting Division had to meet the new requirements of their major client, The Highways Agency.

“The training and learning that took place was an industry leading.

“Success was measured by the number of operatives who achieved accreditation – 100%.

“The fact that we became the first painting contractor in the UK to achieve the NHSS 19A raised our profile enormously and has given us tremendous opportunity for further growth.

“This forward thinking to invest in training, particularly during an economic downturn, is now being widely acknowledged as industry best practice and securing Hankinson high profile awards and contracts.”

NHSS 19A was implemented by the Highways Agency as a mandatory requirement on all appropriate contracts from February 1 2008.

The Highways Agency believes that adopting the scheme has achieved their objective of employing a competent, skilled workforce on all work sites.

The Highways Agency also supported the Institute of Corrosion in developing their Industrial Coating Applicator Training Scheme (ICATS) as the benchmark level for training and assessment of paint applicators to achieve NHSS19A registration.

Established for 34 years, Hankinson employ more than 120 in Birkenhead and 230 people nationally, with a turnover of £12.5m.

In addition to the ICATS accreditation, more than 90% of their workforce now hold Construction Skills Certification Scheme cards.

As a result, Hankinson have recently gained the Platinum Standard Award from the Construction Skills Certification Scheme – another important indicator of standards for the industry.

Stuart Lyon is a professor of Corrosion Control Technology at the University of Manchester and chair and managing director of Correx Ltd, who developed ICATS.

He said: “The resistance to new initiatives in this industry is immense – particularly where there has been no prior track record in the area.” Thus despite the adoption of ICATS by the Highways Agency and Network Rail there was great initial reluctance for contractors to put their heads above the parapet.

“Hankinson were an exception and have supported ICATS from the early days. They registered into the scheme in April 2007 even though it was not mandated by the Highways Agency for new contracts until February 2008.

“Hankinson’s experience with their trained operatives is that they take new pride in their work.

“Thus they are no longer just ‘painters’ they are ‘industrial coatings applicators’.

“Hankinson is a model example of how dedicated management with support of staff and employees can deliver a professional and effective implementation of an innovative training scheme.

“Hankinson has been one of the success stories of ICATS and has developed a training model that we encourage others to emulate.”

Stephen added: “We have delivered all this during the current difficult economic climate because investment in training is one of our core values.

“We believe that our efforts in the last 12 months have not only led to this industry recognition but also to increased profitability and a much stronger market position.

“There was some initial resistance by employees who felt that with more than 20 years experience under their belt, further training was either unnecessary.

“However they can all now see the benefit and take even more pride in their work.

“Both the Highways Agency and Network Rail demand ICATS and Hankinson are now best placed to bid for their future contracts.

“The market place is changing rapidly and companies who fail to invest in training will be left behind.

“The Hankinson group was quick to respond and now that investment in training is paying dividends.”
CATHODIC PROTECTION AND MONITORING

TAYLOR WOODROW TECHNOLOGY CENTRE
Stanbridge Road, Leighton Buzzard, Beds LU7 4QH
Tel: 01525 859 115 Fax: 01525 859 104
Email: michael.thorne@taylorwoodrow.com
Website: www.taylorwoodrow.com/technologycentre

ALFRED BAGNALL & SON LTD
6 Manor Lane, Shipley, W.Yorks BD18 3RD
Tel: 01274 714800 Fax: 01274 530171
Email: info@bagnalls.co.uk
Website: www.bagnalls.co.uk

ALLTASK LTD
Alltask House, Commissioners Road, Medway City Estate, Strood, Rochester Kent ME2 4EJ
Tel: 01634 298000 Fax: 01634 298001
Website: www.alltask.co.uk

APB CONSTRUCTION (UK) LTD
Unit 3 Bramley Way, Hellaby Industrial Estate
Hellaby, Rotherham South Yorkshire S66 8QB
Tel: 01709 541000 Fax: 01709 541411
Email: gary.bentham@apbcon.co.uk

APB CONSTRUCTION (UK) LTD
Unit 1B, OJ Industrial Estate, Claybank Road
Portsmouth, Hampshire PO3 5SX
Tel: 02392 661023 Fax: 02392 691665
Email: info.abrasion@btconnect.com

COATING APPLICATORS

ABRASION LTD
Unit 1B, OJ Industrial Estate, Claybank Road
Portsmouth, Hampshire PO3 5SX
Tel: 02392 661023 Fax: 02392 691665
Email: info.abrasion@btconnect.com

FAIRFIELD MABEY LIMITED
Station Road, Chepstow, Monmouthshire NP16 5YL
Tel: +44 (0)1291 623801 Fax: +44 (0)1291 625453
Email: mail@fairfieldmabey.com

FAIRHURST WARD ABBOTS LTD
225 London Road, Greemhithe, Kent DA9 9RR
Tel: +44 (0)1322 387 000 Fax: +44 (0)1322 370235
Email: works@fwadart.co.uk Website: fwagroup.co.uk

GALCO STEEL LTD
HOT DIP GALVANIZERS & STEEL FABRICATORS
Tel: 01 4506671 Fax: 01 4566213
Email: info@galcosteel.ie

GALCO STEEL LTD
HOT DIP GALVANIZERS & STEEL FABRICATORS
Tel: 01 4506671 Fax: 01 4566213
Email: info@galcosteel.ie

COASTAL PRESERVATION SERVICES LTD
Old Hambledon Racecourse, Wallows Wood
Sheardley Lane, Droxford, Hampshire SO32 3QY
Tel: 01489 878845 Fax: 01489 878846
Email: coastal.preservation@btinternet.com
Website: www.coastalpreservation.com

DYER & BUTLER LTD
Mead House, Station Road, Nursling, Southampton, Hampshire SO16 0AH
Tel: 02380 742222 Fax: 02380 742200
Email: enquiries@dyerandbutler.co.uk Website: www.dyerandbutler.co.uk

F A CLOVER & SON LTD
Unit 23c, Spencer Court, Spencer Road, Blyth Industrial Estate, Northumberland NE24 5TW
Tel: 01670 351666 Fax: 01670 352666
Email: ian@cloverpainting.com

DEMON FIRE PROTECTION LTD.
Unit 23c, Spencer Court, Spencer Road, Blyth Industrial Estate, Northumberland NE24 5TW
Tel: 01670 351666 Fax: 01670 352666
Email: demonfire1@btconnect.com

HOT DIP GALVANIZERS & STEEL FABRICATORS
Tel: 01 4506671 Fax: 01 4566213
Email: info@galcosteel.ie

COATING APPLICATORS

CORROCAOT CORROSIONEERING

• Specialists in anti-corrosion engineering and corrosion protection
• Fast, efficient and economical solutions to corrosion-related problems
• Combining engineering skills and coating excellence for long term solutions
• Repair and refurbishment for components from pumps, pipes and valves through to tanks and vessels
• On-site teams and workshop-based facilities

www.corrocoat.com

Reader Enquiry: CM015

COASTAL PRESERVATION SERVICES LTD
Old Hambledon Racecourse, Wallows Wood
Sheardley Lane, Droxford, Hampshire SO32 3QY
Tel: 01489 878845 Fax: 01489 878846
Email: coastal.preservation@btinternet.com
Website: www.coastalpreservation.com

COASTAL PRESERVATION SERVICES LTD
Old Hambledon Racecourse, Wallows Wood
Sheardley Lane, Droxford, Hampshire SO32 3QY
Tel: 01489 878845 Fax: 01489 878846
Email: coastal.preservation@btinternet.com
Website: www.coastalpreservation.com

COASTAL PRESERVATION SERVICES LTD
Old Hambledon Racecourse, Wallows Wood
Sheardley Lane, Droxford, Hampshire SO32 3QY
Tel: 01489 878845 Fax: 01489 878846
Email: coastal.preservation@btinternet.com
Website: www.coastalpreservation.com

COASTAL PRESERVATION SERVICES LTD
Old Hambledon Racecourse, Wallows Wood
Sheardley Lane, Droxford, Hampshire SO32 3QY
Tel: 01489 878845 Fax: 01489 878846
Email: coastal.preservation@btinternet.com
Website: www.coastalpreservation.com

COASTAL PRESERVATION SERVICES LTD
Old Hambledon Racecourse, Wallows Wood
Sheardley Lane, Droxford, Hampshire SO32 3QY
Tel: 01489 878845 Fax: 01489 878846
Email: coastal.preservation@btinternet.com
Website: www.coastalpreservation.com

COASTAL PRESERVATION SERVICES LTD
Old Hambledon Racecourse, Wallows Wood
Sheardley Lane, Droxford, Hampshire SO32 3QY
Tel: 01489 878845 Fax: 01489 878846
Email: coastal.preservation@btinternet.com
Website: www.coastalpreservation.com

COASTAL PRESERVATION SERVICES LTD
Old Hambledon Racecourse, Wallows Wood
Sheardley Lane, Droxford, Hampshire SO32 3QY
Tel: 01489 878845 Fax: 01489 878846
Email: coastal.preservation@btinternet.com
Website: www.coastalpreservation.com

ALFRED BAGNALL & SON LTD
6 Manor Lane, Shipley, W.Yorks BD18 3RD
Tel: 01274 714800 Fax: 01274 530171
Email: info@bagnalls.co.uk
Website: www.bagnalls.co.uk

APB CONSTRUCTION (UK) LTD
Unit 3 Bramley Way, Hellaby Industrial Estate
Hellaby, Rotherham South Yorkshire S66 8QB
Tel: 01709 541000 Fax: 01709 541411
Email: gary.bentham@apbcon.co.uk

APB GROUP LIMITED
Ryandra House, Ryandra Business Park
Brookhouse Way, Cheadle, Stoke on Trent ST10 1SR
Tel: 01538 755377 Fax: 01538 755010
Email: apbgroup@aol.com Website: www.apbgroup.co.uk

CAPE INDUSTRIAL SERVICES LTD.
Kirkton Drive, Dyce, Aberdeen, Scotland AB21 0BG
Tel: 01224 215800 Fax: 01224 722879

CATHODIC PROTECTION AND MONITORING

TAYLOR WOODROW TECHNOLOGY CENTRE
Stanbridge Road, Leighton Buzzard, Beds LU7 4QH
Tel: 01525 859 115 Fax: 01525 859 104
Email: michael.thorne@taylorwoodrow.com
Website: www.taylorwoodrow.com/technologycentre

COATING APPLICATORS

CORROCAOT CORROSIONEERING

• Specialists in anti-corrosion engineering and corrosion protection
• Fast, efficient and economical solutions to corrosion-related problems
• Combining engineering skills and coating excellence for long term solutions
• Repair and refurbishment for components from pumps, pipes and valves through to tanks and vessels
• On-site teams and workshop-based facilities

www.corrocoat.com

Reader Enquiry: CM015
SUSTAINING MEMBERS

GEMINI CORROSION SERVICES LTD
Spurrhillock Industrial Estate, Broomhill Road, Stonehaven AB39 2NH
Tel: 01569 765488 Fax: 01569 766315

H & H PAINTING CONTRACTORS LTD
Rear Barn, Wixenford Industrial Estate, Plymouth Devon PL9 8AA
Tel/Fax: 01752 401234

H & S DECORATING SPECIALISTS LTD
1 Wellesley Avenue, Kichings Park, Iver, Bucks, SL0 9AU
Tel: 01753 654123 Fax: 01753 654345 e: info@hsgroup.co.uk

MERSEYSIDE COATINGS LTD
Pickerings Road, Halebank Industrial Estate Widnes, Cheshire WA8 8XW
Tel: 0151 423 6166 Fax: 0151 495 1437 Email: info@merseysidecoatings.com Website: www.merseysidecoatings.com

NEW IMAGE COATING APPLICATORS

GEMINI CORROSION SERVICES LTD
Spurrhillock Industrial Estate, Broomhill Road, Stonehaven AB39 2NH
Tel: 01569 765488 Fax: 01569 766315

H & H PAINTING CONTRACTORS LTD
Rear Barn, Wixenford Industrial Estate, Plymouth Devon PL9 8AA
Tel/Fax: 01752 401234

H & S DECORATING SPECIALISTS LTD
1 Wellesley Avenue, Kichings Park, Iver, Bucks, SL0 9AU
Tel: 01753 654123 Fax: 01753 654345 e: info@hsgroup.co.uk

MERSEYSIDE COATINGS LTD
Pickerings Road, Halebank Industrial Estate Widnes, Cheshire WA8 8XW
Tel: 0151 423 6166 Fax: 0151 495 1437 Email: info@merseysidecoatings.com Website: www.merseysidecoatings.com

INDUSTRIAL SUPPORT SERVICES LTD
Specialists in Abrasive Blast Cleaning, UHP Water Blasting, Coating Application, Hydro Demolition, Project Management. Building S146, South Yard, HMBN Devonport, Plymouth, PL2 2BG
Tel: 01752 552515 Fax: 01752 556407 Mobile: 07979 516427

IMPACT

PORT PAINTERS LTD
Unit 3, Ringside Business Park, Heol-Y-Rhosog, Cardiff CF3 2EW
Tel: 029 2077 7070 Fax: 029 2036 3023 Email: port.painters@talk21.com

NEW IMAGE

SUSTAINING MEMBERS

COATING APPLICATORS

NEW IMAGE

NORTHERN PROTECTIVE COATINGS LTD
16 High Reach, Fairfield Industrial Estate, Bill Quay, Gateshead, Tyne & Wear NE10 0UR Tel: 0191 438 5555 Fax: 0191 438 3082 Email: jack.welsh@npcoatings.co.uk Website: www.npcoatings.co.uk

NUSTEEL STRUCTURES

Lymene, Hythe, Kent CT21 4LR Email: simon.slinn@nusteelstructures.com Website: www.nusteelstructures.com

OPUS INDUSTRIAL SERVICES LIMITED
Ethan House, Royce Avenue, Cowpen Lane Industrial Estate, Billingham TS23 4BX Tel: 01642 371850 Fax: 01642 562971 Website: www.opus-services.com

ORRMAC COATINGS LTD
Newton Chambers Road, Thorncliffe Park Estate, Chapeltown Sheffield S35 2PH Tel: 0114 2461237 Fax: 0114 2570151 Email: orrmac@aol.com Website: www.ormac.co.uk

Pipeline Induction Heat Ltd
The Pipeline Centre Farrington Road, Rossendale Road Industrial Estate Burnley Lancs BB11 5SW Tel: 01254 415323 Fax: 01254 415326 Email: Sales@pih.co.uk Website: www.pih.co.uk

PIPERCREST LTD
T/A Halls Specialised Services
Brook Farm, North Hill, Norden on the Hill, Essex SS17 8QA Tel: 01375 361408 Fax: 01375 361448 Email: halls@btconnect.com

PORT PAINTERS LTD
Unit 3, Ringside Business Park, Heol-Y-Rhosog, Cardiff CF3 2EW Tel: 029 2077 7070 Fax: 029 2036 3023 Email: port.painters@talk21.com

 pipeline induction heat ltd

PIPELINE INDUCTION HEAT LTD
The Pipeline Centre
Farrington Road, Rossendale Road Industrial Estate
Burnley, Lancs BB11 5SW
Tel: 01254 415323 Fax: 01254 415326
Email: Sales@pih.co.uk www.pih.co.uk

Pipercrest Ltd
T/A Halls Specialised Services
Brook Farm, North Hill, Norden on the Hill, Essex SS17 8QA
Tel: 01375 361408 Fax: 01375 361448
Email: halls@btconnect.com

PORT PAINTERS LTD
Unit 3, Ringside Business Park, Heol-Y-Rhosog, Cardiff CF3 2EW
Tel: 029 2077 7070 Fax: 029 2036 3023
Email: port.painters@talk21.com

pipeline induction heat ltd

pipeline induction heat ltd
COATING APPLICATORS

RHINOCEROS
SPECIALIST CLEANING • PROTECTIVE COATINGS
INFRASTRUCTURE MAINTENANCE

- ICATS Trained Operators
- Clients: Transport for London
  Edinburgh City Council
  Coventry City Council

Tel: 020 8444 6165
Email: contracts@rhino247.co.uk
Website: www.rhino247.co.uk

Reader Enquiry: CM135

ROWECORD ENGINEERING LTD
Neptune Works, Usk Way, Newport, South Wales NP20 2SS
Tel: 01633 250511 Fax: 01633 253219
Email: enquiries@rowecord.com

SHUTDOWN MAINTENANCE SERVICES LIMITED
Tel: 01634 256969 Fax: 01634 256616
Email: smstld@btconnect.com
Website: www.shutdownmaintenanceservices.co.uk

SITE COAT SERVICES LTD
Unit 11, Old Wharf Road, Grantham, Lincolnshire NG31 7AA
Tel: 01476 577 473 Fax: 01476 577 642
Website: www.sitecoat.com

SOUTHERN BLASTING SERVICES
177 Spring Road, Sholing
Southampton SO19 2NU
Tel: 02380 444455 Fax: 02380 444488
Email: stuart@southernblasting.co.uk www.southernblasting.co.uk

SOUTHERN CONTRACTING SERVICES LTD.
Unit 6 Trident Business Park, 50 Shore Road,
Hythe, Southampton SO45 6DF
Tel: 023 8084 9000 Fax: 023 8084 7979
Website: www.southerncontracting.co.uk

Tel 01675 464446 Fax 01675 464447
Email: enquiries@supablast.co.uk www.supablast.co.uk

Reader Enquiry: CM135

STANDISH METAL TREATMENT LTD
Potter Place, West Pimbo, Skelmersdale
Lancs, WN8 9PW
Tel: 01695 455977 Fax: 01695 728835
Email: stuart.croft@standishmetal.co.uk

STRADA CONTRACTORS LIMITED
Unit 9, Portsmouth Enterprise Centre,
Quartremain Road, Portsmouth, Hants PO3 5QT
Tel: 02392 666109 Fax: 02392 664845
Email: info@strada-contractors.co.uk
Website: www.strada-contractors.co.uk

WATSON STEEL STRUCTURES LTD
Lostock Lane, Lostock, Bolton BL6 4BL
Tel: 01204 699999 Fax: 01204 694543
Email: dave.swift@watsonsteel.co.uk

W G BEAUMONT & SON LTD
INDUSTRIAL PAINTING CONTRACTORS
Unit L1, Chadwell Heath Industrial Park, Kemp Road,
Dagenham RM8 1SL
Tel: 020 85908523 Fax: 020 85909885
Email: tom.costello@wgbeaumont.co.uk

WILLIAM HARE LTD
Brandlesholme House, Brandlesholme Road, Bury BL8 1JJ
Tel: 0161 609 0000 Fax: 0161 609 0468
Email: jeff.grundy@hare.co.uk www.williamhare.co.uk

CONSULTANTS TESTING AND INSPECTION

COATING CONSULTANTS LIMITED
1 Birdcage Walk, Westminster, London SW1H 9JJ
Tel: 0207 7991889 Fax: 0207 9768169
Email: cclservices1@btconnect.com www.cclservices.org

CORROSION MANAGEMENT LTD
Engineering Consultants
21 Sedlescombe Park, Rugby, CV22 6HL United Kingdom
Tel: 01788 816231
Email: cox@corr-man.demon.co.uk
CONSULTANTS TESTING AND INSPECTION

ATKINS LTD
Woodcote Grove, Ashley Road, Epsom, Surrey KT18 5BW
Tel: 01372 726140 Fax: 01372 740055
Email: iain.wesley@atkinsglobal.com

DNV ENERGY
Cromarty House, 67-72 Regent Quay, Aberdeen AB11 5AR
Tel: 01224 335000 Fax: 01224 593311
Email: yee.chin.tang@dnv.com Website: www.dnv.com

INDEPENDENT PROTECTIVE COATINGS SERVICES LTD
IPCS House, 32 Daryngton Avenue, Birchington, Kent, CT7 9PS
Tel: 01843 845472 Fax: 01843 847722

MOTT MACDONALD
Materials & Corrosion Engineering
Spring Bank House, 33 Stamford Street
Altrincham, Cheshire WA14 1ES
Tel: 0161 926 4000 Fax: 0161 926 4103
Email: paul.lambert@mottmac.com www.mottmac.com

SANDBERG CONSULTING ENGINEERS
40 Grosvenor Gardens, London SW1W 0EB
Tel: 020 7565 7000 Fax: 020 7565 7100
Email: ho@sandberg.co.uk www.sandberg.co.uk

SCALD SOLUTIONS LTD
INDEPENDENT LABORATORY SERVICES
Tel: 01506 439994
Email: enquiries@scaledsolutions.co.uk www.scaledsolutions.co.uk

SCISITE LIMITED
Innovation Centre 3, Keele Science & Business Park
Keele, Staffordshire ST5 5NP
Tel: 01782 450 460 Email: info@scisite.co.uk www.scisite.co.uk

SHEFFIELD TESTING LABORATORIES LTD
Mechanical Testing, Material Testing, Corrosion, Calibration
Tel: 0114 272 6581 Fax: 0114 275 1989
Email: info@sheffieldtesting.com Reader Enquiry: CM014

STEEL PROTECTION CONSULTANCY LTD
7a High Street Mews, 28 High Street
Leighton Buzzard, Beds LU7 1EA
Tel: 01525 852500 Fax: 01525 852502
Email: david.deacon@steel-protection.co.uk Website: www.steel-protection.co.uk

TO ADVERTISE HERE CONTACT SQUARE ONE
Tel: +44 (0)114 255 7911 Email: enquiries@squareone.co.uk

TECHNOLOGY OFFSHORE ONSHORE LTD
Woodcote House, Crow Hill Drive, Mansfield, Nottinghamshire NG19 7AE
Email: sales@techoffonshore.com www.techoffonshore.com Tel: 01623 654254 Fax: 01623 420821

ENVIRONMENT AGENCY
Thames Barrier Operational Area, Eastmoor Street, Charlton, London SE7 BLX
Tel: 0208 3054146 Fax: 0208 8547546

FORTH ESTUARY TRANSPORT AUTHORITY
Administration Block, South Quensferry
West Lothian EH30 9SF
Tel: 0131 3191699 Fax: 0131 3191903
Email: customer.care@feta.gov.uk

NUCLEAR DECOMMISSIONING AUTHORITY
1 Curie Avenue, Harwell, Didcot, Oxon OX11 0RH
Tel: 01235 825500 Fax: 01235 831239

SCOTTISH AND SOUTHERN ENERGY PLC
Inveralmond House, 200 Dunkeld Road, Perth PH1 3AQ
Tel: 01738 456000 Fax: 01738 456647

BREWERS PROTECTIVE COATINGS
Reform Rd, Maidenhead, Berkshire SL6 8DA
Tel: 01628 784964 Fax: 01628 672578
E-mail: info@brewersprotectivecoatings.co.uk www.brewersprotectivecoatings.co.uk

CARBOLINE
Offshore and Onshore protection, Waste water treatment plants, Specialist pipeline treatments, Environmentally friendly products
Tel: 07712 768411 Fax: 01475 529893 www.carboline-europe.com

CORROCOAT CORROSION ENGINEERING
- Extensive range of high technology coating systems and composites
- Specific range of coating systems
- Focus on R&D and technical support
- Low VOC levels with little or no solvent content for reduced atmospheric pollution
- Effective single coat solutions available
- Increasingly specified as the industry standard

TO ADVERTISE HERE CONTACT SQUARE ONE Tel: +44 (0)114 255 7911 Email: enquiries@squareone.co.uk

THE METAL INDUSTRY ASSOCIATION
22 Woodcroft House, Crow Hill Drive, Mansfield, Nottinghamshire NG19 7AE
Tel: 01623 654254 Fax: 01623 420821
Email: sales@techoffonshore.com www.techoffonshore.com
**Suppliers Coatings**

**Chemco International Ltd**
Units 3a & 3b, East Shawhead Industrial Estate, Coatbridge, Lanarkshire ML5 4LY
Tel: 01236 606060 Fax: 01236 606070

**Counter Corrosion Ltd**
Formulators and Applicators of Customised Protective Coating and Lining Systems for Steel and Concrete
Tel: 01924 468559/380002 Fax: 01924 458019

**GRACE Construction Products Ltd**
SERVIWRAP PIPELINE PROTECTION
Tel: 01753 692929 Fax: 01753 637590 www.graceconstruction.com

**HempeL PAINTS Ltd**
Llantarnam Industrial Park
CWMBRAN
Gwent NP44 3XF
Tel: 01633 874024 Fax: 01633 489012 Email: sales@hempeLcom www.hempeLcom

**International Paint Limited**
Stoneygate Lane, Felling, Gateshead, Tyne & Wear NE10 0JY
Tel: 0191 469 6111 Fax: 0191 496 0676 Email: simon.daly@Internationalpaint.com Website: www.International-pc.com

**Jotun Paints (Europe) Ltd.**
Stather Road, Flixborough, Scunthorpe, North Lincolnshire DN15 8RR
Tel: 01724 400 125 Fax: 01724 400 100 Email: decpaints@jotun.co.uk www.jotun.co.uk

**Leighs Paints**
MANUFACTURE AND SUPPLY OF SPECIALISED COATINGS
Tower Works, Kestor Street, Bolton BL2 2AL
Tel: 01204 521771 Fax: 01204 382115 www.leighspaints.co.uk

**PPG Protective & Marine Coatings**
Sales Office Industrial Protective Coatings
Micro House, Station Approach
Wood Street North, Alfreton DE55 7Jr
Tel: +44 (0) 1773 837 300 Fax: +44 (0) 1773 837 302 Email: uksalesalfreton@ppg.com www.ameron-bv.com

**Specialty Polymer Coatings Inc**
64 Tudor Avenue
Worcester Park
Surrey KT4 8TX
Tel: 020 8337 4953 Fax: 020 8337 4953 Website: www.stopaq.co.uk

**Stopaq UK Ltd**
Court House Farm Units, Court House Farm
Breerton, Cheshire CW11 1RL
Tel: 01483 793200 Fax: 01483 793201
Website: www.unit19.co.uk

**Suppliers General**

**Civil & Marine Ltd**
Abrasives Works, Gibson Lane, Melton, North Ferriby, East Yorkshire, HU14 3HN
Tel: 01482 633305 Fax: 01482 634835 www.civilandmarine.co.uk

**Doornbos Equipment**
Tel: 023 8064 3388 Fax: 023 8064 3399 Email: sales@doornbosequipment.co.uk Website: www.doornbosequipment.co.uk

**Fernox**
MAKES WATER WORK
Cookson Electronics, Forsyth Rd, Woking, Surrey GU21 5RZ
Tel: 01483 793200 Fax: 01483 793201 www.fernox.com

**F M Conway Ltd**
Conway House, Rochester Way, Dartford, Kent DA1 3QY
Tel: 0208 636 8822 Fax: 0208 636 8827 Website: www.fmconway.co.uk

**GMA Garnet (Europe) Gmbh**
PO Box 9, Middlewich, Cheshire, CW10 9FD
Tel: 01606 836233 Fax: 01606 836610 www.gmagarnet.co.uk
**SUPPLIERS GENERAL**

**HSL DISTRIBUTION UK LTD**
Unit 22 Uplands Business Park, Blackhorse Lane, London E17 5QJ
Tel: 0208 531 4473  Fax: 0208 523 1403  
Email: mcook@hawksystems.co.uk

**INTACT INSULATION**
Manufacturers of High Quality Mineral Wool Products
PO Box 294, F1-01301 Vantaa, Finland
Tel: +358 44 1224 621915  Fax: +358 44 1224 621215
Email: info@iicorr.com  Website: www.iicorr.com

**METACOR**
External Corrosion Management Ltd, Suites 5 & 6, 221-229 Union Street, Aberdeen AB10 6BQ
Tel: 00 44 1224 898282  Fax: 00 44 1224 898202
Email: sales@metacor.com  Website: www.metacor.com

**PAROC GROUP**
Technical Insulation
Manufacturers of High Quality Mineral Wool Products
PO Box 294, F1-01301 Vantaa, Finland
UK Sales office: Tel: 01942 814127  Fax: 0870 7628257

**RGL SERVICES**
TEL: 02380812921  FAX: 02380814016  
e: enquiries@rglservices.co.uk  www.rglservices.co.uk

**SCANGRIT**
Eastfield Road, South Killingholme, Immingholme, Immingham, North Lincs DN40 3NF
Tel: 01469 574715  Fax: 01469 571644
Email: sales@scangrit.co.uk  Website: www.scangrit.co.uk

**INSTITUTE OF METAL FINISHING**
Exeter House, 48 Holloway Head, Birmingham B1 1NQ
Tel: 0121 6227387  Fax: 0121 6666316
Email: exeterhouse@instituteofmetalfinishing.org  www.uk-finishing.org.uk

**PROTECTIVE COATINGS EUROPE**
15 West Street, Carshalton, Surrey SM5 2PT
Tel: 020 82880077  Fax: 020 82880078

**RA MATERIALS & FOUNDRIES**
Park Works, Newton Heath, Manchester M40 2BA
Tel: 0161 9544213  Fax: 0161 2054739

**RA GG FOR INSPECTORS**
Meadowbank Rd, Rotherham, South Yorkshire S61 2NF  UK
Tel: +44 (0)1709 560459  Fax: +44 (0)1709 557705
E-mail: enquiries@ruanetpo.com  Website: www.ruanetpo.com

**INSTITUTION OF METAL FINISHING**
15 West Street, Carshalton, Surrey SM5 2PT
Tel: 020 82880077  Fax: 020 82880078

**SUSTAINING MEMBERS**
**SUSTAINING MEMBERS**
<table>
<thead>
<tr>
<th>ICATS REGISTERED COMPANIES WITH QUALIFIED APPLICATORS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alltask Limited</strong></td>
</tr>
<tr>
<td>Alltask House, Commissioners Road, Strood, Kent, ME2 4EJ</td>
</tr>
<tr>
<td>T: 01634 298000</td>
</tr>
<tr>
<td><strong>APB Construction (UK)</strong></td>
</tr>
<tr>
<td>Unit 3, Bramley Way, Hellaby Industrial Estate, Hellaby, Rotherham, S. Yorkshire, S66 8QB</td>
</tr>
<tr>
<td>T: 01709 541000</td>
</tr>
<tr>
<td><strong>Austin Hayes Ltd</strong></td>
</tr>
<tr>
<td>Carlton Works, Cemetary Road, Yeadon, Leeds, LS19 7BD, UK</td>
</tr>
<tr>
<td>T: 0113 250 2255</td>
</tr>
<tr>
<td><strong>Cameron Limited</strong></td>
</tr>
<tr>
<td>Queen Street, Stourton, Leeds, LS10 1SB, UK</td>
</tr>
<tr>
<td>T: 0113 276 4389</td>
</tr>
<tr>
<td><strong>Cape Industrial Services</strong></td>
</tr>
<tr>
<td>Cape House, 3 Red Hall Avenue, Paragon Business Village, Wakefield, WF1 2UL</td>
</tr>
<tr>
<td>T: 01224 215800</td>
</tr>
<tr>
<td><strong>Cleveland Bridge UK Ltd</strong></td>
</tr>
<tr>
<td>Cleveland House, Yarm Road, Darlington, DL1 4DE</td>
</tr>
<tr>
<td>T: 01325 502345</td>
</tr>
<tr>
<td><strong>Collis Engineering Railway Contracts</strong></td>
</tr>
<tr>
<td>Salcombe Road, Meadow Lane Industrial Estate, Alfreton, Derbyshire, DE55 7RG</td>
</tr>
<tr>
<td>T: 01773 833255</td>
</tr>
<tr>
<td><strong>Concrete TS Ltd</strong></td>
</tr>
<tr>
<td>Unit B2 (2), Moss Industrial Estate, Leigh, Lancs, WN7 3PT, UK</td>
</tr>
<tr>
<td>T: 01942 261909</td>
</tr>
<tr>
<td><strong>Corrocoat</strong></td>
</tr>
<tr>
<td>Forster Street, Leeds, LS10 1PW</td>
</tr>
<tr>
<td>T: 01132760760</td>
</tr>
<tr>
<td><strong>Denholm Industrial</strong></td>
</tr>
<tr>
<td>21 Boden Street, Glasgow, G40 3PU</td>
</tr>
<tr>
<td>T: 0141 445 3939</td>
</tr>
<tr>
<td><strong>Dyer &amp; Butler Ltd (Rail)</strong></td>
</tr>
<tr>
<td>Mead House, Station Road, Nursling, Southampton, SO16 0AH, UK</td>
</tr>
<tr>
<td>T: 02380 667549</td>
</tr>
<tr>
<td><strong>F A Clover &amp; Son Ltd</strong></td>
</tr>
<tr>
<td>Bardolph Road, Richmond, Surrey, TW9 2LH</td>
</tr>
<tr>
<td>T: 0208 948 6321</td>
</tr>
<tr>
<td><strong>Forth Estuary Transport Authority</strong></td>
</tr>
<tr>
<td>Conway House, Rochester Way, Dartford, Kent, DA1 3QY, UK</td>
</tr>
<tr>
<td>T: 0131 319 1699</td>
</tr>
<tr>
<td><strong>Harrisons Engineering Lancashire Ltd</strong></td>
</tr>
<tr>
<td>Judge Wilnemey Mill, Longworth Road, Billington, Clitheroe, Lancashire, BB7 9TP</td>
</tr>
<tr>
<td>T: 01254 823993</td>
</tr>
<tr>
<td><strong>Hayes and Horne</strong></td>
</tr>
<tr>
<td>Rear Barn, Wixenford Industrial, Plymouth, PL9 8AA</td>
</tr>
<tr>
<td>T: 01752 401234</td>
</tr>
<tr>
<td><strong>Hyspec Services Ltd</strong></td>
</tr>
<tr>
<td>Unit 3 Meadowfield Industrial Estate, Cowdenbeath Road, Burntisland, Fife, KY3 0LH</td>
</tr>
<tr>
<td>T: 01592 874661</td>
</tr>
<tr>
<td><strong>Industrial Coating Services</strong></td>
</tr>
<tr>
<td>5 Danesbury Crescent, Kingstanding, Birmingham, B44 0QP</td>
</tr>
<tr>
<td>T: 0121 384 2266</td>
</tr>
<tr>
<td><strong>Jack Tighe Coatings</strong></td>
</tr>
<tr>
<td>Sandall Lane, Kirk Sandall, Doncaster, DN3 1QR</td>
</tr>
<tr>
<td>T: 01302 880360</td>
</tr>
<tr>
<td><strong>Jack Tighe Ltd</strong></td>
</tr>
<tr>
<td>Redbourne Mere, Kirton Lindsey, Gainsborough, Lincs, DN21 4NW, UK</td>
</tr>
<tr>
<td>T: 01652 640003</td>
</tr>
<tr>
<td><strong>Mabey Bridge Ltd</strong></td>
</tr>
<tr>
<td>Station Road, Chester, Monmouthshire, NP16 5YL</td>
</tr>
<tr>
<td>T: 01291 623801</td>
</tr>
<tr>
<td><strong>Merseyside Coatings Ltd</strong></td>
</tr>
<tr>
<td>Pickerings Road, Halebank Industrial Estate, Widnes, Cheshire, WA8 8XW</td>
</tr>
<tr>
<td>T: 0151 423 6166</td>
</tr>
<tr>
<td><strong>Nusteel Structures</strong></td>
</tr>
<tr>
<td>Lympe Industrial Estate, Lympe, Hythe, Kent, CT21 4LR</td>
</tr>
<tr>
<td>T: 01303 268112</td>
</tr>
<tr>
<td><strong>Paintel Ltd</strong></td>
</tr>
<tr>
<td>26 St George’s Road, Saltash, Cornwall, PL12 6EH</td>
</tr>
<tr>
<td>T: 01752 842720</td>
</tr>
<tr>
<td><strong>Palmers Ltd</strong></td>
</tr>
<tr>
<td>1120 Elliot Court, Herald Avenue, Coventry Business Park, Coventry, CV5 6UB</td>
</tr>
<tr>
<td>T: 02476 710294</td>
</tr>
<tr>
<td><strong>Port Painters Limited</strong></td>
</tr>
<tr>
<td>Unit 3, Ringside Business, Hoel-Y-Rhosog, Cardiff, CF3 2EWx</td>
</tr>
<tr>
<td>T: 02920 777070</td>
</tr>
<tr>
<td><strong>Pyeroy Limited</strong></td>
</tr>
<tr>
<td>Kirkstone House, St Omers Road, Western Riverside Route, Gateshead, Wear, NE11 9EZ</td>
</tr>
<tr>
<td>T: 0191 4932600</td>
</tr>
<tr>
<td><strong>Roy Hankinson Limited</strong></td>
</tr>
<tr>
<td>Alexander House, Monks Ferry, Birkenhead Wirral, CH41 5LH</td>
</tr>
<tr>
<td>T: 0870 7892020</td>
</tr>
<tr>
<td><strong>Shutdown Maintenance Services Limited</strong></td>
</tr>
<tr>
<td>Kingsnorth Industrial, Hoo, Rochester, Kent, ME3 9ND</td>
</tr>
<tr>
<td>T: 01634 256969</td>
</tr>
<tr>
<td><strong>Site Coat Services Ltd</strong></td>
</tr>
<tr>
<td>Unit 11 Old Wharf, Grantham, Lincs, NG31 7AA</td>
</tr>
<tr>
<td>T: 01476 577473</td>
</tr>
<tr>
<td>Company Name</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>Supablast Nationwide</td>
</tr>
<tr>
<td>T I Protective Coatings</td>
</tr>
<tr>
<td>Walker Construction</td>
</tr>
<tr>
<td>Wardle Painters Ltd</td>
</tr>
<tr>
<td>ICATS REGISTERED COMPANIES WITH APPLICATIONS IN TRAINING</td>
</tr>
<tr>
<td>Alfred Bagnall &amp; Sons</td>
</tr>
<tr>
<td>Abrasion Ltd</td>
</tr>
<tr>
<td>Armourocote Surface Technology Plc</td>
</tr>
<tr>
<td>Briton Fabricators Ltd</td>
</tr>
<tr>
<td>Coating Services Ltd</td>
</tr>
<tr>
<td>Community Clean</td>
</tr>
<tr>
<td>Fairhurst Ward Abbotts</td>
</tr>
<tr>
<td>Gemini Corrosion</td>
</tr>
<tr>
<td>Industrial Painting</td>
</tr>
<tr>
<td>JPV (Painters) Ltd</td>
</tr>
<tr>
<td>Maclean and Speirs</td>
</tr>
<tr>
<td>Northern Protective</td>
</tr>
<tr>
<td>P C Richardson &amp; Co</td>
</tr>
<tr>
<td>Rowecord Engineering</td>
</tr>
<tr>
<td>South Staffs Protective Coatings Ltd</td>
</tr>
<tr>
<td>Standish Metal</td>
</tr>
<tr>
<td>Strada Contractors Ltd</td>
</tr>
<tr>
<td>T&amp;T Coatings Ltd</td>
</tr>
<tr>
<td>William Hare Ltd</td>
</tr>
<tr>
<td>ICATS REGISTERED COMPANIES</td>
</tr>
<tr>
<td>APB Group Limited</td>
</tr>
<tr>
<td>Barrier Ltd</td>
</tr>
<tr>
<td>Beever Limited</td>
</tr>
<tr>
<td>Coastground Ltd</td>
</tr>
<tr>
<td>ENC (Yorkshire) Ltd</td>
</tr>
<tr>
<td>F M Conway Limited</td>
</tr>
<tr>
<td>Forward Protective</td>
</tr>
</tbody>
</table>
G W Burton Ltd
New Court, Wooddalling, Norwich, Norfolk, NR11 6SA
T: 01263 584203

H & S Decorating
Administration Building, Forth Road bridge, South Queensferry, Edinburgh, EH30 9SF
T: 01753 654123

Hempel UK Ltd
Llantarnam Park, Cwmbran, Gwent, NP44 3XF
T: 01633 874024

Hill Price Associates Ltd
Hill Price Associates Ltd, 3 Prospect Place The Maritime Quarter, Swansea, SA1 1QP
T: 01792 544255

Leighs Paints
Tower Works, Kestor Street, Bolton, Lancs, BL2 2AL
T: 01698 264271

Lanarkshire Welding Co.
82 John Street, Wishaw, Lanarkshire, ML2 7TQ
T: 01698 264271

Malakoff Limited
North Ness, Lerwick, Shetland, ZE1 0LZ, UK
T: 01595 695544

Matatec Ship Repairers
MacGregor House, Seaton Delaval Tyne & Wear, NE25 0PT
T: 0191 2379900

Matthew James Services
Unit 4, Shibdon Business, Cowen Road, Blaydon, Newcastle-Upon-Tyne, NE21 STX
T: 0191 414 5700

Metal Cleaning UK Ltd
Randles Road, Knowsley Business Park, Knowsley, Merseyside, L34 9HX
T: 0151 5492449

MIS Services Ltd
Unit 12 Laurence Industrial, Eastwoodbury Lane, Southend-On-Sea, Essex, SS2 6RH
T: 01702 520400

New Image Specialist Paining Contractors
Askern House, High Street, Askern, Doncaster, DN6 0AA
T: 01302 708081

Opus Industrial Services
Ethan House, Royce Avenue, Cowpen Industrial Estate, Billingham, TS23 4BX, UK
T: 01642 371850

Ormmac Coatings Ltd
Newton Chambers Road, Thorncliffe Park Estate, Chapeltown, Sheffield, S35 2PH
T: 0114 246 1237

Peterborough Blasting
Oxney Road Industrial, Oxney Road, Peterborough, Cambs, PE1 5YD
T: 01733 312034

Prize Spraying
Easdale, Carlton Colville, Lowestoft
Suffolk, NR33 8FW
T: 01502 564437

R A Materials & Foundries
Unit 19, Heysinh Business Park, Middleton Road, Heysinh, Lancs, LA3 3PP
T: 01606 723426

Radleigh Metal Coatings
Unit 30, Central Trading Estate, Cable Street, Wolverhampton, WV2 2HX
T: 01902 870606

R.L.P. Painting
Heathfield House, Old Bawtry Road, Finningley, Doncaster, DN9 3DD, UK
T: 01302 772222

Severfield-Reeve
Dalton Airfield Industrial, Dalton, Thirsk, North Yorkshire, YO7 3JN
T: 01845 577896

Southern Contracting
Unit 6, Trident Business Shore Road, NE28 6UE
T: 0191 262 0510

Steel Protection Consultancy Ltd.
7a High Street Mews, High Street, Leighton Buzzard, Beds, LU7 1EA, UK
T: 01525 852500

Sussex Blast Cleaning
Unit 35-37 Station Road, Hailsham, East Sussex, BN27 2ER
T: 01323 849229

TEMA Engineering Ltd
5-6 Curran Road, Cardiff, CF10 5DF, UK
T: 020920 344556

Watson Steel Structures
Lestock Lane, Lostock, Bolton, BL6 4BL
T: 01204 699999

W G Beaumont & Son
Unit L1, Chadwell Heath Industrial, Kemp Road, Dagenham, RM8 1SL
T: 0208 590 8523

visit the new Icorr website
www.icorr.org
**DIARY DATES 2009/10**

**11th October**  
4th Annual Corrosion Management Summit  
Venue: Abu Dhabi, United Arab Emirates  
Contact: www.corrosionmanagementme.com

**27th, 28th & 29th October**  
Surface World with CORREx 2009  
Venue: NEC, Birmingham  
Enquiries & stand bookings:  
Contact Nigel Bean, Sales Director on +44 (0)1442 826826,  
email: nigelbean1@aol.com  
www.surfaceworldshow.com  
For conference enquiries please contact Denise on 01525 851771.

**11th November**  
Back to Basics; The Essentials of Protecting Structural Steel by Protective Coatings and Paints  
One Day Seminar  
Venue: Cedar Court Hotel, Bradford  
Enquiries: Mr. G. Manning, Tel. 07505111369

**12th November**  
London Branch Joint Meeting with JWS  
Venue: Naval Club, 38 Hill Street, London W1  
Start time: 6.15pm

**24th November**  
A Cost Effective Option for Subsea Applications  
For further details contact George Frank,  
Tel: 01224 870 100  Email: george.frank@cangroup.net

**3rd December**  
London Branch Annual Christmas Luncheon  
For further details contact Mike Allen,  
Email: mball@denso.net

**10th December**  
London Branch Annual visit to the Varsity match at Twickenham  
For further details contact Mick Ball,  
Email: graememanning@blueyonder.co.uk

**26th January 2010**  
Life Extension of Existing Assets from a Cathodic Protection Perspective  
For further details contact George Frank,  
Tel: 01224 870 100  Email: george.frank@cangroup.net

**23rd February 2010**  
Material & Chemical Selection & Ongoing Corrosion Management Issues for Bundled Pipeline Systems  
For further details contact George Frank,  
Tel: 01224 870 100  Email: george.frank@cangroup.net

**13th April 2010**  
Fabrication and Installation of a Multi-Platform impressed Current Cathodic Protection System, an Operator’s View  
For further details contact George Frank,  
Tel: 01224 870 100  Email: george.frank@cangroup.net

**9th-12th November**  
Corrosion Control in the Oil and Gas Industry  
Amsterdam: - Further details contact Colin Britton,  
Tel: +44 (0)1480-860943 Email: cbrit79727@aol.com  
or website at www.cfpa.com

**SHORT COURSES**

Details of all Branch activities, dates and venues can be found at www.icorr.org

---

**BRANCH CONTACT DIRECTORY**

**ABERDEEN:**  
Dr. Yee Chin Tang (Vice Chair)  
Tel: 01224 335005 Fax: 01224 593311  
Email: Yee.Chin.Tang@dnv.com

**DUBLIN:**  
Martha Hidalgo (Secretary)  
Tel: +353 01 4027945  
Terry Hinds of Galco Steel (Chairman)  
Tel: 0145 066 71 Fax: 0145 662 13  
Email: info@galcosteel.ie

**NORTH EAST:**  
Brendan Fitzsimons  
Tel: 0191 493 2600

**NORTH WEST:**  
Jane Lomas,  
AMTEC Marine Corrosion  
Tel: 01928 734996  
Email: amteccorrosion@onetel.com

**LONDON:**  
Brian Goldie (Chairman)  
Tel: 0208 644 9977  
Email: BrianPCE@aol.com  
Geoff White (Secretary)  
Tel: 01728 602289  
Email: geoffanddwn23@tiscali.co.uk

**YORKSHIRE:**  
Graeme Manning  
Tel: 01709 324133  
Email: graememanning@blueyonder.co.uk

Young ICorr Chairman:  
Oliver Lewis  
Email: acesol@exchange.shu.ac.uk

**CSD Division:**  
Nick Stevens  
Tel: 0161 3063621

**CED Division:**  
Nick Smart  
Tel: 01635 280385