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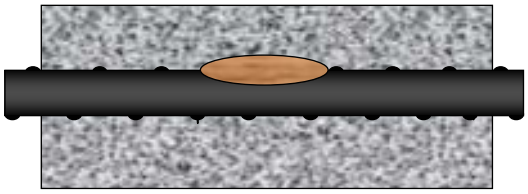


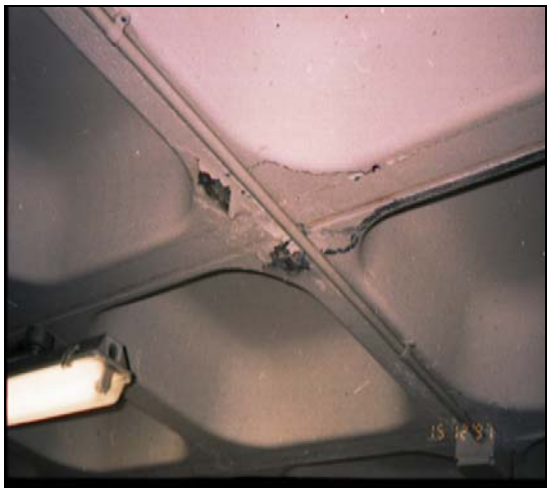
Consulting Corrosion Engineers

Figure 1a Conductive coating on front face

Figure 1b Cosmetic overcoat applied

Case 1 – *Structure and Location* – Office Building Southend-on-Sea, UK
Cause of corrosion – Calcium Chloride ($CaCl_2$) set accelerant cast in during construction
Cathodic Protection Description – Conductive organic solvent based coating with protective/decorative top coat
Parties and dates – UK Government building, Taywood Engineering design and install, 1986
Comments – One of the first full scale cathodic protection installations in the UK

Case 2 – *Structure and location* – Concrete silo, Western Australia
Cause of Corrosion – salt water ingress
Cathodic Protection Description – Conductive organic coating (chlorinated rubber) used for easy maintenance and repair in industrial environment.
Parties and dates – Designed and installed by Taywood Engineering (Australia) 1987.
Comments – one of the first impressed current cathodic protection installations in Australia



Case 3 – *Structure and Location* – Underground car park to Office Building, Birmingham
Cause of Corrosion – deicing salts from vehicle deposits and ramp salting
Cathodic protection description – Conductive coating with cosmetic overcoat
Parties and dates – Specification John Broomfield for Mouchel & Partners (Consultant), detailed design and installation Corrosion Control Services Ltd. installed 1998

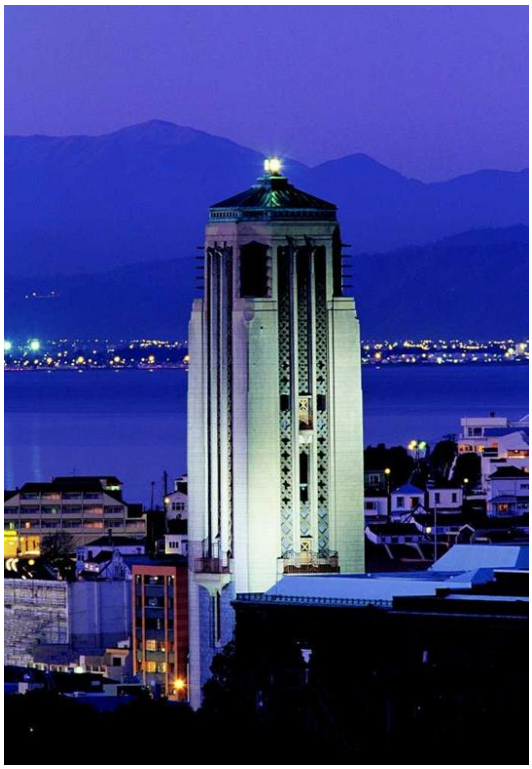
Case 4 – *Structure and Location* – M4 Elevated section cathodic protection trials, London
Cause of Corrosion – deicing salts from winter salting
Cathodic protection description – cathodic protection trials, solvent and water based conductive coating anodes, thermal sprayed zinc and titanium, mixed metal oxide coated titanium mesh and conductive mortar.
Parties and dates – Specification John Broomfield for WSP, (Highways Agency term consultant), detailed design and installation Makers UK, Installed 1996
Comments – severe traffic control problems.

Case 5 – *Structure and location* – Motorway interchange, M6 Cumbria
Cause of Corrosion – Deicing salt leakage through deck joints
Cathodic Protection Description –Arc sprayed zinc anode with probe anodes on cantilevered ends and sheer walls between beams
Parties and dates – Owner, highways agency, consultant AmeyMouchel, outline design and specification John Broomfield, Detailed design and installation Makers UK, installed 2002.
Comments – First major use of arc sprayed zinc system in UK

Case 6 – *Structure and location* – New North Quay Jersey, Channel Islands
Cause of Corrosion – Marine salt
Cathodic Protection Description – Mixed metal oxide coated titanium expanded mesh ribbon
Parties and dates – Consultant Jersey Public Services Department, CP Specification, John Broomfield, Installed Brookes (Northern).
Comments – Applied to columns and beams and some soffit areas

Case 7 – *Structure and location* – Pier Road Multistorey cat park, St Hellier, Jersey
Cause of Corrosion – Sea salt spray
Cathodic Protection Description – Probe anode installations to selected beams and columns
Parties and dates – Consultant Jersey Public Services Department, CP Specification, John Broomfield, Installed Concrete Repairs Ltd, installed 2005
Comments – selective installation with protective coatings elsewhere provides cost effective corrosion

Case 8 – *Structure and location* – 55-56 St. Martin's Lane London
Cause of Corrosion – moisture ingress to steel frame in corners
Cathodic Protection Description –
Mixed metal oxide coated titanium expanded mesh ribbon installed in mortar joints between bricks
Parties and dates – Designed and Broomfield Consultants, Installed by Mannion Construction 2006
Comments – Typical early 20th century steel framed brick clad building system with simple manual control.



Case 9 – *Structure and location* – National War Memorial, Wellington New Zealand
Cause of Corrosion – Sea Salt spray through openings in carillon tower
Cathodic Protection Description – Local application of probe anodes to corroding areas.
Parties and dates – Opus International (Australia), Global Corrosion Consultants Ltd., Broomfield Consultants Installed 1999
Comments – Trial and full scale installation with strict deadline for reopening of tower for ANZAC day celebrations . See "Concrete Building Pathology" Ed. Susan MacDonald, Blackwell Publ. 2003 pp 289-293 for further information.

Case 10 *– Structure and Location –* University of East Anglia, Norwich UK
Cause of Corrosion – Carbonation, deicing salts and cast in $CaCl_2$
Cathodic Protection – Probe anodes installed inside stair and lift tower, Silicate coating to external repairs to moderate appearance
Comments – Grade II historic listed. See Concrete Society Technical Report 64 Appendix A2 for more information.

Case 11 *– Structure and Location* – Amersham Swimming Pool
Cause of Corrosion – Chloride ingress
Cathodic Protection – Specialised Pool anodes to pool sides
Comments – Repairs specified to achieve water tightness and coating specification to corroding steel columns in pool area.

Case 12 *– Structure and Location*- Churchill College Cambridge
Cause of Corrosion – Calcium Chloride in original concrete mix
Cathodic Protection – Probe anodes vertical in structural fascia beams
Comments – Grade II listed building