

WILLIAM MCEWAN

DIP. APP. CHEM; DIP. MET.

CURRICULUM VITAE

CTI CONSULTANTS PTY LTD

ABN 56 003 824 815

JANUARY 09

QUALIFICATIONS:

Diploma of Applied Chemistry, 1964
Diploma of Metallurgy, 1974
Radioisotope Course for Graduates, 1977
Competent Person – Lead Paint Management, 1998
NACE Coating Inspector - Level 1 Certified, 2005

PROFESSIONAL AFFILIATIONS:

- Member, Association of Professional Engineers, Scientists and Managers, Aust.
- Member, Welding Technology Institute of Australia
- Honorary Life Member, Australasian Corrosion Association
- Member, Australian Water and Wastewater Association
- Member, SAA MT/I4/2 "Corrosion Protection of Steel"
- Member, SAA CH 3/4 "Heavy Duty Coatings"
- Member, SAA CH 3/3 "Methods of Tests-Paint"
- Chairman, WTIA Technical Panel "Corrosion"
- Member, WTIA Research Board

EMPLOYMENT:

1996 to Present - Associate, CTI Consultants Pty Ltd (Corrosion & Metallurgy)

1994 to 1996 - Technical Manager, SGS Aust., Tasmania

1986 to 1994 - Scientist-in-Charge, Scientific Services Department, Hydro Electric Commission, Tasmania

1969 to 1986 - Scientific Officer, Metals Technology Section, Hydro Electric Commission, Tasmania

1964 to 1969 - Chemist, Melbourne and Metropolitan Board of Works Research Lab.

COUNTRIES OF WORK EXPERIENCE:

Australia
Singapore
Sri Lanka
New Zealand

PROFESSIONAL EXPERIENCE:

Corrosion Technology

- Laboratory corrosion studies including electrochemical techniques.
- Design and monitoring of cathodic protection installations.
- Investigation of corrosion failures in Australia and overseas.
- AWRA Research Project - "Measurement of Electrochemical Potentials of Welds".
- Member of AWRA panel for Tech Note 13, "Stainless Steels for Corrosive Environments"
- Specification of corrosion control measures for structures, plant and equipment.
- Specialist advice on selection and fabrication of stainless steels.

Metallurgy

- Failure analysis of plant and equipment involving cavitation and impingement attack, stress corrosion, brittle fracture, fatigue, shear and ductile failure investigations.
- AWRA Research Project-"Fracture Properties of Australian Steels".
- Selection of materials for plant and equipment.
- Fitness for purpose studies on old steel structures (including wrought iron road bridges for NSW RTA)

Mechanical and Non-Destructive Testing

- Supervise NATA registered laboratory.
- Recommend testing procedures best suited for particular investigation.
- Provide metallurgical interpretation of test results and make assessment from a fit-for-purpose point of view.

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Welding Technology

- AWRA Research Project - "Effect of Weld Arc Strikes on Pipeline and Structural Steel"
- Member of AWRA panel for Tech Note 16, "Welding Stainless Steel"
- Development and approvals of weld procedures
- Investigations of weld failures
- Research into welding Tempcore reinforcing bars
- Weld repair of cavitation damage on runners and valves

Concrete Technology

- Failure analysis of concrete structures involving AAR, corrosion of reinforcing steel, chemical attack and freeze/thaw deterioration.
- Specification of protective coatings to prevent carbonation, chloride ingress, leaching and chemical attack.
- Design and monitoring of cathodic protection installations for the protection of steel reinforcement.
- Condition assessments of concrete water retaining and load bearing structures in rural and marine environments

Protective Coatings

- Supervision of NATA registered Paint Testing Laboratory.
- Investigations into coating failures on steel and concrete substrates.
- Specification of protective coatings for various substrates under immersion and atmospheric environments.
- Inspection and Quality Surveillance of the application of protective coatings.

Hazardous Paint Management

- Contract administration, removal of red lead paint from road bridges (Tasmanian Dept. of Transport, 1994/95, 1996/97 and 1997/98)
- Environmental surveys for lead paint removal (ambient air monitoring, soil surveys, water sampling)
- Occupational exposure monitoring of lead paint removal activities
- Waste sampling and analysis
- Assessments for lead in paint on engineering structures and public buildings.
- Exposure monitoring of Coal Tar Enamel removal from penstock interior, Energy North (1997)

RECENT CONCRETE PROJECTS:

Investigation into cracking of concrete deck of No. 7 Berth Extension for Burnie Port Authority.

Review of Design and supervision of installation of impressed current cathodic protection to concrete piers of the Arthur and Leven river bridges for the DoT.

Investigation of cracking of concrete silos at Launceston and Devonport for the Tasmanian Grain Elevator Board.

Investigation into corrosion of steel reinforcement in Pump Room floor slab at Goliath Cement complex at Devonport.

Investigation into sea water induced cracking and spalling of concrete chipper pedestal at North Forest Products, Tamar Mill.

Condition assessment of reinforced concrete walls and floor of Pulsator and Filter tanks at Wesley Vale Mill of Australian Paper.

Condition assessment, development of repair procedure and supervision of remedial work of refurbishment of Inveresk railway building in Launceston.

Investigation into cracking and spalling of external reinforced concrete walls of Commonwealth Bank building in Hobart.

Technical review of a Corrosion Investigation Report on the concrete piers and cross heads of the Franklin Rivulet bridge, prepared by Pitt & Sherry for DIERT Tasmania.

Member of a five person International Expert Panel formed by Hydro Tasmania to look into the corrosion of stressing cables in post tensioned concrete dams.

Investigation into cracking and spalling of external reinforced concrete columns on multi storey building at 10 Murray Street, Hobart.

Investigation into corrosion of stressing cables in pre-stressed deck panels and beams underneath Macquarie Wharfs 5 & 6.

Evaluation of Risk to Post Tensioned Cables anchoring Catagunya Dam in Tasmania.

CTI Consultants (Bill McEwan) was part of a five member International Expert Panel set up to review the risk of corrosion to post tensioned cables used to anchor the concrete wall of the Catagunya Dam in Tasmania. The cables were anchored in bed rock below the dam and the Panel had to assess the likelihood of aggressive ground water flowing through the bedrock causing significant corrosion of the cables at any voids in the protective gout.

The investigation involved collection and analysis of ground water and the use of LPR corrosion evaluation on selected cables.

Corrosion of Stressing Cables in Pre Stressed Beams Underneath MacQuarie Wharf in Hobart

CTI Consultants (Bill McEwan) conducted an investigation into the corrosion of pre stressed cables on beams and floor slabs supporting Macquarie Wharf 5 & 6 for the Hobart Marine Board. The investigation involved chloride ingress analysis, depth of cover and depth of carbonation testing.

PUBLICATIONS:

Bowler, J.C.S., McEwan, W.J.
"Corrosion in the Hydro Electric Commission",
Australian Corrosion Engineering 12(9),
September 1970.

Bowler, J.C.S., McEwan, W.J.
"Effects of Arc Strikes on Structural and Pipeline Steels", *Australian Welding Research*, Vol 4,
1975.

McEwan, W.J., Bowler, J.C.S.
"Fracture Extension Resistance of Several Steels of Australian Origin", *Australian Welding Research*, Vol 6, 1979.

Davies, D., McEwan, W.J.
"The Measurement of Electrochemical Potentials on Manual Arc and Electric Resistance Weld",
Australian Welding Research, Vol 8, 1980.

McEwan, W.J.
"Materials and Corrosion", *1991 Mechanical Residential Seminar in Power Generation*, 27th
Jan. to 15th Feb. 1991.

McEwan, W.J.
"Material Selection and Use in the Marine Environment", *Australasian Corrosion Association Seminar*, June 1991.

McEwan, W.J.
"Protective Coatings for Steel and Concrete in Water and Sewage Installations", *AWWA Seminar*, March 1993

McEwan, W.J.
"Corrosion in Domestic and Industrial Buildings",
Master Plumbers Association Seminar, March 1994.

McEwan, W.J.
"Preparation, Testing and Assessment of Weld Test Plates", *WTIA Seminar*, April 1997.

McEwan W. J.
"Corrosion of Metals", *ACA Seminar*, June 2003

McEwan W. J.
"Deterioration of Concrete Structures", *ACA Seminar*, June 2003

McEwan W. J.
"Deterioration of Materials in The Hydro Power Generating Industries", *ESAA Seminar*,
November 2003

CTI Consultants Pty Ltd

For more information, contact:

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