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The ACA New Zealand Branch wishes all Members  
a safe and happy Christmas break in 2024.



We look forward to catching up  
with everyone in 2025!



The first commercially available Christmas card was commissioned by Sir Henry Cole and designed by John Callcott Horsley in London, 1843.

ACANZ would like to gratefully acknowledge this month's sponsor...



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## ACA CORROSION & PREVENTION 24 CONFERENCE IN CAIRNS

### Navigating Corrosion Challenges in Marine and Coastal Environments

The ACA annual conference was held this year at the Cairns Convention Centre in the far north of Queensland from 10-14 November. There were over 400 registrants attending the four days that the event ran, and more than 80 trade exhibition booths. The program comprised three days of paper presentations divided into three streams. There were also ten Forums held on special interest topics. As has become the norm, on Thursday 21st there was a specialised Applicators Day run by a group of trade exhibitors. .

Running throughout the conference during the refreshment breaks were a series of short presentations by trade exhibitors and other speakers at the “Learning Centre” in the Exhibition Hall – this event proved to be very popular. The conference was attended by a group of NZ Branch members, including the NZ Branch President Grant Chamberlain and the incoming Australasian President Raed El Sarraf. During the three days of conference a small group of partners were conducted on tours around the sights of Cairns and the local region, including the famous Sky Train gondola ride through a tropical rain forest. .

Following the Welcome Reception on Sunday night the conference was officially opened on Monday by ACA CEO Maree Tetlow, followed by the starting of the traditional “Ed Potter clock”. There were two Plenary Sessions each day that covered many topical corrosion

and durability issues currently facing marine asset owners. The PF Thompson Memorial Lecture was presented this year by Professor Nick Burbilis with his paper on “Some microstructural influences upon localised corrosion”.

The Annual Awards Dinner held at the Cairns Convention Centre on the Tuesday night was a real gala affair. There were many awards presented to worthy ACA members during the evening and an auction of various items was held to raise funds for the ACA Foundation. The AC Kennett Award sponsored by the ACA NZ Branch (more below) went to Dr Ian MacLeod of the WA Branch. Willie Mandeno received an ACA Recognition of Service Award. The Les Boulton Best Case Study Award went to Blane McGuinness and Oliver Gasior.

Everyone had a great time at this celebration of those ACA members who contribute so much time and effort voluntarily to the ACA.

The Farewell Function on Wednesday evening was a final gathering of delegates who socialised and conversed about the many conference activities over the previous days. As always the Cairns Conference was a great opportunity for networking, learning, and socialising with fellow ACA members. The 2025 ACA Conference is planned to be held in Melbourne with the theme of “Materials Protection for the Future”.

### Dr Ian MacLeod wins 2024 Arthur C Kennett Award

At the Corrosion & Prevention 24 Awards Dinner in Cairns, Dr Ian D MacLeod received this award that is sponsored by the ACA NZ Branch for the best conference paper dealing with an aspect of non-metallic degradation or corrosion. The award carries a prize of A\$1000.

The winning paper was titled ‘Corrosion of Rock Art in Western Australia: Alteration of Pigments and Weathering of Engraved Rocks’ and was presented last year to Corrosion & Prevention 23 in Perth.

### 2024 ACA Foundation Scholarship winner announced at CP24

For three years, Phoenix Solutions has sponsored a New Zealand resident to an ACA training course or attendance at the ACA’s annual conference.

This year the scholarship was awarded to Lakein Cottam, a CP technician with First Gas in New Plymouth. The \$NZ 2,000 scholarship was awarded to her at CP24 in Cairns.

Lakein will provide a brief report of her conference experience to the ACA Foundation which administers the scholarship, which will be included in ‘Corrosion & Materials’ magazine.





# CORROSION & PREVENTION CAIRNS 2024

**Above:** ACA CEO Maree Tetlow opens the CP24 conference

**Centre top:** The Ed Potter clock is started at CP24

**Top right:** Prof Nick Birbilis presents the PF Thompson Memorial Lecture

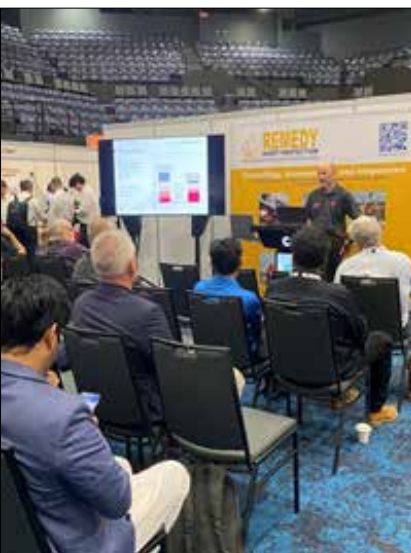
**Right:** Attendees at the trade exhibition

**Below:** A session at The ACA Learning Centre

**Below (right):** Lakein Cottam (First Gas, New Plymouth) with ACANZ President Grant Chamberlain (CPNZ)

**Below centre right:** Dr Ian MacLeod, WA Branch, winner of the AC Kennett Award

**Below, Centre left:** Winners of the Recognition of Service Awards included our own Willie Mandeno



Q  
&  
A  
**CORNER**



Older ACA NZ members have probably seen a number of situations that may never have made it to a textbook.

If you have a question you'd like clarification on, email it to the Editor at [lesboultonrust@gmail.com](mailto:lesboultonrust@gmail.com). We'll pose it to our panel of experts who will answer it in another Bulletin, so everyone can improve their knowledge.

**Q:**  
***What's involved in Corrosion Monitoring of plant?***

**& A:**

**Corrosion rates limit the operational life of plants.**

Corrosion monitoring involves the comprehensive monitoring of the critical components and materials used in industrial plant for any signs of corrosion. It helps to identify the rate and location of any corrosion, as well as underlying causes. Corrosion monitoring also offers advantages in terms of safety management and preventative maintenance.

Corrosion monitoring includes control, measurement and prevention and covers a wide range of technical methods. This may include achieving anodic and cathodic protection, selection of alternative materials, dosing of chemicals, as well as the application of external and internal coatings. In short, corrosion monitoring employs various techniques to identify the condition of the corrosive environment as well as the metal loss rate. It is a quantitative technique that also evaluates corrosion control effectiveness which allows for the optimisation of corrosion control methods.

Based on the data yielded by corrosion monitoring, industries can make informed decisions not only of an object's remaining life, but also on life extension techniques and cost-effective measures to solve corrosion problems.

Measuring corrosion rates as well as the rate of a corrosion remedy offers the most affordable plant operation, while cutting down the life cycle expenses related to operation.

Advantages of corrosion monitoring include:

- It provides an early warning when a damaging process exists which would result in failure caused by corrosion.
- It can diagnose a specific corrosion problem and also identify the causes and parameters for controlling it, like flow rate, temperature and pressure.
- It evaluates the efficiency of certain corrosion control methods like the use of chemical inhibition.
- It provides management information according to a particular plant's present condition and its maintenance requirements.

A wide range of corrosion monitoring techniques is available and just a few of the most common methods employed include:

- Electrical resistance (ER)
- Corrosion coupons
- Linear polarisation resistance (LPR)
- Ultrasonics



*Non-intrusive ultrasonic measurement of corrosion occurring inside a pipeline*

Acknowledgment : [www.corrosionpedia.com](http://www.corrosionpedia.com)



## WELLINGTON TECHNICAL MEETING 5 November 2024

Quest Integrity NZL Ltd (part of Baker Hughes) hosted a Technical Meeting on 5 November 2024 at their Trentham premises in Upper Hutt. This was attended by eighteen ACA and SCANZ members with another fourteen watching it online.

The speaker was Dr Soroor Ghaziof who is their Service Line Manager for Materials and Corrosion, and her presentation was entitled 'Screening of an Environmentally Friendly Corrosion Inhibitor for Mildly Acidic Geothermal Fluid Applications'.

Many acidic geothermal wells with low-carbon steel casing materials benefit from the application of pH control chemicals such as NaOH. However, at high temperatures this can result in rapid scaling by anhydrite. In addition, oxidation of iron in acid wells can lead to a reductive deposition of heavy metals and localised galvanic corrosion.

This constraint has discouraged the use of NaOH

for corrosion control in some geothermal wells. An alternative scenario using corrosion inhibitors, with or without some intermediate pH adjustment has been proposed but has found resistance from users concerned with the environmental impact of traditional oil and gas field inhibitors.

The presentation provided laboratory screening results for an environmentally friendly candidate corrosion inhibitor for acidic geothermal fluids in Japan. The results provide encouragement for use of this alternative solution for production of geothermal wells cased in carbon and low alloy steels that encounter mildly acidic fluids after completion.

Before the meeting, the attendees enjoyed nibbles and refreshments, and the opportunity to network. After the meeting the group were given a tour of Quest's laboratory facilities and test equipment including a micro-hardness tester and a new desktop SEM.



## WELLINGTON'S WATER PIPE WOES

In early November, Wellington Water announced that its new steel arch pipe bridge has been officially opened and replaces the old flume bridge, thus safeguarding the drinking water supply to the region because it's "engineered for seismic resilience." It will supply up to 140 million litres per day of untreated water to the Te Mārua treatment plant, which on average supplies about half of the region's daily water demand.

However, getting treated water to and from households remains an ongoing headache.

A 2023 report commissioned by Wellington Water showed that a quarter of the drinking water pipes are in a 'poor' or 'very poor' condition, with 18 percent in a 'very poor' condition.

It also revealed that 44 percent of the capital's wastewater pipes are in a 'poor' or 'very poor' state.

At the current rate of renewal it will take Wellington City 6,388 years to replace its water pipe network. The statistic is included in a recent report from an advisory group of regional mayors. Many of the underground potable water pipes are made from cast iron and

asbestos cement which are over 100 years old, and suffering extensive internal corrosion.

The report said that 21 percent of water pipes across the region were in poor condition and 1,300km of concrete asbestos pipes could be at high risk of failing. They are susceptible to collapse because over time, water flow has washed out most of the asbestos fibres which provide the concrete pipe walls with much of their strength.

The situation has come about due to decades of under-investment by Council, and the report states that if it was not addressed as a high priority there was a risk of more serious water network failure. The ongoing leaks and breaks are also damaging to the environment, as it means that water treatment plants are not running efficiently and pose a significant risk to the environment.

"In the next 10 years, we are spending \$1.8 billion on the water infrastructure," Wellington Councillor Nureddin Abdurahman was quoted as saying in late October. "I know that is not enough, but that is how much we're spending."

Source: N. Boyack, *The Post*, and RNZ



Images © *The Post* and *Newshub*



## ACANZ WELLINGTON CHRISTMAS LUNCH

ACANZ members, families and friends are invited to a Christmas lunch at Car Inc. Cafe and Museum

**Date:** Friday, 6 December 2024

**Time:** 1.00pm

**Venue:** Car Inc Cafe,  
6 George Daniels Drive, Trentham,  
UPPER HUTT



**RSVP:** With numbers attending, to  
Trish Shaw on 021 665 884 or  
trishshw3@gmail.com  
by 2pm Wed 4 December

We also have the opportunity to visit their car museum at a reduced cost of \$15 per person.

*An ACANZ subsidy will likely be available*

## ACA NZ BRANCH COMMITTEE & OFFICERS 2024-25

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Treasurer:	Willie Mandeno	Technical:	Raed El Sarraf
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