

PROFILE

An Incorporated Engineer (IEng) through The Engineering Council, UK, and a Registered Engineering Associate (REA) through the Engineering Associates Registration Board of New Zealand, with extensive experience in electrical and mechanical failure analysis, disaster recovery, equipment restoration, electrical engineering, electronics design, software development, project management, and operations management. He has published numerous papers and articles for insurance journals and various associations.

He has more than 35 years' experience, including 14 years' experience in telecommunications, digital hardware and software design engineering for telemetry and SCADA control systems for the power and energy industries, over 15 years' experience in senior management and director roles in technical equipment damage assessment and the restoration industry, and more than 6 years of forensic engineering experience across a wide range of industries, throughout the Asia-Pacific region.

Bruce is headquartered in our Singapore office.

Key strengths include the following:

- ▶ Electrical & mechanical failure analysis
 - ▶ Power Transmission & Distribution Equipment
 - ▶ Manufacturing Equipment
 - ▶ Test and Laboratory Equipment
 - ▶ Semiconductor Manufacture
 - ▶ Radio / TV / Broadcast Systems
 - ▶ Telecommunications Systems
 - ▶ Automation and control
 - ▶ HVAC / Building Automation
 - ▶ Computers / Hardware / Software
- ▶ *Industries:* energy and power, telecommunications, broadcast, semiconductor, hard disk drive, electronics manufacture, general manufacturing, information systems

EDUCATION

Graduate Programme in General Management, 1990
University of Auckland, New Zealand

NZ Certificate in Computer Technology, 1982
Auckland University of Technology, New Zealand

NZ Certificate in Engineering (Electrical) Int., 1979
Manukau Institute of Technology, New Zealand

NZ Certificate in Engineering (Telecommunications) Int., 1979
Manukau Institute of Technology, New Zealand

OFFICE

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WEBSITE

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LICENSES / ACCREDITATIONS

Incorporated Engineer (IEng):

- ▶ The Engineering Council, United Kingdom

Registered Engineering Associate (REA):

- ▶ Engineering Associates Registration Board, New Zealand

PROFESSIONAL DEVELOPMENT

- ▶ Combustible Dust Explosions
- ▶ Fire Arc Mapping
- ▶ Semiconductor Processing Technology
- ▶ Labour Relations Practices in Singapore
- ▶ Customer Satisfaction Measurement
- ▶ Computer & Software Contracts
- ▶ Selling Skills
- ▶ Engineering Contract Law
- ▶ Effective Oral Communications Skills
- ▶ Negotiating Contracts Management
- ▶ Project Management

PROFESSIONAL AFFILIATIONS

- ▶ Institution of Engineering & Technology
- ▶ Risk & Insurance Management Association of Singapore (former committee member)
- ▶ Insurance Law Association of Singapore (committee member)
- ▶ National Association of Fire Investigators (NAFI)

PROFESSIONAL BACKGROUND

January 2010 – Present: Envista Forensics, formerly PT&C|LWG – Singapore
Managing Director

October 1994 – December 2009: BELFOR (Asia) Pte Ltd
Technical Director, Regional Director Japan, Regional Consulting Director, General Manager

August 1988 – October 1994: TeleConsultants (NZ) Ltd
Operations Manager, Senior Consultant

January 1980 – July 1988: GEC Plessey Telecommunications (GPT) NZ Ltd
Project Manager, Development Engineer, Service Engineer

PUBLICATIONS / PRESENTATIONS

- ▶ Spoliation of Evidence, Insurance Law Association of Singapore.
- ▶ The Role of the Technical Expert.
- ▶ The Semiconductor Industry Energy, Power and Distribution.
- ▶ The Application of Expert Engineering Knowledge to Complex Losses.
- ▶ Semiconductor & Pharmaceutical Cleanrooms – Contamination, Damage & Reinstatement.
- ▶ Minimising Business Interruption Following Natural Catastrophes.
- ▶ Petrochemical Industry Claims – Understanding the Issues.
- ▶ CAT Events: Key issues for assessing property damage.
- ▶ Crane failure claims: technical & regulatory issues.
- ▶ Managing water damaged electrical equipment claims.
- ▶ Food Processing Facility Losses: Special Considerations.
- ▶ Transformer Claims: What every Adjuster & Claims Manager should know.
- ▶ The Energy Industry: Overview and typical losses.
- ▶ The semiconductor Industry: Unique Claim Characteristics.
- ▶ After the storm: Mitigating losses in High-technology Equipment Following a Flood.
- ▶ Emergency Management of Industrial Incidents: An Asian Perspective.
- ▶ Safe Decommissioning Requires Teamwork.
- ▶ Strategies for Managing Property Claims in Asia - The Role of a Disaster Recovery Specialist, Reducing Claim Amounts.
- ▶ Major Fab contamination incidents, and the “3 R’s”: Readiness, Response and Recovery.
- ▶ Incident Recovery: Some Old Lessons Re-Learned During the 1999 Taiwan Earthquake.
- ▶ How to Recover from a Cleanroom Disaster Crisis Management – When there is no time for traditional PM techniques?
- ▶ Technical Equipment Restoration/Understanding Computer Disaster Recovery.
- ▶ The Japan Earthquake.
- ▶ Strategies for Managing Commercial Equipment Losses.
- ▶ Investigating Lightning Damage Claims.
- ▶ Safe Decommissioning of Semiconductor Fabs.
- ▶ Recovery from Cleanroom Contamination Incidents.
- ▶ Equipment Restoration.
- ▶ Guidelines for Successful Geographic Information System Projects.
- ▶ New Technology Opportunities for Electricity Supply Authorities.

REPRESENTATIVE PROJECT EXPERIENCE

Forensic Investigations (representative cases)

- ▶ Back-energisation of a 400MW generator, Singapore
- ▶ 500MW transformer ferroresonance incident, Singapore
- ▶ Mobile crane collapse (multiple cases), Singapore
- ▶ Subsea pipeline failure, Indonesia
- ▶ 69kV GIS circuit breaker failure, Taiwan
- ▶ Vessel diesel engine failure, Singapore
- ▶ High voltage cable failure, Thailand
- ▶ Bus duct failure (multiple cases), Singapore
- ▶ Generator failure (multiple cases), Maldives
- ▶ Distribution transformer failure (multiple cases, cast resin & oil filled), Singapore
- ▶ Substation fire, Indonesia

- ▶ Deep water pile driving hammer failure, Malaysia
- ▶ Air conditioning chiller system failure (multiple cases), Singapore
- ▶ Factory fire, Indonesia
- ▶ Baghouse explosion, Thailand
- ▶ Exploding traction battery cells, Singapore
- ▶ Collapsed gantry crane at a coal mine, Indonesia
- ▶ Baggage vehicle fire at Changi airport, Singapore
- ▶ Collapsed water storage tank, Singapore
- ▶ Collapsed warehouse racking system, Indonesia

Damage Assessment & Reinstatement Options Analysis (representative cases)

- ▶ Gas contamination of hard disc drive media manufacturer, Singapore
- ▶ Petrochemical plant mechanical failure, Indonesia
- ▶ Jack up oil rig partial submersion, Singapore
- ▶ 12.5kV generator circuit breaker, Bangladesh
- ▶ Flood water damaged electronics manufacturing facility, Thailand (multiple cases after 2011 floods)
- ▶ Cool store fire, Korea
- ▶ Lift (elevator) damage (multiple cases), Singapore, Vietnam
- ▶ Collapsed fly ash hoppers, coal-fired power station, Hong Kong
- ▶ Electrical component manufacturer tsunami loss, Japan
- ▶ Refined minerals manufacturer tsunami loss, Japan
- ▶ Petrochemical plant fire loss, Taiwan
- ▶ Steel mill flooding, Taiwan
- ▶ Plastic film extrusion plant fire, Taiwan
- ▶ Semiconductor wafer fabrication ('Wafer Fab') facility fire, Taiwan
- ▶ LNG plant substation fire, Malaysia
- ▶ 1500MW hydro power plant powerhouse flooding, India
- ▶ 8" semiconductor wafer Fab fire, Taiwan
- ▶ Car parts manufacture fire, China
- ▶ "Diamond Princess" (115,800 tonnes) cruise liner fire, Japan
- ▶ Silicon ingot factory fire, Taiwan
- ▶ Large HF spill (1000 litres), semiconductor wafer Fab, USA
- ▶ "921" earthquake – multiple semiconductor facility losses, Taiwan
- ▶ Semiconductor assembly & test facility fire, Thailand
- ▶ Laboratory (semiconductor industry support) fire, Singapore
- ▶ HF radio station fire (4 x 500 kW transmitters), Sri Lanka
- ▶ 2001 Jakarta floods, Indonesia
- ▶ Paper making machine fire damage, Malaysia
- ▶ Semiconductor Cleanroom fire, Singapore