

**Peter Grant Airey** AM HonFIEAust CPEng APEC Engineer IntPE (Aust)  
**Managing Director** Airey Taylor Consulting, Scientists and Engineers



| <u>Qualifications</u>                                                                                                                                                                           | <u>Professional Memberships</u>                                                                                                                                                                                                                                    |
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| Bachelor of Engineering (University of Western Australia 1960)<br>James and Rose Coombe Scholar<br>Commonwealth Scholar<br>Graduate Diploma in Administration (WA Institute of Technology 1975) | Honorary Fellow, Engineers Australia<br>Chartered Professional Engineer<br>Member of Asia Pacific Member Cooperation<br>International Professional Engineer<br>Registered Professional Engineer of Queensland (RPEQ)<br>Registered Building Practitioner, Victoria |

### **Selected Project Highlights**

#### **QV.1 Tower, Perth (1993)**

42 Storey modernist office tower won a plethora of National Awards (and recently the 2019 Richard Roach Jewell Award for Enduring Architecture). Peter's pile-assisted raft design for the foundation system overcame problematic soils and has become a case study for University Engineering Students.

#### **State Theatre Centre of WA (2011)**

Peter provided cutting edge Structural Engineering for this development, which received Best National Project in the 2011 Engineers Australia Awards. The project put world class theatre spaces into up to 8 metres of groundwater with significant access, Heritage restrictions and acidified soils; creating a building rated 100 years to first maintenance and an iconic building for the State of Western Australia.

#### **Cockburn Central Stage 3 (2015)**

2015 National Master Builders Association Best Commercial Development under \$100 million and Concrete Institute of Australia (WA) Best Infrastructure Project winner, Peter's design enabled a tendered price of \$79.7 million ahead of an anticipated project cost of \$106 million due top-down construction design using his unique and patented Piles to Pillars system, that delivered 20,000m<sup>2</sup> of commercial space and parking 4 months ahead of schedule.

#### **Church House (2017)**

Winner of the 2017 National Master Builders Association of Australia's Best Commercial/Industrial Building (\$20-\$50 million) in Pier Street used top-down construction and Peter's suite of substructure innovations to put 2 and a half levels of substructure hard against two Heritage buildings and in 3.5 metres of groundwater.

#### **Crown Towers (2017)**

Peter provided 80,000m<sup>2</sup> of post-tensioned concrete floor design on an aggressive schedule for all levels of this 6 star, \$570M Hotel project celebrated as Best Project of 2017 in the Master Builders Association/Bankwest Excellence in Construction Awards (currently Perth's largest Hotel).

#### **Guildford Hotel (2018)**

This landmark development restored the community heart of Guildford Hotel following fire and flood damage and integrated superb modern functionality while championing Heritage aspects. Peter supplied Structural Engineering and Materials Science services for this complex project that won the National Building Designer's Award for best Heritage design.

## Innovator – a career of Excellence

Peter has been a Fellow of Engineers Australia for over 42 years, following his completion of the structural design of the Perth Entertainment Centre, recognised in the Guinness Book of Records as the biggest auditorium in the world of that type at that time. In 2018, Engineers Australia appointed Peter an Honorary Fellow. In 2022, Peter was appointed Member of the Order of Australia (AM) for services to Engineering and the professional community.

In 1971 he launched Airey Taylor Consulting Engineers and Scientists (formerly Airey Ryan and Hill among other incarnations). The firm has contributed significantly to the built environment of Western Australia with over 17,000 completed structural commissions; with national and international projects also achieving widespread acclaim. Alongside long-term partner John Taylor since 1980, Airey Taylor Consulting has designed over 40 State and National Award-winning projects since 2000 alone.

Peter has a career long passion in improving the built environment and engineering standards. Prior to Cyclone Tracy, he insisted structures he designed for Darwin be created for cyclonic wind conditions. Following the devastation Peter's buildings remained standing and were used as post-disaster refuge. Whilst in Darwin for remediation engineering of the city, Peter initiated what eventually became a new industry standard of cement stabilised rammed earth wall buildings – a world first prototype building in Darwin with walls created with post-tensioned rods to ensure they remained in compression at all times. It was also used in a modified form for the cyclone resistant Carnarvon Hospital – designed in the following year – and the system became an industry.

Peter received a National Certificate of Recognition in the 1998 Engineering Australia Awards for a system for permanent restoration of damaged buildings on clay-based soils. In October 2005, Peter was awarded a Patent for the proactive use of this system for new buildings named "ClayLock." In January 2013, he was granted a Patent for the use of layering system for permanent repair of cracked walls. These systems have been used proactively on dozens of new buildings and to remediate nearly 100 buildings in WA, including Heritage and large-scale institutional buildings. Peter is a listed Heritage Engineering expert with the WA government

Peter's evolution of top-down construction design enables simultaneous construction of substructure and superstructure of projects, largely removing basement construction from the critical path and enabling great savings of time and money from material, capital and holding costs. These techniques enhance access and neighbourhood integration and have been the deciding factor in making several projects viable.

Peter was nominated by the WA chapter of Engineers Australia as Technical reviewer of the redraft of Australian Standard AS4678 (Earth Retaining Structures) advising the panel for WG4 (Embedded Walls). He has already had an impact on the revision of the Code to feature world leading parameters on frictional resistance, diaphragm wall use, and safety standards for load bearing.

He is an acknowledged Expert Witness for the WA Legal community and has provided specialist Forensic Engineering testimony for clients with buildings damaged due to inadequate design or construction in dozens of cases. His neutrality and attention to detail have been lauded by Judges and made him sought after for contentious cases.

Peter is passionate about education and has presented dozens of papers, presentations and conferences, most recently to Engineers Australia nationally on the topic of **"A decade of design and practice using GFRP (glass fibre reinforced polymers: current and future trends)"** on 19 August 2021 to 427 registered attendants. He presented to the biennial Concrete Institute of Australia national conference as opening address of the Infrastructure stream **"Specialist to Detail : The Industry Gap in Substructure Design"** on 5 September 2021.

He leads a completely Western Australian Engineering team and provides total Quality Assurance/Control without outsourcing or compromise. He has mentored dozens of young Engineers in the formative stages of their career. He continues to serve the Engineering community as a Consultant on the WA Cyclone Seroja taskforce and presented an Engineers Australia National livestream on Cyclone Readiness in 2021.