

BPEQ 90th ANNIVERSARY CELEBRATING RPEQS AND THEIR ACHIEVEMENTS

Pictured: Duncan Gilmore



In 2020, BPEQ turns 90. To celebrate this milestone BPEQ is acknowledging the achievements, projects, innovations, discoveries and stories of RPEQs past and present.

The public can appreciate engineering skill and expertise in the built environment but what about those inconspicuous creations and developments that contribute to the way we live? For instance, emissions reduction technology and renewable energy projects pioneered by Australian and Queensland engineers.

With World Creativity and Innovation Day being celebrated in April it is the perfect opportunity to look at the creativity and innovation of RPEQ Duncan B Gilmore (Mechanical, registered since 1980), the Managing Director and President of Gilmore Engineers Pty Ltd, e3k and the Bright Devices Group Pty Ltd.

Duncan graduated from The University of Queensland in 1972 with a First Class Honours degree in Mechanical Engineering and received The University Medal. He went on to complete a Master of Engineering Science degree in 1975, and a PhD degree in 1977.

In 1977 he joined the Queensland Electricity Commission and later took up the position of project engineer on a world-first prototype fuel and emission-saving hybrid gasoline-electric vehicle transmission in 1979. In 1982 the federally funded vehicle was demonstrated at a World Congress held in Melbourne. Many novel features, such as brake energy regeneration, power flow control via a computer, and a rotary computerised mode controller (similar to iDrive today) were demonstrated. Today, many vehicles incorporate similar features first revealed in Australia in 1982, including hybrid drive.



The hybrid technology was incorporated into a Ford Falcon – a common sight in many Australian garages. Photo courtesy: Duncan Gilmore.

In 1988, Duncan worked at the Robotics Division in the Mechanical Engineering Laboratory, Ministry of International Trade and Industry, Tsukuba, Japan; and as a visiting professor in the Systems and Design Division, Mechanical Engineering Department, the Massachusetts Institute of Technology, Boston, USA.

“...world-first prototype fuel and emission-saving hybrid gasoline-electric vehicle transmission in 1979.”

Duncan was a Senior Lecturer in Mechanical Engineering at The University of Queensland from 1986 to 1993. He also aspired to the office Vice President of Engineers Australia.

Duncan left the University in 1993 to form Gilmore Engineers Pty Ltd, a leading edge consultancy specialising in research and development and failure analysis. He expanded his company with the introduction of e3k, a research and development arm in 2001.

After being a Queensland finalist in 2010, e3k went on to receive four Engineering Excellence Awards from Engineers Australia including being named an overall National Winner in 2012, for the engineering design and testing of the SeaUrchin Marine Power Generator.

“...e3k went on to receive four Engineering Excellence Awards from Engineers Australia...”

Notably, in February 2014, Atlantis Resources Limited, a company grown in Queensland and New South Wales from the technology developed by e3k in the years 2001 to 2004, was publically listed on the London Stock Exchange. The world-patented technology, part-owned by investment bank Morgan Stanley since 2007, relates to underwater tidal renewable power generation turbines. This project represented another important early contribution by Australia to the introduction of renewable electric power generation. The company is currently installing 269 turbines on the seabed of the Pentland Firth, north of Scotland, thereby contributing to the Country becoming the first green data storage centre.



An underwater tidal renewable power generation turbine developed e3k. Photo courtesy: Duncan Gilmore.

Further, in 2013, the medical device named ‘Agilitas’ which was wholly developed by e3k over five years, was launched for commercial sale by Bright Devices Pty Ltd. It is a smart visual cueing device designed to assist persons suffering primarily from ‘Freeze of Gait’ (**FOG**) associated with Parkinson’s Disease. An Australian Patent was awarded in 2012 and a US Patent in 2019.

Duncan became a RPEQ in 1980, and Gilmore Engineers Pty Ltd became a Registered Professional Engineering company of Queensland in 1993.

This year is a celebration of the achievements, projects, innovations, discoveries and stories of RPEQs past and present. BPEQ encourages RPEQs to share their thoughts –

- What are some of Queensland’s great engineering feats?
- Who was the RPEQ/s who helped deliver the project?
- Are there unsung heroes in the profession?

To have your say contact BPEQ at admin@bpeq.qld.gov.au.