

# Joinlox bonds with e3k

**D**ean Cameron beat some very strong competition to win the 2008 ABC *The New Inventors* Invention of the Year with his Joinlox technology (see *Business Acumen* issue 54).

Joinlox is a good example of the collaborative engineering work of another leading Queensland company, e3k, the specialist innovation arm of Gilmore Engineers based at Brisbane Technology Park.

Joinlox is a rapid, reliable and cost-effective method of joining and locking assemblies together. It is a simple alternative to traditional joining methods such as nuts, bolts, screws, rivets, welding or gluing.

From electrical boxes and crates to huge pipes and bridges, Joinlox brings versatile joining solutions that surprise seasoned designers.

The first application for Joinlox was in creating segmented tanks for Mr Cameron's other award-winning invention, the Biolytix wastewater treatment system, which could be stacked into a compact form for shipping, and then assembled quickly and easily on site.

Engineering consultancy e3k performed calculations and Finite Element Analysis (FEA) simulations on the proposed design under various loading scenarios, including internal and external pressures, and lifting loads, to examine material stress.

This specialised computer analysis performed by e3k helped optimise the



Dean Cameron with his winning Joinlox key on the ABC's *The New Inventors* – the ingenious bonding system assisted by another Queensland company, e3k.

Joinlox shape and size to meet the requirements of *Australian/New Zealand Standard AS/NZS 1546.1:1998* 'On-site domestic wastewater treatment units'.

### BRAINS TRUST UTILISED

Ray Hope, vice president of e3k, said, "Dean invited us to a meeting of industry experts to discuss and help improve his innovative idea. Many of the experts were sceptical about its chances of creating a water tight seal, but Dean was confident and e3k enjoyed tackling a challenging problem to create a solution that worked."

Mr Cameron said, "The Joinlox technology was inspired by nature and in particular the ocean clam. Clams and other shellfish wedge onto

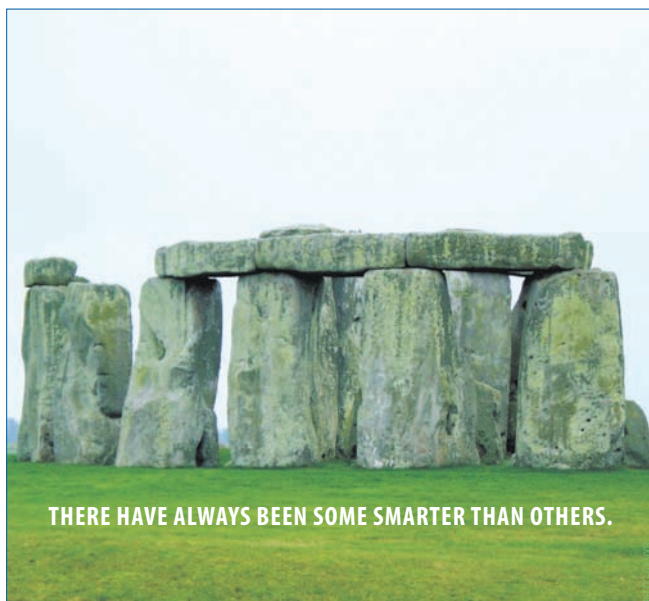
rocks with incredible force, locking many tiny 'hooks' on the end of byssus threads under small overhangs and crevices. This locking converts the shear forces into tensile and flexural forces. The Joinlox castellations copy these hooks."

Duncan Gilmore, director and president of e3k said, "The Joinlox technology is innovative and has significant advantages over more conventional joining methods.

"Immediate commercial potential will be with plastic and fibre reinforced plastic components particularly with those requiring repeated joining, disassembly and rejoining."

[www.e3k.com](http://www.e3k.com) ■

[www.joinlox.com](http://www.joinlox.com) ■



### e3k – TURNING YOUR IDEAS INTO REALITY.

e3k specialises in engineering design, research, and development to ensure that your system or product can be introduced successfully into a market.

Our services include:

- Intellectual property development - assisting you to retain your IP.
- Prototype design and commercialisation.
- Comprehensive technical reviews and advice for business planning, marketing and R&D finance.
- Advanced machine design and development.
- Advanced Engineering analysis including computer simulation of systems.
- Computational Fluid Dynamics, Finite Element Stress Analysis, Rapid Prototyping.

With over 30 years of engineering R&D experience, e3k will turn your ideas into reality.

► IDEAS ► INNOVATION ► ANALYSIS ► PROTOTYPE ► COMMERCIALISATION



DR DUNCAN GILMORE



engineering3000  
new product design & development

DIVISION OF GILMORE ENGINEERS PTY LTD - R&D | [www.e3k.com](http://www.e3k.com) | [innovation@e3k.com](mailto:innovation@e3k.com) | T 61 7 3853 5250