

ROADS REVIEW

WITH A FOCUS ON INNOVATIONS, WE ASKED THE ROADS' INDUSTRY KEY PLAYERS: WHAT ARE SOME INNOVATIVE CONSTRUCTION PRODUCTS/TECHNIQUES THAT ARE CHANGING THE INDUSTRY?



DAVID HALLETT, CEO, IPWEA VICTORIA

Civil works contractors and material suppliers are leading the way when it comes to innovation in road construction. Research and development projects around the country and across a range of new materials – including crumb rubber, glass and hard/soft plastics – are addressing an increasingly urgent need to deliver more environmentally sustainable road infrastructure. Sector agencies are also playing their part by releasing updated specifications to provide state and local governments with the confidence to procure more sustainable products that foster the circular economy and support their ESG [Environmental, Social, and Governance] commitments. IPWEA congratulates everyone doing great work in this vital area and encourages more!



SARAH BACHMANN, CHIEF EXECUTIVE OFFICER, NATIONAL PRECAST

In response to the need for third party verification, Master Precaster is a new brand which is set to transform the precast concrete procurement process. With precast offering a sustainable construction solution with safer sites, better quality and aesthetics, faster construction, lower waste and structures that require minimal maintenance, heating and cooling, its market share is growing. So too are the number of precast manufacturers. Investigating suitable precasters takes real expertise and time. National Precast has done the work to mitigate client risk and ensure a positive precast experience. All National Precast Master Precasters have been audited by auditors who understand precast manufacture. They all meet minimum benchmarks relating to their skills, qualifications, experience, facilities, financial stability, industry contribution, plus importantly, their quality, safety and environmental practices.



RAFI TCHOPOURIAN, GENERAL MANAGER, ENGINEERING SOLUTIONS, COATES

Coates, Australia's leading equipment hire and solutions provider, has partnered with Monash University, launching the world's lightest heavy duty structural support system with a capacity of 170 tonne at three metres for temporary works in the construction sector. Quadshore 150 is a high-capacity and lightweight structural system that makes construction sites and temporary works more efficient, while also lowering costs significantly for construction sites. Quadshore 150 has disrupted structural props through a revolutionary design brought together using lightweight, high-strength structural elements, boltless connections that render consumables obsolete, and creating significant benefits including reduced labour, handling, storage, installation and de-installation costs, decreased transportation and handling, and a lower carbon footprint.



MICHAEL CALTABIANO, CEO, AUSTRALIAN ROAD RESEARCH BOARD (ARRB)

As we move to a zero emissions future, the confluence of a focus on reducing our footprint on the world with the circular economy outcomes will flow into the construction sector. It will be no longer acceptable to build transport infrastructure that has not been assessed against circular economy outcomes. The enhanced use of a suite of emerging products like bottom ash in embankment construction, crumbed rubber in all bitumen applications, recycled crushed concrete and waste stream glass in granular materials. The next generation of construction materials and the smart construction techniques used to place and compact these will be a key innovation that will be normalised across the sector in 2022 and beyond. At ARRB, the National Transport Research Organisation, we have completed the technical certification of the products and processes necessary to allow these next generation materials to be used in Australian road construction. We look forward to playing our part in a future zero net emissions world.



ROB BRYANT, EXECUTIVE VICE PRESIDENT APAC, INEIGHT

Road construction is as innovative and evolutionary as the vehicles using them!

Design: Mitchell Freeway upgrade in WA is a great example of smart highways incorporating sensors, signals and overhead message boards to improve traffic flows and guide maintenance work.

Construction techniques: Design for Assembly (DfA) is an innovative approach to building key components for rapid assembly on site. Particularly useful in lots or segments that include bridges and tunnels.

Digital project management for design, construction and maintenance: Artificial Intelligence facilitates agile budgeting and scheduling, which incorporates risk considerations and best practice from similar road projects.



DR SALMAN SHOOSHTARIAN, LECTURER, SCHOOL OF PROPERTY, CONSTRUCTION AND PROJECT MANAGEMENT, RMIT UNIVERSITY

In Australia, the architecture, engineering and construction industry has a low resource efficiency. In 2018-19, the industry produced 27 million tonnes of construction and demolition (C&D) waste. Managing such a large quantity of waste has become a priority for Australian federal and state governments. Circular economy – an emerging concept in Australia – seems to offer a solution via using recycled C&D waste materials. However, the industry fails to create demand for these materials. Creating and stimulating markets could solve the problem. Market development only happens if barriers are identified and tackled systematically – a task that is not easy, but can change the industry in a positive way.



DEEPAK MADAN, CHIEF MARKETING AND BUSINESS DEVELOPMENT OFFICER, SRIPATH ASIA-PAC

PGXpand, a unique innovative polymer additive, was recently introduced into Australia by Sripath Asia-Pac. A plastomeric polymer, PGXpand enhances high temperature performance of bitumen without impacting low temperature properties. PGXpand Modified Bitumen mix delivers roadways with outstanding rutting resistance, fatigue properties and durability. PGXpand lowers viscosity, improves workability, and makes it easier to pave and compact. It is highly dosage efficient, storage stable and easily mixes into bitumen using low shear mixers and short mixing times; resulting in lower overall mix cost. Sripath is also exploring the use of PGXpand in hot spray seal applications to mitigate difficulties encountered with the use of crumb rubber. In addition, PGXpand Modified Emulsions are used for repair and maintenance applications. Sripath is currently working with key industry experts and stakeholders in Australia to test and approve PGXpand.

If you or someone at your organisation is an industry leader and would like to be a part of this monthly column in 2021, please get in touch with Editor, Tara Hamid: tara.hamid@primecreative.com.au