

The Multi-Head Badger Breaker in action.



BRINGING INFRASTRUCTURE SUSTAINABILITY INNOVATION TO AUSTRALIA

HOW CONCRETE PAVEMENT RECYCLING IS ANOTHER SUCCESSFUL INFRASTRUCTURE SUSTAINABILITY AND ENHANCED PRODUCTIVITY INITIATIVE COMING FROM THE AUSTRALIAN FLEXIBLE PAVEMENT INDUSTRY VIA INTERNATIONAL TECHNOLOGY TRANSFER. BY DOUGAL BROADFOOT, EXECUTIVE DIRECTOR (NSW/ACT), AUSTRALIAN ASPHALT PAVEMENT ASSOCIATION.

Sustainable concrete pavement recycling technology has arrived in Australia through the use of the Antigo Multi-Head Badger Breaker, with asphalt overlay. A recent NAPA/FHWA survey confirmed that asphalt remains the US's most recycled product and typifies the commitment of the flexible pavement industry to sustainable

pavement engineering solutions, overseas and in Australia. The savings in virgin materials, both aggregates and bitumen, from the increasing use of reclaimed asphalt pavement in construction work at its highest value application possible is self-evident, not to mention the avoidance of waste and savings of land fill space.

This example is but one of the many successful sustainability and economy initiatives undertaken by the Australian flexible pavement members and the industry association, the Australian Asphalt Pavement Association (AAPA), in conjunction with Australian road authorities and research bodies such as the Australian Road Research Board (ARRB) across Australia over many

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years. Others include:

- The successful implementation of warm mix asphalt technologies with commensurate savings in energy and emissions
- The introduction of high modulus asphalt enrobé à module élevé class 2 (EME2)
- The outcomes of long-life pavement studies delivering major savings in structural asphalt design incorporated in the Austroads design guides.

Many of these outcomes were born in overseas international knowledge transfer (IKT) studies organised by AAPA against a list of topics generated by its member organisations.

Recognising the challenge faced from the pending build-up of rigid pavements in need of remediation, the topic of how international practice best deals with them today was included on the agenda of topics to be researched on the IKT 2014 to the USA. The solution was rubblisation, crack and seat and asphalt overlay processes, which were inspected and verified from overseas experts. The attraction of these processes lay not only in the engineering outcomes but also in the sustainability benefits – in-situ treatment and reuse of the existing worn-out concrete pavement materials, minimisation of traffic disruption and reduced energy consumption and emissions from transport tasks avoided.

AAPA got on the front foot and called for expressions of interest from the membership to import technology, expertise and equipment for such treatments to be available here. It was known that this was a proved technology, having seen crack and seat and asphalt overlay successfully deployed by the then-Main Roads Department of Queensland and the asphalt industry on Ipswich Road in the late 80s. AAPA members Tony Wehl of RPQ Group

in Brisbane and Nick Argyropoulos of NA Group in Sydney joined forces to create an organisation to meet the tasks and opportunities foreseen. The rest, as they say, is history – and Concrete Pavement Recycling Pty Ltd (CPR), a joint venture between the two entrepreneurs, was formed. Excitingly, it is now operating its Antigo Multi-Head Badger Breaker (MHB) in Australia. CPR is currently engaged on a major package of works on the M1 Motorway Widening Tuggerah to Doyalson Project for CPB Contractors, breaking the existing concrete pavement for removal, where it is being recycled on site in this instance. CPR's Business Manager, Marty LaNauze, notes that the MHB Badger Breaker can

quickly and efficiently break concrete layers up to 380 millimetres thick. Given appropriate site access conditions, the MHB has the capability to achieve productivities far in excess of the traditional methods with output per working day in excess of 6000 square metres. The MHB can also customise the size of the concrete fragment remaining. Marty advises the MHB is designed to break, fracture or rubblise a travel lane (up to 3.8-metre hammer width) in a single pass, reducing the number of plant movements required – reducing the risk of plant/pedestrian interface, as well as reducing the risk for potential operator oversight. The MHB also has a customisable hammer configuration that can be modified to work within the longitudinal pavement joints to suit varying lane widths. As stated in the headline above – herein lies another infrastructure sustainability and enhanced productivity initiative from the Australian flexible pavement industry via international technology transfer. We can look forward to more Australian exploitation of this initiative – and others to follow it. ■



The machinery came to Australia off the back of an AAPA knowledge tour to the US in 2014.