Fifty Years of Stabilisation

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The first major specialist contractor to enter the stabilisation market was Stabilisers Limited when they introduced the P&H triple-rotor stabiliser around 1950. The attention to quality and the efficient mixing of these machines enabled a rapid expansion to each of the states of mainland Australia.

Victoria carried out subgrade stabilisation including Tullamarine Airport. Stabilisation was used for residential road development in New South Wales, South Australia and Western Australia and for general roads, and in particular for beef roads, in Queensland. Around this time, an American company, KLK, arrived in Queensland in grand style. Also using P&H triple-rotor stabilisers, they travelled Queensland with equip-ment, including a caravan containing a grand piano to entertain everyone of an evening. Unfortunately for them they did not believe the locals on the severity of Australian floods and the final straw saw not only their equipment but their grand piano under water, while all the local contractors had moved their equipment to higher ground.

Cement stabilisation continued to be used in increased quantities during the 1960s, while Stabilisers Australia changed hands from being a private company to being a subsidiary of McDonald Constructions and then of Mobil Oil. In the late 1960s, competition from other contractors became fierce and work was being carried out by cheaper machines, not producing the same quality of mix, with lower prices and less attention to quality. This led to unacceptable failures of stabilisation and the closure of a number of companies. Today, we should consider this lesson and users must consider the importance of quality and that low prices will in fact lead to a deterioration in performance. Under Mobil's ownership, the various state branches of Stabilisers Limited were closed or sold.

By 1970, the only branch left was Victoria which was maintained to promote the sale of foamed bitumen stabilisation, a product which was resurrected in 1995. Mobil had sold their NSW operation and from this small company a programme was established for recycling in the Western Suburbs of Sydney. Through particular attention to quality and continued work on the control of reflection cracking, the efficiencies of recycling by cement stabilisation was introduced to Bankstown, Fairfield and Blacktown Councils. At the same time, Mobil sold their Victorian operation which passed through a number of ownerships before residing with Road Stabilisers and finally Pavement Technology. The 1970s saw a resurgence in the use of stabilisation in Victoria, New South Wales and Victoria which soon spread to South Australia and later to Western Australia.

In 1976, many articles on completed cement stabilisation projects were seen in technical publications, such as the first issue of Road Note. While the NSW-based operation relied very heavily on the mixing quality of the P&H triple-rotor machine, the industry slowly changed to the single-rotor machines we are familiar with today. It is my personal belief that these machines do not mix as efficiently in a single pass and hence our own company has always stressed the importance of two passes of this equipment, hence matching the original machine performance.Recent years have seen the first major change in stabilisation equipment in 30 years with the introduction of the CMI RS500, now followed by a number of machines of a similar style from other manufacturers. Together with the development of accurate cement spreading equipment, it has led to the extension of stabilisation from the Local Government low-traffic roads through to major roads and highway construction with the introduction of deep-lift (ie depths to 400 mm of stabilisation in a single layer). These greater depths have called for new products to delay the set time, enabling full compaction and finish to be achieved. Hence we are now using binders consisting of blends of cement and what were previously waste products, namely slag and fly ash. Cement companies are responding to this challenge by providing excellent service and investment in new technology to properly service the market – a far cry from the early 70s when only one product was available.

Today, Australia is recognised as a world leader in stabilisation theory and application. Australian technology is being used in Europe and Asia to develop the use of stabilisation in those areas; in particular, our cement spreaders are the most accurate and advanced in the world. Australian experience has also assisted in the development of new equipment coming out of America.

The drive for cement stabilisation and the outstanding success of the process in Australia has been very much due to the concept of the specialist contractor. This has produced and retained in the industry, experience, expertise and development which would not otherwise been achieved.

I believe future years will show a further improvement in cement incorporation, including machines which will combine the benefit of the modern single-rotor machine with the qualities of the old triple-rotor stabilisers. We will see over the next five years further improvements to machines spreading the cement and a greater range of equipment, meeting the demand for all forms of stabilisation from small patching to major highway reconstruction using stabilisation trains.

Australia needs a national road strategy to maintain and strengthen its economy and export of materials and manufactured goods. This strategy must consider all aspects and be consistent with national objectives of ecologically sustainable development, including a minimal disruption to our natural environ-ment. Stabilisation of natural materials and recycling of roadways by stabilisation will play a major role in such a strategy.