

Foreword

The theme of this Special Issue of the Electronic Journal of Structural Engineering (EJSE) is “Structural Performance Assessment of Civil Infrastructure”. The importance of this theme has been exemplified through a sequence of research projects undertaken as a part of the Infrastructure Cluster of the Australian Indonesia Centre (AIC). It has been well documented that improving a countries productivity and wellbeing is underpinned by the provision of internationally competitive infrastructure. The problem is that all countries have development expectations that exceed their available budget capacity if the pace of development is to match the requirements of our global community. In the case of Indonesia, some USD \$35 billion worth of projects have been prioritised as essential yet the budget is limited to some USD \$9 billion per annum. Similarly, in Australia, Infrastructure Australia’s most recent priority list of projects, released in March 2018, identified some 96 major infrastructure projects requiring investment of some \$55 billion yet the available governmental capital for these projects is about \$13 billion per annum. One concept to assist in bridging this funding gap is to squeeze more from existing assets using sophisticated techniques of structural performance monitoring.

Many of the AIC research projects explored the adequacy of existing and proposed technologies to improve infrastructure asset performance evaluation as a mechanism to prolong the useful life of current and proposed assets. Assets explored in this edition of the journal range from consideration of high rise reinforced concrete framed buildings, to bridges, marine structures, railway tracks, railway vehicles to utility assets such as water pipes. Numerous advanced technologies have been explored that include consideration of the complex interpretation of dynamic evaluations to fibre optic sensors and a range of non-destructive testing techniques.

The insights gained from these focussed research projects provides a platform for considering innovative approaches for safe performance assessment of the structural life of infrastructure assets.

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