

## GIS Applications for the AEC Industry

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Arup is a global engineering consultancy firm and GIS has been widely applied to Arup's various projects in different disciplines for many years. In this presentation, the speaker will demonstrate the latest Arup's GIS applications in 3 categories – Visualisation, Spatial Analysis, and Data Management Portal, to share with the audience how GIS has been applied to Arup projects in the AEC (Architecture, Engineering, and Construction) industry. Each category will be given an example to explain the application methodology and the benefits being along with.

The first case demonstrates how GIS is used to visualise the underground information to facilitate engineers and geologists to better understand the ground condition in 3D. The second case is an award-winning\* tool for blasting vibration assessment that integrates the whole analysis workflow onto the GIS platform. Blasting in the highly urbanised area such as Hong Kong is very challenging as the sensitive receivers to consider are of high complexity and the requirements to fulfil are strict. This tool has been applied to a number of on-going MTR railway tunnel construction projects and proved to provide a systematic and efficient method that helps to streamline the workflow between the analysis calculations and the various data sources. The last case is the project data management portal based upon web GIS technology to ensure the project information is consistently shared among the various stakeholders across the long timeframe of a large-scale construction project.

*\*Grand Prize of the HKIE (Hong Kong Institution of Engineers) Innovation Awards for Young Members 2011, Category I: An Invention.*