

## Building an Interactive Web-Based GIS System for Planning of Geological Survey Works

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**Abstract :** The planning of geological survey works is an iterative process which involves planner, geologist, civil engineer and other stakeholders, who perform different roles and have different points of view. Traditionally, the team used paper maps or CAD drawings to present the proposal which is not an efficient way to present and share idea on the site investigation proposal such as sitting of borehole location or seismic survey lines. This paper focuses on how a GIS approach can be utilised to develop a web-based system to support decision making process in the planning of geological survey works and also to plan site activities carried out by Singapore Geological Office (SGO). The authors design a framework of building an interactive web-based GIS system, and develop a prototype, which enables the users to obtain rapidly existing geological information and also to plan interactively borehole locations and seismic survey lines via a web browser. This prototype system is used daily by SGO and has shown to be effective in increasing efficiency and productivity as the time taken in the planning of geological survey works is shortened. The prototype system has been developed using the ESRI ArcGIS API 3.7 for Flex which is based on the ArcGIS 10.2.1 platform.

**Keywords :** engineering geology, flex, geological survey planning, geoscience, GIS, site investigation, WebGIS

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