



***Farnham Geological Society***  
***Next meeting at Farnham Maltings,***  
***7:30pm for 8pm, Friday 12<sup>th</sup> April 2024***

**Remote monitoring of an active urban mud volcano**

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Abstract

On 29 May 2006, a mud volcano erupted in the Sidoarjo regency of East Java, Indonesia. Unlike other mud volcanoes, this one has been erupting almost continuously since then, burying villages, factories and farmland to now cover an area of almost six square kilometres.

Atkins has been monitoring and assessing these risks since early 2007. This work has included using a combination of remote sensing techniques to map and monitor the growth of the mud volcano as well as ground surface movements and deformation around the mud volcano area. To date, the remote sensing work has shown that while the flow of mud from the crater area is now being constrained by the earth embankments surrounding the mud volcano, the ground movements are affecting a much larger area, and are potentially also being heavily influenced by anthropogenic factors.

This presentation will provide an overview of the ongoing eruption and how it has developed since 2006. It will also highlight how the use of remote sensing mapping techniques has allowed for the risks posed by the eruption to be monitored over an extended period of time in an innovative but cost-effective manner, as well as the importance of field verification in such work.

Bio

**Dr Andrew Hart** currently works for AtkinsRéalis where he is a Technical Director, Discipline Lead & AtkinsRéalis Fellow for Engineering Geomorphology, Geohazards and Ground Modelling. Andrew has over 26 years of experience assessing the impacts of Geohazards and other geo-engineering constraints while working on a wide variety of infrastructure projects. This has included O&G pipelines and facilities, iron ore railways, highways and mountain roads and offshore wind farms.

He has also worked on a number of Geohazard Assessment and Disaster Risk Reduction projects in places such as the Himalayas. This has meant that Andrew has been lucky enough to work in many interesting parts of the world, for a wide range of client organisations and project teams.