

Geotechnical Engineering During COVID 19

The health of our staff, client, subcontractors and the wider community is CMW's paramount concern and a responsibility we take very seriously. We are strictly adhering to national and local government edicts and advice and taking every step to ensure we protect each other and the wider community, whilst keeping engineering and infrastructure projects which are important to the economy running.

Social Distancing and Isolation

We are constantly reviewing our social distancing and isolation regime and whilst office and field operations are still being undertaken in some of our jurisdictions, we have adopted the following:

- 1) Individual travel (i.e. no co-workers, clients etc to share the same vehicle)
- 2) Job Safety (Hazard) Analysis (JSA) relating to COVID 19 prepared for all fieldwork and updated to accommodate latest local and national edicts and guidelines.
- 3) If face to face meetings are required (internal, with clients, subcontractors etc) these are only undertaken following a "Take 5" to assess venue, participant numbers etc. comply with the latest government guidelines. Although we are equipped with Teams and Skype to assist where required to be remote.

Remote Engineering

We recognise that most of our work may need to be undertaken from home. CMW fortunately, has for some time provided staff the flexibility and tools and encouragement to operate from home.

'We have implemented a network-based system, providing tools such as Sharepoint, Microsoft Teams and relevant cloud-based design software'.

All CMW systems including quality control, document management and geotechnical data are cloud based requiring only internet access. We will therefore be continuing to operate from our homes exactly as we did when we were office based, with office and team based tele-meetings continuing. Projects will still have the same degree of senior oversight with a Project Manager, Project Principal and Independent Reviewer. It is business as usual with the same checks, reviews and supervision.

Virtual Ground Investigations

Although it is likely there will be a period when COVID 19 makes it difficult to physically undertake Ground Investigations, there is no reason why this should prevent utilising a well-informed conceptual ground model based on several data sources.

'CMW is a leading company in the use of HoleBASE and generating Conceptual Ground Models'.

All our ground investigations and many other investigations provided to us for use, as well as public databases, are uploaded to this GIS-based database. This provides the tools to interrogate available information from nearby sites and use our local geological and geotechnical knowledge, to develop and present a well-informed conceptual ground model.

'In many cases our level of confidence in the model would be enough to allow a design to be advanced'.

A confirmatory ground investigation would be done later, prior to construction, when restrictions are lifted.

We have staff members who have previously advanced large-scale projects through to Information for Tender (IFT) stage, without physical ground investigation. This has resulted from long backlogs in government approvals for ground disturbance. Investigations were eventually done post IFT and pre IFC (Information for Construction). Our staff also have experience from the EBOLA epidemic in West Africa and were able to advance engineering for a 650 km long railway, again without undertaking physical ground investigations. In both Australia and West Africa, the remoteness of the sites meant very little pre-existing geotechnical data.

'The solution was to use Advanced Terrain Evaluation techniques utilising public domain remote sensing, aerial photography and digital elevation data'.

The data was modelled, processed, interpreted and presented in a GIS environment. This is a service we can offer allowing our client's projects to progress whilst waiting for a physical ground investigation.

We would be pleased to discuss with you how we can support you and your projects through this crisis and minimise any disruption as much as possible.