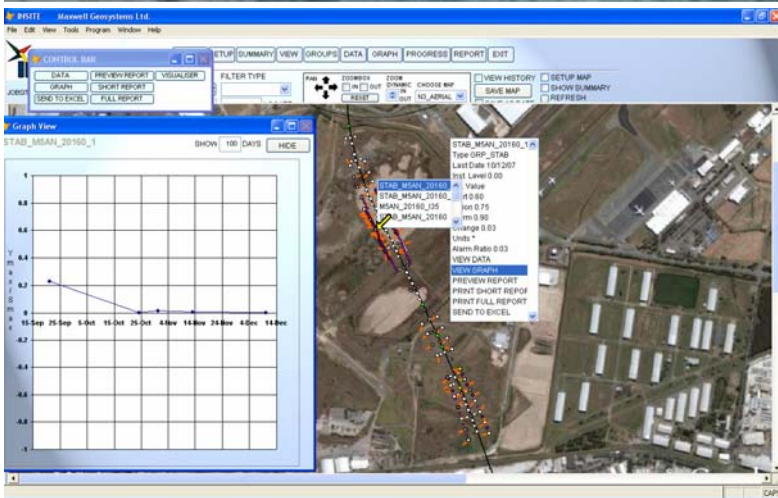


INSITE CASE HISTORY:

GATEWAY MOTORWAY EXTENSION



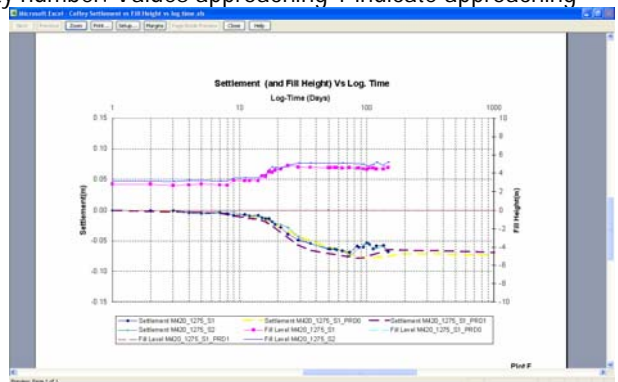
The Gateway Motorway linking Brisbane's City Centre to the Air and Sea Ports has reached capacity and is being duplicated. The alignment crosses many areas of soft ground where embankment settlements are expected to reach half a meter or more. An observational approach is being adopted to check embankment stability and to ensure satisfactory control of road level within an acceptable time span. The client, a joint venture of Leighton Contractors and Abi Group, have chosen INSITE to manage data collection, display and reporting across the job.

Using Derived Instruments to Monitor Stability
As part of the observational approach embankment stability was monitored principally by tracking the

Embankment Stability Monitoring

maximum lateral movement shown in an inclinometer against the maximum vertical movement of an adjacent settlement point or plate. This is often referred to as Y_{max}/S_{max} or the embankment stability number. Values approaching 1 indicate approaching instability. INSITE has the capability to group instruments to make further instruments which may, as in this case, have more engineering relevance to the designer. Two settlement points can give settlement but also a further instrument measuring tilt and differential. Three will give angular distortion. Stability group instruments were added to INSITE for this project and they are now used to monitor the overall stability and send alarms when trigger levels are exceeded.

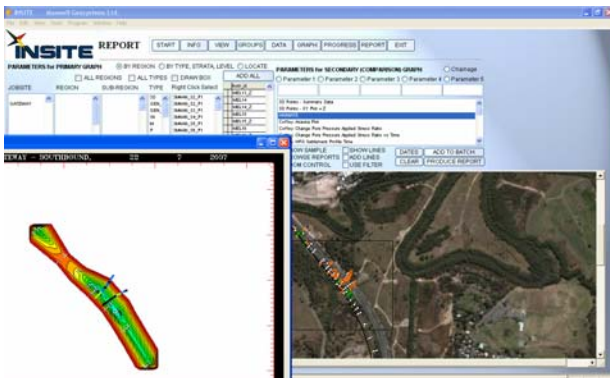
Track Behaviour Against Predictions: Designer Coffey also wanted to track the performance of the earthworks against prediction. This was accomplished by adding a PREDICTION instrument at certain stations. These predictions could also be selected when



Embankment Settlements vs Prediction

generating plots to see how settlement were progressing relative to the prediction

Animate the data to spot trends and forecast performance: As with all INSITE applications you have the ability to visualize the data in multi-dimensions to explore the data well beyond what would be possible with conventional tools. This includes animation of the data to produce historical and future settlement maps.



Embankment Settlement and Lateral Movement Animated

Maxwell Geosystems contact:

Dr Angus Maxwell :
asm@maxwellgeosystems.com