

SURVEY REPORT
on
DEFORMATION ANALYSIS
De Tijger Slope

BACKGROUND:

The initial survey took place on the 16 November 2017 for Kantey & Templer Consulting engineers. 30 targets were placed around the site as per specification from Kantey& Templer. The site was 3D scanned and geo referenced using RTK GPS. The survey was based on Town Survey Mark 165 DC13.

AIM:

To provide supporting monitoring data for use by the site engineer.

EQUIPMENT USED:

Trimble R10 base and rover (for WGS control only)
Trimble TX8 3D laser scanner

METHODOLOGY:

The entire site was scanned with a Trimble TX8 scanner and was compared with the EPOCH1. All targets were scanned with the exception for SP27 which could not be found.

EPOCH 2 was then registered onto EPOCH 1 using control stations. This allows the comparison to be calculated. (See epoch adjustment report E2) This adjustment was split into 2 sections to minimize error, Section A and B.

Section A achieved a Mean absolute error between EPOCH 1 and 2 of Dy; 0.0060m, Dx;0.0055m and D; 0.0170m

Section B achieved a mean absolute error of Dy;0.0087m, Dx;0.0056m and Dz;0.0139m

The targets were then compared and movement calculated. Cross sections and slope analysis slope were generated which to be used to compare the change in surface between EPOCH 1 and 2. It is important to note that the these can be affected by vegetation and may in some cases represent the top of vegetation and not ground.

EPOCH 1 – 16 November 2017
EPOCH 2 – 30 November 2020

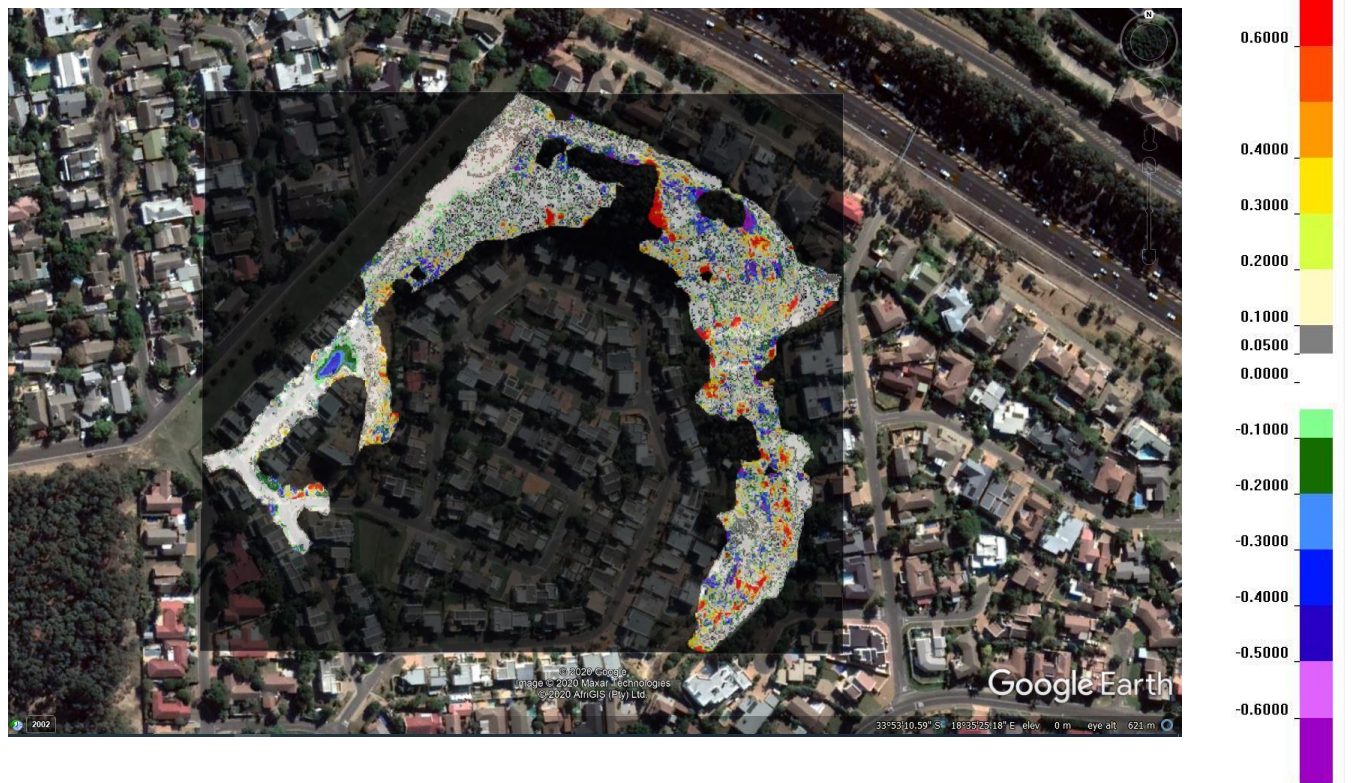
TARGET MONITORING RESULTS:

(See Attached Excel Spreadsheet)

CROSS SECTION MONITORING RESULTS:

(See Attached Cross Section Plan)

SURFACE ANALYSIS RESULTS:



Positive values indicate the surface has risen
Negative values indicate the surface has sunk



CONCLUSION

Overall little to no movement was detected on the slope targets with the exception of SP12, SP13 and SP28 which showed a horizontal movement greater than 4cm. The surface and cross section show some changes, some of the positive surface changes could be caused by dense vegetation.

Some notable deformation is seen on Dauphine street where the road has sunk. The surface analysis shows the that road has sunk up to 45cm in some areas.

Yours Faithfully

A handwritten signature in black ink, appearing to read 'C. Kohler', with a long horizontal line extending to the right.

Cameron Kohler (GPr LS 1421)
Professional Land Surveyor

VPM SURVEYS