

If you're using machine control on your project, here's a step-by-step guide to the set up and process at Alexander Symonds...



STEP 1: ELECTRONIC DATA

The design data for your project needs to be in an electronic format for it to be used for machine control. Sometimes this electronic data will be available from the designer and sometimes it has to be built by the surveying team from PDF information. In both instances, work needs to be done to ensure the electronic data is correct and matches the pdf drawings that the project is to be constructed from.



STEP 2: SITE CALIBRATION (GPS MACHINE CONTROL)

Site calibration is required to calculate the correction between the GPS coordinates and the project coordinates. Project coordinates are defined by the boundaries. This correction is then applied to the data, so that the machines are in the correct coordinates system that is referenced to the GPS base that is being used. Moving the base to a location not coordinated will result in completing another site calibration.



STEP 3: CREATING MACHINE/PLANT FILES

These files are a combination of the site calibration with the surface model and linework (design data) and produces files that can be used in the plant. This is performed using machine guidance software. Each brand i.e. Trimble, Leica and Topcon have different files types with only some being interchangeable.



STEP 4: SITE CHECKS BY THE SURVEYOR

The surveyor needs to make sure that the plant is reading the level/RL correctly and that the plant is also registering the correct cut/fill and position. The surveyor needs to check the plant directly after the machine control files have been installed. More checks need to be completed during the works.



STEP 5: SITE CHECKS BY THE OPERATOR

The operator needs to bench the plant regularly, a minimum of 3 times a day. This makes sure that heights are still correct and allows the operator to monitor slop and blade wear as both have an impact on the levels displayed. The operator also needs to check off the PDF plans to ensure all is ok with position and height. Machine calibration should also be performed regularly.



STEP 6: CONTRACTOR REQUIREMENTS

- a. The contractor needs to supply solid locations for bench marks that the machine/plant can bench from. Usually buried concrete blocks, grader blades or installed SEP's work well.
- b. The contractor needs to supply their rover in order to perform the site calibration, as well as have plant ready for checking once completed and the data is uploaded.
- c. The Surveyor will also need to return to do an evaluation once the site begins to take shape.

Alexander Symonds can assist you with further information about this process. Call us to discuss on (08) 8130 1666 or email adelaide@alexander.com.au.