THE SURVEY SCHOOL

S1 – Basic Setting Out
Five-Day Course

Course Overview

This course is designed to give site staff in the construction industry and personnel in many other fields a basic knowledge of surveying and setting out using mainly the level and Total Station.

The Total Station not only measures the angles and distances, but can also store measurements to be downloaded to a computer for mapping, quantity calculations and checking against required measurements.

It is important that the setting-out engineer has a basic knowledge of the functions available to make his or her work on site faster, more reliable and more cost effective. We therefore take the participants through these functions on the instrument.

Candidates would benefit from having some previous experience of using survey equipment in particular the ability to set up a tripod over a point, be able to level an instrument and to be able to read a level staff. Those without this knowledge will find that the 2 day L1 levelling and the 3 day L2 total station courses provide the required experience and background theory.

Summary of main topics covered by the course:

- Safety on site.
- Principles of levelling and levelling equipment.
- Practical level run to establish a TBM and find closing error.
- Practical levelling including intermediate sights and reading inverted staff.
- Measurement of instrument collimation error and adjustment of the instrument if required.
- Understanding the principals of gradients for roads, pipes or excavations.
- Practical exercise to calculate and set out construction profiles to the required level (trench excavation).
- Calculator functions using degrees, minutes and seconds.
- Understanding and addition and subtraction of, degrees, minutes and seconds.
- Basic trigonometry.
- Using the Total Station – setting-up, handling and operation.
- Using the Total Station – starting a new job, entering station co-ordinates and co-ordinates for setting out.
- Using the Total Station – finding position by free-station (resection) and setting station co-ordinates, back-sight co-ordinates and bearings.
- Using the Total Station – built-in functions including ‘free station’, ‘missing line measurement’, ‘remote heighting’, ‘reference line and offset’, ‘area measurement’ and ‘height transfer’.
- Setting out points from co-ordinates.
- Exercises to set out a structure using right angles and tape, offset distance and elevation and offset lengths and distances using the reference line function.
- Set out a centre line, edge positions and level profiles for a given structure or road.
- Set-out of batter boards for a given earthworks filling.
- Survey points that have been set out, then download the surveyed points to check against the Design.

For more information contact:
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