



**THE SURVEY SCHOOL**



## Land Surveying Five-Day Course

### Course Overview

This course is designed to give surveyors and engineers a good grounding in the principles and practical application of site surveying, using a total station and a level and staff. (Note GNSS practical usage is not a part of this course).

The course is aimed at the assistant or junior surveyor who is starting to carry out their own small surveys and requires more theoretical and practical training in 'best practice'.

The course assumes that the student either has completed the Survey School's 2 day levelling and 3 day Total Station courses or has experience of using both level and total station equipment.

Knowledge of mathematics and the use of the scientific calculator prior to coming on the course would be an advantage. The course includes calculation of co-ordinates and bearings and distances to enable the surveyor to establish and survey points of detail or check survey control together with the calculation and the adjustment of traverses.

The Total Station functions used include setting up the instrument for a job, orientation by known points, resection and the detail surveying programs in the instrument.

Practical exercises are used to back up the theory learned in the classroom. One of the main aims of this course is to teach how to establish control by traversing for topographical surveys.

### Summary of main topics covered by the course:

- Introduction and Safe working on site
- Calculations – co-ordinates, angles, bearings, and basic trigonometry using a scientific calculator
- Principles of survey control and sighting of control stations
- Observing, booking and reducing, Horizontal angles, vertical angles and slope distances.
- Practical surveying exercises – using a level and a total station
- Resection – using a total station function
- Traversing and Traverse calculations
- Principles of traverse adjustment
- Detail mapping using feature codes – on a total station
- Uploading and Downloading of data – and processing in LISCAD Survey Software
- Contouring from observed spot heights using LISCAD Software
- Cross Sections from field observations drawn in LISCAD Survey Software
- Using some of the other total station functions such as Area calculation tie distance and remote height.
- Required precision of observations and relation of detail to map scale.(RICS spec)
- The Ordnance Survey National Grid system and scale factor awareness
- Review, questions and close

At the end of the course students receive a certificate of attendance/completion.

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