

Survey Errors

Systematic, random, and the blunder.

Civil Engineering

Systematic

- Same sign and size every time
- From instrument, method or conditions
- Tape too long, collimation, refraction
- Accumulates steadily through a survey
- Removed by calibration and procedure

Random

- Different sign and size each reading
- From reading, pointing and centring
- Cannot be predicted or eliminated
- Grows with the square root of n
- Reduced by repeating and averaging

THE DIFFERENCE THAT MATTERS

A blunder is neither. It is a mistake, and only an independent check will find it.

Educational reference. Accuracy classes and permitted misclosures come from the survey specification for the work.