A Principle for Determining the Optimum Surveying Accuracy

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Surveying Accuracy: Tunnel Surveying Example
Better Accuracy?

- CS2 – CS1 < E1 – E2 (1)
  - CS1: Cost of surveying for Accuracy $\alpha_1$
  - CS2: Cost of surveying for Accuracy $\alpha_2$
  - E1: Cost to address the Delta for $\alpha_1$
  - E2: Cost to address the Delta for $\alpha_2$

- CS2 + E2 < CS1 + E1 (2) $\alpha_2$ is better
- (CS + E) is minimized (3) Optimum Accuracy!

Conclusion

- The optimum accuracy for the same surveying project will vary from place to place due to the fluctuation of the various costs (equipment, labour, construction methods, etc.)
- This principle should be included in every surveying text book.