

Surveying is the means of determining the relative position of points and the relative distances. It is very important in the field of Civil Engineering. We can find uses of surveying in all civil engineering projects. The objectives of surveying may very depend on the type of project. A surveyor must be clear about the objects of surveying. The main objectives of surveying are discussed below.

Objectives of Surveying

- To determine the relative position of any objects or points of the earth.
- To determine the distance and angle between different objects.
- To prepare a map or plan to represent an area on a horizontal plan.
- To develop methods through the knowledge of modern science and the technology and use them in the field.
- To solve measurement problems in an optimal way.

Principles of Surveying

1. To locate the position of a point by measurement from two reference points
2. To work from whole to part

Uses of Surveying

Some of the numerous functions of surveying are given below.

- Topographical maps showing hills, rivers, towns, villages, forests etc. are prepared by surveying.
- For planning and estimating new engineering projects like water supply and irrigation schemes, mines, railroads, bridges, transmission lines, buildings etc. surveying is required.
- Cadastral Map showing the boundaries a field houses and other properties are prepared by surveying.
- Engineering map showing the position of engineering works like roads, railways, buildings, dams, canals etc. are prepared through surveying.
- To set out a work and transfer details from map to ground knowledge of surveying is used.
- For planning navigation routes and harbors, marine and hydro-graphic surveying are used.
- To help military strategic planning, military maps are prepared by surveying.
- For exploring mineral wealth, mine survey is necessary
- To determining different strata in the earth crust, geological surveys are required
- Archaeological surveys are used to unearth relics of antiquity.



Fig: Topographical map of United States. Source:media1.britannica.com

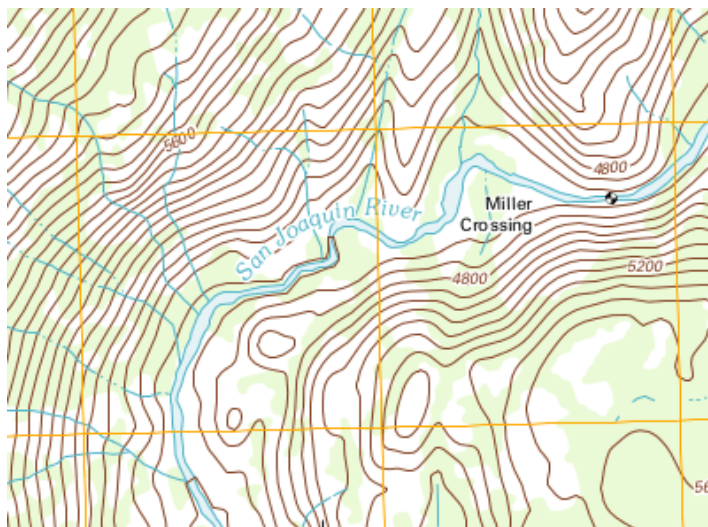


Fig: Contour map.Source:stack.imgur.com

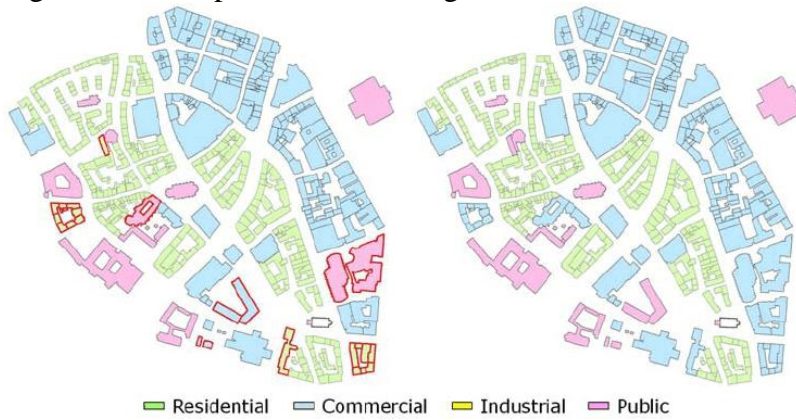


Fig: Cadastral map of Hanover, Germany. Source:researchgate.net