

Land information system

Land Information System (LIS) consists of an accurate, current and reliable land record cadastre and its associated attribute and spatial data that represent the legal boundaries of land tenure. It provides a vital base layer capable of integration into other geographic systems or as a stand alone solution that allows data stewards to retrieve, create, update, store, view, analyze and publish land information.

The land register is the list of owners and all the parcels they possess. The cadastral map is a spatial structure consists of parcel boundaries, ground use and class boundaries and individual object is described by an identifier.

Constraints - Data stored in traditional cadastral systems do not meet requirements connected with supervision, management, decision-making, forecasting and development planning. The most significant problems are:

- low precision of geometric data
- quality and speed of data access
- difference between the map and the register
- lack of supervisory tools

Issues:

Information carrier and conservation

- Clay tablet, marble stone, palm leaf, animal skin, paper, microfilm, database

Cadastral mapping results in distortion Choose projection to minimize distortion

- Maps are flat representations of the earth surface, which is spheroidal
- Maps require the choice of a projection to transform latitude and longitude into metric coordinates (more convenient)
- Every projection induces geometric distortion which varies according to latitude and longitude
- Scale factor quantifies the distortion (eg. 0.9996)

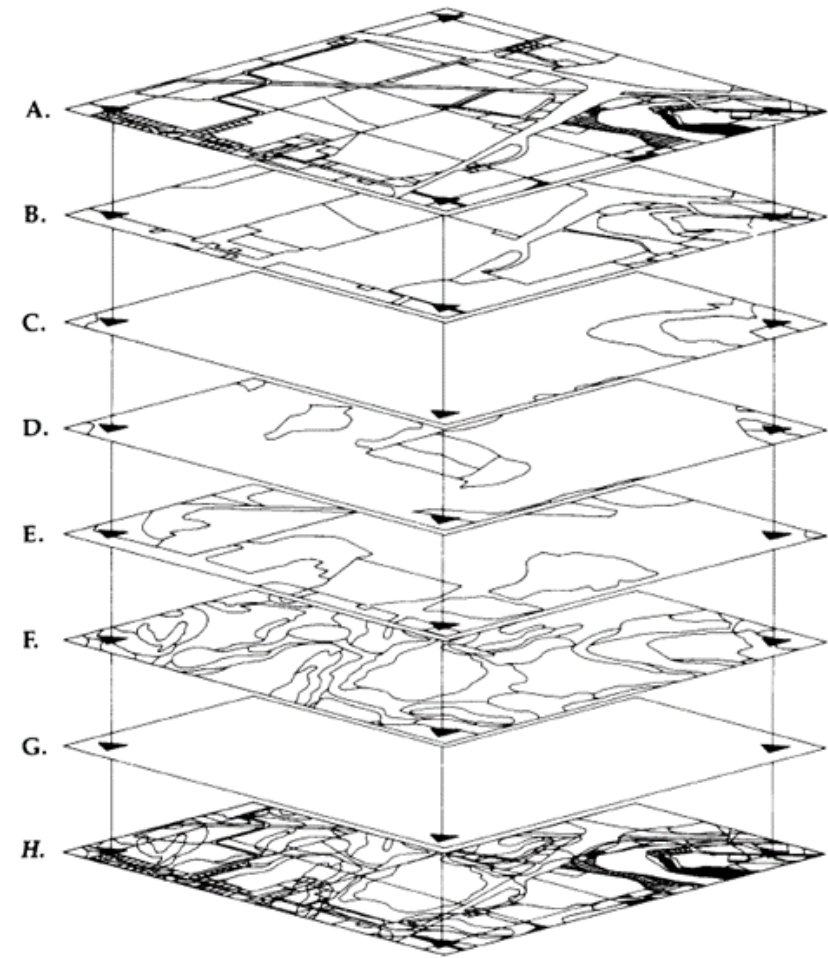
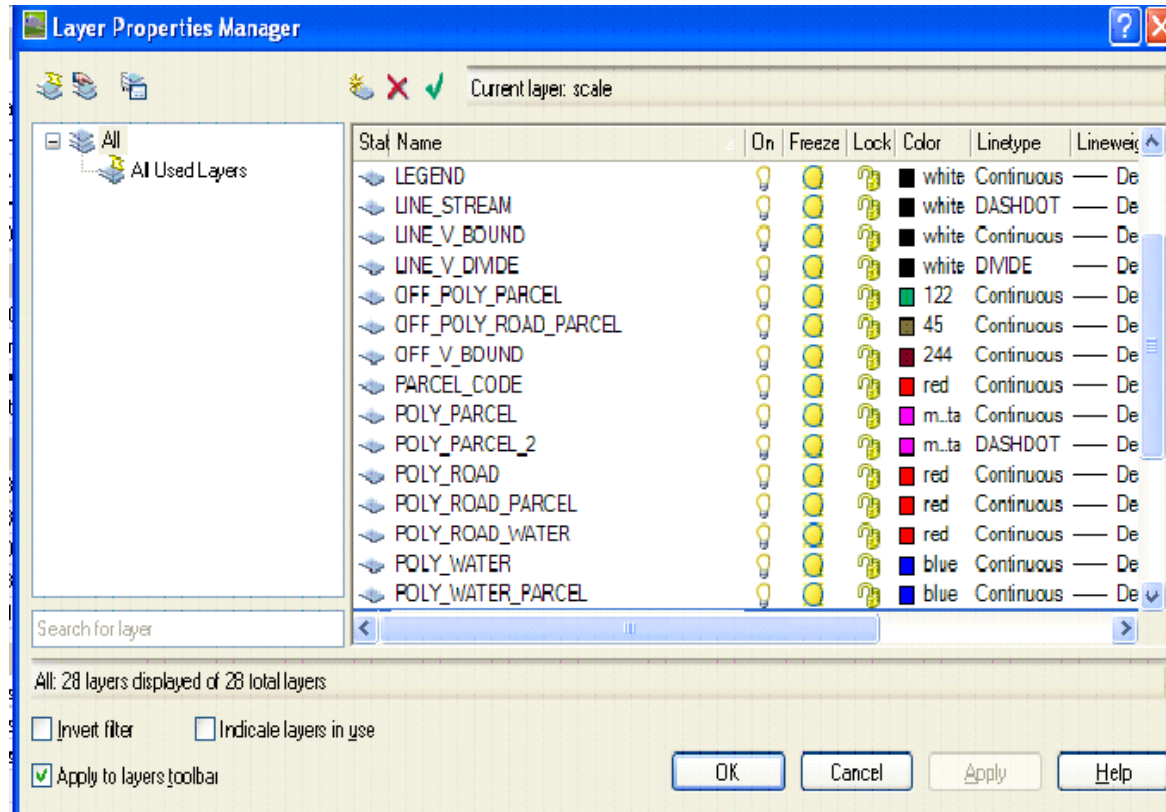
Parcel numbering system uniqueness, simplicity, permanency, ease of maintenance needed

- Hierarchical sequential numbering (*most common*)
- Coordinate locator numbering (*mostly in the US*)
- Intelligent” combination of Easting and Northing to create a unique identifier

Geographical Information System (GIS) and Land Records?

- Relating to legal description of property to coordinate-based systems
- highlight & then minimize ambiguous or overlapping boundaries
- Complex attribute relations
- access to public

Creation of layers and attributes



Land value and survey accuracy

- The higher the land value, the more accurate the survey
- Urban cadastre requires higher accuracy (centimetric to submetric)
- Rural cadastre requires lower accuracy (metric to decametric)

Costs must be balanced against benefits

Measurement

- 1.Triangulation
- 2.Distance and Bearing
- 3.Photogrammetry
- 4.Global positioning