Team Geo @ HuC, KNAW

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KNAW Humanities Cluster

HISGIS

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Wednesday, april 14th

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Addresses: where people & place meet

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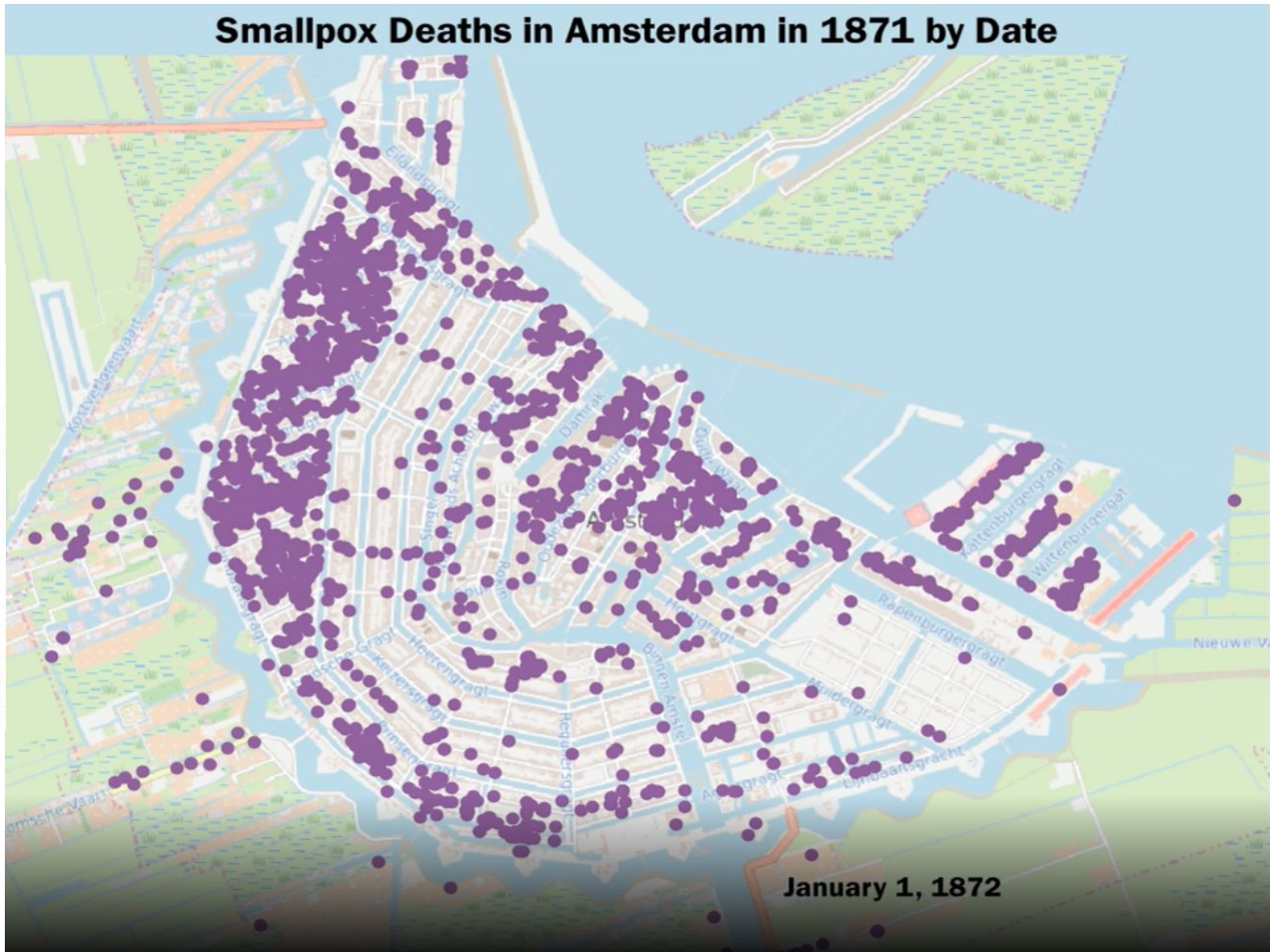
AMSTERDAM TIME MACHINE

World Historical Gazetteer



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HISGIS

FRYSKE AKADEMY

HisGIS: the cadastre of 1832:
continuous system from 1832 until now

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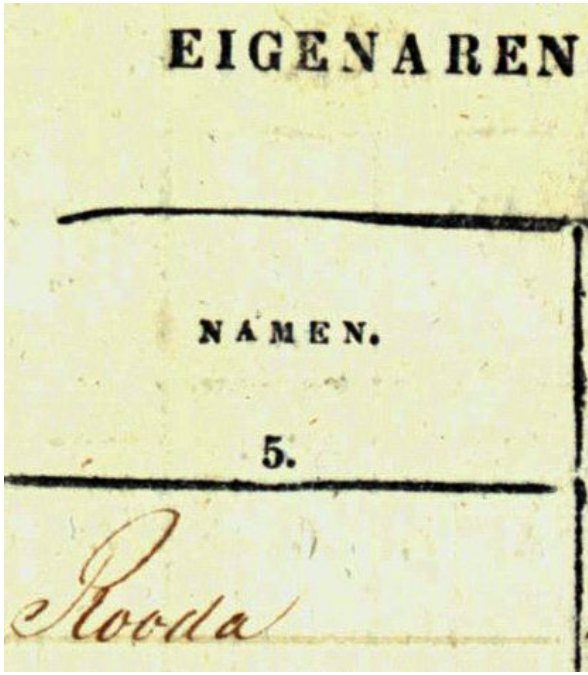
- Cadastre NL: initialised in 1832 with a French model
  exceptional amount of work: **NOT** Quick & Dirty!

- idea: equal taxation of land
  - no benefits for aristocracy / nobility
  - lots of participation, but very bureaucratic
  - benefits for digitisation



- numerous data about
  - **owners** (persons and organisations)
  - **landuse** (tarif and classification)
  - **taxation** (appraisal of landuse)

- Geographical accuracy "to the metre"
  - Oldest and most detailed maps for North-Western Europe
  - Now and for eternity; even over a thousand years in 3021!

HisGIS: Wassenaar 1832 in 3D

(background: dunes, AHN, elevation-hillshade)

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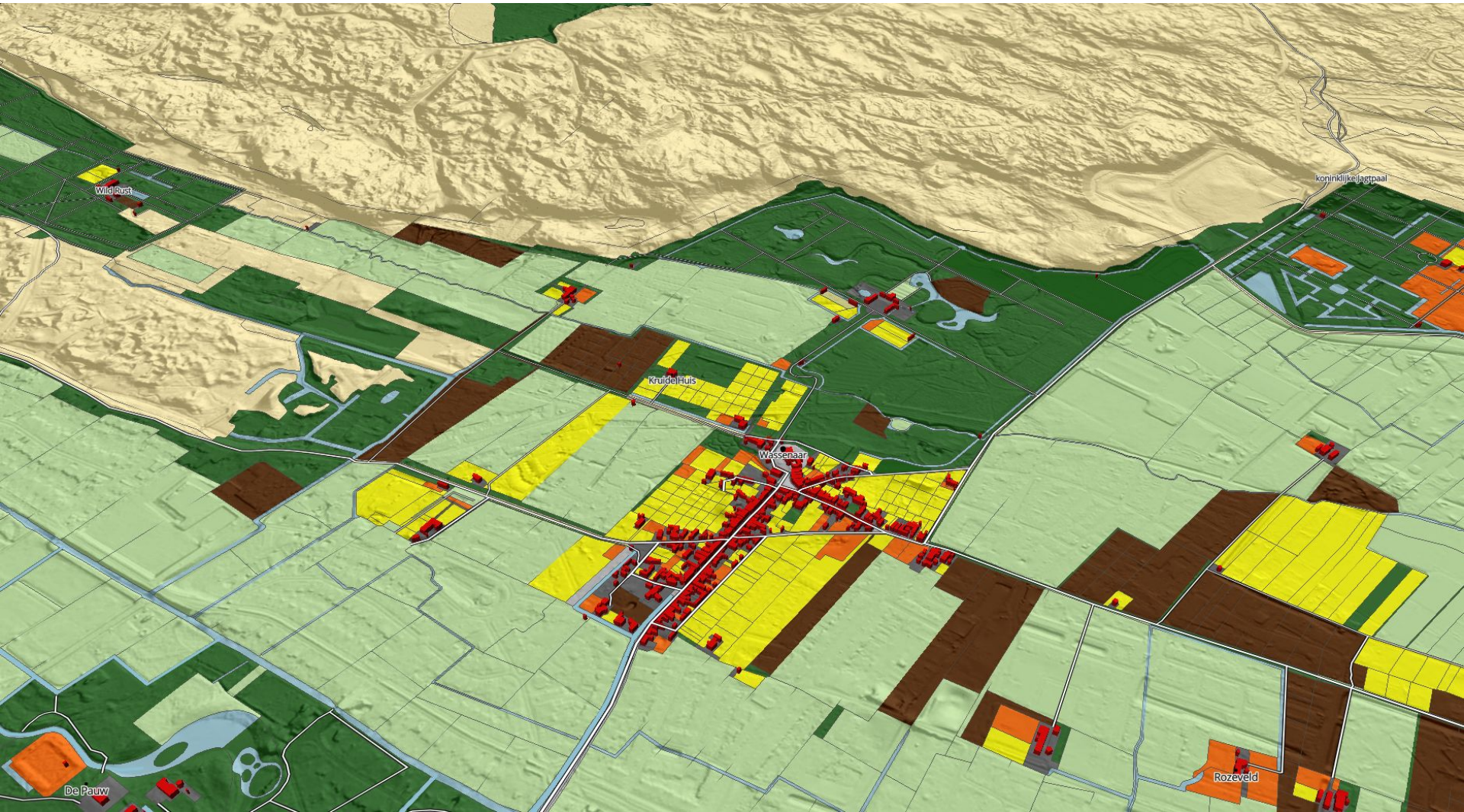

Conceptual challenge GIS:
Geometry ⇔ Semantics

GIS = Geographical Information System

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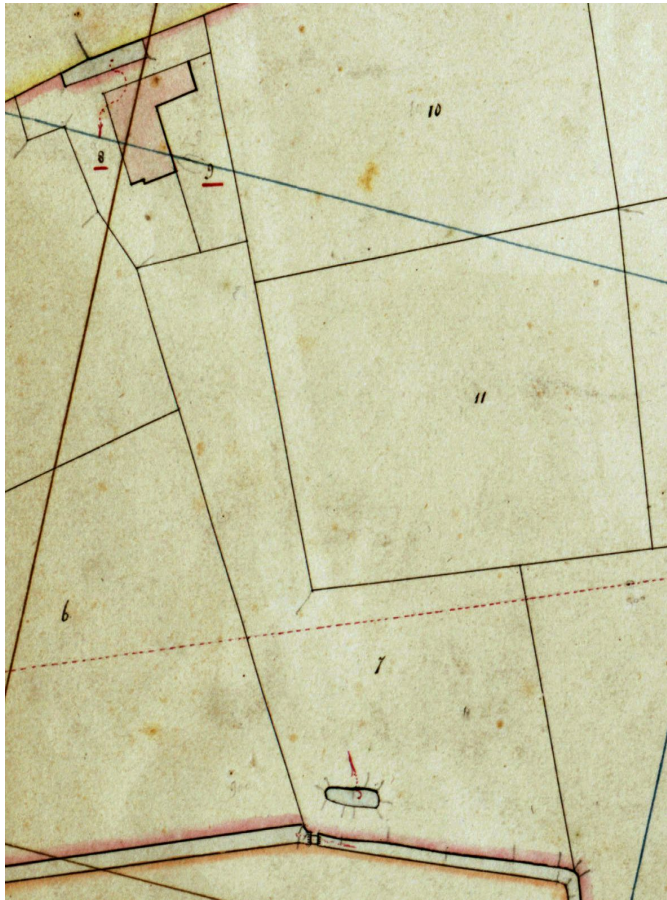
- **Geometry**: mathematical spatial definition:
  - points or nodes
  - lines, linestring, way
  - polygon, area
  - multi-geometries

    p.e. multi-polygon or *donut*
- **Semantics**: additional logical layer
  - parcel ~ administrative construction

    ⇒ cadastral address
  - complex relation ~ landuse
  - sub-parts are their own entity; boundaries have semantic meaning

    p.e. river



Linked Data @ GIS:
from top-down to bottom-up

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- **In the olden days**: the shapefile* 😨

  ** also applies for other formats such as Geopackage (.GPKG) or classic (relational) geographical databases*

  - **top-down**: entity-design (table) is **prescriptief**
  - entity (geometry + data-columns, *row*)
    belongs to exactly 1 class (= entity-type / file)

- **Linked Data** 😅
  - bottom-up: **descriptive**
  - geometric entity can be a member to ∞ classes
  - predicate-object statements for a subject determine the class
    ~ triples / key-value pairs paired to the entity
  - opportunity: separation between geometry and semantics

Implementation: Open Street Map (**OSM**)

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- known as platform for volunteers to cooperatively work on a current and actualised, modern, map
  ⇒ also OpenSource design for LinkedData-*inspired*™ platform
    - OSMAPI (ruby-on-rails API)
    - relational database-architecture postgres

- Team Geo: OSM as a Docker-container
    - **Docker**: simple implementation per project (contact us!)
    - multi-user interaction
    - volunteers from within their home (Corona…)
    - **separation geometry - semantics**
      by using key-value pairs per geometry ~ triple
        - **geometry** (subject)
        - **key** (predicate / property / *column*)
        - **value** (object; value for that property; *cel*)

2.5D with Mapbox

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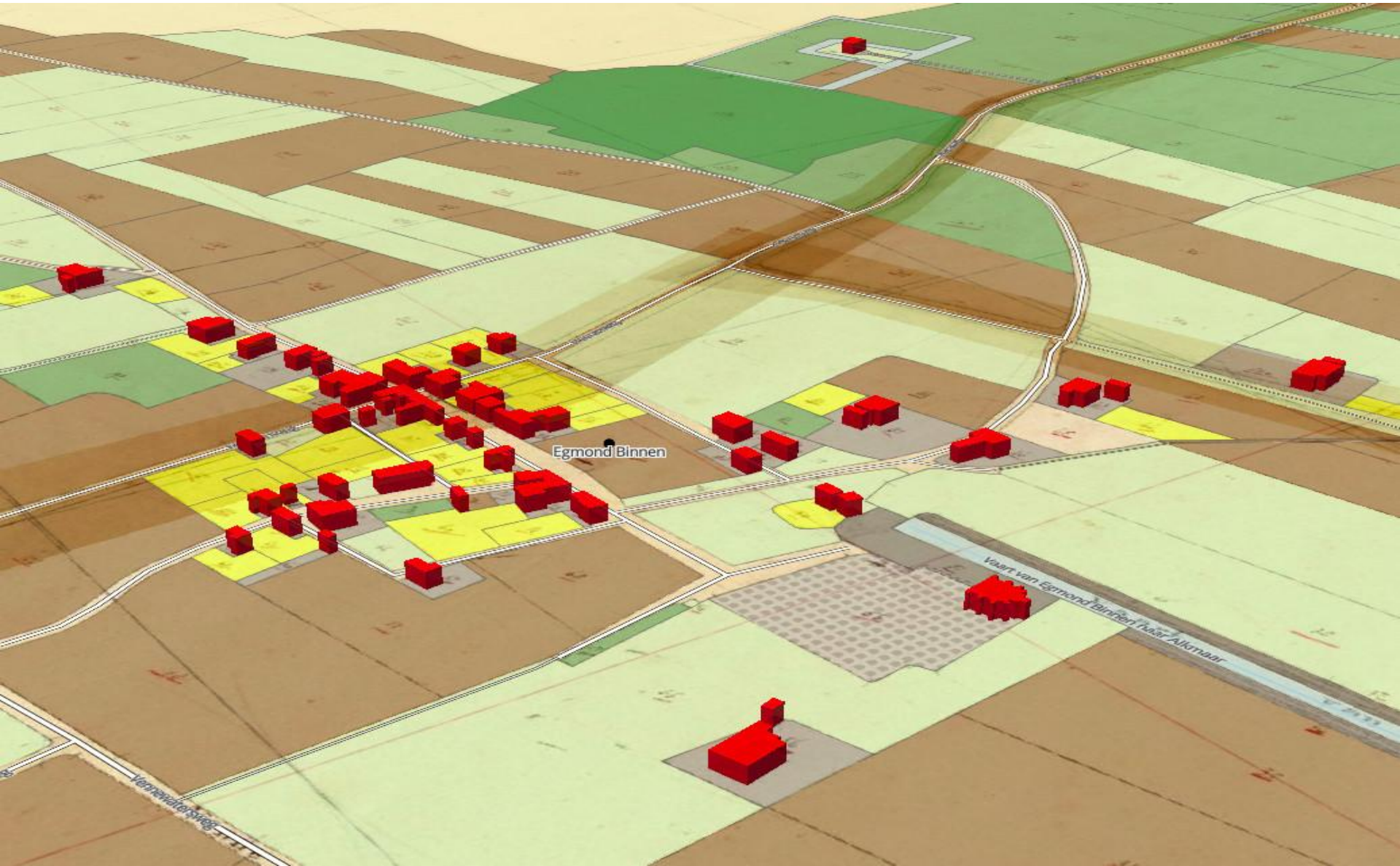

HisGIS: Leiden and surroundings

historical TomTom

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Combining maps with blending-techniques

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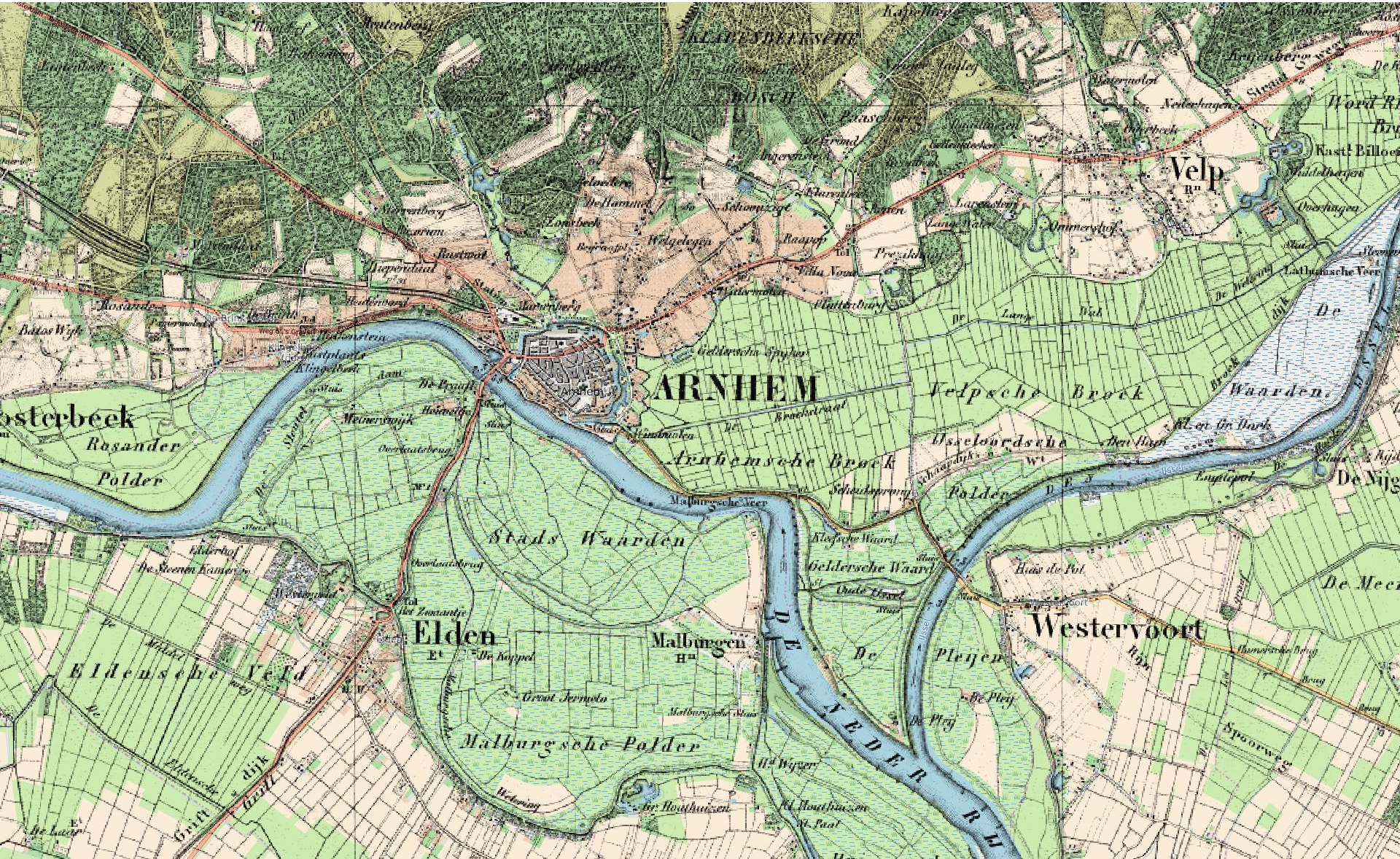

Any questions?

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