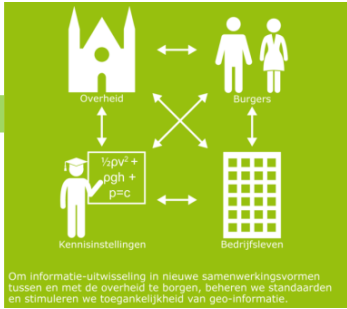


## The project: BGT Linked Data

# Added value of **Linked data** for the Base Registry **Grootschalige Topografie**

Linda van den Brink, 2-4-2015

## Enabling standards

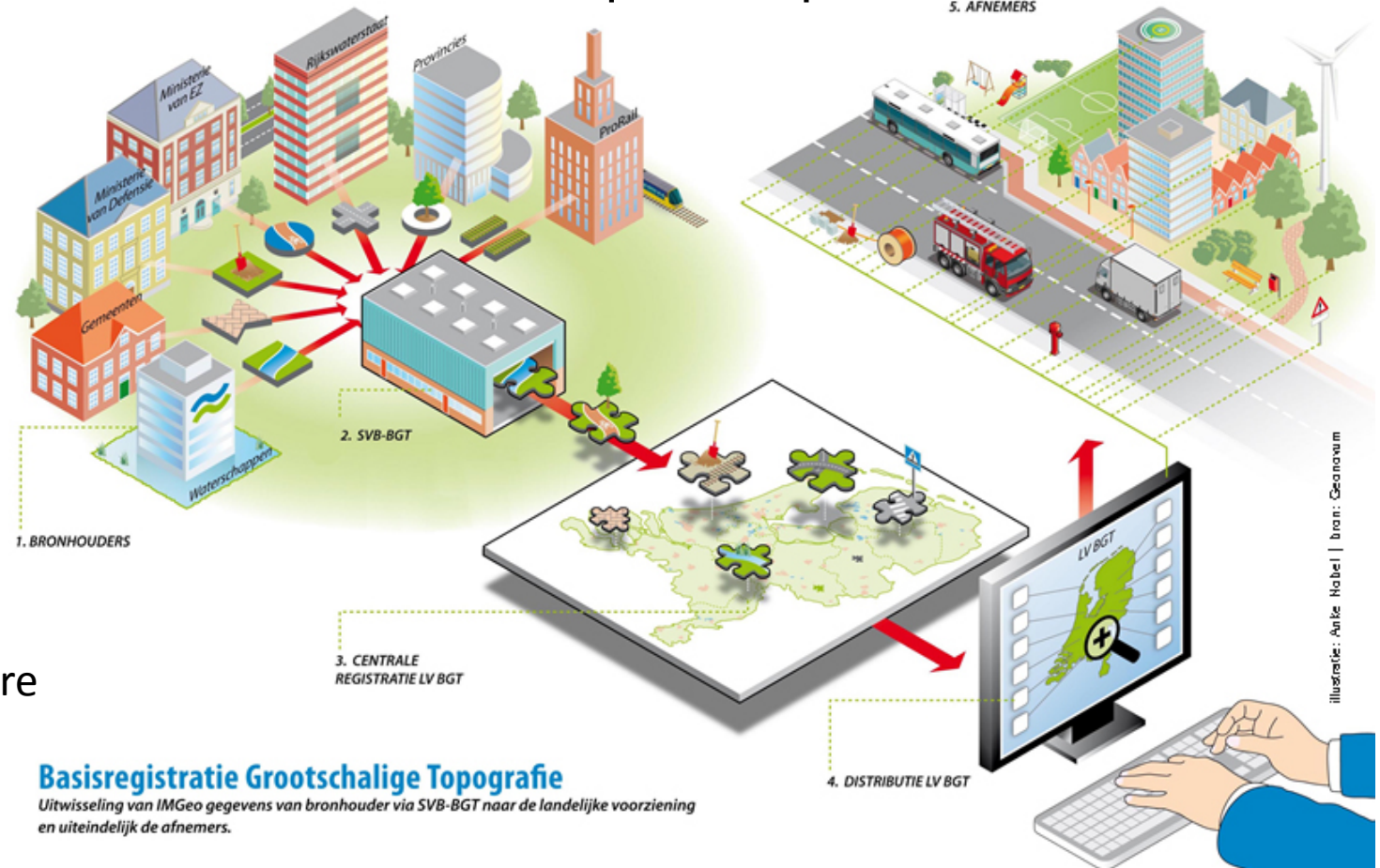


Dutch standard for large scale topography  
2.0 version 2011  
mandatory part as part of key registry  
optional part with lot of extras

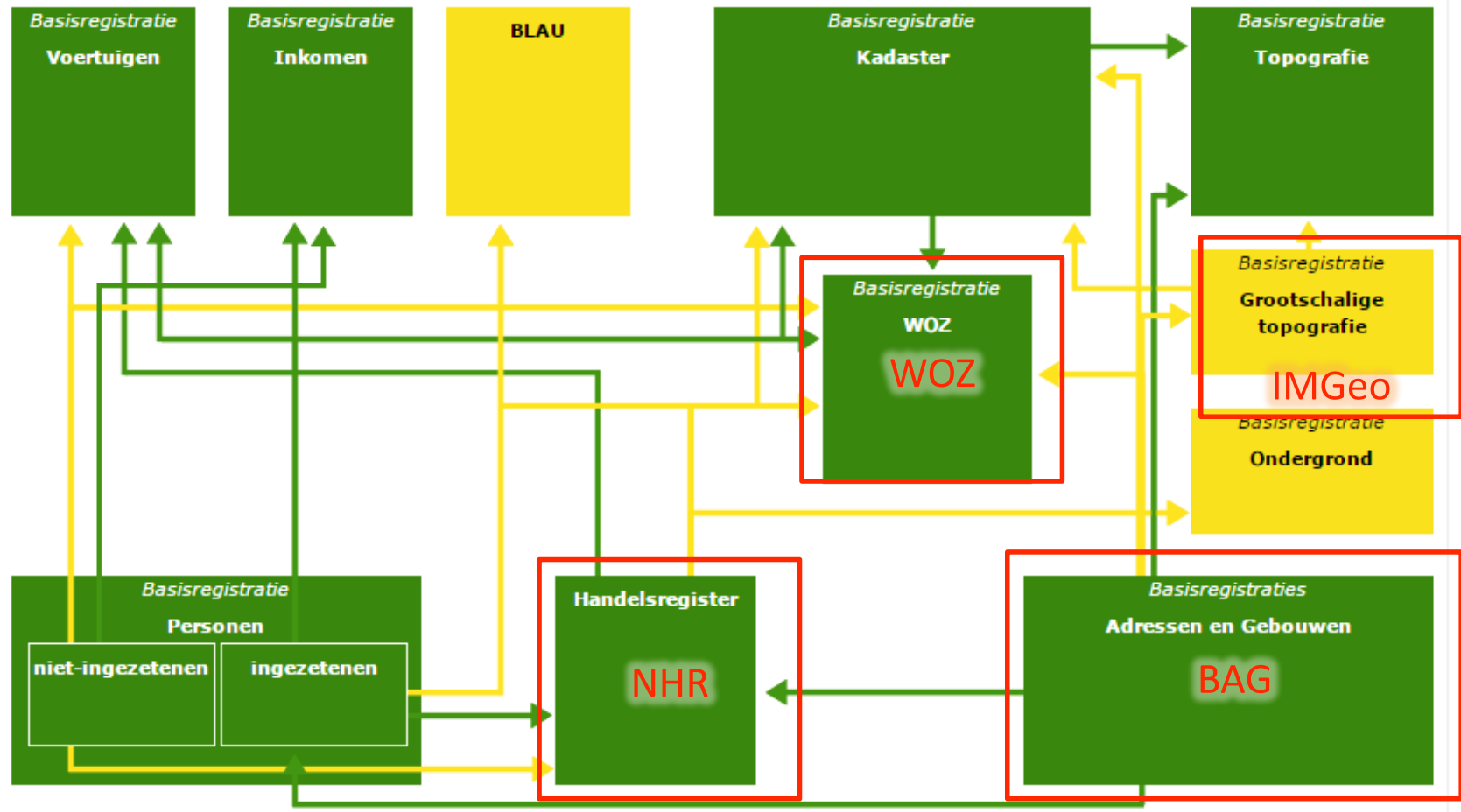
# Information model geography (IMGeo)

## Data providers:

- 400+ municipalities
- 25 water boards
- 12 provinces
- ministry of infrastructure
- ministry of agriculture
- ministry of defense



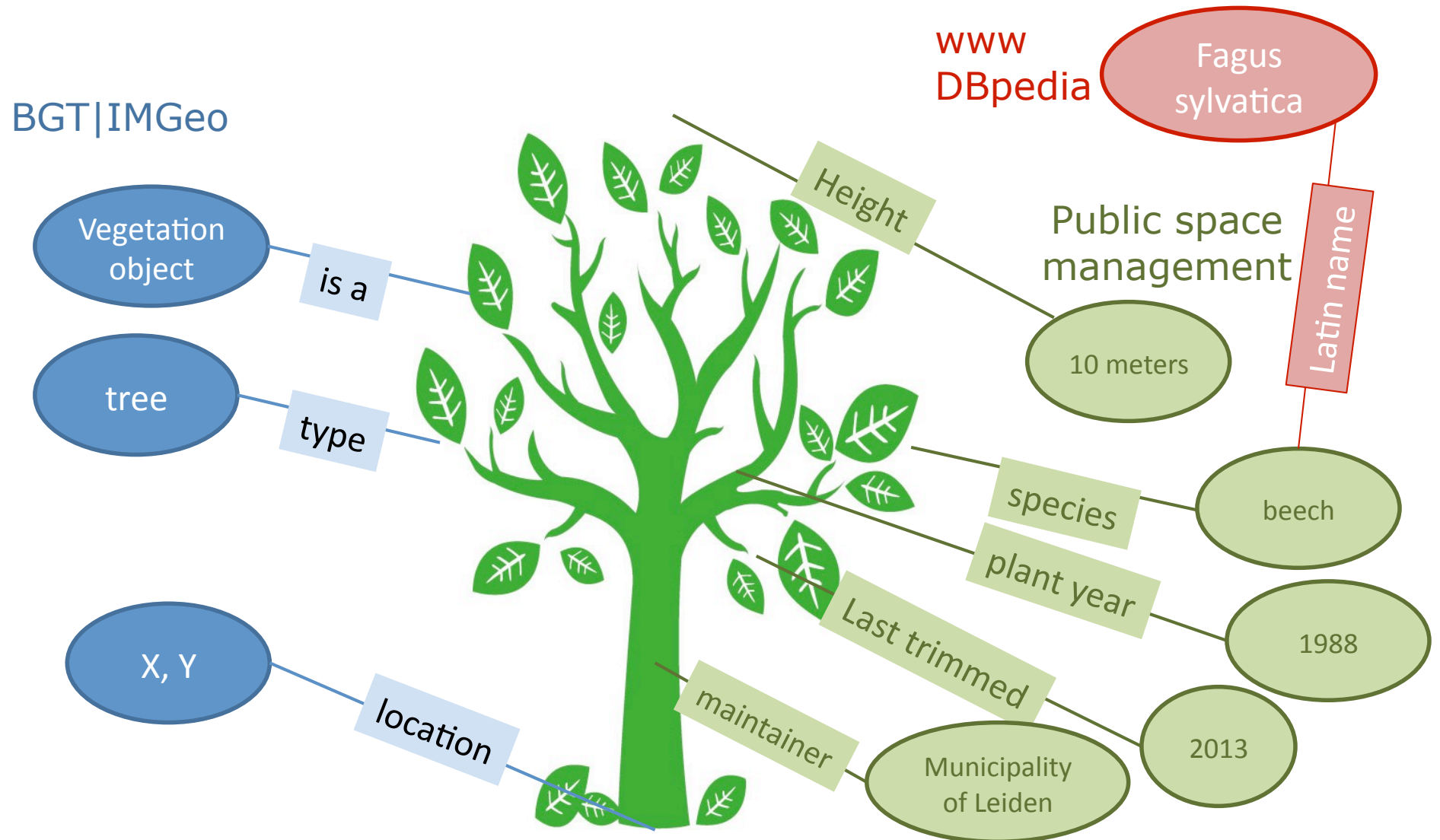
# Can linked data connect our base registries?



“Is Linked Data a good technology to connect data in the system of base registers in such a way that this data can be used to answer cross-register questions?”



# “Linked data offers a good way to enrich data”



---

**“What about performance and storage of large volumes of linked data?”**



## So we created a prototype

IMGeo data combined with data from other base registers



## The problem...



- Base registers were **created** to enable **reuse**
- But ... they are **silos** with **complex** interfaces for synchronization
- Most base registers have an **open data** policy
- But... **getting** all the data took us **2 months**

## Step 1: Collecting data

- Area: City of Leiden
  - BGT large scale topo
  - Public space asset management data
  - BAG addresses + buildings
  - WOZ building tax
  - NHR businesses

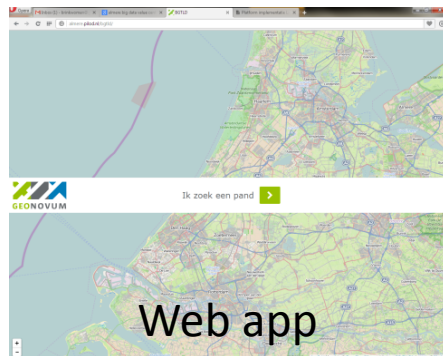




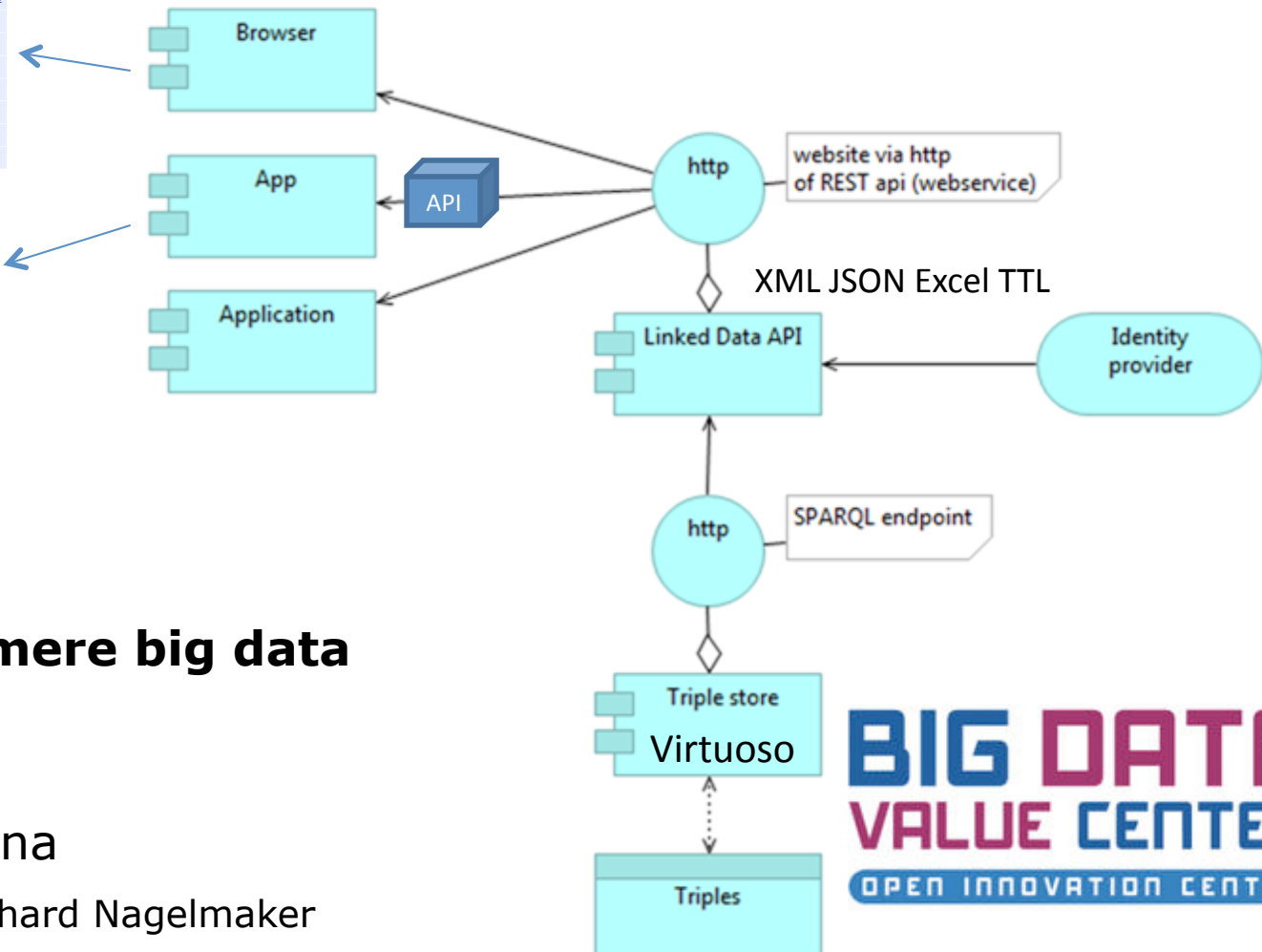
## Step 2: setting up linked data server

|   |   |
|---|---|
| <a href="http://bag.kadaster.nl/id/nummeraanduiding.0003200000141460">http://bag.kadaster.nl/id/nummeraanduiding.0003200000141460</a> |   |
| type  | Nummeraanduiding  |
| gerelateerdeOpenbareRuimte  | <a href="http://bag.kadaster.nl/id/openbare ruimte.0003300000117060">http://bag.kadaster.nl/id/openbare ruimte.0003300000117060</a> |
| identificatiecode   | 3200000141460   |
| ingangsdatum  | 2014-06-25T22:00:01+02:00   |
| officieel   | 0   |
| status  | Naamgeving uitgegeven   |
| postcode  | 9907SP  |
| typeAdresseerbaarObject   | terrein   |
| huisnummer  | 2   |

Data browser



Web app



- Installed on **Almere big data center**

Developed by Ordina

Marco Brattinga en Richard Nagelmaker

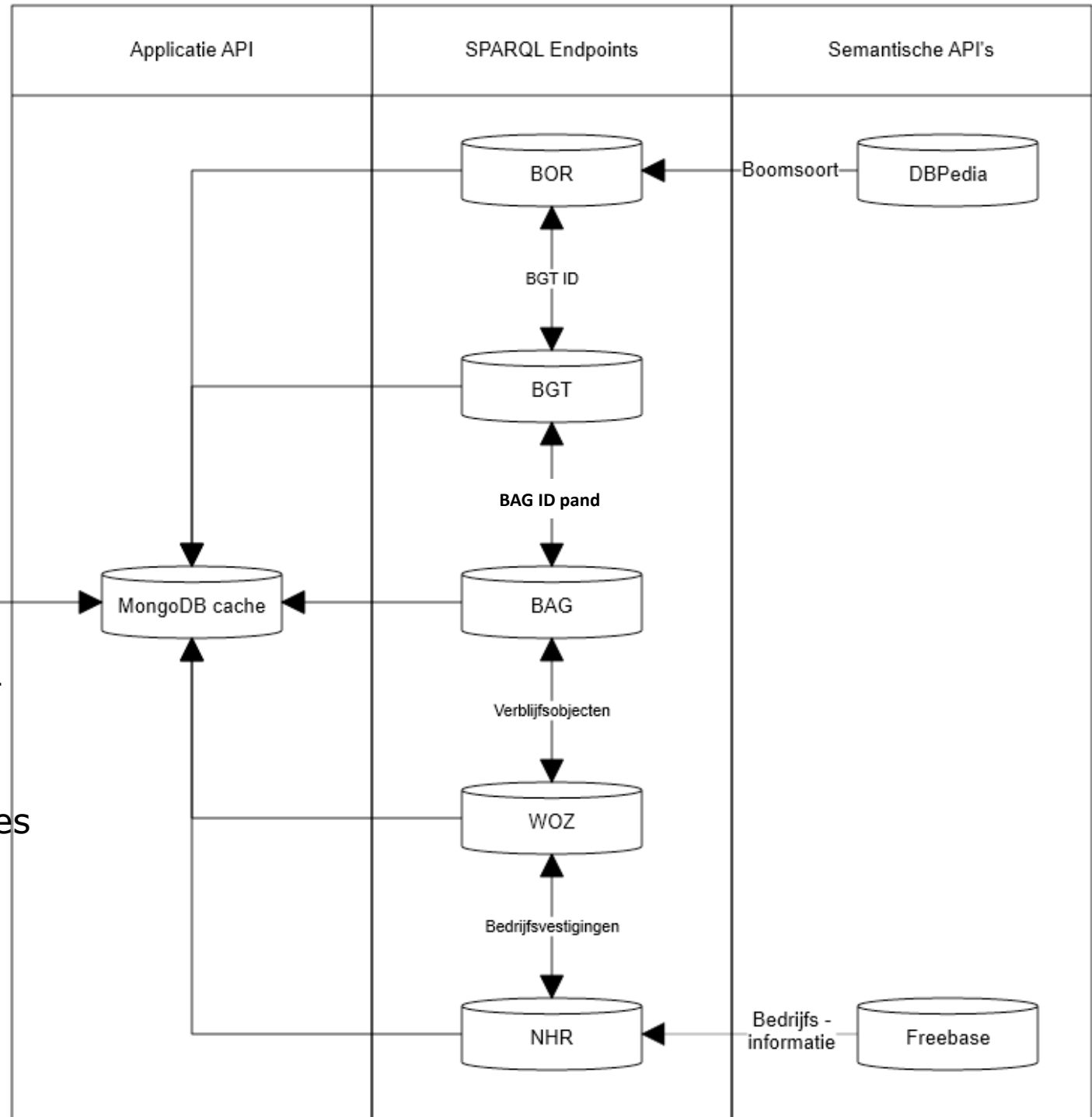
## Step 3: Converting data to linked data

- Took 1 ½ week
- Challenge: different source formats
- We ❤️ standards: GML / XML took a lot less effort than e.g. database dumps
- Challenge: volume
  - Not succeeded in converting all the data (BGT, BOR partly)
- Challenge: generating links
  - E.g. different ways of referring to addresses

# A linked data architecture

- Realized frontend in 1 week
- 2<sup>e</sup> API layer for web developers
- Use of existing libraries like Leaflet
- Caching
- Data enriched with external sources

Developed by Freshheads

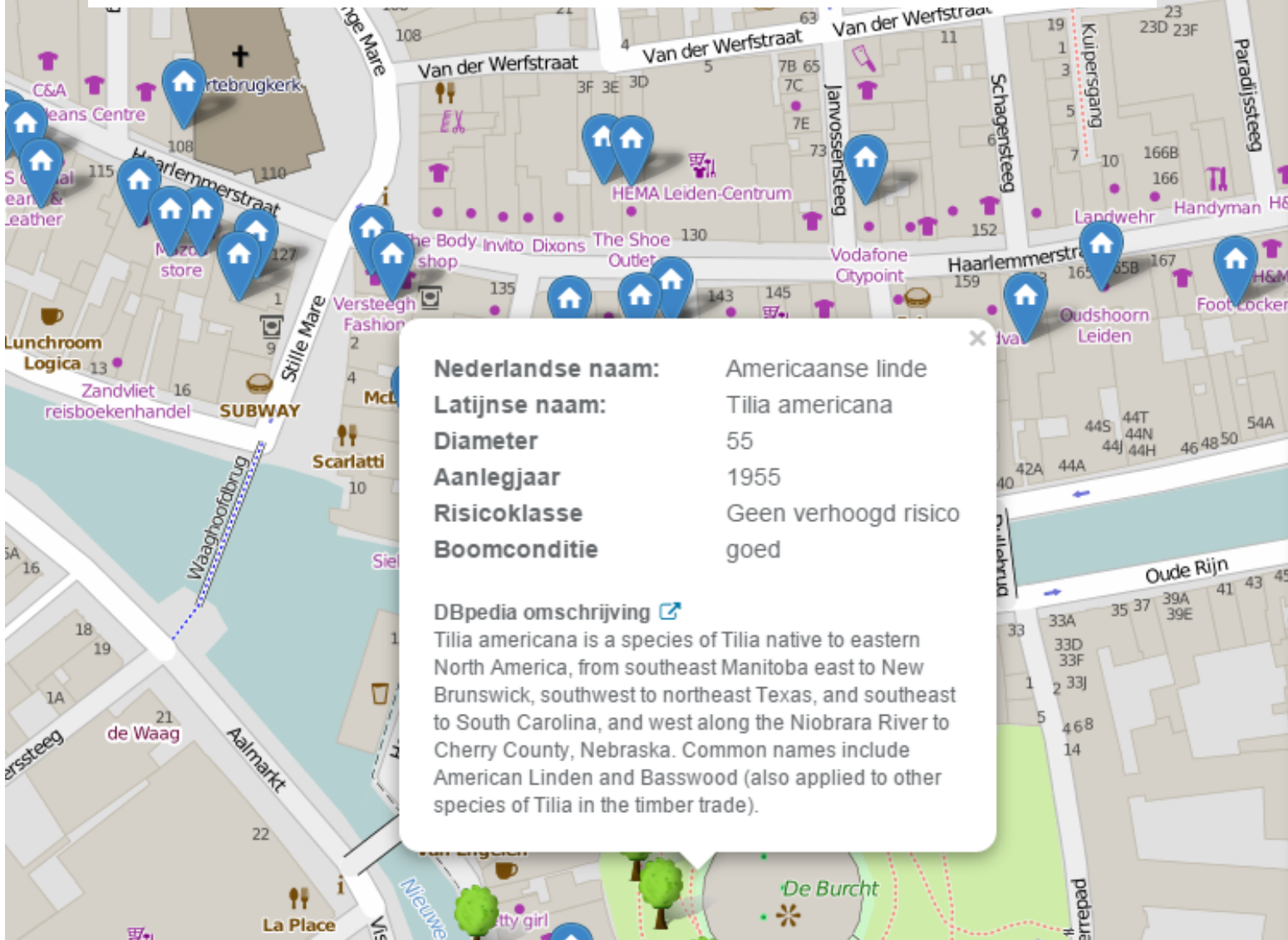


🕒 bouwjaar voor 1906

🏠 WOZ-waarde van € 500.000,- en € 1.000.000,-

# IMGeo Linked data

<http://almere.pilod.nl/bgtld>



**Nederlandse naam:** Amerikaanse linde  
**Latijnse naam:** Tilia americana  
**Diameter:** 55  
**Aanlegjaar:** 1955  
**Risicoklasse:** Geen verhoogd risico  
**Boomconditie:** goed

**DBpedia omschrijving** [🔗](#)  
 Tilia americana is a species of Tilia native to eastern North America, from southeast Manitoba east to New Brunswick, southwest to northeast Texas, and southeast to South Carolina, and west along the Niobrara River to Cherry County, Nebraska. Common names include American Linden and Basswood (also applied to other species of Tilia in the timber trade).

**Bouwjaar** 1890  
**Status** Pand in gebruik

**WOZ-objecten** [🔗](#)  
 In dit pand zijn 6 WOZ-objecten geregistreerd

Er zijn in dit pand geen bedrijven gevestigd.

🏠 Woning (4)      🏪 Winkel (2)



Barchman Wuytierslaan 10, 3818 LH Amersfoort, NL

Postbus 508, 3800 AM Amersfoort, NL

+ 31 (0) 334 604 100

info@geonovum.nl

www.geonovum.nl

@geonovum.nl

[l.vandenbrink@geonovum.nl](mailto:l.vandenbrink@geonovum.nl)

@brinkwoman