



GWFF

GEOSPATIAL WORLD FORUM

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Geo Digital Twin in support of a sustainable future for our living environment





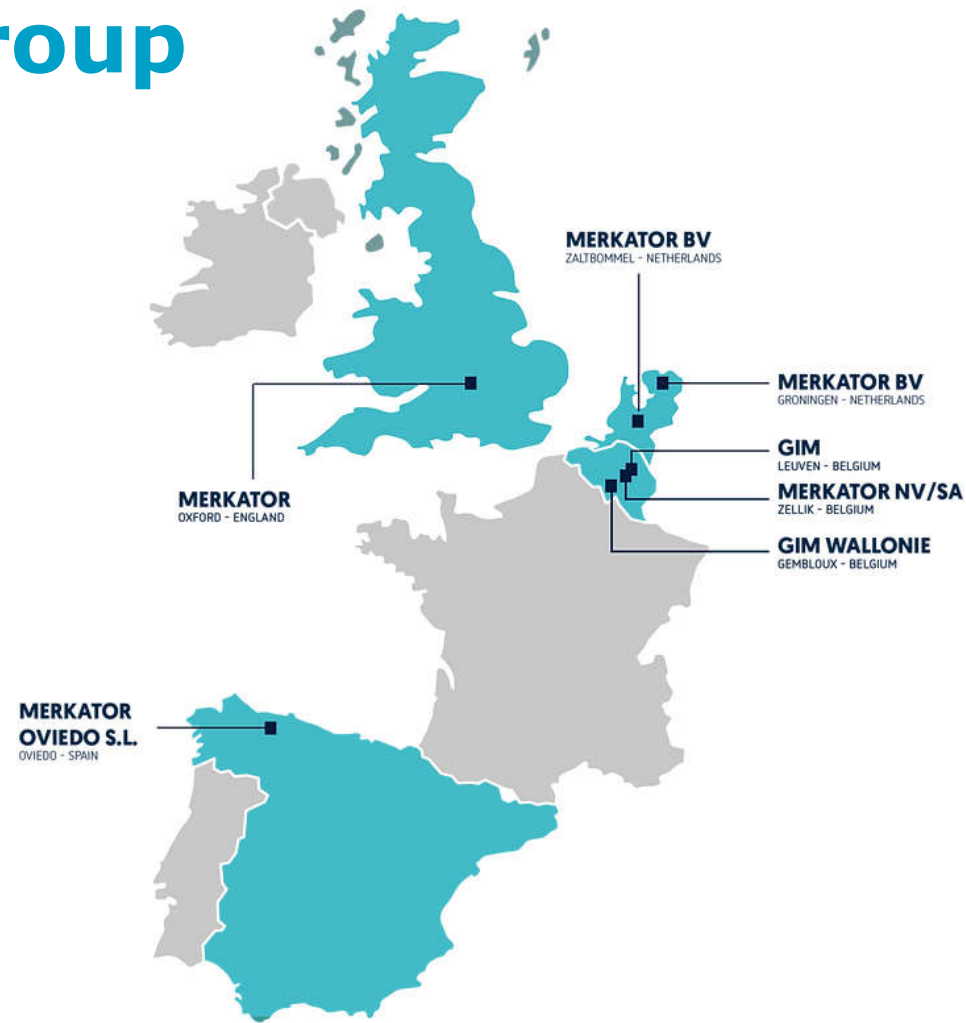
**“Every location has a story...
we bring it to life”**





Part of a strong group

(since 06/2022)



At home in various markets

Government




Private




Utilities & Telco




All-round expertise for the collection, integration and exchange of geodata



Geospatial AI
Sourcing more and better data faster



Geodata Engineering
Making data work for you



GeoICT
Bringing the story of locations to life



Building blocks of a Geo Digital Twin

3D BASE MAP



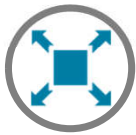
SIMULATION
PLATFORM



IOT SENSORS



Quality



Completeness



Maintenance

Building blocks of a Geo Digital Twin

3D BASE MAP



Quality



Completeness



Maintenance

SIMULATION PLATFORM



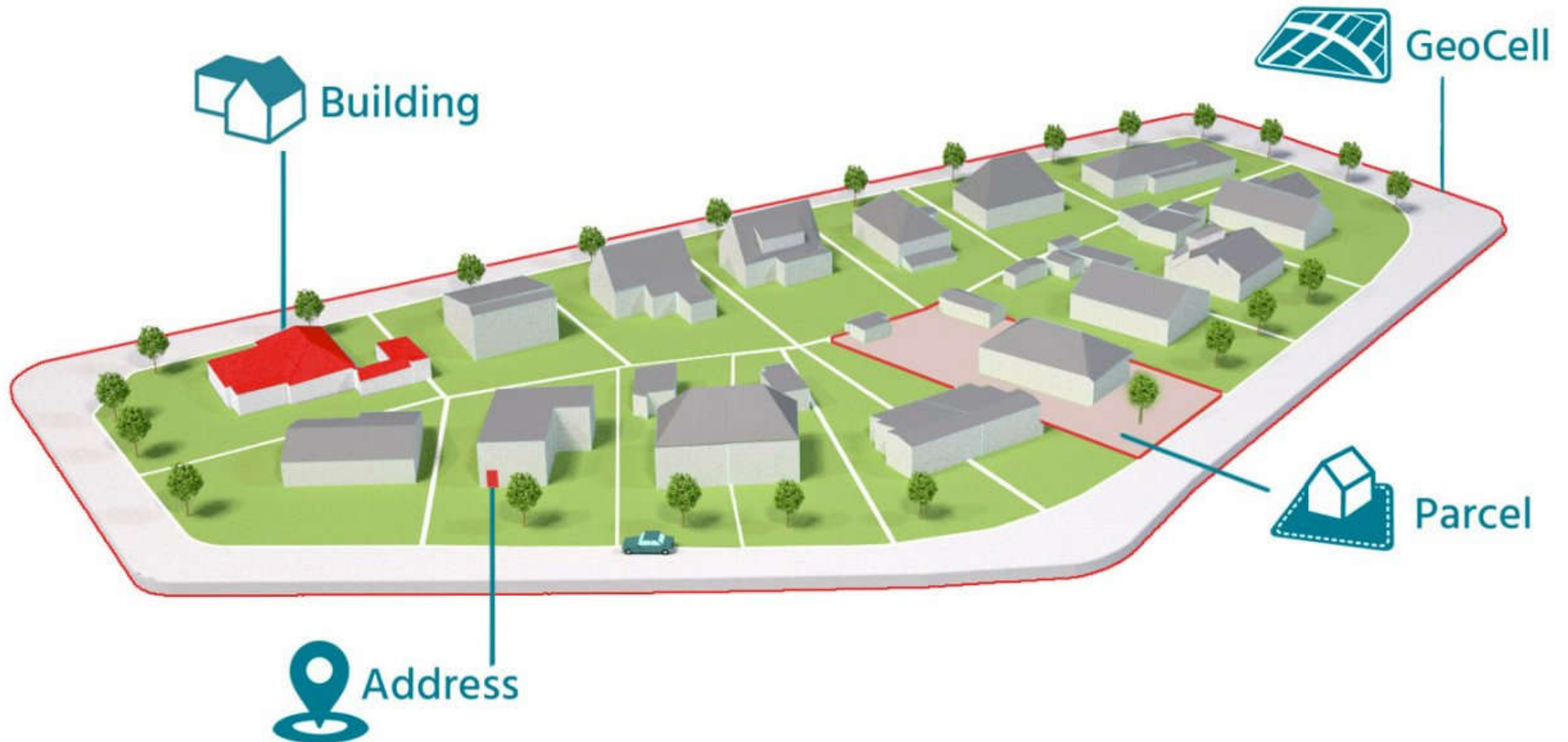
IOT SENSORS

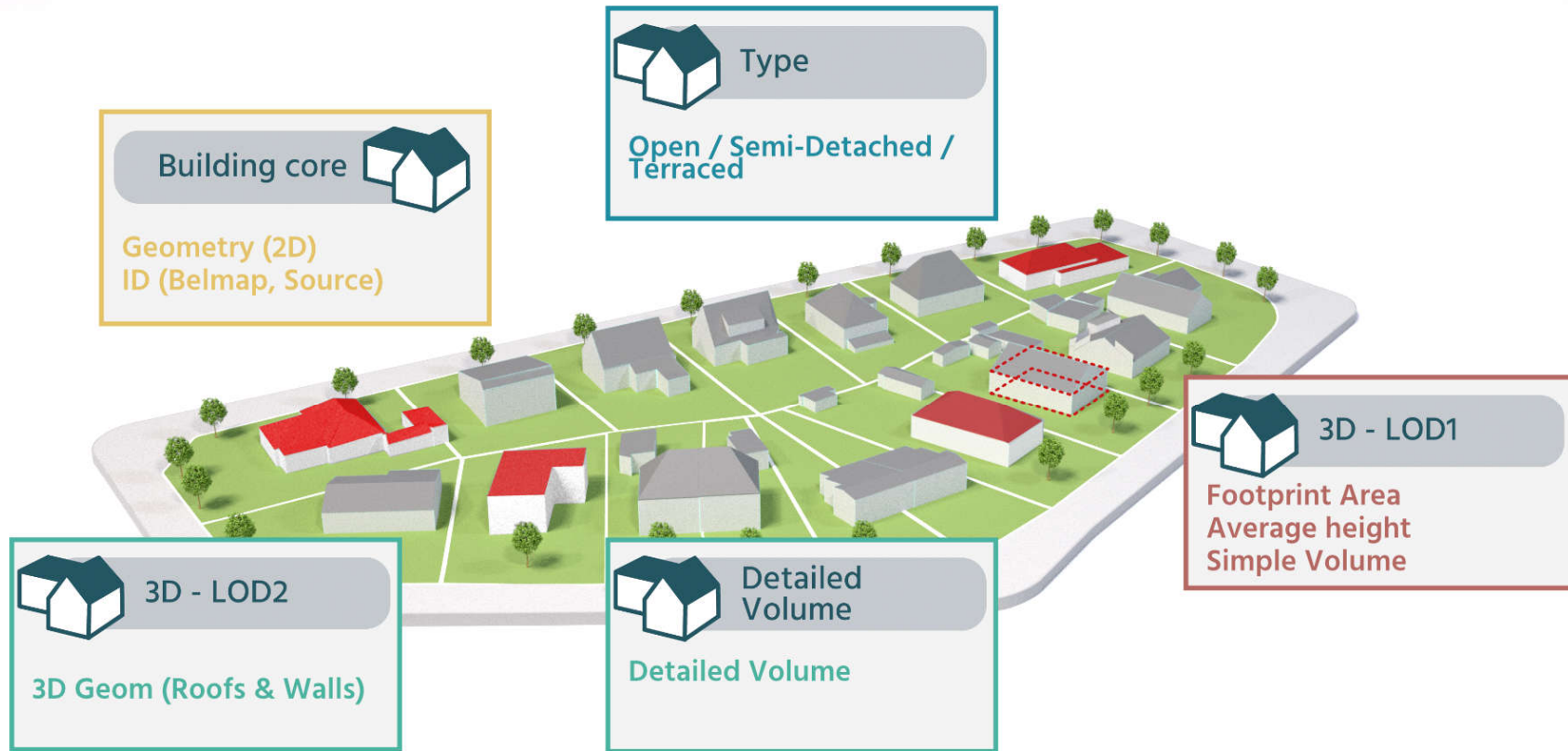


80% of all data is linked to location...



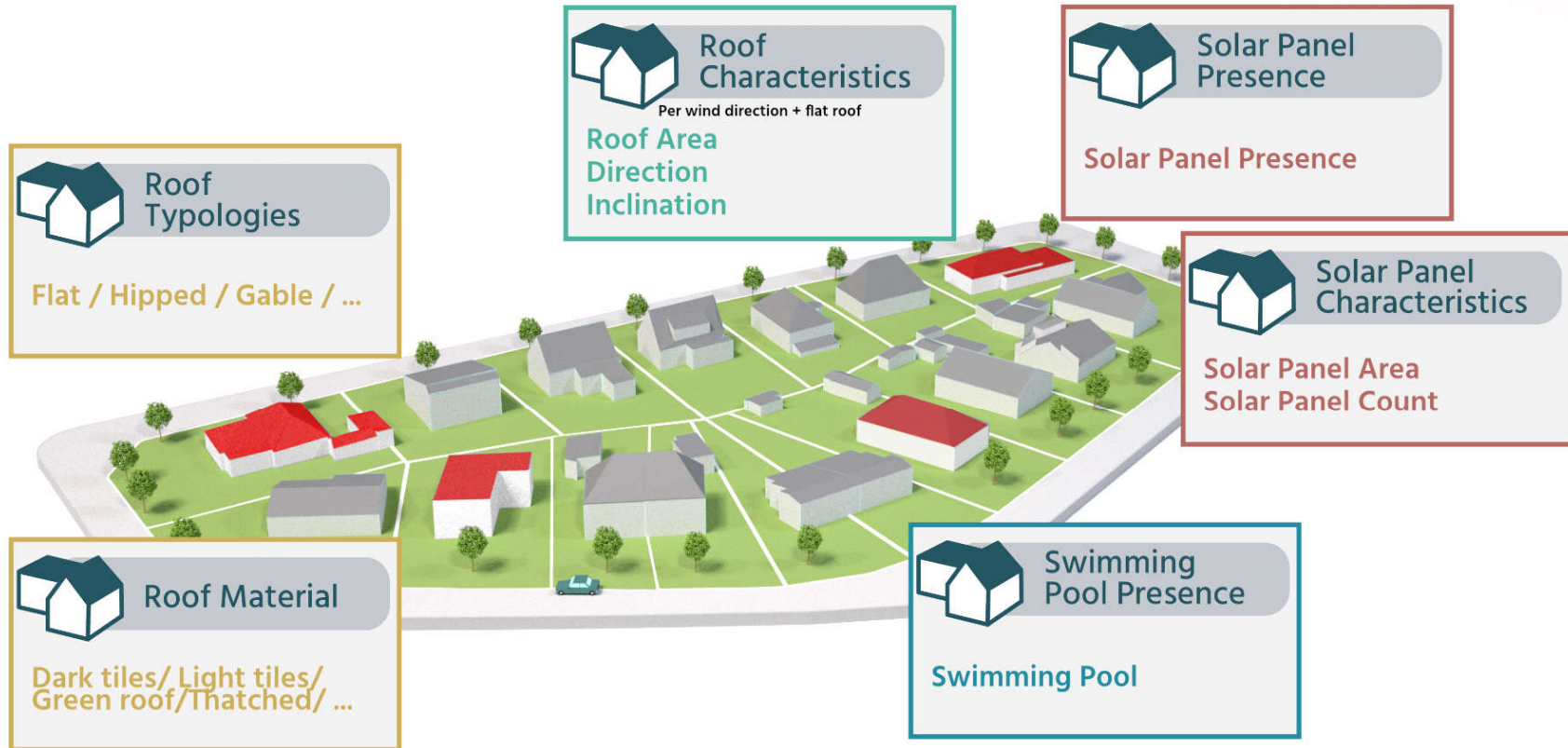
Belmap - Embrace Reality





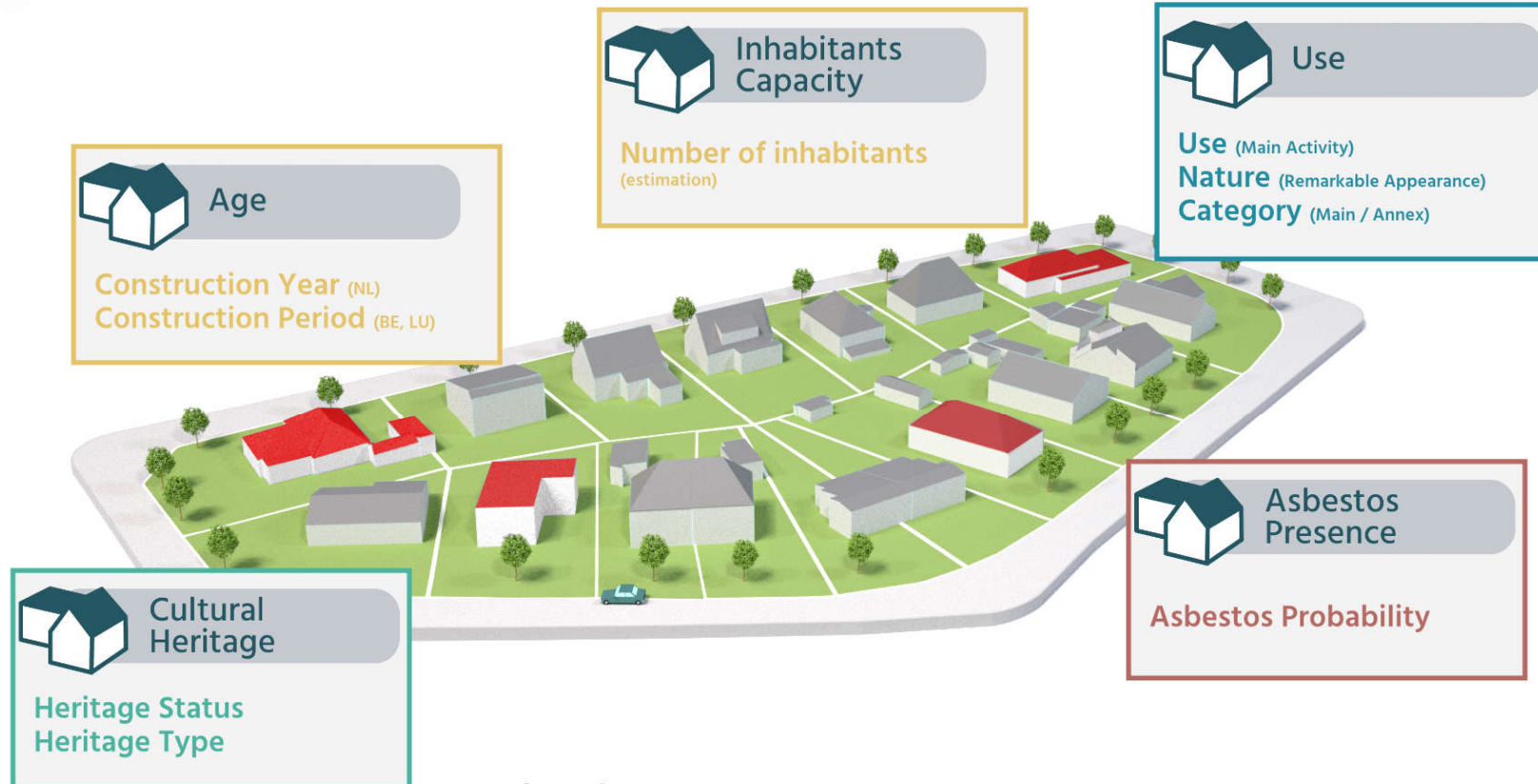
Building Data Modules

1/3



Building Data Modules

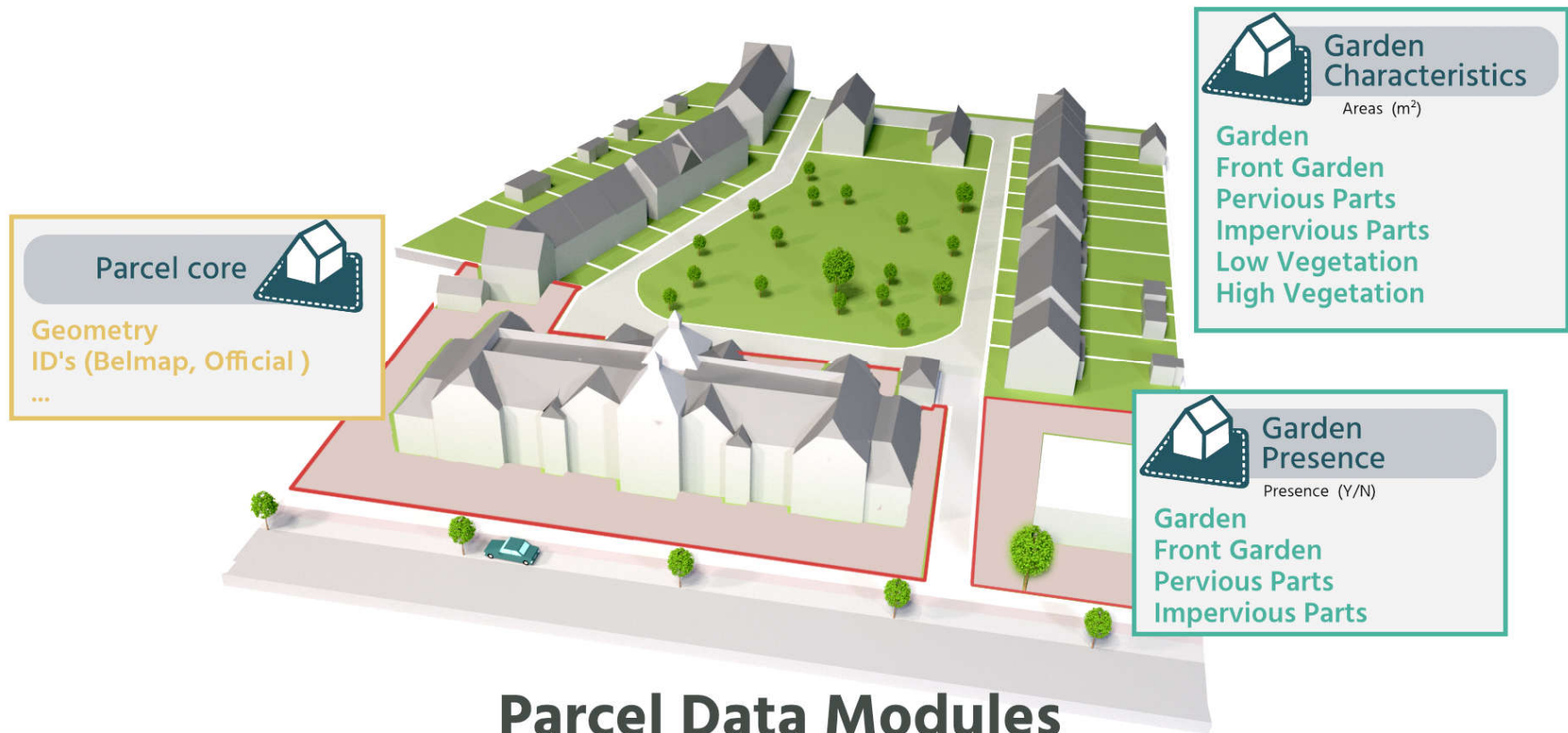
2/3



Building Data Modules

3/3

Belmap - Embrace Reality



Parcel Data Modules



Garden Modules

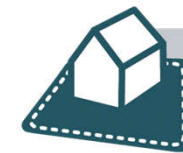
- 1 Buildings
- 2 Roads
- 3 Other Covered
- 4 Railroads
- 5 Water
- 6 Other Uncovered
- 7 Fields
- 8 Grass and bushes
- 9 Trees



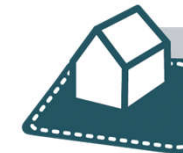
GIM's Land Cover Map



GIM's Front Garden Demarcation



Garden Presence



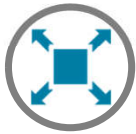
Garden Characteristics

Building blocks of a Geo Digital Twin

3D BASEMAP



Quality



Completeness



Maintenance

SIMULATION PLATFORM



IOT SENSORS





Zanadoo - Geo Digital Twin Platform

Understand the dynamics of today's and tomorrow's realities



Climate & Water



Urban Planning



Energy Transition



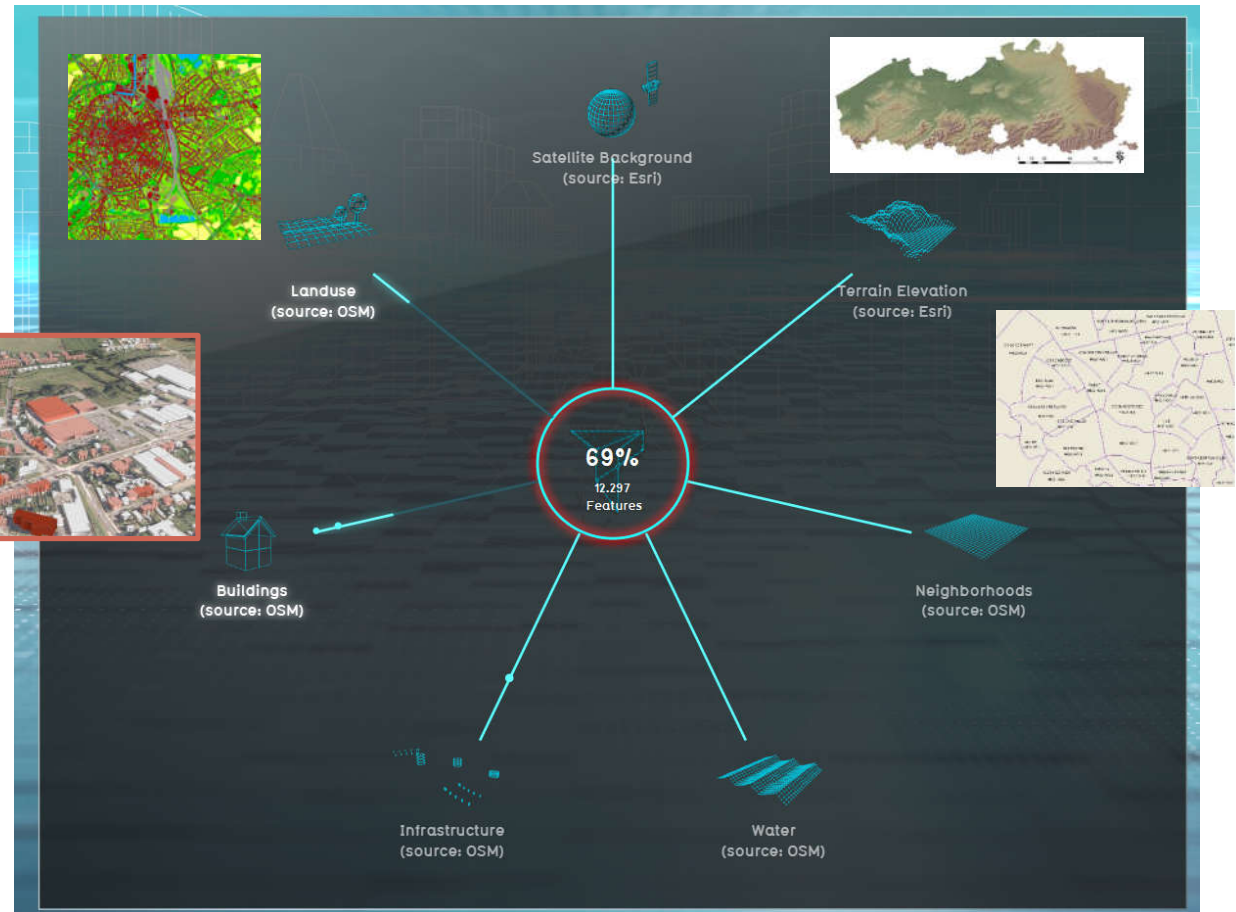
Use Case: Sustainable Urban Planning

- New housing block for young families > focus on no private garden but embedded in existing, already developed space with communal facilities
- Bottleneck between affordable housing and sufficient green/open space
- Consider impact on heat stress - traffic - livability



Loading data for building the 3D environment & the use case

- Belmap LOD1 / LOD2
- Landcover Map
- DHMVII
- Statistical Sectors (NIS)
- Trees
- Traffic (TomTom)





Naar 2D Overzicht

Zoek op adres

- Gemeente heeft maatregel Middenklasse woning toegepast.

Maatregel: Kessello
Maatregel gebouwd door: Gemeente
Grondhoogte: 28,365 m
Eigenaar: Gemeente
Maatregel: Kessello
Bron: Rudolf Koster, rvt_to_cityjson_kessello.json (2) en ESRI
Elevation: 25m

Kosten: € 28.972.465,-
Opbrengsten: € 38.629.954,-
Vloeroppervlak: 9.657 m2
Middenklasse woningen: 114

ADDING BIM BUILDING TO THE DIGITAL TWIN



EFFECT OF NEW BUILDING ON HEAT STRESS

weergave
ORGINEEL
GEPLAND

hittestress

Naar 2D-Overzicht

Zoek op adres

Hittestress toename



Hittestress toename

-1°C 0.5°C 0.5°C 1°C



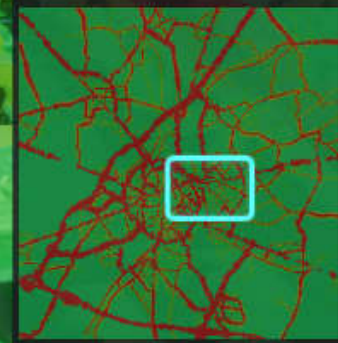
weergave
ORIGINEEL
GEPLAND

hittestress

Naar 2D Overzicht

Zoek op adres

Stikstofdioxide Verkeer



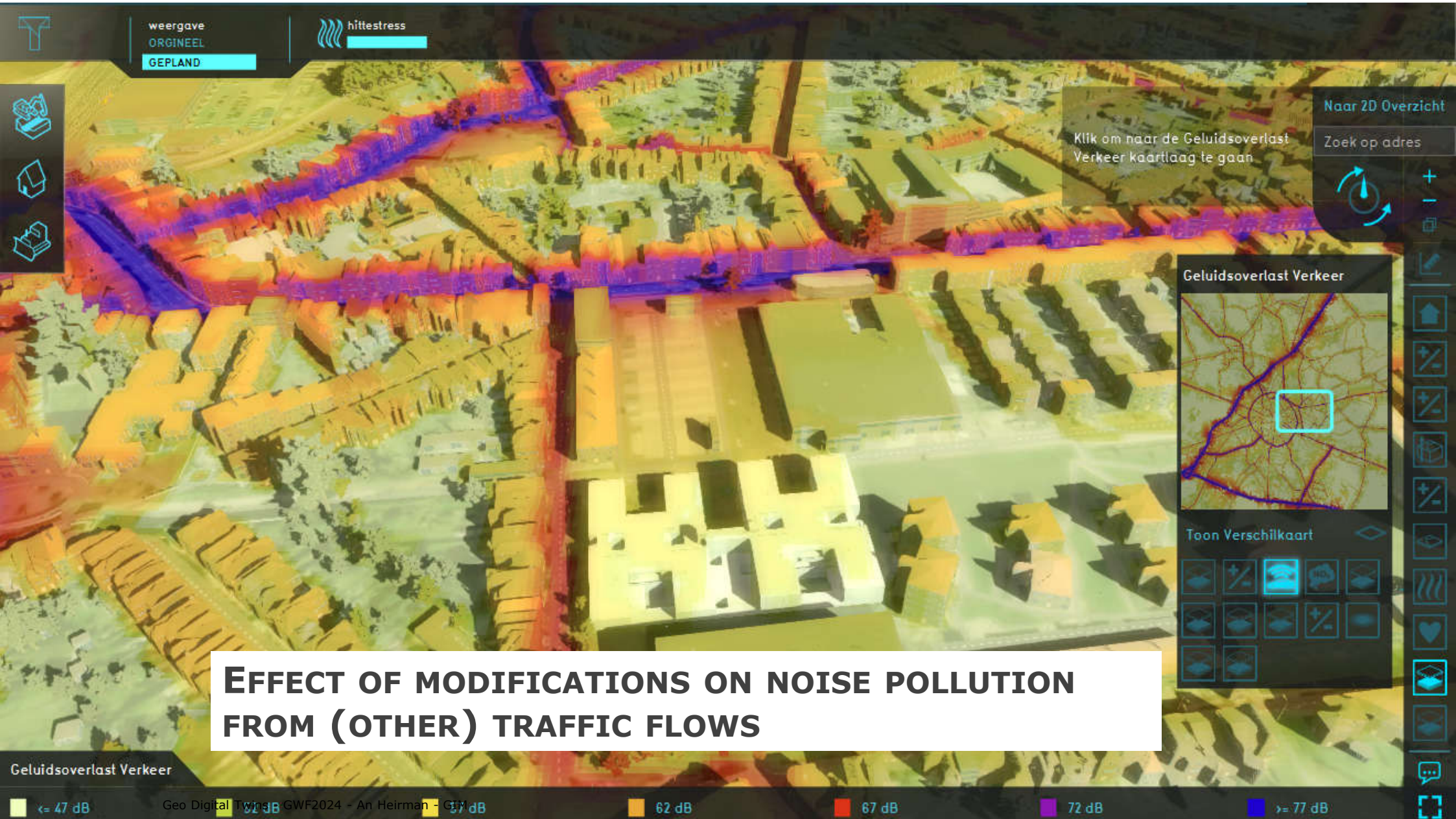
Toon Verschilkaart

Control panel for the difference map, featuring a grid of icons for various map layers and settings. The 'NO2' icon is highlighted, indicating that the difference map shows the impact of nitrogen dioxide (NO2) from traffic.

EFFECT TRAFFIC ON AIR QUALITY

Stikstofdioxide Verkeer

Geo Digital | Wvg/163/F2024 - An Heirman | 10 ug/m3 | 3 ug/m3 | >= 4 ug/m3



Naar 2D Overzicht

Zoek op adres

Klik om naar de Geluidsoverlast Verkeer kaartlaag te gaan

Geluidsoverlast Verkeer

Toon Verschilkaart

EFFECT OF MODIFICATIONS ON NOISE POLLUTION FROM (OTHER) TRAFFIC FLOWS

Geluidsoverlast Verkeer

<= 47 dB 52 dB 62 dB 67 dB 72 dB >= 77 dB

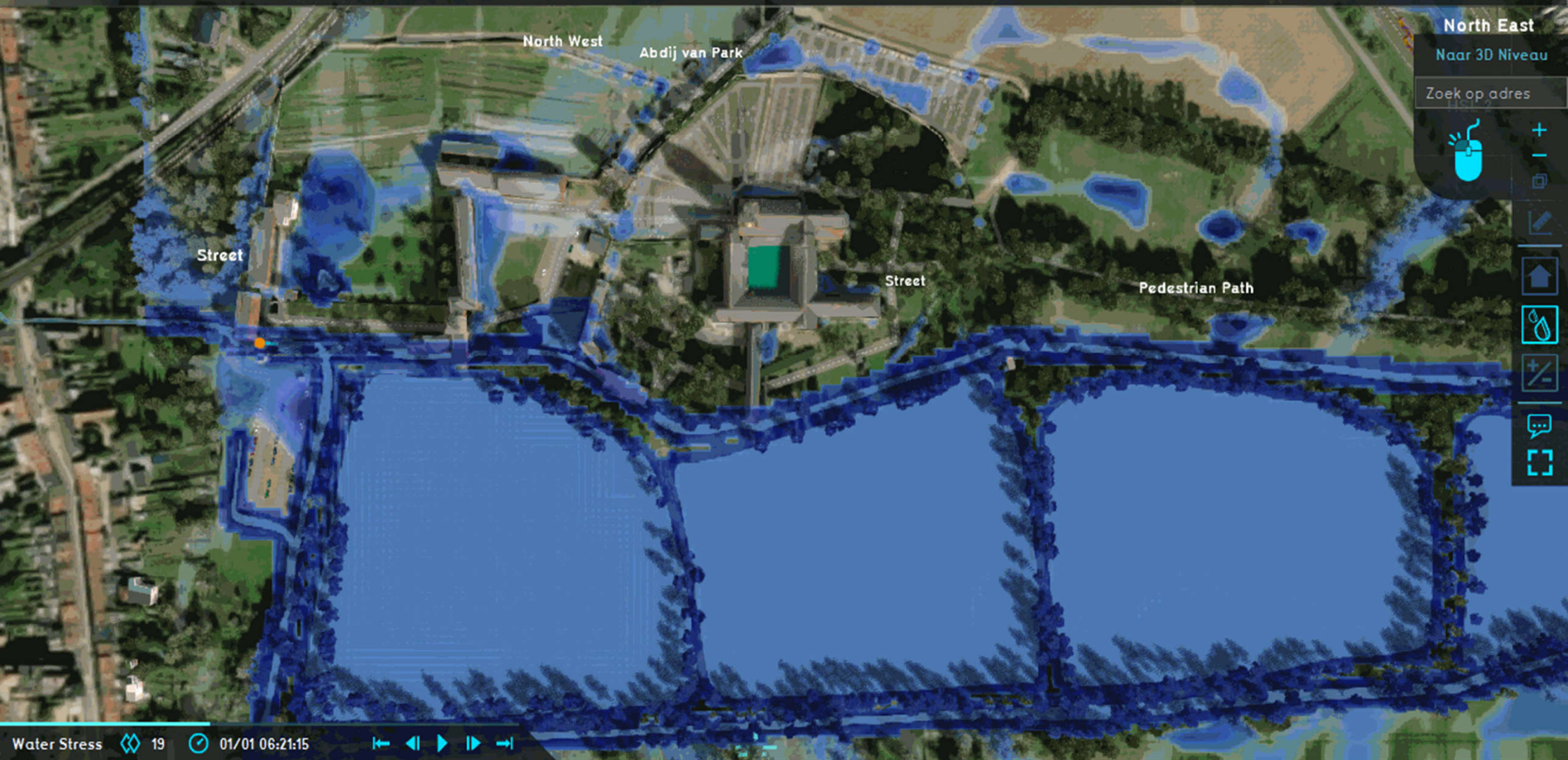
Geo Digital Twins - GWF2024 - An Heirman - City dB



IMPACT OF COMPENSATORY MEASURES IS EXPLORED - EX: PLANTING TREES

Use Case: climate and water





North East

Naar 3D Niveau

Zoek op adres



Water Stress 19 01/01 06:21:15

0 cm 1 cm 2,5 cm 5 cm 10 cm 25 cm >= 50 cm

Geo Digital - GWF2024 - An Heirman - CIM

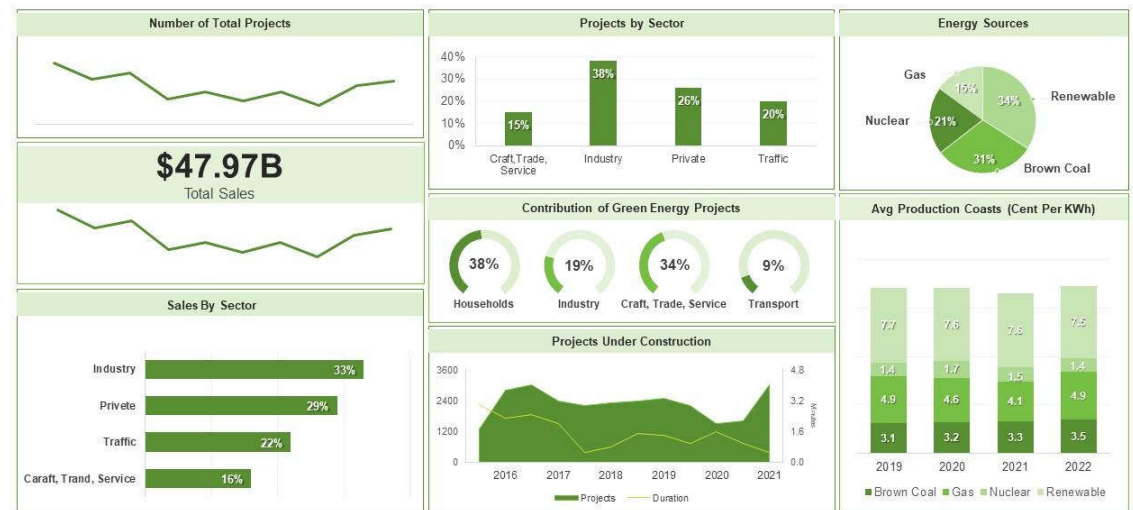
Use Case: Energy transition

▪ 'Energy dashboard'

- Investigate which energy transition measures are possible in a given area (municipality, neighborhood, etc.)
- Evaluate results, adjust goals
- Use Dashboard in participation moments with experts, local residents, companies, ... through the presentation of different scenarios

Dashboard for Our Green Energy Projects

This slide depicts the dashboard for our green energy projects by covering details of total projects, projects by sector, energy sources, the contribution of green energy projects in households, industry, etc.







The image shows a 3D aerial view of a residential development. The roofs of the buildings are color-coded to indicate their suitability for solar panels. A legend at the bottom identifies the colors: green for 'Zeer geschikt' (Very suitable), yellow for 'Mogelijk geschikt' (Possibly suitable), red for 'Niet geschikt' (Not suitable), and orange for 'Waarschijnlijk niet geschikt' (Probably not suitable). The development features a grid of streets, several canals, and a central roundabout. A UI overlay on the right side includes a search bar, navigation controls, and a 'Naar 2D Overzicht' button.


WHICH ROOFS ARE SUITABLE FOR SOLAR PANELS?

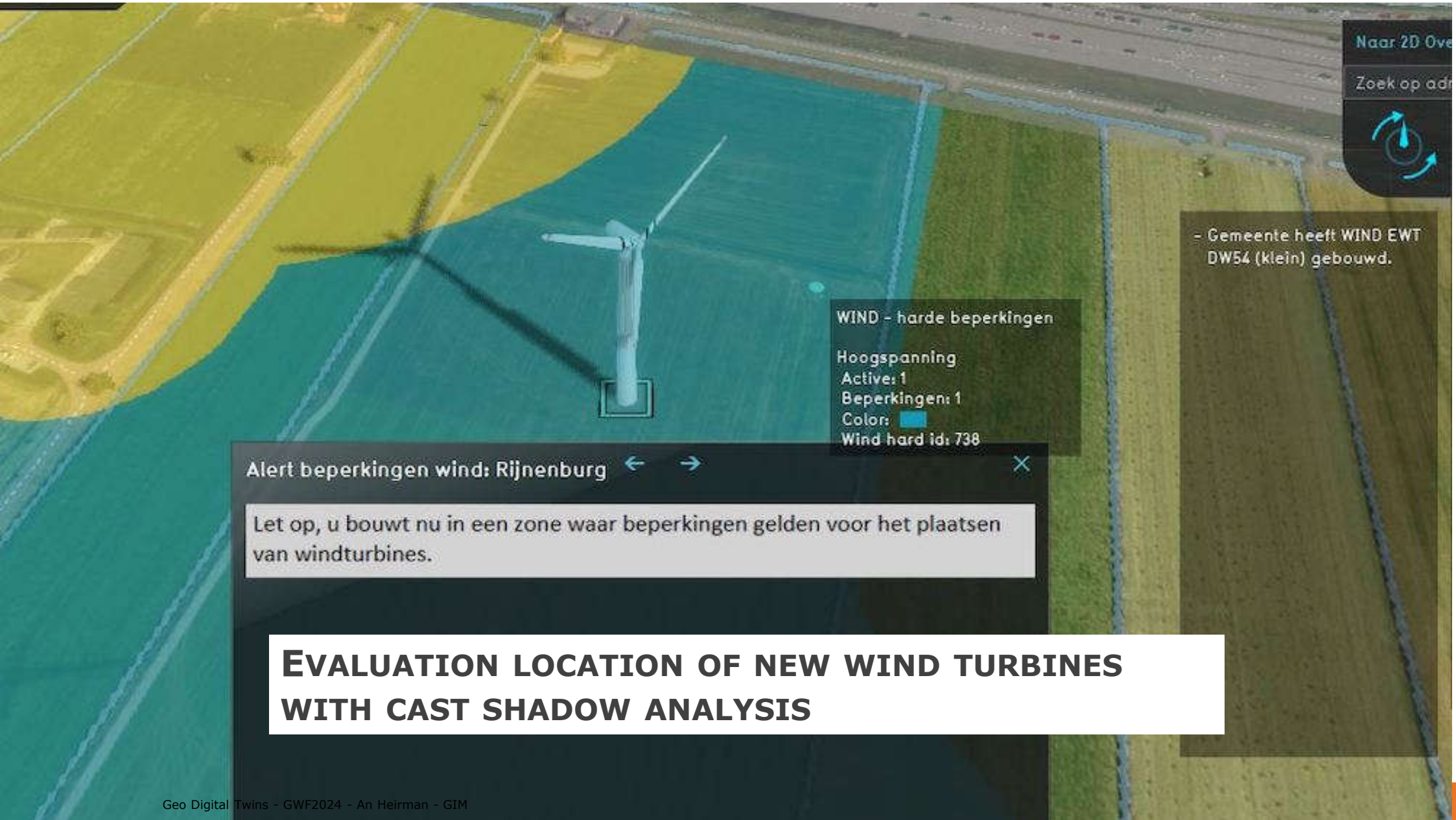
Daken geschikt voor zonnepanelen

 Zeer geschikt

 Mogelijk geschikt

 Niet geschikt

 Waarschijnlijk niet ges...



Naar 2D Over

Zoek op ad

- Gemeente heeft WIND EWT DW54 (klein) gebouwd.

WIND - harde beperkingen

Hoogspanning

Active: 1

Beperkingen: 1

Color: ■

Wind hard id: 738

Alert beperkingen wind: Rijnenburg ← → ×

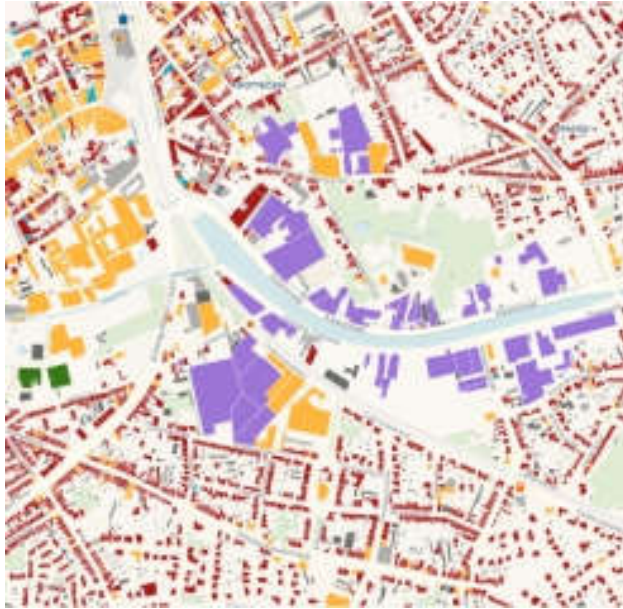
Let op, u bouwt nu in een zone waar beperkingen gelden voor het plaatsen van windturbines.

EVALUATION LOCATION OF NEW WIND TURBINES WITH CAST SHADOW ANALYSIS



“A digital copy of the built environment that models reality and enables to shape a sustainable future”

from 2D GIS...



to 6D Geo Digital Twins





Thank you

More info:
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016/40 30 39

