



EUROPEAN WEEK OF  
REGIONS & CITIES

2003 - 2022

New Challenges for  
Europe's Cohesion

# Embracing Local Digital Twins for collaborative design

## 3 URBANAGE Flanders key factors

Jurgen Silence – Digital Flanders

#EURegionsWeek



## Green Comfort Index score in public domain

- URBANAGE project : over second half of the project
- Quantify green & comfortable areas for older people in the city
- Flanders : 5 pilot cities
- 3 target groups : older citizens, experts, policy makers
- Co-creation workshops with all target groups
- Parameters : air quality, noise levels, heat stress, green/blue infrastructure, POIs, accessibility
- Map the public domain
- Use of artificial Intelligence(AI) and street imagery (POIs)

GREEN COMFORT INDEX  
Opacity

2D BASE LAYERS

Open street Map  
 Orthophotos Flanders  
 Hybrid map

AIR - NOISE

HEAT STRESS - SHADOW

POIs

GREEN INFRASTRUCTURE

BLUE INFRASTRUCTURE

ACCESSIBILITY

FEEDBACK

Export map to PDF



Green Comfort Index map

- Base layer
- Hexagon overlay
- Color scale + score



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Export map to PDF

**Green comfort index : 3,5** X

Average user score : 3,5 - 115 votes

Average expert score : 4,0 - 9 votes

Air quality, noise

Heat stress, shade

POIs

Green infrastructure

Accessibility

**I AGREE** **SCORE IS INCORRECT**

Green Comfort Index map  
- clickable GCI info

0 1 2 3 4 5



Also offline options to consult GCI



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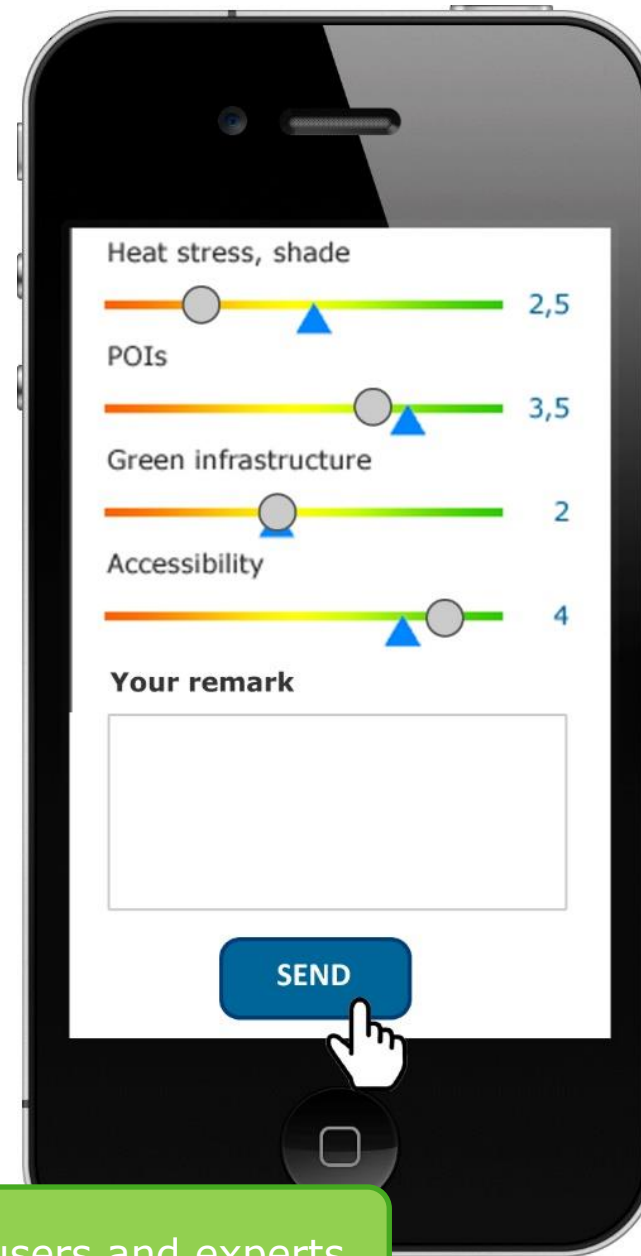
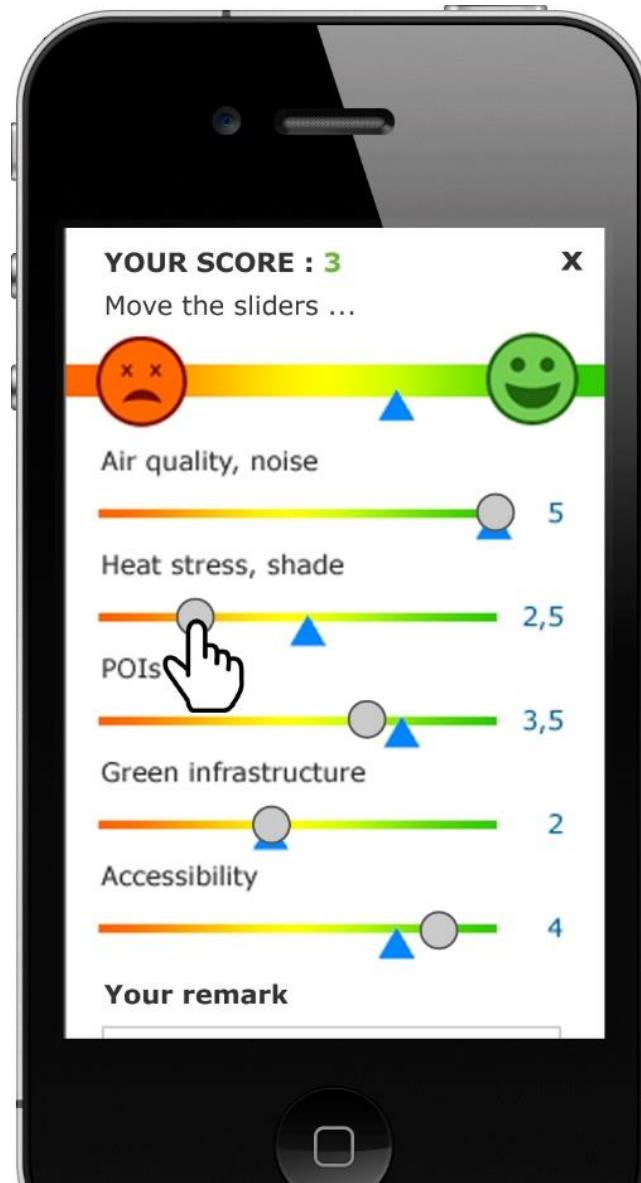
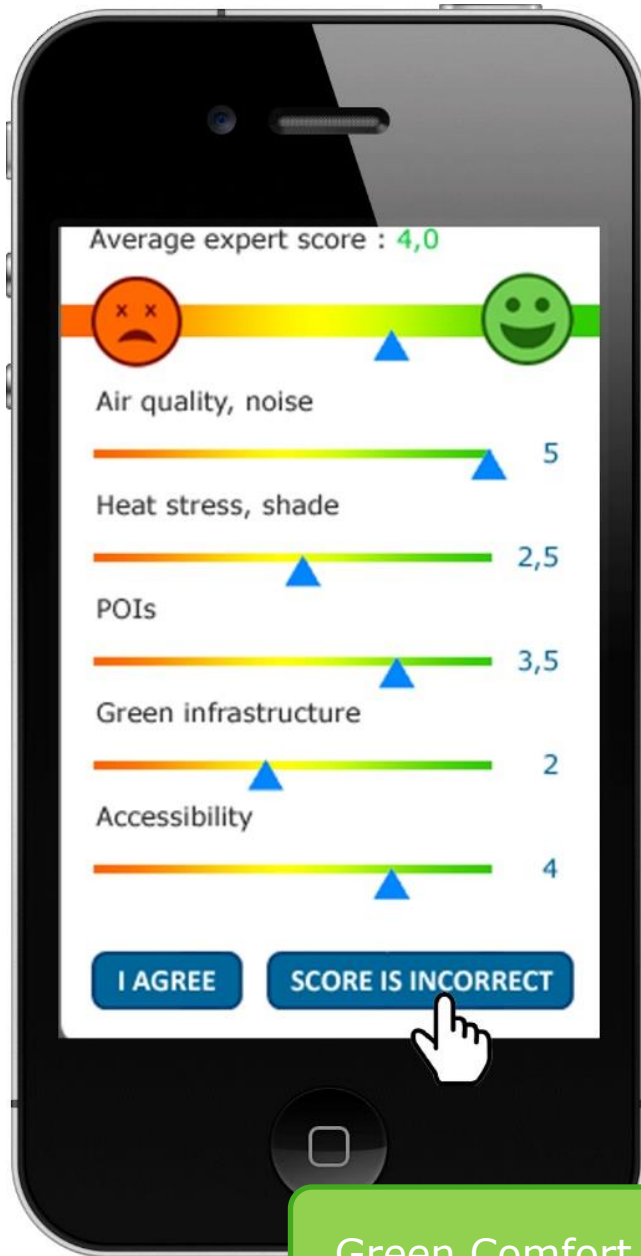
New Challenges for  
Europe's Cohesion

## KEY 1 – CO-CREATION & PARTICIPATION

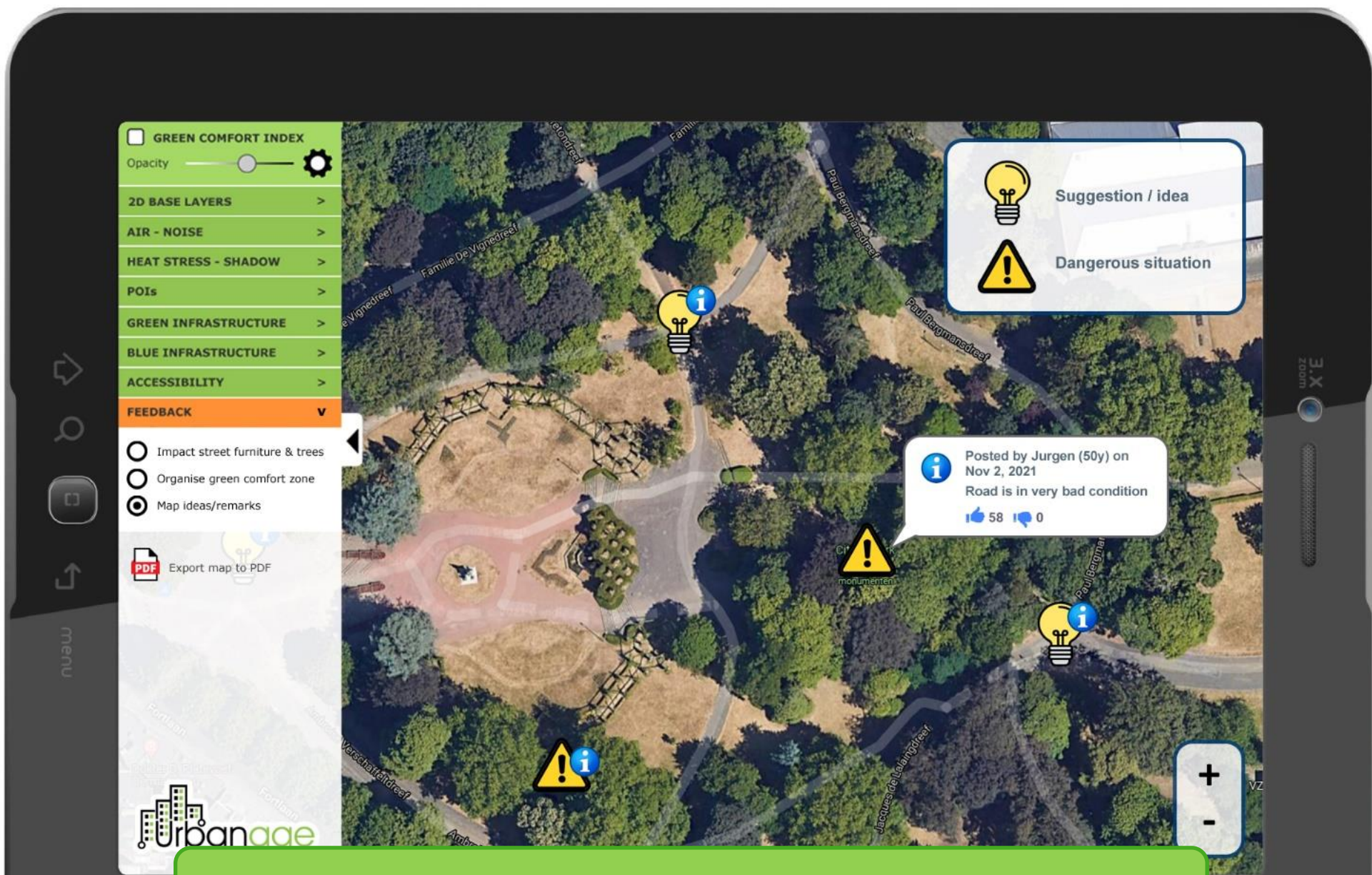
- 5 co-creation workshops -> solid use case base
  - Older citizens
  - Local authorities
  - Experts
- Co-creation feedback rounds -> keep on the right track
- Participation - GCI corrections by older citizens and experts, processed by AI -> qualitative data, validated
- Community building
- Feedback : commenting and voting after GCI consultation
- Presenting scenarios
- Maximise interaction

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Green Comfort Index app – score correction by citizen users and experts



Users with login- suggestions, mark dangerous situations



POLL - Where to add new green zone

Brief explanation.



Scenario 1

Scenario 2



Scenario 3

Scenario 4

	☹️				😊
Scenario 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Scenario 2	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scenario 3	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scenario 4	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

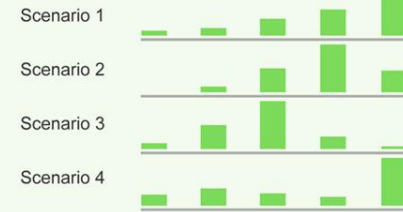
VOTE



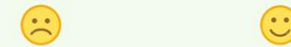
POLL - Where to add new green zone

✔️ Thank you for voting, these are the polling results on November 2, 2021 :

Total feedback : 1000 votes



graph - numbers



Scenario 1	20	50	100	200	630
Scenario 2	0	30	150	700	120
Scenario 3	30	250	600	100	20
Scenario 4	120	220	150	80	430

graph - numbers



Expert – setting up a scenario



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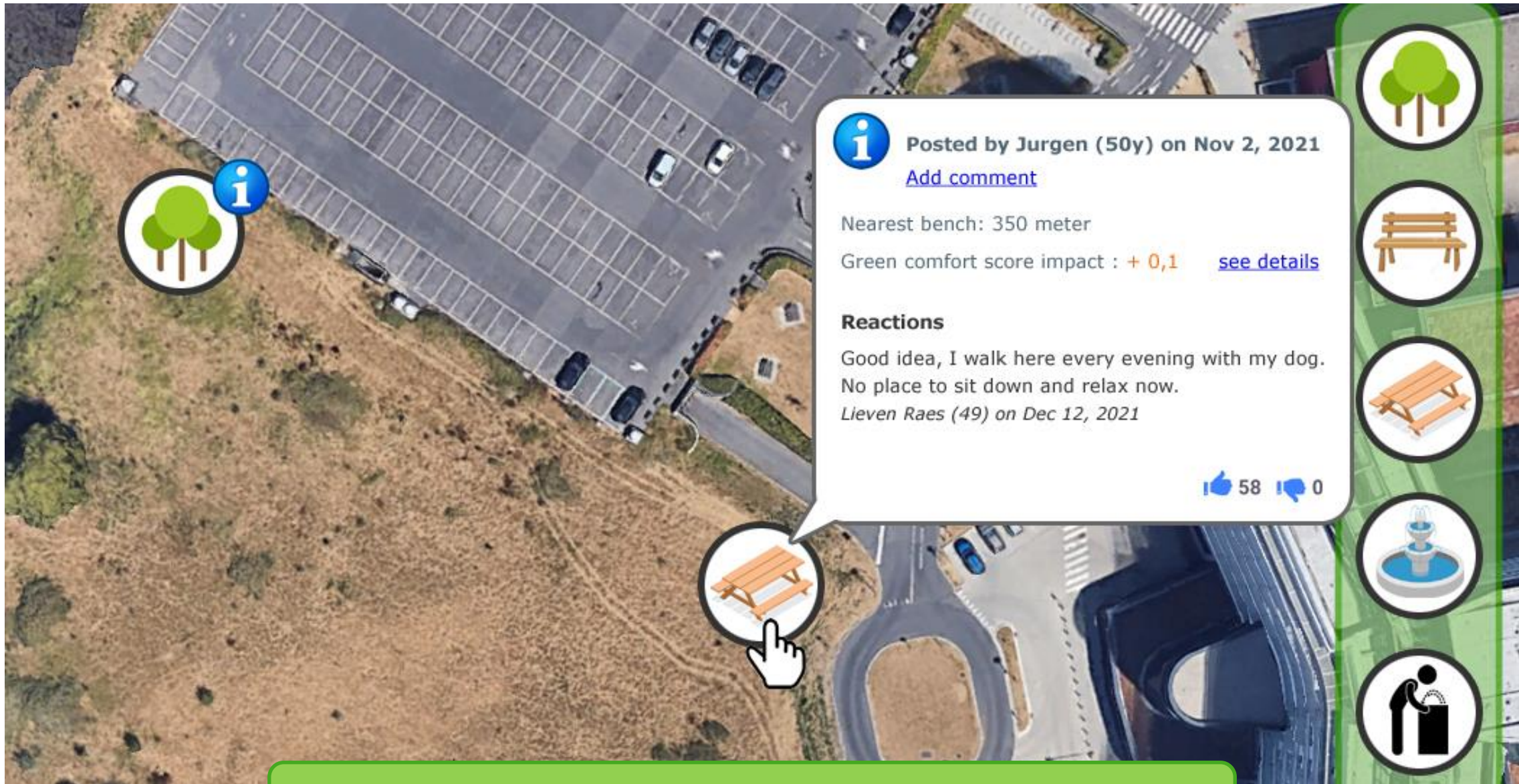
New Challenges for  
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## KEY 2 – SIMULATION AS A TOOL

- For evidence-based policy making
- Broad applicability, easy to use
- Stimulate self exploration (better than showing final results)
- Gamification aspect = good trigger
- Connected to feedback options
- Open view

#EURegionsWeek





Posted by Jorgen (50y) on Nov 2, 2021

[Add comment](#)

Nearest bench: 350 meter

Green comfort score impact : + 0,1 [see details](#)

#### Reactions

Good idea, I walk here every evening with my dog.  
No place to sit down and relax now.

*Lieven Raes (49) on Dec 12, 2021*

👍 58 🗨️ 0



Gamification : Visitors with login – suggest POI implantation



Expert – simulations – mark zone + add POI = GCI impact assessment

Shadow Settings

Time 9:38 AM

Date 6/19/21

19/06/2021

Shadow Player

Day Year Speed

⏪ ⏩ ⏴ ⏵



The image shows a software interface for shadow analysis. It includes a 'Shadow Settings' panel with sliders for 'Time' (set to 9:38 AM) and 'Date' (set to 6/19/21). Below this is a 'Shadow Player' section with buttons for 'Day', 'Year', and 'Speed', along with navigation icons. The 'Urbanage' logo is positioned at the bottom of the interface panel.



Self-exploring shadow impact by setting date and hour

### 3D BASE LAYER

- Open street Map
- Terrain data
- Buildings LOD2

### POIs

- Benches, tables
- Public toilets
- Street lights

### GREEN INFRASTRUCTURE

- Trees
- Green areas

### BLUE INFRASTRUCTURE

### ACCESSIBILITY

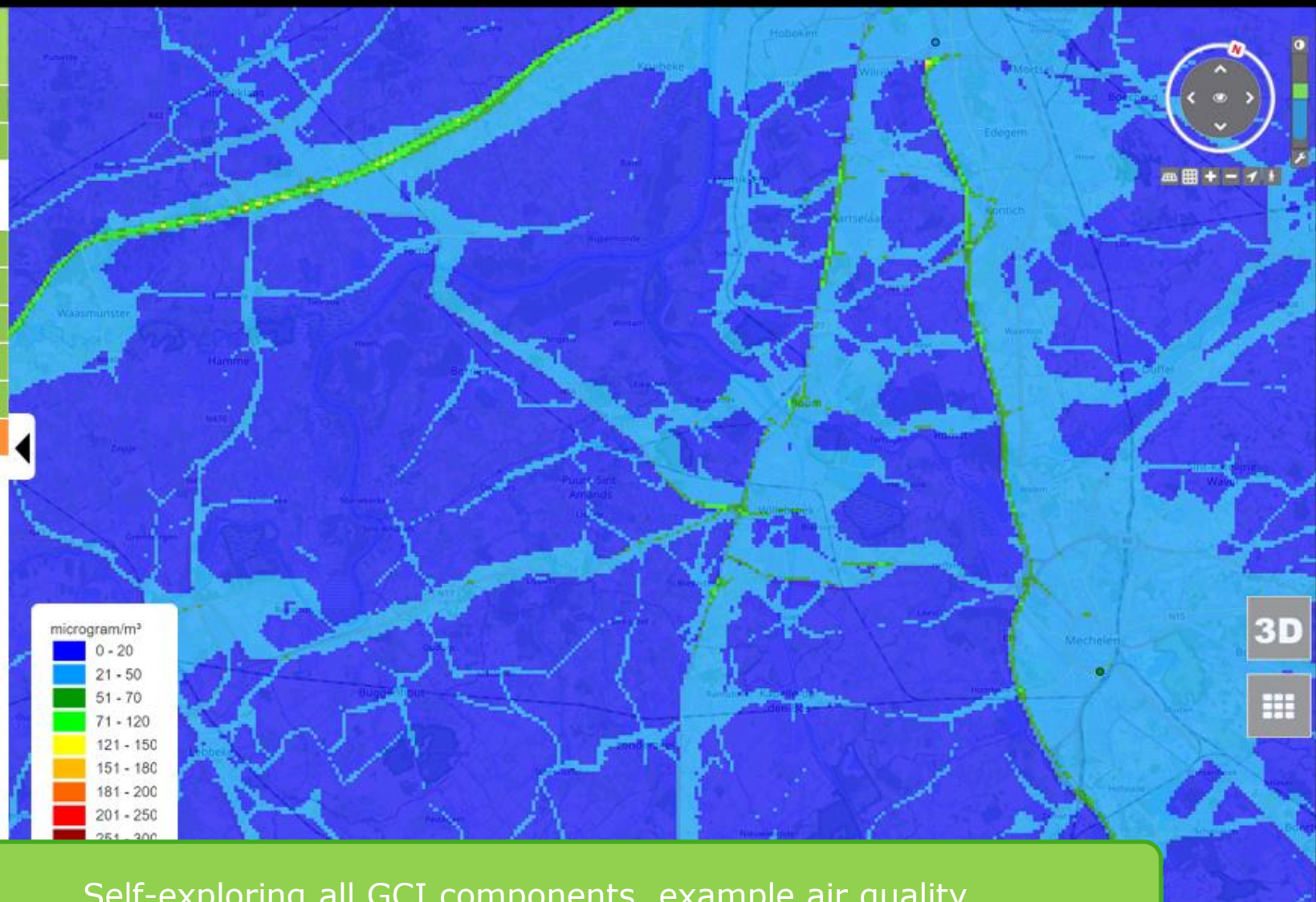
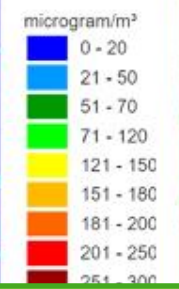
### USER FEEDBACK



Self-exploring POIs in the city

- GREEN COMFORT INDEX  
Opacity
- 2D BASE LAYERS >
- AIR - NOISE v
  - Air quality
  - Noise
- HEAT STRESS - SHADOW >
- POIs >
- GREEN INFRASTRUCTURE >
- BLUE INFRASTRUCTURE >
- ACCESSIBILITY >
- FEEDBACK >

Export map to PDF



Self-exploring all GCI components, example air quality





## KEY 3 – INTEROPERABILITY & DISSEMINATION

- Software :
  - Maximal compatible software (standards)
  - Ready-to-use plugins
- Dissemination :
  - External tools & platforms
  - Make use of project URBANAGE tools :
    - [www.urbanage.eu](http://www.urbanage.eu)
    - Social media : linkedIn, Twitter, YouTube
  - **Movie** – example [citytwin.eu/urbanage-flanders](http://citytwin.eu/urbanage-flanders)
    - Interoperability / replicability in action



[www.urbanage.eu](http://www.urbanage.eu)



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**Policy Brief:** Guidelines for Engaging Older Citizens in Co-Design Activities

Our first co-design workshops with older residents in Helsinki, Flanders and Santander provided us with insights on how to better engage these valuable members of society in policy exploration.

[Find out more >](#)



**News:** Amplifying the Voices of Older Adults

Elsie Haldane (Edited by Vilde Skorpen Wikan) wrote an article about URBANAGE and its mission to create age-friendly cities based on our European Week of Regions and Cities workshop.

[Find out more >](#)



**Blog:** URBANAGE Showcased at European Smart Cities Marketplace

Patricia Molina Costa, from Tecnalía, participated as a senior expert in the Smart Cities Marketplace Action Cluster on Integrated Planning. The online event was held late 2021.

[Find out more >](#)

## Urban Test Beds



### Helsinki, Finland

Helsinki's advanced city services are designed for general public needs. As its population ages the city would like to use its



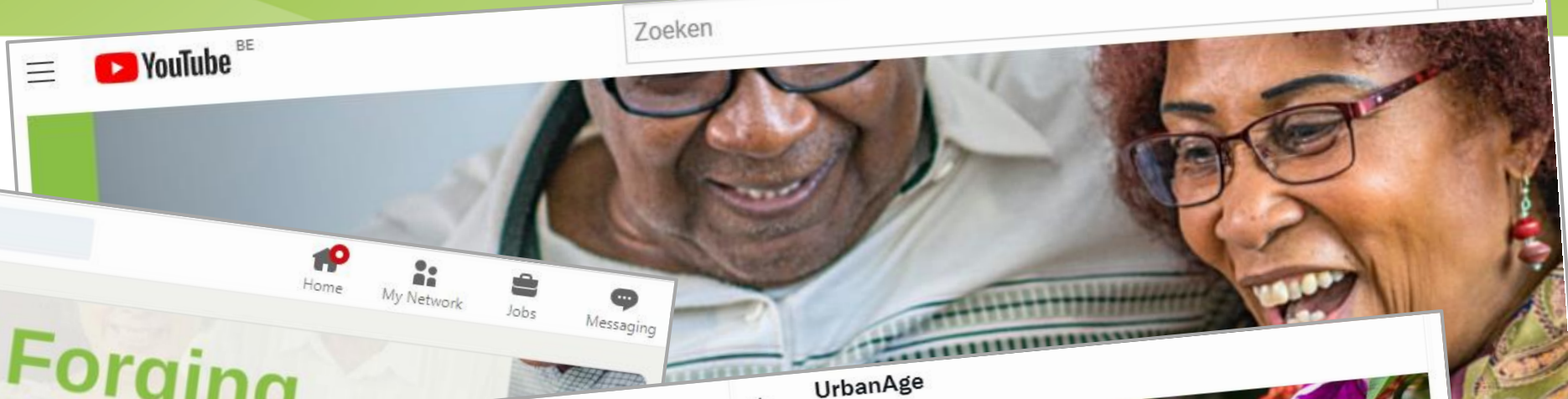
### Santander, Spain

Santander has a population older than the regional average. To ensure urban services are accessible for all the city will harness



### Flanders, Belgium

The Flanders region of Belgium will support policymakers in developing age-friendly cities through evidence based



LinkedIn navigation bar featuring the 'in' logo, a search bar with the text 'Search', and navigation icons for Home, My Network, Jobs, and Messaging.

LinkedIn banner for UrbanAge featuring a green circular logo with a city skyline and the text 'Forging the Future' and 'Its time to invest in age-friendly cities'.

Twitter navigation menu with a blue bird icon and options for '# Verkennen' and 'Instellingen'.

Twitter profile header for UrbanAge (@UrbanageH2020) showing 2,099 tweets and a 'Volgen' button. The profile picture is the UrbanAge logo.

LinkedIn profile information for URBANAGE EU · 1st, including a description: 'Transforming urban planning with new technologies to create inclusive, age-friendly cities', and statistics: '256 followers · 170 connections'.

Twitter bio for UrbanAge: 'Disruptive tech to enhance urban planning and create age friendly smart cities'. It includes website links for #DigitalTwin, #H2020, #SmartCities, and urbanage.eu, and mentions funding from @EU\_H2020.

LinkedIn 'Highlights' section featuring a blue star icon and the text 'Digital Technologies for Inclusive & Sustainable Decision-Making Processes'.

Twitter tweet content showing a pinned tweet from UrbanAge: 'Vastgemaakte Tweet UrbanAge @UrbanageH2020 · 31 aug. Save the date !!' and a tweet about a workshop: 'Workshop #Data driven #Cities - #DigitalTechnologies for inclusive and sustainable decision-making'.

LinkedIn 'Featured' section with a 'Post' label and a partial view of a post.



## About URBANAGE



URBANAGE is a 3-year H2020 European initiative focused on improving the comfort of older citizens. The project started in 2021. Based on a thorough understanding of users' needs, the ecosystem (tools, and cocreation) will be validated by piloting use-cases in three local planning systems in Europe (Helsinki, Santander, and Flanders).

Two pilot cases were designed for Flanders as a result of 3 cocreation workshops.

- Based on comfort-indicators, a green comfort index is determined and visualised on a map. This information helps citizens find comfortable spots in the city and allows planners and policymakers to increase green comfort (or improve accessibility) based on inclusive, evidence-based decisions.
- By mapping the distribution of older people with reduced mobility, policymakers can prioritise city upgrades to improve comfort.

On this webpage, we bundle use cases, demonstrating the outcome of this project.

Find out more: <https://www.urbanage.eu/flanders>

## More information



Visit our project website



## About the Flanders pilot



Total surface: 13.522 km<sup>2</sup>

Inhabitants: 6.653.062 (2021)

URBANAGE Pilot highlights include:

- Cocreation-based mapping of users' needs;
- The determination of a Green Comfort Index;
- The visualisation of Green Comfort Index components;
- 3D simulation of shadow impact of buildings and trees;
- The usage of AI technology to improve calculations;
- Anonymous mapping of higher concentrations of older people with reduced mobility;

## In the picture

Amplifying the Voices of Older Adults

Elsie Haldane (Edited by Vilde Skorpen Wikan) wrote an article about URBANAGE and its mission to create age-friendly cities based on our European Week of Regions and Cities workshop.





STATUS : **started**

LOCATION : Belgium, Ghent

TARGET AUDIENCE : citizens of Ghent

### CHALLENGE

Senior citizens are vulnerable to the harmful effects of extreme heat during the summertime.

Urbanage is a European project focusing on improving the life quality of senior citizens, based on smart city data. One of the Urbanage Initiatives is to detect comfortable, shadow rich places inside the city.

It was challenging to find the suitable data layers and software to make these simulations. But the main challenge will be to customise this information and make it relevant and easily understandable for the senior citizens community.

### APPROACH

Based on the terrain data and the spread of trees and buildings, the shadow impact can be simulated perfectly at different time intervals during the day and for each day of the year by using our map viewer. **Check out the "how to use" section and try it yourself.**

### EXPECTED OUTCOME

Starting from today, senior citizens of the city of Ghent can see where they can find refreshing, shadow-rich areas inside the city on extremely hot summer days. They can investigate easily at what time their favourite bench will be covered by the shadows of nearby trees and buildings.

We warmly invite all citizens of Ghent to locate and comment on their favourite public spot in the city to rest during hot summer days.

### Categories

- > 3D buildings
- > Belgium
- > Czech
- > Duet
- > Flanders
- > Ghent
- > Greece
- > Pilots
- > Traffic Simulation Model
- > Uncategorized
- > Urbanage

### Recent cases

- > Ghent – simulation closure Contributie bridge
- > Athens partial reduction of traffic
- > Ghent – simulation closure Nieuwewandeling street, one direction
- > Pilsen – Map for tactical exercise
- > Pilsen – New development in Nepomucka Street

### Monthly

- > September 2022
- > August 2022
- > February 2022
- > January 2022

- How to use**
- Used data
- Used models

Click the green button at the bottom of this box to see the 3D map of Ghent with buildings and trees. Use the navigation wheel to find your location in the city and look for your favourite spot.

At the right side of the navigation wheel, you find a slider with a small wrench icon underneath, as indicated by the blue arrow in the image below. Click this icon.





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1

# Embracing Local Digital Twins for collaborative design

## 3 URBANAGE Flanders key features

Jurgen Silence – Digital Flanders

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