



“Cool Neighbourhoods: Green Wall in Differdange”



17 June 2026

Interreg



Co-funded by
the European Union

North-West Europe



Centre de
documentation européenne
Ville de Differdange

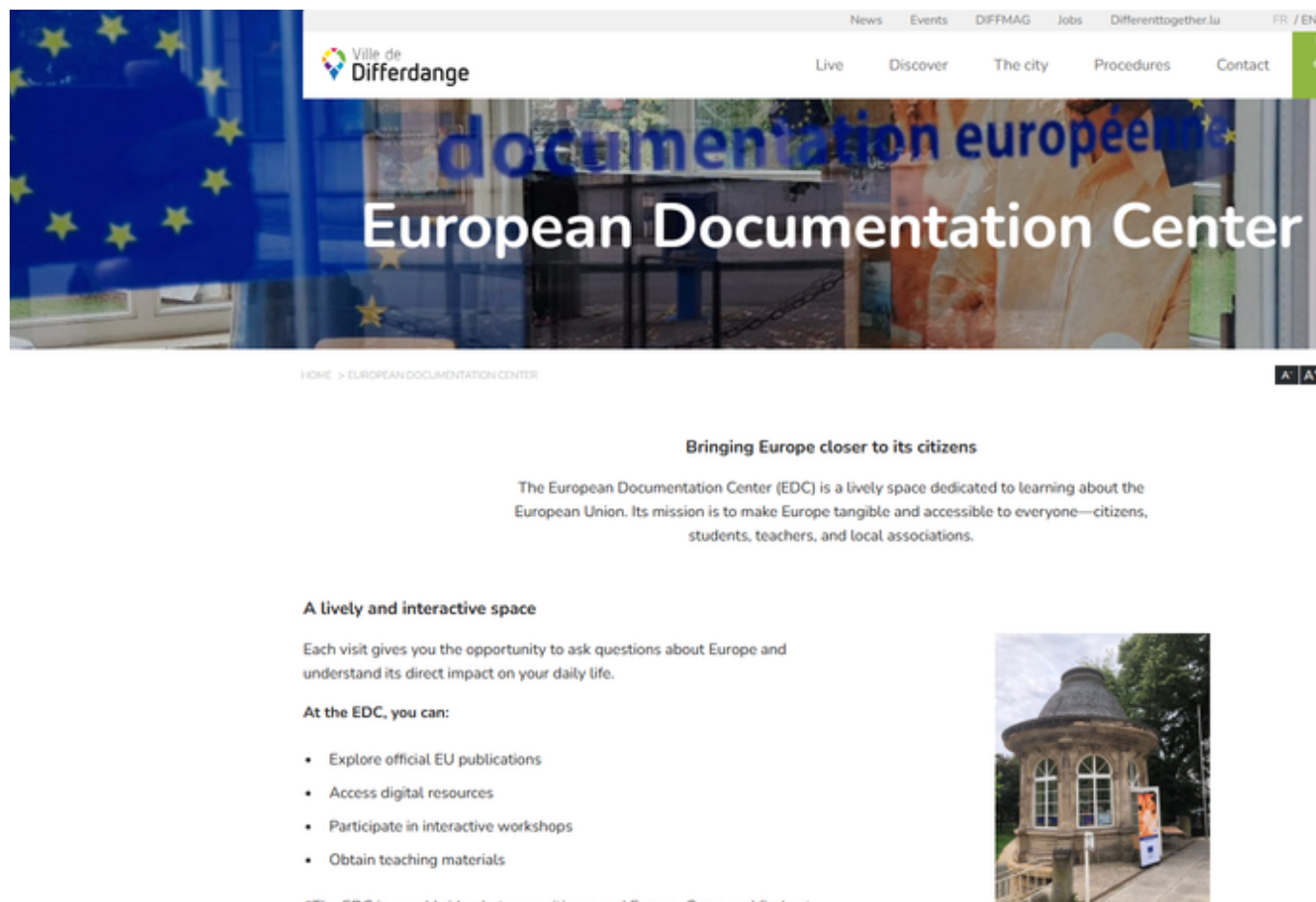


UNIVERSITY
OF APPLIED SCIENCES



Ville de
Differdange

European Documentation Centre (EDC) Differdange



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www.differdange.lu



Differdange & the EU



Source: EU Mission: Climate-Neutral and Smart Cities

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Cool Neighbourhoods

Smart climate and environmental
resilience for NWE territories



12 partners from BE, FR, LU, NL
Cooperating from 2021 - 2027

EU funding
€ 5.5 million

Total project budget
€ 9.3 million

Cool Neighbourhoods focuses on reducing heat stress and improving the quality of life for our residents in Northwestern European cities. The project will develop capacity building materials and tools for decision makers and community actors. In addition, partners will work with stakeholders in 9 pilot districts to develop heat stress action plans and test viable cooling solutions for individual buildings and public spaces.

Projectpartners:



coolneighbourhoods.nweurope.eu

Source: Interreg North-West Europe

Interreg North-West Europe



What is Interreg North-West Europe?

Interreg North-West Europe

Interreg
North-West Europe



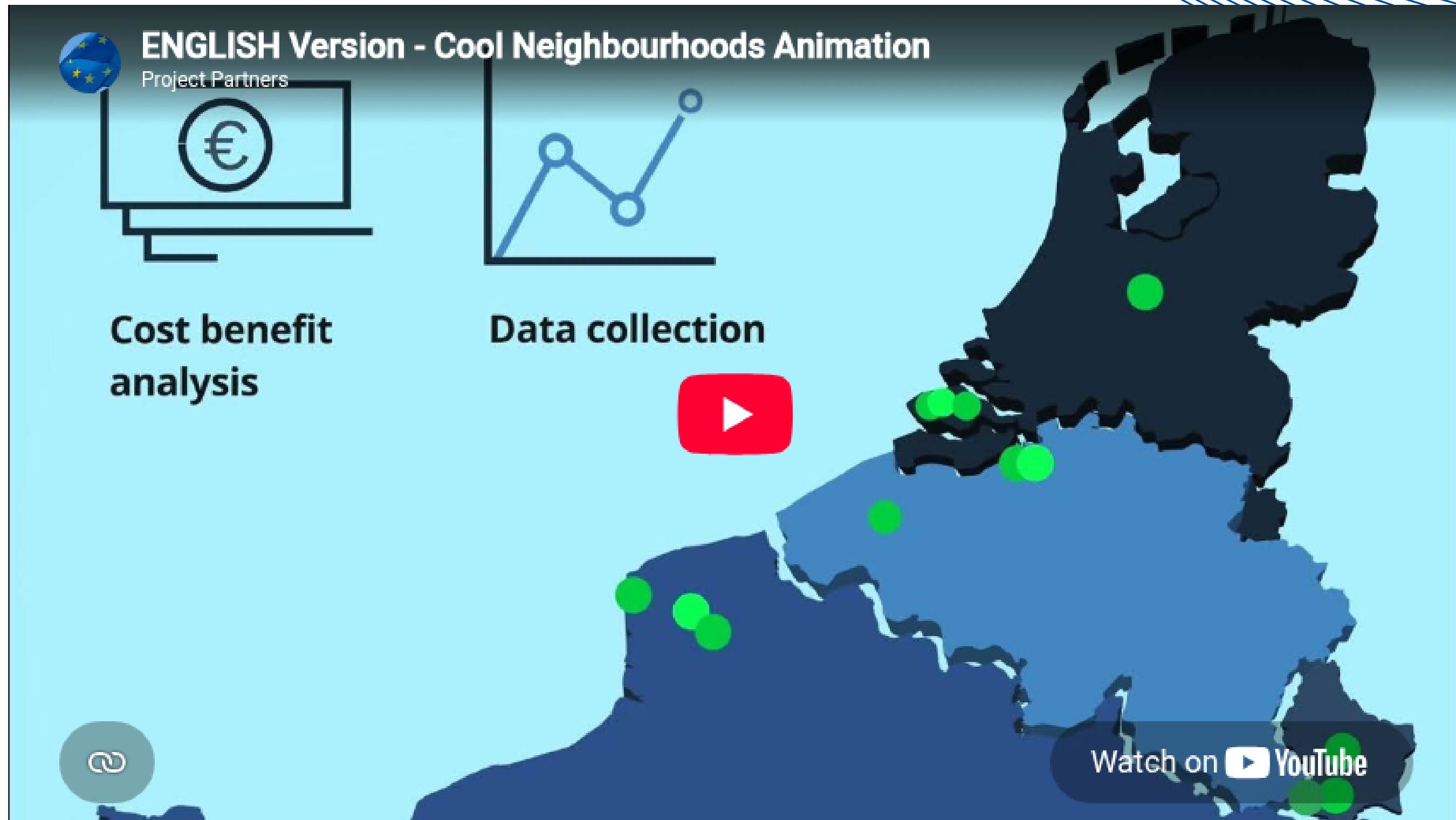
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Watch on YouTube

[Source: Interreg North-West Europe](#)

Cool Neighbourhoods



[Source: Cool Neighbourhoods - Interreg North-West Europe](#)

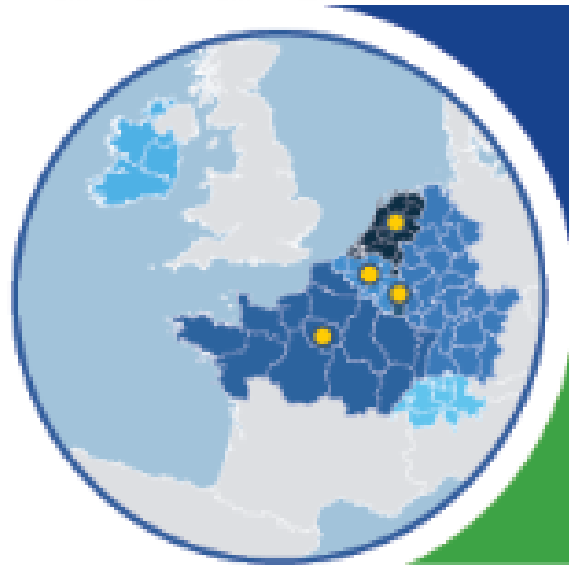
Cool Neighbourhoods: Partners

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12 partners from Belgium, France, Luxembourg & the Netherlands operating in 9 selected pilot areas from 2021 - 2027.

The 3 neighbourhood typologies:

- Inner City
- Green hub
- Economically disadvantaged

SIOEN

EXCEPT
INTEGRATED SUSTAINABILITY



gemeente Goes



Ville de Differdange

The province of Antwerp

Ettelbréck
VILLE D'ETTELBRUCK

hz UNIVERSITY OF APPLIED SCIENCES

WILMEREUX

University of Antwerp

MIDDELBURG

“Differdange’s Green Wall: Cooling a School, Scaling a Region”

- **What?** 100 m² vertical Green Wall
- **Where?** Schoul Déifferdeng Zentrum
- **Why?** Urban Heat Island hotspot
- Bioclimatic analysis (ClimPROSUD)



[Schoul Déifferdeng Zentrum, Differdange \(Luxembourg\)](#)

Green Wall: Concept

- Vertical structure covered with living plants
 - exterior of a building
- It grows upward — saving ground space, bringing nature into urban areas
- Plants are rooted in a lightweight system fixed to the wall, irrigated automatically
- Also called a "living wall" or "vertical garden"



[More Information: Cool Neighbourhoods - Ville de Differdange](#)

“Differdange’s Green Wall: Cooling a School, Scaling a Region”

Benefits:

- Reduce façade surface temperatures
- Lower air temperature in the playground
- Improve indoor thermal comfort
- Increase usability of public space during heatwaves



[More Information: Cool Neighbourhoods - Ville de Differdange](#)

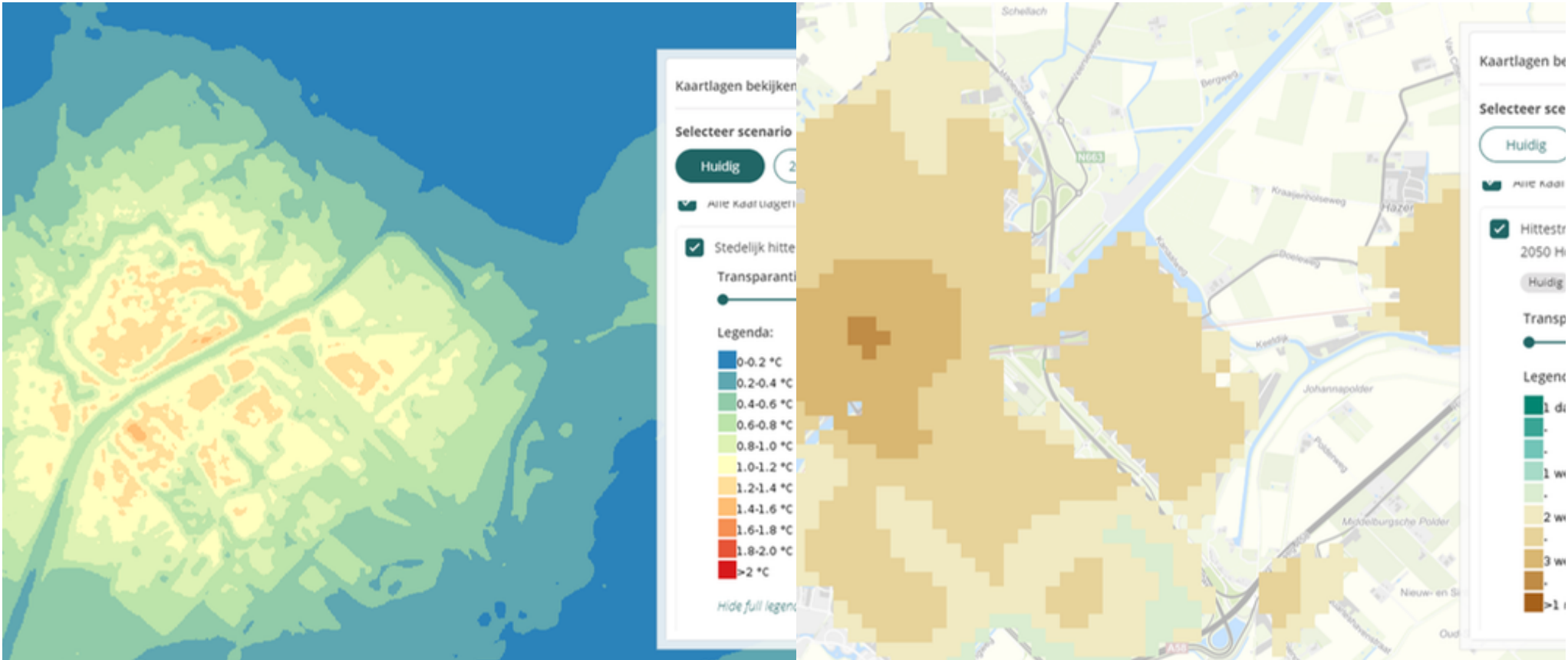
The Indoor Heat Sensor: Live demonstration

- Heat in urban areas is invisible and sensors make it measurable and comparable over time
- Proof of green wall impact on temperature
- Results feed back into the Cool Neighbourhoods project and are shared at EU level



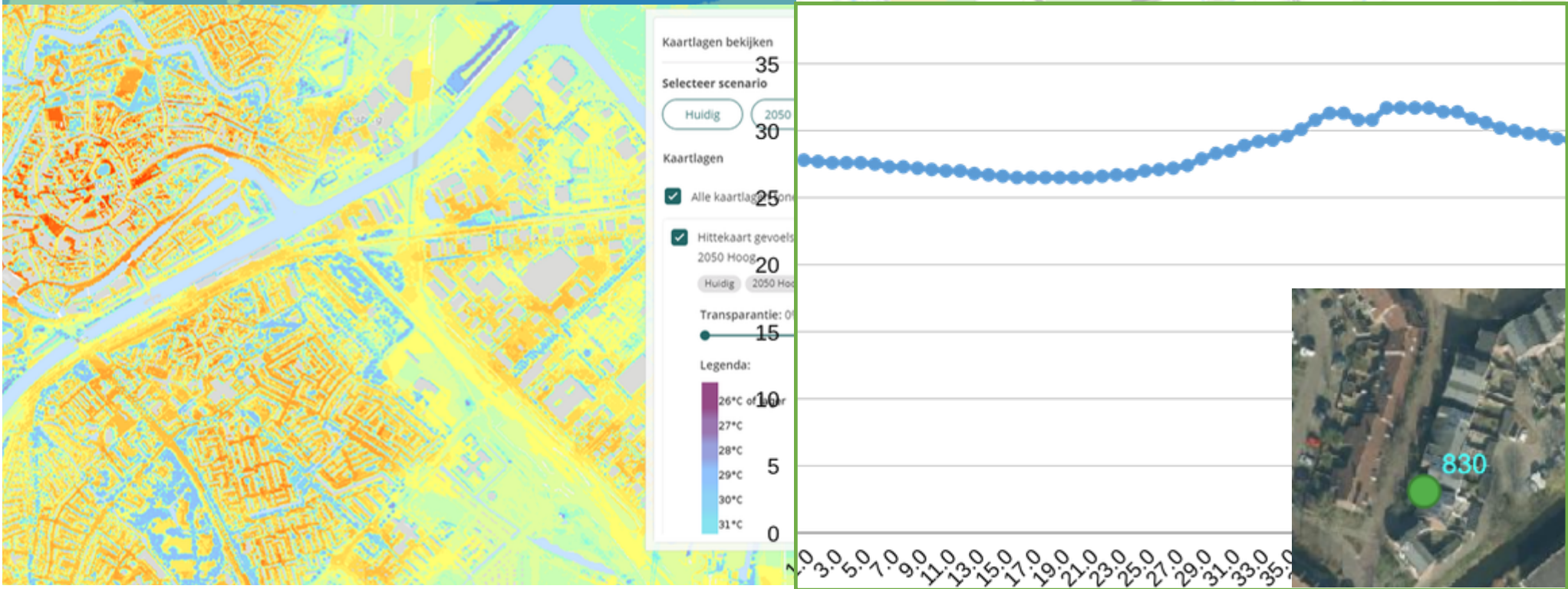
Heat in urban areas

Urban Heat
Island



Heat stress
warm nights

Feeling
temperature
(Physiological
Equivalent
Temperature,
PET)

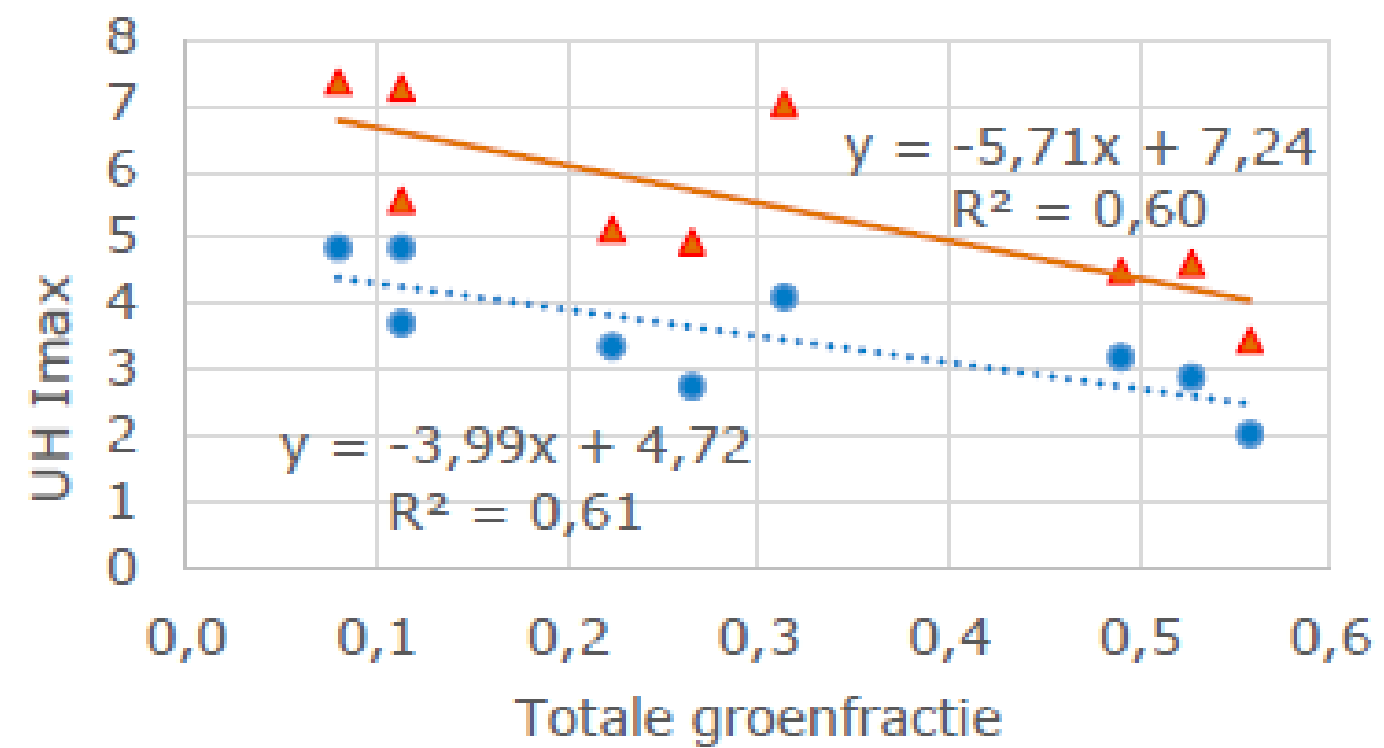


Heat indoors

Source: HZ University of Applied Sciences

Green / grey / blue fractions

10% more green results in temperature reduction



[Source: HZ University of Applied Sciences](#)



Heat in urban areas

Do you recognise the heat?



Ettelbruck
Luxembourg



Middelburg
The Netherlands



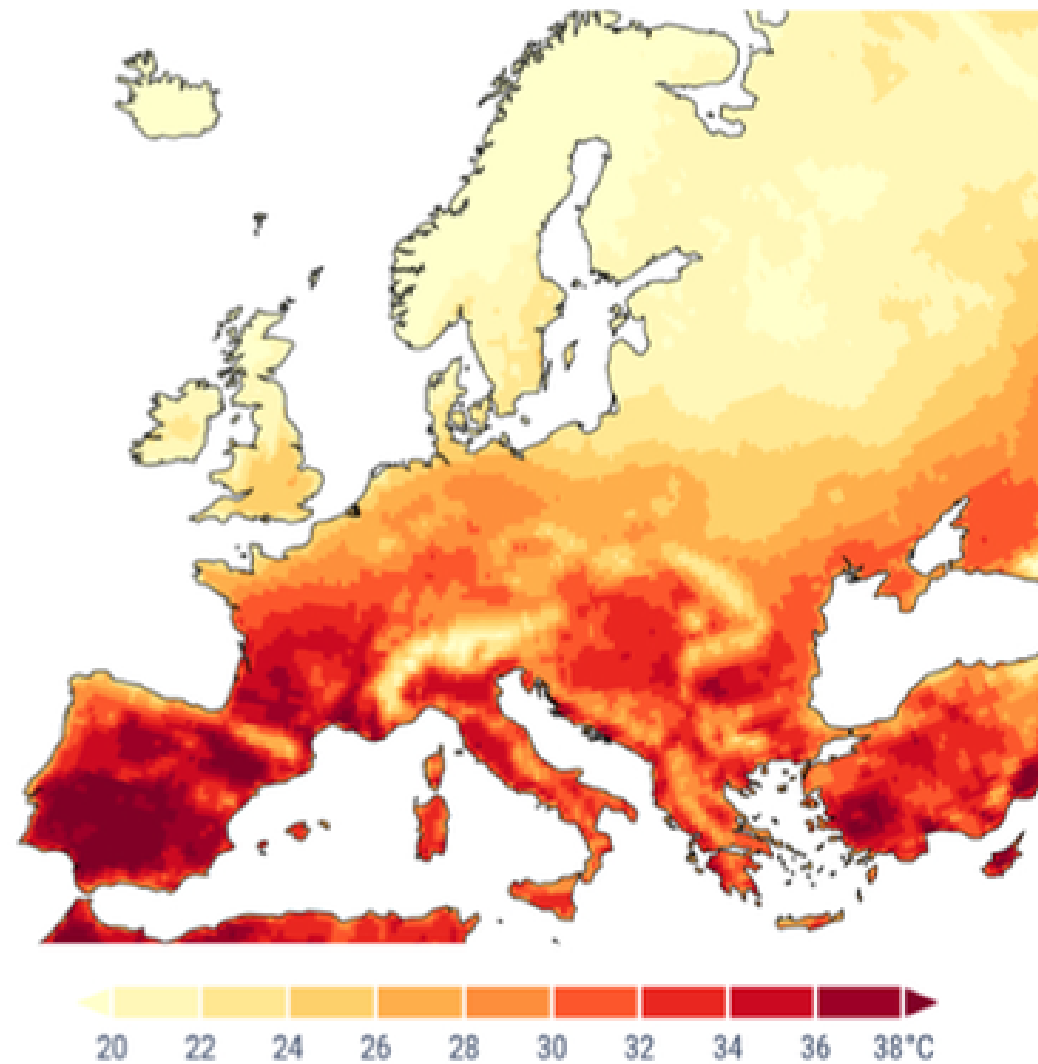
Rotterdam
The Netherlands

Heat wave number 2 2025

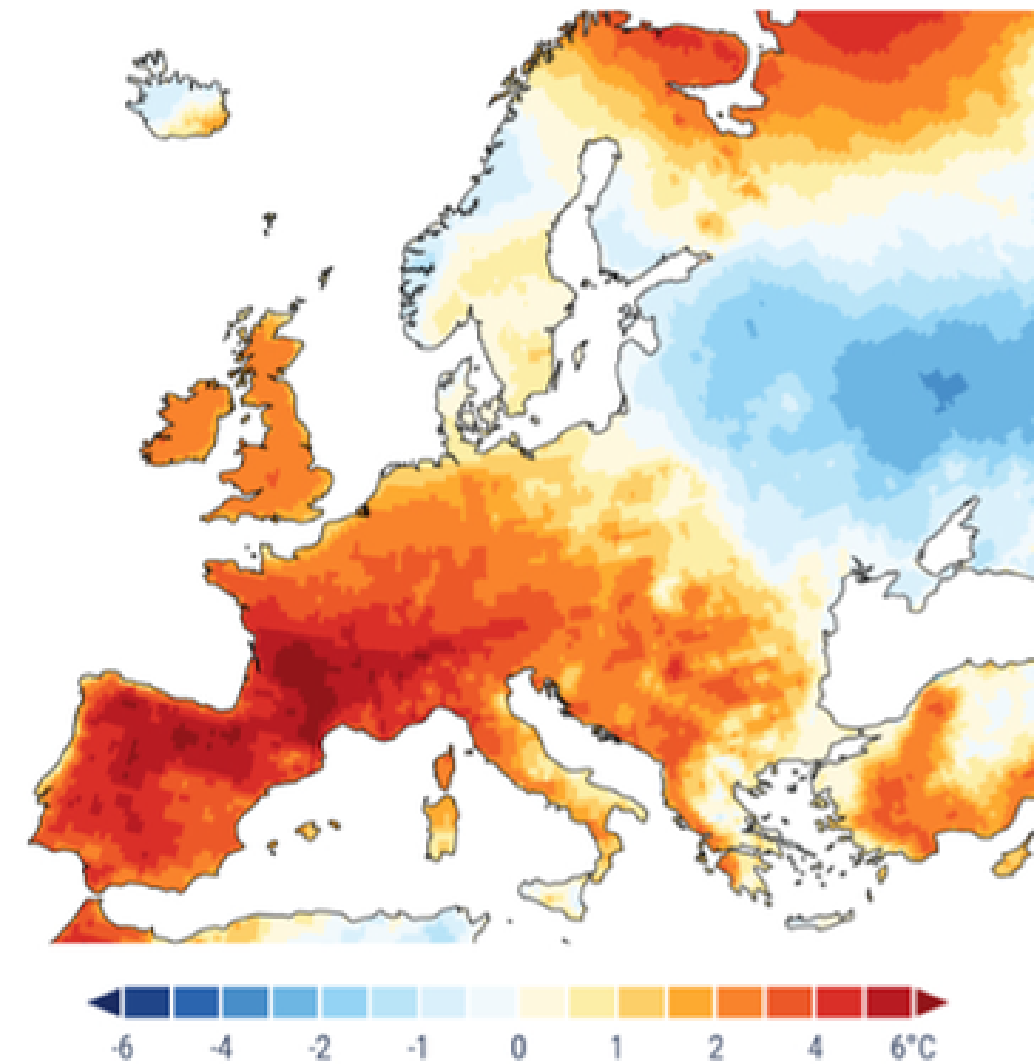
Surface air temperature during the August 2025 heatwave (8–18 August)

Data: ERA5 • Reference period: 1991–2020 • Credit: C3S/ECMWF

Average of daily maximum temperatures



Average of daily mean temperature anomalies



PROGRAMME OF
THE EUROPEAN UNION

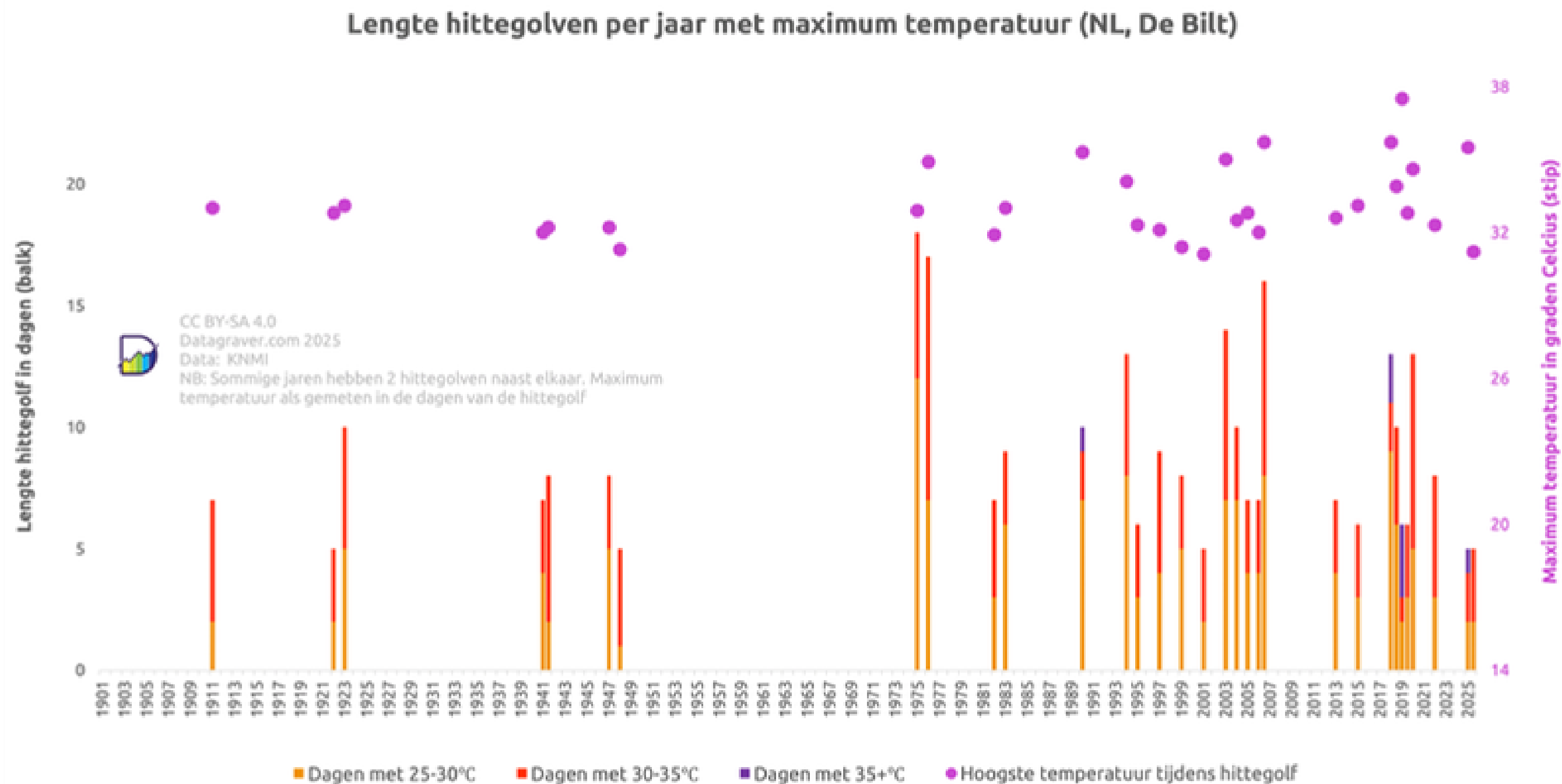


IMPLEMENTED BY



Source: [Third summer heatwave hits south-western Europe](#)

Heatwave Duration by Year with Maximum Temperature



Source: [Datagraver](#), "Dutch Heatwaves by Year and Peak Temperature" (CC BY-SA).

Heat measurement in urban areas



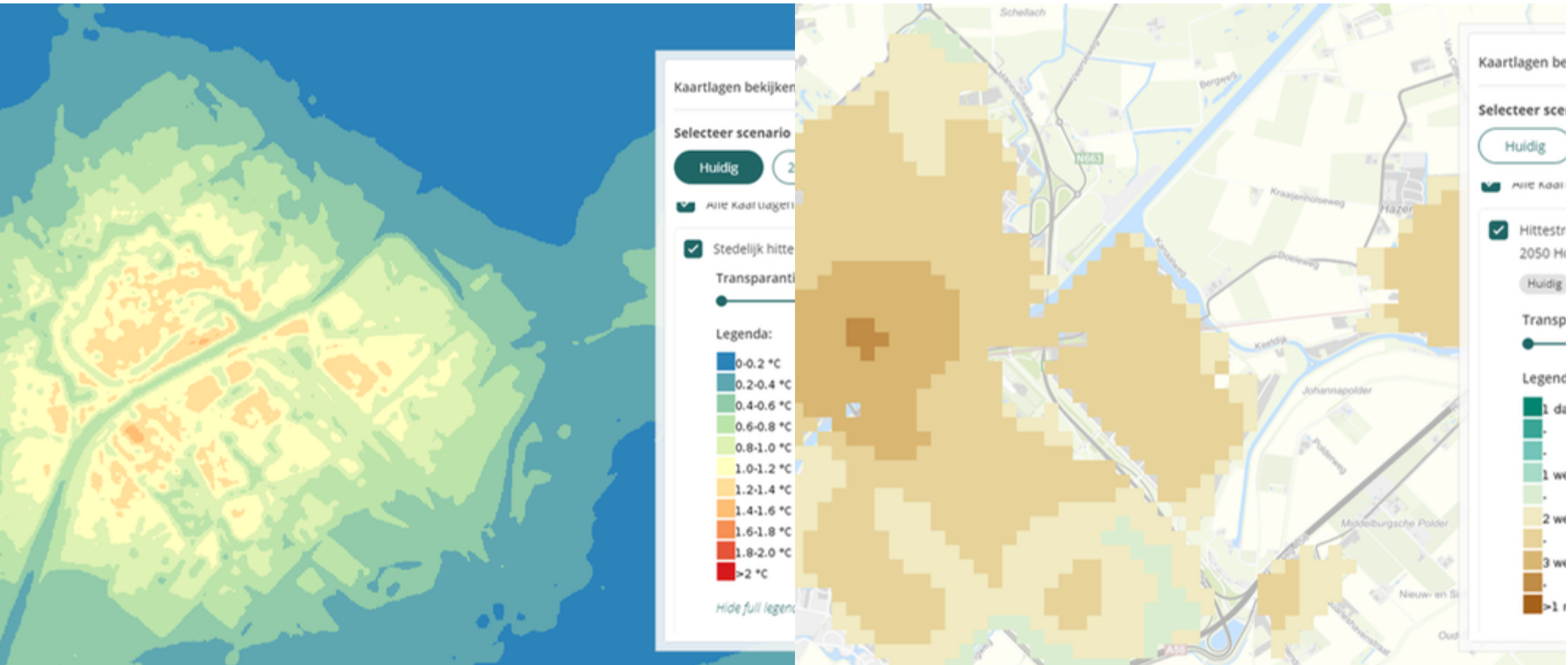
Outdoor sensors



Indoor sensors

Heat in urban areas

Urban Heat
Island



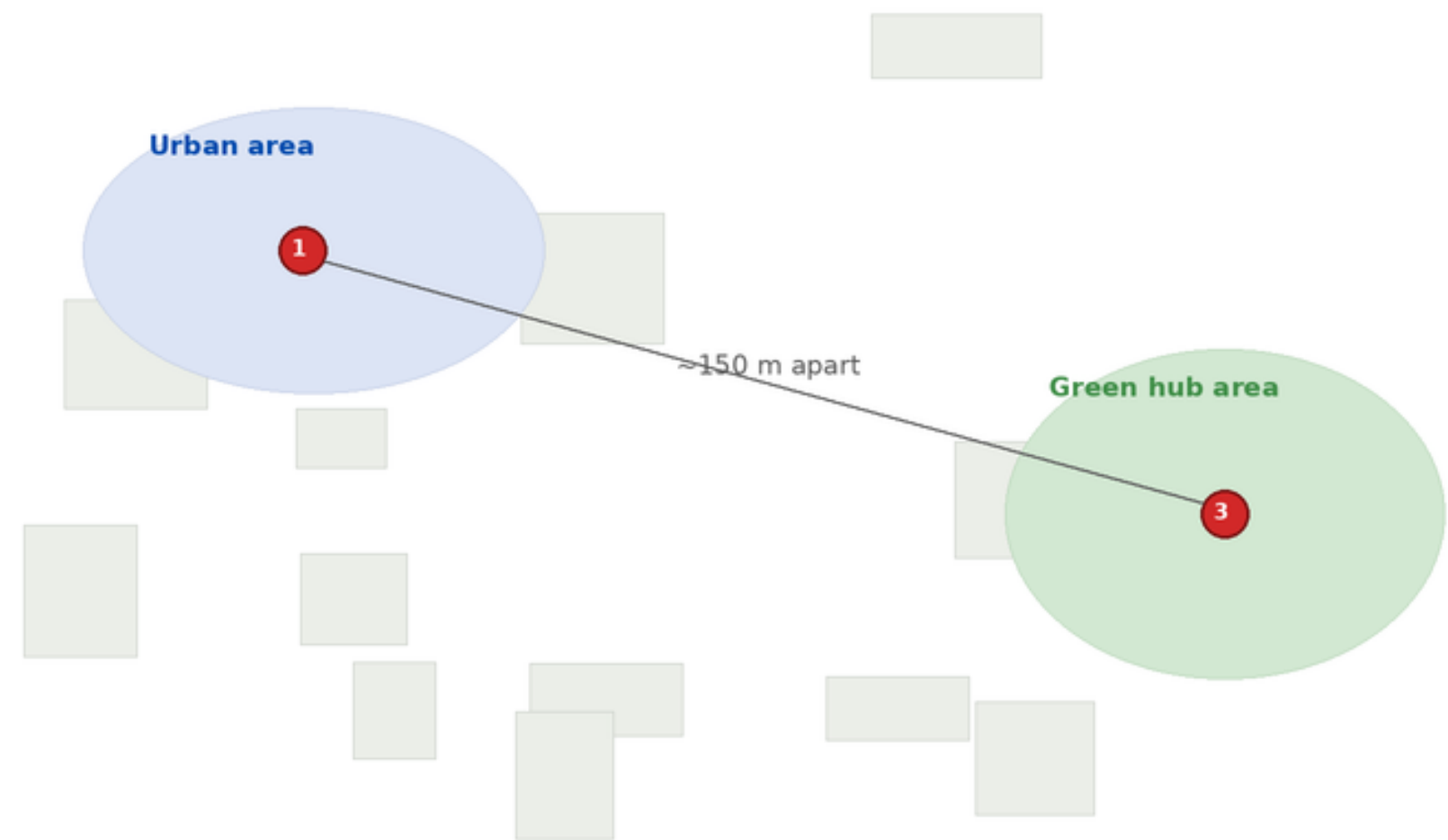
Heat stress warm
nights

[Source: HZ University of Applied Sciences](#)

Insight of warm nights from climate
impact atlas

Warm nights	Current climate	2050
Goes	1 -2 weeks	2 – 3 weeks
Middelburg	1 -2 weeks	3 to 4 weeks

Differdange: Outdoor Sensors



Map data: Google. Sensor pin locations approximate.

Sensor per city	Warm nights (>18 °C) (August)	Tropical nights (>20 °C) (August)
Differdange 1 (urban)	7	2
Differdange 3 (green hub) (150 m distance between)	3	1

Connection: Outdoors and Indoors measurements

On 12 August 2025

At 17:00

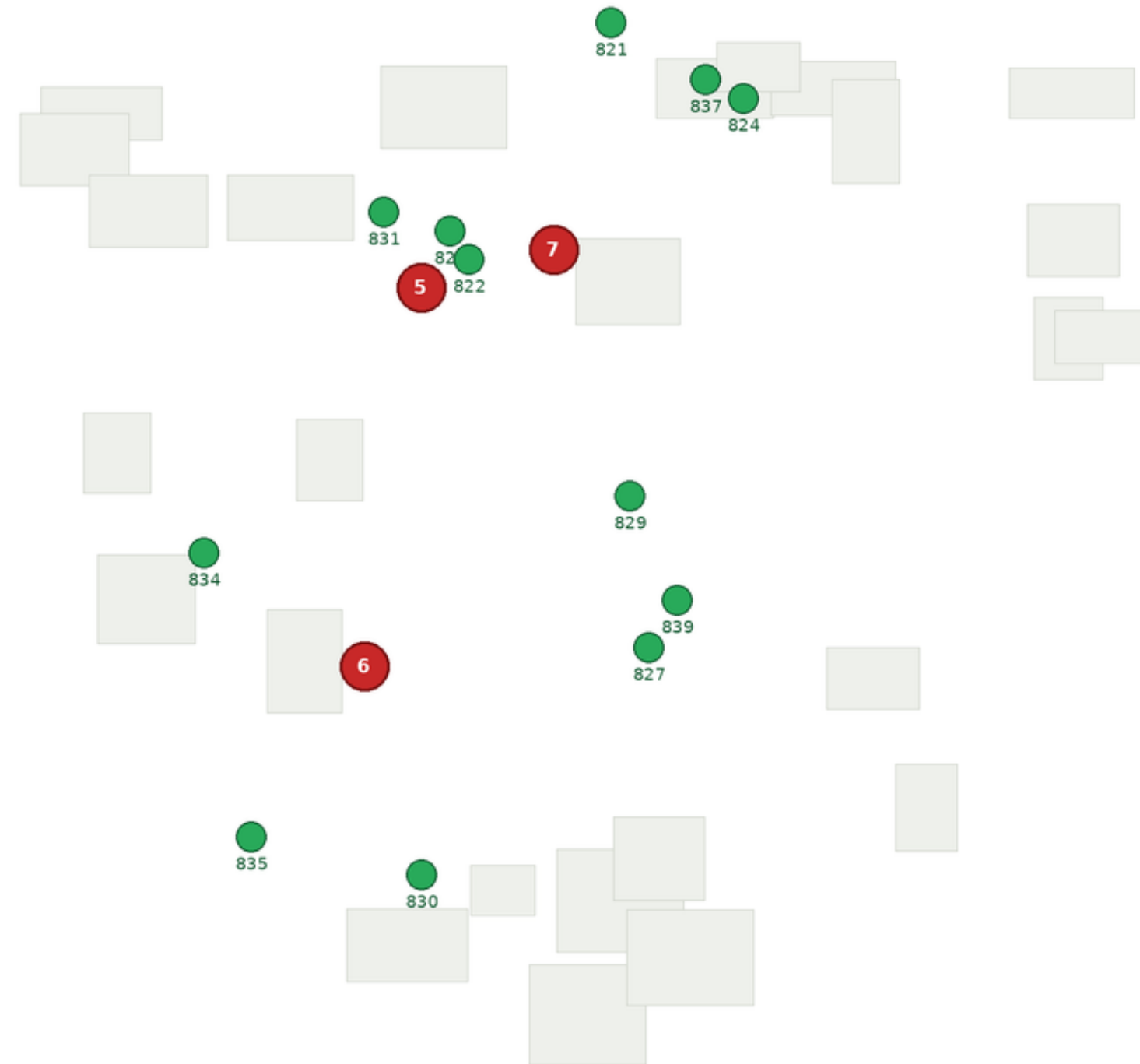
Outdoors maximum:

- 5 – 35 °C
- 6 – 35.4 °C
- 7 – 35 °C
- 8 – 32.4 °C

Overheating hours (>26 °C)

Average: 63 hours

Highest 2: 302 and 258 hours



On 12 August 2025

Indoors maximum:

- 821 – 17:30 – 29.2 °C
- 822 – 13:30 – 27.2 °C
- 824 – 12:00 – 24.9 °C
- 827 – 17:46 – 30.6 °C
- 829 – 17:18 – 27.4 °C
- 830 – 22:22 – 31.7 °C
- 835 – 19:00 – 23.9 °C
- 839 – 20:48 – 26.3 °C

Illustrative schematic — sensor IDs shown for reference - Middelburg, The Netherlands

Heat in urban areas: experience

Short survey on heat experience
linked to temperatures

Survey questions:

- How did you experience the heat over the past 3 days?
- Did you keep your windows open or closed, during the day and/or at night?
- Did you keep your sunshades open or closed?



Green Wall's Effects

- Green walls can significantly reduce energy demand, cooling and heating.
- The ambient temperature can be reduced up to 8 degrees;
- A UHI (Urban Heat Island effect) of up to 5 degrees can be mitigated;
- A green wall can reduce the need for heating of a building;
- Energy demand can be reduced by 16.5%;
- Important are specifics as type of vegetation, water availability, thickness of layer (including soil) and of course wind.



Source: [Susca et al. \(2022\), Renewable and Sustainable Energy Reviews, 159, 112100](#)

Citizen science: how residents can take part this summer

- Open to all citizens
- Simple to set up, minimal effort required
- Each sensor goes in the bedroom, on a shelf or in a closet — out of direct sunlight
- No further action needed afterward
- Starting summer 2026
- Optional survey, different times over the summer
- Results will be shared with participants after summer



Disclaimer – Information

*Non-binding, for informational purposes only.
Official info: [Cool Neighbourhoods official website](#)
Organisers not liable for errors, omissions, or reliance.*

Disclaimer – Data

Personal data handled per GDPR (EU 2016/679) & Luxembourg law (1 Aug 2018). To exercise your data protection rights (access, rectification, erasure), contact europe@differdange.lu.

Views and opinions expressed are those of the author(s) only and do not necessarily reflect those of the European Union or the Interreg North-West Europe Programme. Neither the European Union nor the granting authority can be held responsible for them.



Image and Data Credits

Slide 1: Green Wall - Gabor Koszegi, via Unsplash

Slide 2: EDC webpage screenshot and office photos — Ville de Differdange.

Slides 3–6: Programme and partner logos — Interreg North-West Europe

Slides 7–9: School and green wall photos — Ville de Differdange / PRO-SUD

Slides 10–12, 16–19: Sensor photos and heat-mapping charts — HZ University of Applied Sciences.

Slide 13: Ettelbruck sensor photo — HZ University of Applied Sciences. Rotterdam and Middelburg street photos

Slide 14: Heatwave temperature maps — Copernicus Climate Change Service / ECMWF (C3S/ECMWF), Licence CC BY 4.0.

Slide 15: Heatwave duration chart — Datagraver, Licence CC BY-SA.

Slides 18–19: Sensor location diagrams — illustrative schematics created for this presentation

Slide 21: Figures cited from Susca et al. (2022), Renewable and Sustainable Energy Reviews, 159, 112100.

Slide 22: Citizen-science sensor photo — HZ University of Applied Sciences.

Slide 24: "Thank You" lettering graphic



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European Documentation Centre
Differdange



Thank
You!



Centre de
documentation européenne
Ville de Differdange

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