UrbanAIR

New digital tools for cleaner, cooler & healthier cities

urbanair-project.eu

Funded by the European Union

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UrbanAIR in Action

Cities need immediate climate solutions, not ones that take years. UrbanAIR delivers insights that transform how cities respond to heat waves and air pollution.

Our digital twin enables cities to test multiple 'what-if' scenarios, showing how solutions will perform before implementation – from emergency response to long-term green infrastructure and urban planning.

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Mission & Purpose

We empower cities with AI-powered digital twins that predict climate risks and support adaptation strategies at street level.

UrbanAIR's digital twin combines climate science, advanced modelling, and AI to help five European cities develop better climate response strategies and more resilient neighbourhoods.

Impact

- **Smarter policy & faster emergency response**
- **Cost-effective planning for climate risk**
- **Healthier, safer urban living**
- **Green infrastructure and climate resilience**

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Inside the UrbanAIR Digital Twin

Five key components work together to transform complex atmospheric data into actionable insights for decision makers in urban planning and emergency response.

This advanced atmospheric digital twin simulates urban heat and air quality patterns, enabling analysis and optimization of climate adaptation strategies to support smarter, more responsive urban planning.

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Inside the UrbanAIR Digital Twin

Atmospheric Modelling

Simulates heat and air pollution at street level using advanced weather and fluid dynamics models.

Behavioural Analysis

Models how people respond to heat waves and poor air quality using simulations and real feedback.

AI based Emulation

Accelerates simulations with machine learning, enabling near real-time insights for emergency planning.

Decision-Support

Transforms complex data into clear recommendations through a user-friendly interface integrated with Destination Earth

Uncertainty Quantification

Provides confidence levels for all results using statistical tools and scenario analysis.

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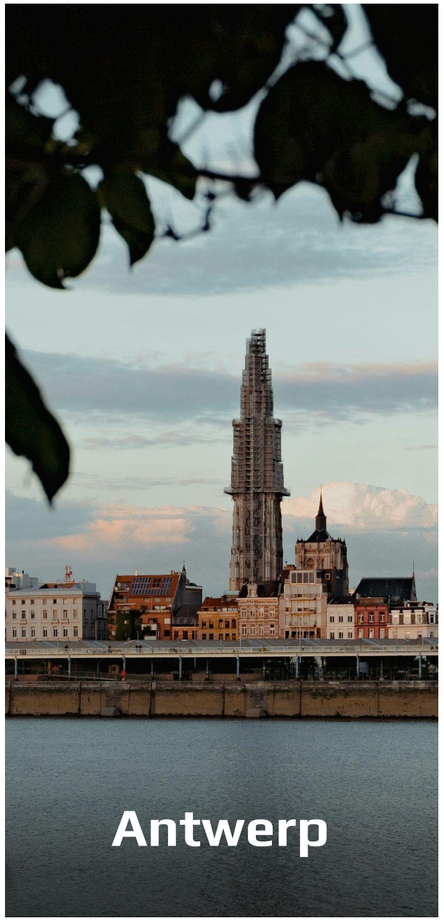
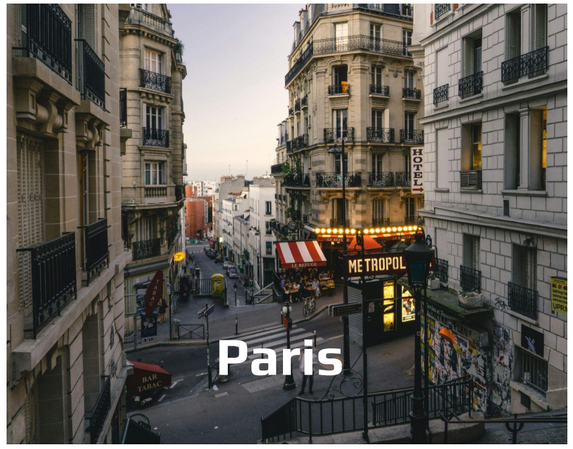
Pilot Cities

UrbanAIR follows a living lab model. All tools are co-designed and tested with municipal partners to ensure relevance and usability in real-world decision-making.





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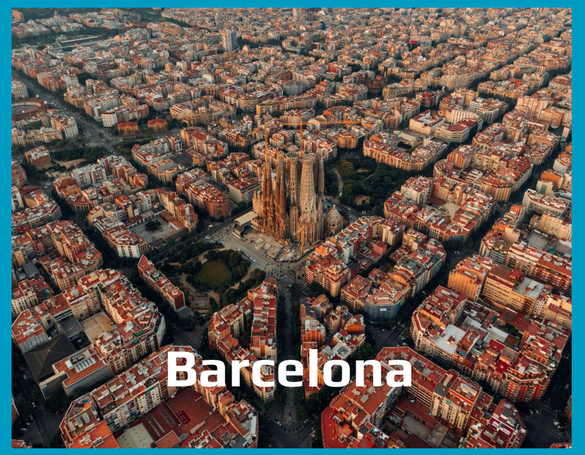

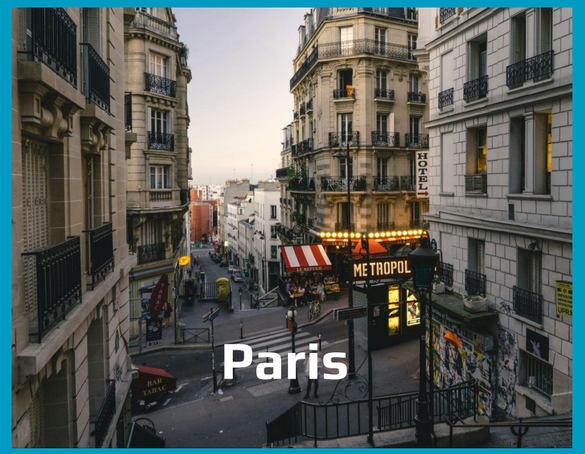

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Our Partners

Led by TU Delft, UrbanAIR brings together Europe's leading climate scientists, supercomputing experts, and city planners to deliver AI-powered digital twin solutions for urban heat and air quality challenges.

TU Delft

NORCE

TECHNISCHE UNIVERSITÄT ILMENAU

vito

ARUP

Koninklijk Nederlands Meteorologisch Instituut
Ministerie van Infrastructuur en Waterstaat

Leibniz Universität Hannover

IMPERIAL

UNIVERSITÉ TOULOUSE III PAUL SABATIER

BSC Barcelona Supercomputing Center
Centro Nacional de Supercomputación

FN future needs

universität freiburg

SMHI

RESILIENT CITIES NETWORK

METEO FRANCE

CERFACS

UKRI Science and Technology Facilities Council

FH

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Future Needs

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