

UrbanAIR: URBAN simulation for Air quality and heat Resilience strategies

As European cities face increasing pressure from air pollution and extreme heat, the UrbanAIR project provides innovative digital tools to help them understand, anticipate and act.

Funded under Horizon Europe ([HORIZON-INFRA-2024-TECH-01-03](#)) and running from 2025 to 2028, UrbanAIR develops advanced digital twins that simulate the interactions between urban climate, human behaviour, and policy choices. These models enable cities to explore what-if scenarios, such as new green infrastructure, mobility measures or building designs, and assess their impacts on health, safety and social equity.

At the core of UrbanAIR lies a strong integration of atmospheric science, data analytics and artificial intelligence within the [Destination Earth \(DestinE\) framework](#). The project combines high-resolution urban climate models with behavioural data and AI-based acceleration methods, offering a new generation of tools that support local decision-making on air quality and heat resilience.

UrbanAIR is being co-designed with five pilot cities: Antwerp, Barcelona, Paris, Bristol and Rotterdam, in collaboration with policymakers, planners, researchers and citizens. This ensures that the digital twins respond to real urban needs and can be readily transferred across Europe.

For VITO, participation in UrbanAIR is a natural continuation of its long-standing expertise in urban climate modelling and environmental intelligence. As a partner, VITO contributes to the development of high-resolution simulations and to the integration of air quality and heat exposure indicators into the digital twin environment. This collaboration allows VITO to bridge science and policy, enabling cities to build evidence-based, data-driven strategies for a healthier and more sustainable urban future.

UrbanAIR supports the European Green Deal, the EU Mission on Climate-Neutral and Smart Cities, and the EU Digital Strategy, contributing to Europe's leadership in digital environmental innovation.