URBREATH

Reimagining urban living

a synergistic blend of nature's wisdom and cutting-edge technology

URBREATH is a groundbreaking initiative co-funded by the European Union, poised to revolutionise our urban landscapes. This project isn't just about adapting to climate change; it's about transforming our cities from the ground up, making them not only sustainable but resilient against the ever-growing threats of a warming world.

Objectives

- Create innovative cooperative organizational models to ensure project sustainability, emphasizing the systemic adoption of Nature-Based Solutions (NBS) and hybrid approaches for urban regeneration and climate neutrality.
- Develop and showcase efficient services, models, and tools for quantitatively assessing the impact of climate effects, specifically related to climate neutrality, regeneration, and adaptation planning.
- Develop and implement new combinations of Nature-Based Solutions (NBS) and hybrid approaches to maximize positive outcomes, enhancing urban and local climate neutrality, resilience, and regeneration.
- Establish a structured framework for evaluating Nature-Based Solutions (NBS) through the ongoing monitoring of implemented solutions in four European regions.
- Share and replicate the URBREATH methodology and tools through mentoring and coaching initiatives.
- Develop novel business models and strategies to enhance regional climate resilience.



Results

Through the engagement of local communities, the utilization of Local Digital Twins, and the application of AI technologies, URBREATH is setting the stage for a new era of urban planning. A collaborative effort involving leading researchers, urban planners, policymakers, and tech innovators, this project seeks to harness the full potential of nature-based solutions (NBS) across diverse climate zones, each facing unique climate challenges. The aim is to deliver:



Co-design Platforms for Regenerative Planning:

shaping its Living Labs (LLs) as co-design platforms, fostering participatory urban transformation practices.



Advancement in Ecological Transition:

enhancing techniques for assessing Nature-Based Solutions (NBS), moving towards hybrid solutions by integrating statistical physics advancements.





providing innovative Climate Services, offering reliable statistical climate projections, daily deterministic forecasts up to 10 days, and probabilistic forecasts up to 6 months ahead, regularly updated.



Holistic Socio-economic Impact Quantification:

addressing community resilience gaps by employing a flexible framework for exposure modeling and impact assessment, considering demographic factors and comprehensive economic models.



Local Digital Twins for Policy Simulation:

developing a Digital Twin tool for policy simulation and engagement, integrating simulation models and providing results in an understandable way.



Integration of Climate Change Data into Engineering Science:

enhancing methods to create representative weather files, utilizing high-resolution regional climate models for unbiased impact assessment in engineering and socioeconomic applications.



Institutional and Business Innovations:

introducing a financial framework and canvas to attract investors, identify revenue sources, and develop sustainable business models for hybrid infrastructures.



Enhanced NBS Impact Monitoring:

establishing an innovative NBS Key Performance Indicator (KPI) Catalogue connected to a robust data and monitoring system, facilitating effective monitoring and assessment of NBS impacts.



Expected Impact

Climate change mitigation and adaptation

- Decrease the carbon footprint and pollution of the European urban areas.
- Boost resilience of the European urban areas towards climate change related hazards such as heath waves, heat bubbles, flooding.
- Safeguard biodiversity and enhance public health and well-being.

Trust and Engagement

- Increase trust in democratic institutions increasing the involvement of citizens in the decision making processes.
- Enhancing policy-decision-making processes of urban greening and re-naturing for urban regeneration, resilience and climate neutrality.

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The Team

The project brings together a consortium of 37 partnering organisations, from 12 countries, which will all work under the experienced lead of The Lisbon Council for Economic Competitiveness (Belgium).

The extended list of the consortium members includes:

RTOs and Universities: Politecnico di Milano, Fraunhofer Institute for Industrial Engineering IAO, University of Stuttgart, Tallinn University of Technology, Institute of Communication and Computer Systems, VITO, Universidad Politécnica de Madrid, Kajaani University of Applied Sciences

Public Agencies: Digital Flanders

Large Enterprises: Engineering, Municipia, Deda Next

Small and Medium Enterprises: Athens Technology Center, Virtual City Systems, Urbasofia, Diadikasia Business Consultants, Latitudo 40, South Pole, Telesto, EXUS Software, Traza, Dark Matters Lab

Non-profit Organisations and Networks: Open and Agile Smart Cities, Climate Alliance, Climate Research Foundation, Basurama, BLOXHUB

Frontrunner Cities: Madrid, Leuven, Tallinn, Cluj-Napoca

Follower Cities: Parma, Athens, Aarhus, Kajaani, Pilsen

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