

# BEYOND ALL LIMITS CONFERENCE 2025

3rd International Conference on Sustainability  
in Architecture, Planning, and Design

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Proceedings Book of Papers



ÇANKAYA UNIVERSITY



Università  
degli Studi  
della Campania  
*Luigi Vanvitelli*



LUNDS  
UNIVERSITET



October  
16-17  
Ankara, Türkiye

Proceedings Book of Papers

# **BEYOND ALL LIMITS / 2025**

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in Architecture, Planning, and Design

ÇANKAYA UNIVERSITY  
MAIN CAMPUS

October 16-17, 2025



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*Luigi Vanvitelli*



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## FOREWORD

It is our great pleasure to welcome you to BEYOND ALL LIMITS 2025 – The 3rd International Conference on Sustainability in Architecture, Planning, and Design, jointly organized by Çankaya University (Türkiye), Università degli Studi della Campania “Luigi Vanvitelli” (Italy), Lund University (Sweden), and Azerbaijan Technical University (Azerbaijan). The conference will take place in the Congress Hall of Çankaya University, Ankara, Türkiye, on October 16–17, 2025, and is supported by SITdA – Società Italiana della Tecnologia dell’Architettura and GRID – Architecture, Planning and Design Journal.

The BEYOND ALL LIMITS conference series has established itself as an international platform where scholars, practitioners, and students converge to explore and challenge the evolving concept of sustainability. This year’s theme continues this legacy by seeking to redefine sustainability across environmental, economic, and socio-cultural dimensions, while fostering cross-disciplinary dialogue and collaboration among architecture, urban planning, and design fields. The conference aspires not only to broaden the conceptual and methodological boundaries of sustainability but also to inspire transformative and practical approaches for shaping a more resilient, equitable, and regenerative built environment.

The scientific program of the conference includes a rich variety of sessions, featuring keynote lectures, and parallel paper presentations. Over two intensive days, nearly 200 academicians, experts, researchers, and professionals from various countries will share their studies, projects, and perspectives. The conference program includes 78 scientific presentations, offering a comprehensive overview of current research trends and innovative practices in the field.

We are honoured to host two distinguished keynote speakers whose contributions have greatly advanced the discourse on sustainable architecture and energy design: Prof. Dr. Susan Roaf, Emeritus Professor of Architectural Engineering at Heriot-Watt University (UK), renowned for her pioneering work on climate-responsive architecture and resilience and Prof. Dr. Pieter de

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Wilde, Professor of Energy and Building Design at Lund University (Sweden), recognized internationally for his expertise in building performance modelling and simulation.

This Proceedings Book compiles the written contributions presented at the conference, including both peer-reviewed papers and keynote addresses. All authors submitted papers (ranging between 1500 and 3000 words), which were blind peer-reviewed by the Scientific Committee to ensure academic rigor and quality. The accepted papers published herein represent a diverse and inspiring collection of ideas that reflect the conference's central aim to go *beyond all limits* in reimagining sustainability for the built environment.

On behalf of the Conference Organization Committee, we would like to express our deepest gratitude to all members of Çankaya University, Università degli Studi della Campania “Luigi Vanvitelli”, Lund University, and Azerbaijan Technical University for their invaluable contributions, dedication, and collaborative spirit in organizing this international event.

We would also like to extend our sincere appreciation to all authors, speakers, reviewers, and participants for sharing their research, insights, and visions. Your active participation and commitment to advancing sustainable design and planning make this conference a vibrant and meaningful academic platform.

We wish you all a productive and inspiring conference experience, filled with fruitful discussions, new collaborations, and lasting connections.

Conference Organization Committee

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**COMMUNITY ENGAGEMENT AND CO-DESIGN PROCESSES FOR  
SUSTAINABLE URBAN REGENERATION. THE UTOPIZE HORIZON  
EUROPE PROJECT.**

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## Community Engagement and Co-Design Processes for Sustainable Urban Regeneration. The Utopize Horizon Europe Project

**Abstract:** This paper illustrates the objectives, methodological framework and expected results of the European Project *Utopize – Urban Transformation through Open Participation and Inclusivity for citiZen Empowerment*, funded under the Horizon Europe programme. The project promotes new models of collaborative, participatory and regenerative urban governance, geared towards the sustainable transformation of public spaces, in line with the principles of the New European Bauhaus. Through a transdisciplinary and phased approach, *Utopize* integrates nature-based solutions, digital technologies and co-design practices, with the aim of strengthening the active role of local communities in decision-making processes. The paper focuses on the pilot case study of the Ponte Lambro neighbourhood in Milan (Italy), on one of the pilot projects of *Utopize*, a peripheral urban area characterised by environmental and social challenges, but at the same time endowed with untapped potential. *Utopize* aims to generate concrete impacts in terms of social inclusion, quality of public space and resilience, developing a replicable model of participatory urban regeneration in European contexts.

**Keywords:** community engagement; co-design; public space design; New European Bauhaus; digital technologies

### Introduction

Addressing climate change necessitates profound structural shifts in both lifestyles and resource management. The urgency of this challenge has brought it to the forefront of political agendas across all levels of governance (IPCC, 2023).

In response to this emergency, the European Union has set itself the goal of achieving climate neutrality by 2050 and is moving towards this goal by committing, on the one hand, to reducing greenhouse gas (GHG) emissions by at least 55% by 2030 and, on the other, to increasing the climate resilience of its territories. In this regard, the European Green Deal<sup>1</sup> has been defined, with related initiatives (Kılıkış et al., 2024). Among these, the New European Bauhaus (NEB), active since 2021, connects the domains of science, technology, art and culture with the aim of creating sustainable, inclusive and attractive living spaces. The built environment is responsible for 40% of the EU's energy consumption and 36% of greenhouse gas emissions<sup>2</sup>, so it is necessary to focus research and experimentation on innovative, circular and regenerative approaches to building production and urban development.

While buildings constitute a major source of habitat degradation, environmental pollution, and resource depletion, advancements in the construction sector remain

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<sup>1</sup> For further information: [https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal\\_en](https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en).

<sup>2</sup> See national data on air pollutant emissions for 2005-2021 available at: <https://www.eea.europa.eu/data-and-maps/dashboards/necd-directive-data-viewer-7>.

comparatively slow, economically burdensome, and constrained in their capacity to optimise adopted technical solutions. (EC-JRC, 2016).

Innovative approaches to urban transformation are therefore essential to enable progress towards sustainability. However, their effectiveness depends primarily on reconfiguring governance models (Mussinelli, 2023). Traditional hierarchical governance models, which are no longer effective, are gradually evolving towards decentralised, inclusive, transparent models that respond to citizens' needs. This cultural and structural change reflects a more general shift in society, driven by digital technology, demographic change and social and political instability.

The importance of incorporating citizen engagement, foresight and design thinking into governance models is also highlighted in the *Future of Government 2030+* report as a condition for redefining the relationship between citizens and the public administration, strengthening the democratic legitimacy of governments and mutual trust (Vesnic Alujevic, et al., 2019). However, this change is complex to implement due to the complexity of social issues and disparities in citizens' skills. Possible answers come from collaborative governance, which allows the strengths of the public, private and civil society sectors to be combined to improve the quality of services through community-led solutions with immediate and tangible impacts.

This is the context for the *Utopize* project – *Urban Transformation through Open Participation and Inclusivity for citiZen Empowerment*<sup>3</sup>, which this contribution presents, explaining its objectives, methodological aspects and expected results.

The project was funded by the European Commission in September 2024 as part of the Horizon Europe programme “New governance models for the co-design and co-construction of public spaces in neighbourhoods by communities (Horizon-Miss-2024-Neb-01-02)” and aims to rebuild the community's relationship with public spaces and the natural environment, promoting social cohesion and improving the sustainability of neighbourhoods. Within the broad partnership, for Italy, the Municipality of Milan and the Politecnico di Milano are following the project trial in the Ponte Lambro pilot neighbourhood, in the south-east of the Lombard capital, in a marginal urban context with problems of environmental and social degradation and serious issues regarding connections with the city centre<sup>4</sup>.

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<sup>3</sup> *Utopize* is coordinated by Cim Região de Coimbra, in collaboration with Coimbra University, Politecnico di Milano, Örebro University, Aalto University, Municipality of Penacova, Municipality of Milan, Municipality of Karlskoga, Consultancy company Volcano, Zentrum für Soziale Innovation, European Association for Innovation in Local Development, Inova+, InnCrease.

<sup>4</sup> The other *Utopize* pilot neighbourhoods are Karlskoga in the Bergslagen region of Sweden and Penacova in Portugal.

## Cultural background

The *Utopize* project stems from European policies to strengthen collaborative and participatory governance models and tools in response to contemporary emergencies and challenges, particularly in the fight against climate change.

The project proposes Utopia Labs, where citizens actively co-design public spaces, promoting inclusion, cultural identity and innovation to encourage individual and collective responsibility for local change.

In particular, *Utopize* aligns with the objectives and definitions set out by the NEB, which conceptualises governance as a multidimensional framework, distinguishing among the following components: “collaborative governance”, which promotes cross-sector partnerships to co-create public policies; “participatory governance”, which allows citizens to engage directly in decision-making processes; “regenerative governance”, which aims to restore and improve social and environmental systems; “decentralised governance”, which allows local communities to lead projects tailored to their specific needs; “smart governance”, which integrates digital technologies to optimise resource use and improve transparency. In the vision expressed by the NEB, it is only by integrating these different components of governance that quality spaces can be designed, both in urban and rural areas. Moreover, this vision is also fully in line with the European principle of subsidiarity<sup>5</sup>.

*Utopize* also draws on the results of other European research projects to build a comprehensive picture of existing knowledge and contribute to a broader understanding of the role that public spaces play in fostering social relations within communities. In particular, *Utopize* collaborates with actions funded under the Horizon Europe programme that focus on the revitalisation of local communities, bio-based business models, social innovation, NEB tools and innovative governance models<sup>6</sup>.

The interim and final results of *Utopize*, which will conclude in 2028, will be shared in the New European Bauhaus hub.

## Methods

The *Utopize* project aims to provide tools for designing sustainable, inclusive and attractive public spaces. The proposed design approach is gradual and structured in phases of

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<sup>5</sup> See: <https://www.europarl.europa.eu/factsheets/en/sheet/7/the-principle-of-subsidiarity>.

<sup>6</sup> In particular: Horizon-CL2-2022-Democracy, Horizon-CL6-2021- Governance, Horizon-CL5-2021-D4, Horizon-CL4-2021-Resilience, Horizon-CL4-2023-Human, Horizon-Miss-2021-Cit, Horizon-Miss-2021-NEB, Horizon-Miss-2021-Clima and Horizon-CL5-2024-D4.

progressive deepening: identification (recognition of key challenges, information gathering and identification of potential solutions), exploration (testing of engagement models in real contexts, iterative refinement), refinement (formalisation of successful strategies and methodologies, consolidation of results and translation into actionable recommendations). This will enable the definition of robust, scalable and effective governance models.

Participation is a cross-cutting theme throughout all project phases, understood as strengthening the sense of belonging to the place and the commitment of each member of the community, as individuals and as a group, to the care of their neighbourhood. In particular, *Utopize* stimulates and strengthens participation through the organisation of workshops and training and local activation events, collective site visits, explorations and interpretations of the landscape<sup>7</sup>, and the provision of interactive co-design platforms for citizens.

The physical transformations implemented by *Utopize* are focused on sustainability, understood in its broadest sense, and on interdisciplinarity. From an environmental standpoint, the project develops solutions that systematically integrate nature-based strategies (NBS) with the utilization of regenerated materials, aiming to design public spaces that achieve zero-emission performance (Bologna et alii, 2020). From a social perspective, *Utopize* also involves marginalised communities in the co-creation of sustainable public spaces, ensuring that the benefits of the transformations are shared equally within the community. From an economic perspective, the design strategies favour the use or reuse of locally sourced materials, promoting local know-how, traditions, craftsmanship and culture.

*Utopize* takes a transdisciplinary approach, bringing together experts in architecture, engineering, design, social sciences, environmental studies and local cultural organisations. This cross-sector collaboration ensures that the solutions are scientifically sound, culturally relevant and tailored to the specific needs of each context. By combining practical experience with scientific and technical knowledge, *Utopize* facilitates peer learning processes and strengthens the bonds between people, places and nature to create resilient and innovative solutions for the efficient management of territories and communities.

The design model developed with *Utopize* is currently undergoing an initial phase of application testing and evaluation of results in three different demonstration neighbourhoods, in urban (Ponte Lambro in Milan, Italy), peri-urban (Karlskoga in the Bergslagen region of Sweden) and rural (Penacova in Portugal) contexts. The results of the trials, which are currently

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<sup>7</sup> These participatory tools have also been borrowed from the experience of ecomuseums (Riva et al., 2022).

underway, will provide guidance on the scalability and replicability of the participatory model in other neighbourhoods, allowing for any necessary adjustments to be made.

From an operational point of view, *Utopize* has been broken down into specific objectives, which in turn have made it possible to divide the project into work packages, tasks and actions, listed below:

- Studying and refining models and methodologies for involvement and participation in the co-design and transformation of public spaces.

Within the Utopia Labs, local communities are initially activated through meetings aimed at gathering needs and aspirations for the development of neighbourhood public spaces. At the same time, a detailed study of existing engagement models is conducted to ensure that they are adapted to the socio-economic and contextual characteristics of each demonstration neighbourhood. In a subsequent phase, advanced technologies are made available to the collaborating communities to visualise and model the future development of the neighbourhoods. In particular, reference is made to digital tools such as Extended Reality (XR), including Augmented Reality (AR) and Virtual Reality (VR), with interactive web access. These tools transfer content from specific technical systems such as Geographic Information Systems (GIS), Digital Twins and 3D BIM-NBS libraries, encouraging citizen involvement and offering immersive platforms for urban planning and design.

- Pilot and refine selected engagement models to promote social cohesion, trust, community belonging and skills development.

To engage and empower local communities, training workshops with a limited number of participants are promoted (digital literacy, social innovation and inclusive decision-making), as well as design sessions, coordination and online mentoring by experts on funding and exchange programmes. Following this training phase, larger local activation and co-design events are promoted. These events are aimed at refining project ideas. In this phase, the demonstration neighbourhoods also establish twinning arrangements with other areas to verify the actual replicability of the model and create a solidarity network of communities dedicated to sustainable and lasting urban transformation.

- Assessing the impact of the *Utopize* project on community engagement, inclusiveness, sustainability and the quality of public spaces

A framework for evaluating preliminary results and impacts is implemented as part of the project. This evaluation framework requires that data collection and interpretation be conducted extensively by citizens involved in the *Utopize* project and communicated to the community and local stakeholders, as well as published in specialised journals to inform future urban planning projects and influence broader policy discussions on urban development.

- Disseminating project results to maximise impact.

The results of *Utopize* will be communicated through a comprehensive dissemination strategy, including academic papers, the drafting of a white paper, dissemination on social media and a dedicated website, and presentations to the public and policy makers. This phase also involves collaboration with the NEB hub to share and compare good practices and experiences in other contexts.

- Ensure efficient and effective project management.

Through exchanges between partners and the organisation of meetings, *Utopize* is constantly monitored in terms of its timetable, budget and the achievement of shared objectives.

## Findings and Discussion

Trials in the demonstration neighbourhoods were officially launched in June 2025. The Municipality of Milan, with scientific support from the Politecnico di Milano, is particularly involved in monitoring the development of project activities in the Ponte Lambro demonstration neighbourhood.

Ponte Lambro is located on the eastern border of the municipality of Milan. It is a rural settlement that underwent significant development in the second half of the 20th century with the construction of several residential buildings, mainly public. The surrounding conditions limit Ponte Lambro's integration with neighbouring districts due to the presence of significant physical barriers (the Tangenziale Est ring road, the railway, the Lambro river, Linate airport and the Paullese provincial road). Ponte Lambro is therefore an enclave that is difficult to access.

On the other hand, this condition has preserved a natural environment worthy of protection and enhancement. However, in recent years, the Lambro river, which runs alongside the neighbourhood, has become a critical issue due to frequent flooding and unresolved

hydraulic problems, as well as the progressive deterioration of water quality and the landscape along its banks.

Over the years, there have been several programmes and projects for the redevelopment and regeneration of the neighbourhood, with building and energy renovation works, but also initiatives to reclaim public spaces and promote social development. However, the results achieved have been limited to improvements at the building level without producing significant urban and social benefits. The most ambitious programmes have mostly remained unimplemented or have been significantly scaled back due to the lack of public funding. There has been a lack of clear public leadership and effective involvement of the community and local stakeholders (Riva, 2023).

Today, the Ponte Lambro neighbourhood is facing problems related to the presence of abandoned “non-places”, which have been stripped of their identity and effectively removed from public use. However, several opportunities are emerging, linked, for example, to the completion of the PalaItalia for the 2026 Milan-Cortina Winter Olympics in the nearby Santa Giulia neighbourhood, which will see the construction of a pedestrian walkway connecting Ponte Lambro, as well as other initiatives by the Municipality of Milan with the Housing Department for the redevelopment of existing heritage. The solutions proposed are mostly contingent, linked to funding opportunities, while the citizens are calling for structural solutions that respond to the environmental emergency but at the same time increase the usability of the area and the quality of public spaces.

This is the context for the *Utopize* project, which aims to rebuild the community’s relationship with public spaces and the natural environment as a prerequisite for curbing abandonment, vandalism and degradation. For Ponte Lambro in particular, *Utopize* will define a “toolbox” for the implementation of the Milan City Council’s Air and Climate Plan, with the aim of achieving carbon neutrality by 2050 (Riva, 2025).

The projects proposed for Ponte Lambro are located in three areas considered strategic for improving the environmental and social quality of the neighbourhood. These are a large agricultural area owned by the municipality on the western edge of the town, a green area to the south of the neighbourhood intended to accommodate a hydraulic regulation structure, and an urban park near a problematic public housing complex built in the 1970s.

For the first two areas, discussions with the community are focusing on urban forestry measures and the creation of reservoirs for sustainable water management and to combat the intense weather events caused by climate change.

For the urban park, the idea under discussion is to enhance public services and improve accessibility and usability.

The design of these areas is also being carried out with the support of Extended Reality tools, as well as specific training programmes to consolidate activities already underway in the context. As part of the participation process, the creation of a collaboration agreement will also be proposed, to supplement the existing civic agreement on water quality monitoring, to enable citizens to promote community initiatives and manage the areas through events, educational workshops and art installations.

*Utopize* revives the idea of the UNESCO Neighbourhood Laboratory, provocatively promoted in the early 2000s by Renzo Piano. The Ponte Lambro Utopia Lab will therefore be a place where citizens can co-design and co-implement local interventions, as well as serving as a historical memory of the area, reflecting on the failures of past public interventions in order to promote a new collective vision for the neighbourhood.

In essence, *Utopize* is moving in the direction of activating stable forms of participation, both in terms of collaboration between the internal skills of the Municipality of Milan and in terms of the involvement of local actors, in order to build a shared vision of local development towards which projects, interventions and skills can converge in a unified manner.

## **Conclusion**

Ponte Lambro is an emblematic neighbourhood in the Milan metropolitan area, where suburban management problems are exacerbated by environmental and infrastructural issues that relegate the neighbourhood to an enclave that is physically and functionally separated from the rest of the city. On the other hand, Ponte Lambro is a strategic resource for the development of the metropolitan city due to its environmental and cultural value. The *Utopize* project transforms it into a laboratory for experimenting with a different model of urban suburb management, focused on participation, care for common goods, the co-creation of new values and quality of life.

At a critical stage in the governance of the city of Milan, with the revision of the Territorial Government Plan (PGT) currently underway, the *Utopize* experiments could be an opportunity for a concrete revival of urban planning on a large inter-municipal scale, starting from the needs of local communities, with solutions that are tailored to those needs and are effective, sustainable and inclusive. This approach also brings citizens closer to local government bodies, increasing mutual trust and collaboration.

More generally, based on the results of ongoing experiments in Sweden and Portugal, the *Utopize* project will offer tools to increase social integration and incorporate community-led solutions into the fabric of public decision-making processes. Utopia Labs allow for the testing, on a local scale with reduced complexity, of collaborative governance models that can then be usefully scaled up and transferred to the urban and wider area. They also make it possible to verify the impact of co-design and co-s in the management of public spaces, as a pivot around which to promote widespread, effective and long-lasting urban regeneration interventions.

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