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URD
PhD in Urban and Regional Development
IN VARIETATE CONCORDIA

Urban and Regional Development Ph.D. Programme
ANNUAL REPORT 2025

Politecnico di Torino
UNIVERSITÀ DI TORINO

DIST
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INTRODUCTION

This report contains information on all the Ph.D. students enrolled in the interuniversity Ph.D. Programme in Urban and Regional Development (URD). The Ph.D. programme is hosted at the DIST, the Interuniversity Department of Urban and Regional Studies and Planning of the Politecnico di Torino and Università degli Studi di Torino.
The Ph.D. programme is designed to train highly qualified doctors in socio-spatial dynamics of development. To do so, it aims at attracting motivated and qualified candidates from all over the world, offering courses and a research environment which corresponds to the highest academic and professional standards.
The programme is offered in English, and it has a multi-disciplinary approach that combines social and technical sciences (SSH and STEM). It is meant to promote individual talents by providing training and research opportunities in a wide variety of scientific fields that are grouped in three main research areas:

1. Urban and Regional Studies;
2. Spatial Planning, Evaluation and Management;
3. Technologies, Techniques and Methodologies for Sustainable Development.

Ph.D. students attend soft and hard skills courses organised around the thematic areas, and each student, supported by members of the Academic Board, can design a specific study plan to match their research and academic interests. The Ph. D. educational offer includes frequent contributions from scholars of other universities and promotes research and training activities in highly qualified institutions across the globe. As part of the programme, Ph.D. students are encouraged to organise seminars, promote events, and open the programme to the department, the academic community, and the society as a whole. The programme is based on the acknowledgement of the Ph.D. students' ambition to think beyond borders, both while completing their educational and academic training, and while searching for a job. Our Ph.D. may start an academic career or search for management positions in public or private structures, related to the planning and management of spatial transformation processes.
Career opportunities offered by doctoral training can be summarized as follows:

- Public and private scientific research carried out at national, European, and international level;
- University education;
- Spatial and urban management in national, state, regional and local administrations;
- Employment in transports and/or environmental protection organisations;
- Construction companies, real estate market;
- Local development agencies, urban development companies;
- Engineering companies and architecture consulting firm and professional offices.

The Ph.D. programme is focused on topics that are developed across the three main research areas. Furthermore, such topics can be related to four Sustainable Development Goals (SDGs) adopted by the United Nations Member States in the Agenda 2030:

SDG 11
Sustainable cities and communities

- Urban and regional governance
- Spatial planning
- Urban studies
- Human, economic, and political geography
- Built environment
- Real estate
- Natural environment
- Landscape
- Cultural heritage
- Social innovation

SDG 13
Climate actions

- Climate change
- Sustainable land use and territorial resilience
- Risk prevention and management
- Geomatics

SDG 9
Industry, innovation and infrastructure

- Transport systems
- Building information modeling
- Big data for spatial development
- Virtual and augmented reality for spatial development

SDG 7
Affordable and clean energy

- Renewable energy and energy transition
- Water management

CONTENT

XXXVIII CYCLE – 3rd YEAR STUDENTS

NAME **Niccolò AIMO**
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COURSE XXXVIII cycle - 3rd year

RESEARCH TITLE Climate Change Response and the Reshaping of Urban Governance

TUTOR(S) Fabrizio DI MASCIO, Ekaterina DOMORENOK

ACADEMIC CONTEXT

- Adelle, C. and Russel, D., 2013. Climate Policy Integration: A Case of Déjà Vu? *Environmental Policy and Governance*, 23(1), 1-12. https://doi.org/10.1002/eet.1601.
- Tosun, J. and Lang, A., 2017. Policy integration: Mapping the different concepts. *Policy Studies*, 38(6), 553-570. https://doi.org/10.1080/01442872.2017.1339239.
- Domorenok, E., Graziano, P. and Polverari, L., 2021. Introduction: Policy integration and institutional capacity: Theoretical, conceptual and empirical challenges, *Policy and Society*, 40(1), 1-18. https://doi.org/10.1080/14494035.2021.1902058.
- Winkel, G. and Sotirov, M., 2016. Whose integration is this? European forest policy between the gospel of coordination, institutional competition, and a new spirit of integration. *Environment and Planning C: Government and Policy*, 34(3), 496-514. https://doi.org/10.1068/c1356j.

EXTERNAL COLLABORATIONS

- Institut d'études politiques – University of Lausanne (host for visiting or research period)
- Comune di Genova (host for visiting or research period)
- Instituto de Ciências Sociais (ICS) – University of Lisbon (host for visiting or research period)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

The research project is dedicated to the study of public responses to climate change at the local level, with a particular attention to the integration of different policy domains confronting the intersectoral climate issue.

Cities are nowadays recognized as a fundamental level of government for climate change response. Cities, in fact, are an active player in climate policymaking for a variety of reasons. On the one hand, the effects of climate change are particularly evident at the local level. Cities are ever more frequently interested by climate hazards, making the adverse effects of climate-change more obvious to citizens and policymakers. On the other hand, cities are also key players in the ideation and experimentation of solutions for the mitigation of and adaptation to climate change. This research addresses the *governance* issues related to the implementation of such solutions, especially relating to the cooperation between thematic policy sectors.

The traditional model of public policymaking is characterized by the bureaucratic fragmentation in multiple thematic domains. This approach, however, has proved to be scarcely effective when dealing with cross-boundary issues like climate change. This problem appears particularly relevant in the case of Southern European cities, which are currently tasked with the implementation of projects funded by the Next Generation EU program (NGEU). This initiative, in fact, has the explicit goal of integrating economic recovery with the climate transition goals of the EU Green Deal. Adopting the theoretical framework of policy integration, the research investigates the implementation of NGEU funded projects at the local level, to inquire if and how the European programme has stimulated the integration of climate action in municipal policymaking. The research empirically studies two local cases in Southern Europe: Genoa and Lisbon. Reconstructing the pattern of investments and the decision making processes underpinning local NGEU expenditure, the research identifies a series of mechanisms explaining how the goals of the EU programme combine with the local development patterns of the two municipalities.

NAME **Hashem ALSIBAI**
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COURSE XXXVIII cycle - 3rd year

RESEARCH TITLE Post Carbon Cities and Renewable Energy Communities: Stacked Energy Campuses for low-carbon energy transition

TUTOR(S) Egidio DANSERO, Lavinia Chiara TAGLIABUE, Gilles DESTHIEUX

ACADEMIC CONTEXT

- Alsibai, H., 2024. Post carbon cities: A geospatial assessment for the solar potential of Turin. *Urbanistica Informazioni*, 317, pp. 101-106. https://hdl.handle.net/11583/2995189.
- Oke, T.R., 2017. *Urban climates*. Cambridge: Cambridge University Press.
- Perera, A.T.D., Nik, V.M., Chen, D., Scartezzini, J.-L. and Hong, T., 2020. Quantifying the impacts of climate change and extreme climate events on energy systems. *Nature Energy*, 5(2), pp.150-159. doi:https://doi.org/10.1038/s41560-020-0558-0.
- Alsibai, H., Gasbarri, P., Boscariol, M., Meschini, S., Tagliabue, L.C., Dansero, E. and Tartaglino, A., 2024. Solar Potential and RES Evaluation into UniTO's Digital Asset Management System for Sustainable Campus Development. In *Proceedings of the EG-ICE Conference* (pp. 136-145). https://hdl.handle.net/11583/2995440.

EXTERNAL COLLABORATIONS

- Unito green office: Member of the energy sector and research group
- International Forum on urbanism (IFoU)- young ambassador
- Commune di Torino: Internship
- Haute école du paysage, d'ingénierie et d'architecture de Genève (HEPIA): Mobility period

HIGHLIGHTS OF THE RESEARCH ACTIVITY

The United Nations (UN) and the World Bank predict the percentage increase of the world population living in urban areas in the 21st century (Angel et al., 2005). This change is anticipated due to the rise in the number of cities, migration from rural to urban areas, and transformation of some rural settlements into urban areas (United Nations, 2019) . Recently, making "cities and human settlements climate resilient and sustainable" has been highlighted as one of the sustainable development goals by the UN (UN 2030). Hence, research on sustainable habitats and related topics is becoming the center of attention and will continue to do so in the coming years (Martos et al., 2016).

Cities are rapidly expanding their boundaries and populations, and, as noted, "from a climatological perspective, human history is essentially the history of urbanization." (Santamouris et al., 2001) Recent trends of industrialization and urbanization have significantly increased the number of urban buildings, which in turn has greatly affected energy consumption in this sector. It is projected that 700 million people will migrate to urban areas during the last decade of this century. The urban population has already grown from 600 million in 1920 to 2 billion by 1986 (Santamouris et al., 2001).

However, modeling solar radiation in urban areas is more challenging than in open spaces due to the complex shading created by varying building heights, densities, and roof slopes. To estimate the energy that solar technologies can produce in cities, two key factors must be taken into account: (Compagnon, 2004): the urban solar availability, i.e. the total incident irradiation on building roofs and facades, and the utilization factor that assesses the area suitable for installation as well as technical characteristics.

The research focuses on energy production by sustainable means in the city, specifically public buildings like university campuses and identifies the regions with the greatest capacity for solar energy generation while also examining the connectivity of electric cabins.

NAME **Sebastiano ANSELMO**
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COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	Urban Energy Modelling for the feasibility analysis of Renewable Energy Communities. An application on the City of Turin
TUTOR(S)	Piero BOCCARDO, Stefano Paolo CORGNATI, Maria FERRARA

ACADEMIC CONTEXT

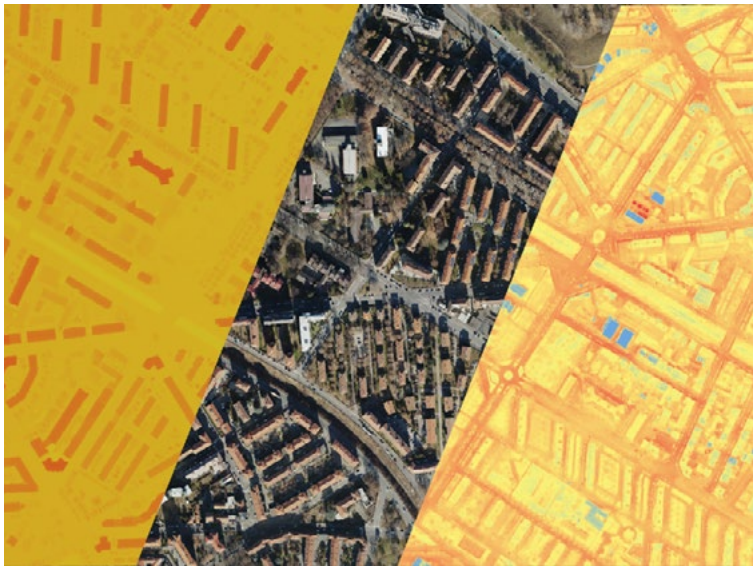
– Johari, F., Shadram, F. and Widén, J., 2023. Urban building energy modeling from geo-referenced energy performance certificate data: Development, calibration, and validation. *Sustainable Cities and Society*, [e-journal] 96, p. 104664. https://doi.org/10.1016/j.scs.2023.104664.
– Martin, M., Chong, A., Biljecki, F. and Miller, C., 2022. Infrared thermography in the built environment: A multi-scale review. *Renewable and Sustainable Energy Reviews*, [e-journal] 165, p. 112540, https://doi.org/10.1016/j.rser.2022.112540.
– Anselmo, S., Boccardo, P., Corgnati, S. and Ferrara, M., 2025. Integration of aerial thermography and energy performance certificates for the estimation of energy consumption in cities. *Energy and Buildings*, [e-journal] 336, p. 115644, https://doi.org/10.1016/j.enbuild.2025.115644.
– Anselmo, S., Safaeianpour, A., Torabi Moghadam, S. and Ferrara, M., 2024. GIS-based solar radiation modelling for photovoltaic potential in cities: A sensitivity analysis for the evaluation of output variability range. *Energy Reports*, 12, p. 4656, https://doi.org/10.1016/j.egyr.2024.10.031.

EXTERNAL COLLABORATIONS

– Scientific traineeship at the Joint Research Centre of the European Commission.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Urban areas are crucial to achieve decarbonisation objectives stated at international level, as recognised by the UN 2030 Agenda for Sustainable Development – with SDG11 identifying cities as key areas of intervention in the path towards a post-carbon society – and the fit for 55 package – elaborated at European level. The latter included the revision of Energy Performance of Buildings Directive, which targeted the achievement of minimum performance objectives for all existing buildings, certified by Energy Performance Certificates. Therefore, it emerged the need for an extensive survey on the conditions of the building stock. It is possible to perform such large-scale analyses taking advantage of remotely sensed thermographic pictures and GIS technology.



The principal task of my research consists in the correlation between the surface temperature and the EPCs to model the energy classification of the building stock. It learns its moves from the assumption that – given a constant internal temperature as stated by law – the outer surface temperature (on the right) returns the thermal loss of the building and therefore the energy performance. A three-dimensional model will be used to semantically enrich the buildings with thermal data, as well as to effectively visualise the produced information. EPC data – such as the energy class and energy use intensity – are used as training dataset to input known values in the model. The adoption of EPC-derived parameters enables the calculation of the thermal energy demand. On the other hand, the photovoltaic potential is assessed with 2.5D and 3D methods, estimating the solar radiation (on the left) and calculating performance values. By intersecting the previous calculations, it is possible to assess the feasibility of Renewable Energy Communities, which partially self-produce their energy needs. The final goal is to develop – in accordance to the framework agreement between the City of Turin and the Polytechnic for the realisation of a Digital Twin – an energy Digital Twin supporting policymaking. This platform is being implemented starting from District 6, to be then scaled up. As for the technology, the aim is to automate as much as possible the calculation model, so as to improve the algorithm with the addition of new thermographic pictures and EPCs.

NAME **Elisa BIOLCHINI**
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COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	Toward the Healthy City. A model to support planning scenarios' choice for climate justice
TUTOR(S)	Riccardo POLLO, Giuseppe MANDRONE

ACADEMIC CONTEXT

- Meerow, S. and Keith, L., 2021. Planning for extreme heat. *Journal of the American Planning Association*, 88(3), pp. 319-334.
- Turner, V.K., French, E.M., Dialesandro, J., Middel, A., Hondula, D.M., Weiss, G.B. and Abdellati, H., 2022. How are cities planning for heat? Analysis of United States municipal plans. *Environmental Research Letters*, 17(6):064054.
- Hashemi, F. and Adib, M., 2024. Examining thermal inequities: Land surface temperature, social vulnerability, and historical redlining in San Antonio, TX. *Urban Climate*, 55, 101960.
- Pollo, R., Biolchini, E., Squillacioti, G. and Bono, R., 2020. Designing the healthy city: an interdisciplinary approach. *SMC*, 12, 150-55.

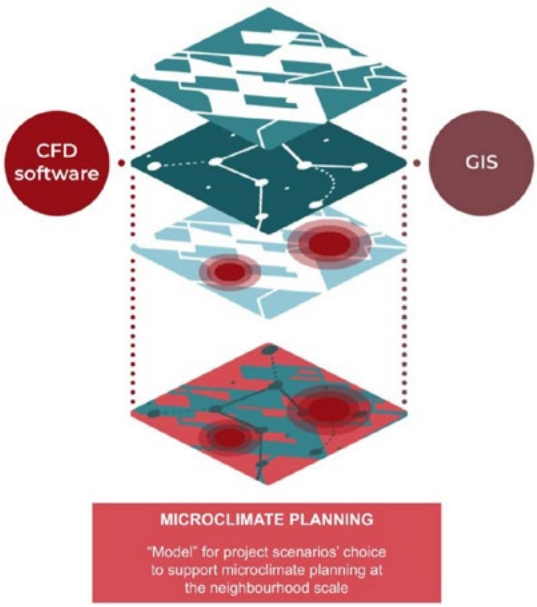
EXTERNAL COLLABORATIONS

- FONDAZIONE CRT CASSA DI RISPARMIO DI TORINO, Turin, Italy (co-financer of the PhD grant)
- University of Texas at San Antonio (UTSA), San Antonio, Texas (USA) (host for visiting period)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

The strong drive for urbanisation of the last decades led to a disorganised cities' development, worsening environmental and microclimatic conditions and today extreme heat phenomena need to be faced. In this context, Healthy City, intended as the process that the city undertakes to achieve the goal of health, programming specific actions, becomes fundamental. The current organisation of cities often tends to exacerbate economic, social and microclimatic vulnerabilities.

The focus of the research is oriented towards planning, at the neighbourhood scale, that can mitigate heat risks, promoting the health and well-being with a specific attention to vulnerability factors. The goal is to give decision makers a "model" for project scenarios' choice to facilitate the selection of the "risk areas" and the strategies to implement, especially to address heat-related health risks for vulnerable people. It is believed that the use of digital tools such as analysis, mapping, modelling and simulation software to support the planning processes, can help the choice of the best project scenario in the perspective of climate justice.



The first year was focused on a Systematic Literature Review (PRISMA method) selecting, reading and analysing publications to have an overall view of research, projects and plans taking into account the correlation between health, extreme heat and vulnerability factors at the neighbourhood scale. This review was useful to understand research background and gaps.

The second year was based on the "model" development. Specifically, first I focused on identifying, both from a preliminary scoping review and the literature review, some analysis, modelling, simulation and visualisation software already used for these purposes but also new ones and I chose the combination of ENVI-met (CFD software) and QGIS software.

The third year has been dedicated to the implementation of the "model" in 2 case studies, Turin (Italy) and San Antonio (Texas, USA), to evaluate and validate the tool, through the use of qualitative surveys.

It is also planned, by the end of the PhD, to write guidelines describing how to use these tools to respond effectively to the risks related to extreme heat with the city design.

This research should enhance the connection between environmental, social and economic variables to promote, in urban planning processes, the use of digital tools, in a systematic way, and to bridge the gap between projects and specific neighbourhoods' conditions.

NAME **Riccardo Giovanni BRUNO**
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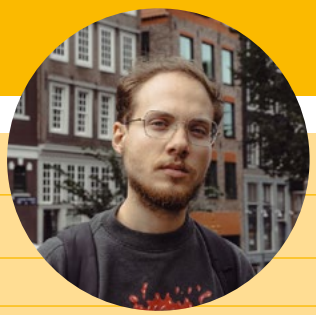

COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	A New Domain of Public Action - Emplacing innovative food governance in UNESCO Man and the Biosphere Reserve CollinaPo
TUTOR(S)	Egidio DANSERO

ACADEMIC CONTEXT

– Krähmer, K., Battisti, L., Berti, G., Bruno, R.G. and Dansero, E., 2024. Towards Sustainable and Sufficient City Region Food Systems: Reflections from the Case Study of Turin, Italy. *Sustainability* 16(19), 8569. https://doi.org/10.3390/su16198569.
– Berti, G., Bruno R.G., Lazzeroni M. and Rossi, A. 2023. Le regioni del cibo: processi, politiche, narrazioni. *Rivista Geografica Italiana*, CXXX, 4, pp. 152-171. https://dx.doi.org/10.3280/rgioa4-2023oa16857.

EXTERNAL COLLABORATIONS

– Trinity College Dublin
– Aeres University of Applied Sciences (Almere)
– INRAE (Montpellier)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This PhD thesis investigates Urban Food Policies (UFP) as an emerging domain of public action, aiming to understand the governance processes capable of addressing the territorial complexity of food systems. The research builds on the City-Region Food Systems (CRFS) approach, developed by FAO, while critically reassessing its conceptual and practical foundations. The work is grounded in an action-research project in the UNESCO Man and the Biosphere Reserve CollinaPo, which serves as both case study and experimental field. The thesis is structured into two main parts. The first explores the geographical perspectives of food system re-localization, situating UFP within the globalized food regime and highlighting the governance challenges of reconnecting local food networks. A systematic literature review reveals that CRFS often lacks a sufficiently articulated theoretical background for the city-region scale, which risks producing weak applications. To address this gap, the thesis develops a revised conceptualization of the city-region dimension and a set of criteria to identify and assess CRFS configurations, later tested on Turin and its surrounding areas. This analysis identifies CollinaPo as the most coherent and operationally promising scale for the research. The second part focuses on planning territorial UFP within CollinaPo, starting with a socio-spatial assessment of the reserve and continuing with a systemic analysis of its food system. Through mapping, interviews, and resilience-based evaluation, the work examines sustainability drivers and vulnerabilities. Further, stakeholder mapping, participatory SWOT analysis, and semi-structured interviews provide insight into governance potentials and limitations, highlighting the key actors for policy development. The final chapter synthesizes findings into a food policy proposal tailored to CollinaPo, while outlining replicable methodological pathways for other contexts. The main contributions include a critical reassessment of CRFS pillars, a redefinition of city-region perimeters with geographical precision, a clarified role of resilience in food systems, and a participatory governance framework.

NAME **Ilaria CAZZOLA**
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COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	Evaluating, Planning, and Designing for Resilience: Strategies to Overcome Territorial Risks
TUTOR(S)	Angioletta VOGHERA, Grazia BRUNETTA

ACADEMIC CONTEXT

- Asadzadeh, A., Khavarian-Garmsir, A R., Sharifi, A., Salehi, P. and Kötter, T., 2022. Transformative Resilience: An Overview of Its Structure, Evolution, and Trends. *Sustainability*, 14(22), Article 15267.
- Brunetta, G., Ceravolo, R., Barbieri, C.A., Borghini, A., de Carlo, F., Mela, A., Beltramo, S., Longhi, A., De Lucia, G., Ferraris, S., Pezzoli, A., Quagliolo, C., Salata, S. and Voghera, A., 2019. Territorial Resilience: Toward a Proactive Meaning for Spatial Planning. *Sustainability*, 11(8), pp. 11-19.
- Giovannini, E., Benczur, P., Campolongo, F., Cariboni, J. and Manca, A., 2020. *Time for transformative resilience: the COVID-19 emergency*. EUR 30179 EN, Publications Office of the European Union, Luxembourg.

EXTERNAL COLLABORATIONS

- RETURN Extended Partnership – PhD research carried out within the project; funding from the European Union Next-GenerationEU (NRRP, Mission 4, Component 2, Investment 1.3 – D.D. 1243 2/8/2022, PE0000005) – SPOKE TS 1.
- Universitat Internacional de Catalunya (UIC), Barcelona – Visiting research period (October–December 2025).

HIGHLIGHTS OF THE RESEARCH ACTIVITY

In recent years, resilience has been widely discussed in many different contexts. However, the concept of resilience can be somewhat nebulous and challenging to put into practical use. Despite its complexity, resilience is considered crucial in addressing the contemporary challenges, especially in the context of climate change and urban development (Brunetta et al., 2021). It encompasses the capacity of systems, communities, or individuals not only to withstand and adapt to external shocks and stresses but also to recover and thrive in the face of adversity. Resilience is also seen as a transformative concept with the potential to reshape planning and interventions (Giovannini et al., 2020), turning disruptions into opportunities for positive change and innovation (Asadzadeh et al., 2022). For these reasons, there is a growing interest in translating resilience from a broad theoretical notion into concrete tools and strategies that can guide urban planning and design.

This research aims to operationalize the concept of urban resilience by investigating what makes cities resilient and how this can be translated into planning and design practices. The work develops an evaluation framework supported by a catalogue of spatial indicators, designed to measure and assess the multiple dimensions of resilience. Building on this, the research adopts a comparative perspective, analysing two case studies: Turin—developed within the RETURN project (https://www.fondazionereturn.it/), focusing on the confluence of the Po and Stura di Lanzo rivers, an area exposed to hydrological risks but also undergoing significant urban transformation—and Barcelona widely recognized as a global exemplar of urban resilience, investigated to explore how resilience is assessed and operationalized within a different governance and planning context. The comparative analysis of these cases will make it possible to identify good practices and extract transferable lessons, which will then inform the development of planning and design guidelines oriented towards resilience. The ultimate goal is to provide practical tools for urban development that strengthen resilience while embracing its transformative potential.

NAME **Ioanna CHATZIKONSTANTINOU**
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COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	Neoliberalization of nature and the political ecology of wildfires: Changing forests and livelihoods in a Greek agroforestry area
TUTOR(S)	Marco SANTANGELO, Elia APOSTOLOPOULOU

ACADEMIC CONTEXT

- Apostolopoulou, E. and Adams, W.M., 2015. Neoliberal capitalism and conservation in the post-crisis era: The dialectics of "Green" and "Un-green" Grabbing in Greece and the UK. *Antipode*, 47(1), pp. 15-35.
- Castree, N., 2008. Neoliberalising nature: Processes, effects, and evaluations. *Environment and Planning A*, 40(1), pp. 153-173.
- Devine J.A. and Baca J.A., 2020. The Political Forest in the Era of Green Neoliberalism. *Antipode*, 52(4), pp. 911-927.
- González-Hidalgo, M., Otero, I. and Kallis, G., 2014. Seeing beyond the smoke: The political ecology of fire in Horta de Sant Joan (Catalonia). *Environment and Planning A*, 46(5), pp. 1014-1031.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Wildfires are increasing in intensity and severity throughout the Mediterranean basin, and particularly in Greece. This phenomenon is attributed to climate change as well as the emptying of rural areas and the abandonement of agroforestry practices, which used to maintain fire-resistant landscapes and land/forest-based livelihoods.

This thesis examines the case study of one of the biggest wildfires in Greece's modern history, the North Evia island 2021 wildfires, which severely affected an area strongly dependent on forest and agricultural jobs (resin collection, forest logging, honeymaking, subsistence and commercial agriculture, shepherding). Through the lens of political ecology, it explores social conflicts over environmental governance and spatial planning related to wildfires, framing them as fundamental struggles over land, labor and access to resources.

It touches upon three aspects of the fires -suppression, prevention and recovery- and analyzes:

- how latest official firefighting tactics clash with local values and Traditional Fire Knowledge (TFK), undermining local participation, which used to be a vital part of older firefighting strategies.
- how post-wildfire spatial planning marginalizes agroforestry jobs and cancels environmental restrictions/protections through declassification and the promotion of touristification and urban expansion.
- how new policies on fire prevention and climate mitigation through forest thinning marginalize local forest labor and cooperatives in favor of big contractors and perceptions of further environmental degradation caused by mechanical forest understory removal.

These topics were explored qualitatively through ethnographic fieldwork conducted in the island of Evia for 9 months. Three main categories of actors (agroforestry, state services on forest and fire management and forestry science) were interviewed along with a close observation of everyday life and activities in the fire affected areas. The project draws from three main conceptual and disciplinary frameworks: political ecology of natural disasters, neoliberalization of nature and climate/environmental justice. The findings of this study critically interogate neoliberal disaster policies that further marginalize and increase the vulnerability of depopulating rural areas and their inhabitants and call for socio-environmentally just climate change adaptations.

NAME **Sara CIARLANTINI**
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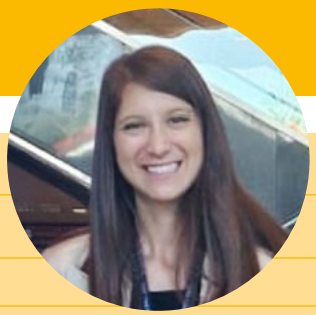

COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	Meteorological influences on air pollution and the economic impacts of health outcomes worldwide
TUTOR(S)	Alessandro PEZZOLI, Claudio A. BELIS, Vito FRONTUTO

ACADEMIC CONTEXT

– Belis, C. A., Djatkov, D., Lettieri, T., Jones, A., Wojda, P., Banja, M., Muntean, M., Paunović, M., Niegowska, M., Marinov, D., Poznanović, G., Pozzoli, L., Dobricic, S., Zdruli, P. and Vandyck, T., 2022. *Status of environment and climate in the Western Balkans*, EUR 31077 EN, Publications Office of the European Union. https://doi:10.2760/294516.
– Ciarlantini, S., Frontuto, V., Pezzoli, A., Gavros, A. and Belis, C.A., 2025. Econometric model derived from meta-analysis to estimate VSL and VOLY associated to air pollution at a global level. *Journal of Environmental Management*, 379. https://doi.org/10.1016/j.jenvman.2025.124824.
– Frontuto, V., Dalmazzone, S., Salcuni, F. and Pezzoli, A., 2020. Risk Aversion, Inequality and Economic Evaluation of Flood Damages: A Case Study in Ecuador. *Sustainability*, 12. https://doi.org/10.3390/su122310068.
– Fiore, A. M., Naik, V. and Leibensperger, E. M., 2015. Air Quality and Climate Connections. *Journal of the Air & Waste Management Association*, 65:6, 645-685. https://doi.org/10.1080/10962247.2015.1040526.

EXTERNAL COLLABORATIONS

– Visiting scientist at JRC (Joint Research Centre) – Ispra

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Air pollution is one of the leading environmental health risks, with over 99% of the global population exposed to unsafe air and more than 8 million premature deaths each year. Its economic cost is also substantial, with global welfare losses estimated in trillions of dollars.
This PhD research addresses these challenges through two complementary studies. While human activities significantly contribute to air pollution, climatic variables also play an essential role in pollutant dispersion. Unfavorable weather conditions can reduce the atmosphere's ability to dilute pollutants, intensifying concentrations. For this reason, before quantifying the economic costs of mortality attributable to air pollution, the first study investigates the meteorological conditions most likely to worsen air quality. Türkiye, one of the world's 20 largest economies and a highly populated country facing persistent severe pollution episodes, is used as a case study. Using hourly data and a generalized additive model (GAM) with sensitivity analysis, the study examines how temperature, relative humidity, wind speed, precipitation, and boundary layer height influence air quality, accounting for seasonal and regional variations. Projections for 2030 and 2050 are also developed under two IPCC climate scenarios: RCP 4.5, assuming strong mitigation, and RCP 8.5, representing high emissions. Results highlight the growing impact of climate change on air pollution and the need for region-specific management strategies. Building on this climate analysis, the second study turns to the economic dimension by monetizing the health impacts of air pollution. Estimating the Value of Statistical Life (VSL) and the Value of a Life Year (VOLY) is challenging due to methodological differences across studies and the absence of reliable estimates in many countries. To overcome these limitations, a meta-analysis was conducted, resulting in a global database with 494 VSL entries covering 186 countries. These values were integrated into an econometric model incorporating economic, socio-economic, demographic, and health proxies to tailor VSL estimates to each national context. Since VOLY data remain limited, country-specific figures were derived from VSL values. This methodology improves the reliability and comparability of health cost assessments, providing policymakers with a stronger basis to evaluate the benefits of abatement measures and prioritize interventions that reduce premature deaths worldwide.

NAME **Jessica COMINO**
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COURSE XXXVIII cycle - 3rd year

RESEARCH TITLE Grades of (in)visibility. Audiovisual tools exploration towards place-based representation and heritage recognition in planning tools

TUTOR(S) Piero BOCCARDO, Marco SANTANGELO

ACADEMIC CONTEXT

– Comino, J., 2023. Digital limits and human possibilities. An introduction to urban filmmaking towards SDGs local achievement. *INFOLIO*, Vol. 42, 9-17.
– Sandercock, L. and Attili, G., 2014. Changing the Lens: Film as Action Research and Therapeutic Planning. *Journal of Planning Education and Research*, Vol. 34(1), 19-29.
– Mitchell, C., De Lange, N. and Moletsane, R., 2017. *Participatory Visual Methodologies. Social Change, Community and Policy*. SAGE Publications, London.

EXTERNAL COLLABORATIONS

– Rāhui Center, Moorea, French Polynesia

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Spatial representation is a concept embedded in all forms of art. Surfing in the area of digitalization, artificial intelligence (AI), multi- and metaverse, visual arts so as architecture and spatial planning are questioning current visual tools in order to create new digital representations of place, in which human perception of place tends to vanish as a secondary aspect. University of British Columbia researcher and urban planner.
Leonie Sandercock underlines the importance of interdisciplinarity within urban studies, further stating that «planners need to pay more attention to and be more respectful of the emotional impacts of change in order to understand the resulting conflicts, and to design better processes for recognition of and working through these emotions (of loss and grieving)» – intended as a place of attachment that is being undermined by change – and addresses the urge for a change in planning endeavours, introducing the concept of «therapeutic planning». Within this frame, the present research is currently investigating the possibilities of the filmic instrument, particularly of participatory video, – in collaboration with the Rāhui Center of Moorea (French Polynesia) – in addressing the intangible heritage, sacred sense of place and the impact on resources management of local communities in French Polynesia.

NAME **Marco DEL FIORE**
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COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	Institutional and Governance Innovation in Territorial Policies. Tackling the Challenges of Fragile Territories
TUTOR(S)	Loris A. SERVILLO, Abdel Illah HAMDOUCH

ACADEMIC CONTEXT

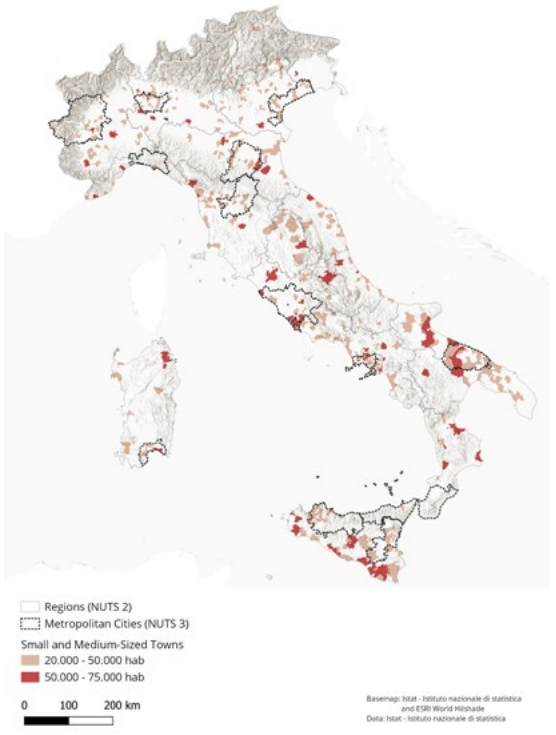
- Del Fiore, M. and Servillo, L.A., 2025. Small and medium-sized towns in Italy: policy gaps and institutional challenges. *European Planning Studies*, 33(4), pp. 578-600.
- Fontana, M., Del Fiore, M., Servillo, L. A. and Garelli, A., 2024. Rivoluzione silenziosa e incompleta: nuove geografie istituzionali, tra CLLD e altre iniziative d'area vasta. *Territorio*, 104, pp. 86-92.
- Del Fiore, M. and Fontana, M., 2023. Territori marginali, metromontagna e pianificazione strategica: testimonianze dalle Terre del Monviso. *Atti e rassegna tecnica*, LXXVII-1, pp. 26-33.
- Tozzi, M., Lamela, M., Del Fiore, M. and Cestaro, L., 2025. La cooperazione transfrontaliera Italia-Francia: punti da considerare per la creazione di un GECT. In: R. Botteghi, R. Coletti, A. Rainaud, G. Salerno, G. Saputelli & P. Weckel, eds. *Il Trattato del Quirinale: nuovi orizzonti per la cooperazione transfrontaliera italo-francese*. CNR Edizioni, pp. 111-135.

EXTERNAL COLLABORATIONS

- Agenzia per la coesione territoriale (co-financer)
- SciencesPo Paris (host for visiting)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research examines how territorial policies addressing fragile territories serve as sites for institutional and governance innovation, particularly within European territorial cohesion policy. Using a mixed-methods approach combining document analysis, expert interviews, and participatory observation, the research investigates how institutional contexts influence policy development, multilevel governance mechanisms emerge, and territorial development instruments contribute to institutional reconfiguration.



The study comprises five peer-reviewed papers examining diverse contexts from Italian small towns to French rural areas, cross-border cooperation, and community-led development initiatives. Drawing on spatial justice, neo-institutionalism, experimental governance, and organizational ambidexterity frameworks, the research demonstrates that fragile territories function as testing grounds for governance innovation where traditional approaches prove insufficient.

Key findings reveal how territorial welfare systems undergo "regioncraft" processes; how small and medium-sized towns face systematic policy exclusion due to entrenched imaginative geographies; how organizational ambidexterity manifests differently across Italian and French rural strategies; how meta-governance shapes European territorial cooperation; and how Local Action Groups represent underexploited institutional innovations with significant political potential.

The dissertation contributes theoretically by extending organizational concepts to territorial governance, conceptualizing welfare state spatiality, and developing analytical frameworks for examining institutional innovation in marginalized territories. It concludes that effective territorial policies must balance exploration and exploitation, integrate multi-level governance, and recognize the political dimension of technical interventions, offering crucial insights for addressing territorial inequalities and fostering inclusive spatial development across Europe.

NAME **Andrea DI BERNARDO**
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COURSE XXXVIII cycle - 3rd year

RESEARCH TITLE Ethnography of Territorial Development Policies: SNAI and LEADER in two Alpine areas

TUTOR(S) Paolo GIACCARIA, Valentina PORCELLANA

ACADEMIC CONTEXT

- Barca, F., Casavola, P. and Lucatelli, S. 2014. *A strategy for inner areas in Italy: definition, objectives, tools and governance*. Materiali Uval.
- Bosworth, G., Annibal, I., Carroll, T., Price, L., Sellick, J. and Shepherd, J. 2016. Empowering Local Action through Neo-Endogenous Development; The Case of LEADER in England. *Sociologia Ruralis*, 56(3).
- Labianca, M., 2021. *Towards a Visionary Approach for rural areas. From the key features to planning the future of LEADER*. University of Salento.
- De Rossi, A. and Barbera, F., 2018. *Riabitare l'Italia le aree interne tra abbandoni e riconquiste*. Roma: Donzelli.

EXTERNAL COLLABORATIONS

- Unité des Communes valdôtaines Grand-Paradis, Centro GREEN Università della Valle d'Aosta

HIGHLIGHTS OF THE RESEARCH ACTIVITY

The research starts from the evolution of the participatory component in local development policies, offering a comparative qualitative analysis of two key approaches: the National Strategy of Inner Areas (SNAI), an Italian place-based policy, and the European LEADER approach, a tool of Community-Led Local Development (CLLD).

While these strategies share the common goal of revitalising rural and marginal areas, they differ in how they engage local communities and stakeholders: SNAI emphasises co-design with local authorities, stakeholders, and communities to tackle socio-economic challenges, whereas the LEADER approach adopts a bottom-up model, engaging local actors through the LAGs' grassroots animation activities.

The research is based on two case studies: the Grand Paradis SNAI Inner Area in Aosta Valley and LAG EVV (GAL Escartons e Valli Valdesi) in Piedmont. Building on qualitative methods and ethnographic fieldwork, the research now focuses on comparing the two participatory approaches through the lens of the COPP framework (Comparison of Participatory Processes).

The findings aim at highlighting the importance of well-structured participatory processes in local development policies and how these strategies can be adapted to meet local needs, contributing both to a deeper understanding of a participatory process as a lived practice and to better resonate with territorial specificities and community dynamics.

NAME **Caterina DI LUCCHIO**
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COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	Beyond the pathologisation of the urban, towards a paradigm of care? Decoding narratives, instruments and practices of urban regeneration in Italy
TUTOR(S)	Loris Antonio SERVILLO, Carlo SALONE

ACADEMIC CONTEXT

- Baeten, G., 2002. Hypochondriac geographies of the city and the new urban dystopia. *City*, 6, pp. 103-115.
- Lovering, J., 2007. The Relationship Between Urban Regeneration and Neoliberalism: Two Presumptuous Theories and a Research Agenda, *International Planning Studies*, 12(4), pp. 343-366.
- Porter, L., Shaw, K., eds., 2009. *Whose urban renaissance? an international comparison of urban regeneration strategies*. London; New York: Routledge (Routledge studies in human geography, 27).
- Power, E., Williams, M. J., 2020. Cities of care: A platform for urban geographical care research1. *Geography Compass*, 14 (1), e12474.

EXTERNAL COLLABORATIONS

- FULL - the Future Urban Legacy Lab (co-financer)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

My research is part of the project Urban Regeneration: Institution, Agency, and Tools, promoted by the FULL Research Centre, which critically examines urban policy in Italy within a European frame. My PhD thesis investigates how urban regeneration, both as discourse and practice, relates to socio-spatial inequalities in contemporary Italy. The project questions whether regeneration functions as an instrument of spatial justice or, conversely, reproduces pathologising narratives legitimising uneven interventions. To address this, I develop an alternative lens based on the ethics of urban care, conceived as a normative and relational framework that foregrounds everyday practices, social agency, and territorial dynamics often marginalised in dominant approaches.

The research is structured along three analytical axes. The theoretical axis engages international scholarship to deconstruct mainstream understandings of regeneration and promote care as a critical paradigm. The discursive axis analyses Italy's National Recovery and Resilience Plan (PNRR, 2021–2026), focusing on measures such as PINQUA, PUI, and PRU, to examine how institutional narratives construct urban problems and legitimise specific interventions. The socio-spatial axis is developed through an in-depth case study on Palermo's south-eastern coast, where several PNRR-funded projects are being implemented. Here, I combine discourse analysis with ethnographic fieldwork and interviews with local actors, to investigate how regeneration is locally enacted, negotiated, and contested, and what forms of care and non-care emerge in shaping socio-spatial dynamics.

Over the past year, I consolidated the theoretical framework by combining critical urban research with feminist and relational care ethics. I conducted a systematic analysis of PNRR documents, noting the persistence of medicalised, pathology-centred metaphors in national discourses. In parallel, I carried out fieldwork in Palermo, including participant observation and over twenty semi-structured interviews with institutional, professional, and grassroots actors. These findings highlight tensions between celebratory political rhetoric and local experiences of marginality, insecurity, and fragmented governance. At the same time, they reveal alternative practices of care expressed through grassroots initiatives, cultural projects, ecological engagement, and collective memory work.

By linking discourse and practice, this research contributes to rethinking regeneration as a socio-political process rather than a neutral planning objective. It advances urban care as a paradigm capable of challenging pathologising models and opening perspectives for more just and inclusive urban transformations.

NAME **Enrico FEDELI**
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COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	Perspective visual impairments. Exploration of interdisciplinary policy analysis methodologies in transport planning
TUTOR(S)	Cristina PRONELLO, Yves CROZET

ACADEMIC CONTEXT

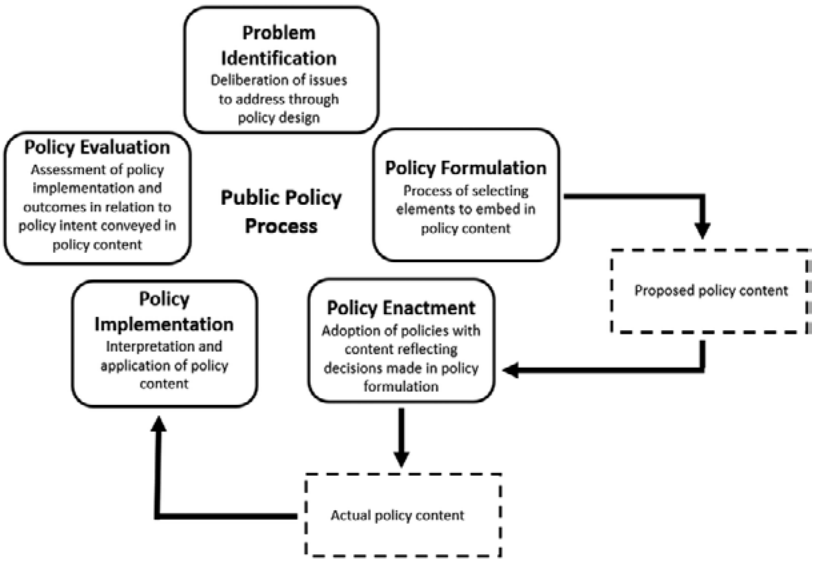
- Bardach, E., Patashnik, E. M., 2019. *A practical guide for policy analysis: The eightfold path to more effective problem-solving*. CQ Press.
- DeLeon, P., ed. 2016. *Handbook of public policy analysis: Theory, politics, and methods*. CRC Press.
- Siddiki, S., Curley, C. 2022. Conceptualising policy design in the policy process. *Policy & Politics*, 50(1), pp. 117-135. DOI: 10.1332/030557321X16346727541396.
- Latour, B., 1993. Aramis, or the Love of Technology. Cambridge, MA: Harvard University Press.

EXTERNAL COLLABORATIONS

- ENS-PLS Paris – Visiting period

HIGHLIGHTS OF THE RESEARCH ACTIVITY

The expected policy planning and design should normally follow the steps of issue identification, policy formulation, decision making, implementation and evaluation. This theoretical expectation, however, crumbles in the face of practice. Planners know how to build policies, but sometimes (more or less often, depending on the socio-economic context) the results are poor. In the field of transport, we might get over- or under-designed infrastructures, inefficient transport services or transport services that pose major difficulties about construction or operation financing. This research project studies the implementation of transportation policies through the lens of policy failure. The basis conceptual assumption is that there is such a thing as a perspective visual impairment (PVI), i.e. a conscious or unconscious black spot where the policymakers' or planners' sight doesn't reach out, thus creating the conditions for the implementation of ineffective or even harmful public policies. This includes diachronic, synchronic, functional, scalar, and normative PVI. The first ones are about ignoring feedback effects of the context which amplify or reduce the impact of policies. The second ones are about (not) evaluating and comparing a plurality of solutions. The third ones refer to the comprehensive examination of technological, economic, and managerial constraints. The fourth ones are about consistency among policy goals at multiple scales.



Finally, the fifth ones refer to the very function of policy—either an adaptive or normative approach to reality. The aim of this research is to explore interdisciplinary methodologies of transport policy design that can lighten these black spots and restore the full functionality of decision-makers' vision. The research is built on two steps composed by: and a subsequent collection of case studies where fixing the PVI can fix the (failing) policies (prescriptive stage), composed by:

- The descriptive stage, i.e. identifying, through exemplary cases and representative benchmarks, the critical issues that exist in adopted policies and visualizing PVI in policy construction. This will create a taxonomy of PVI.
- The prescriptive stage, i.e. a subsequent collection of case studies where fixing the PVI can fix the (failing) policies. This will help proposing policy design tools to address PVI.

NAME **Francesco GRASSO**
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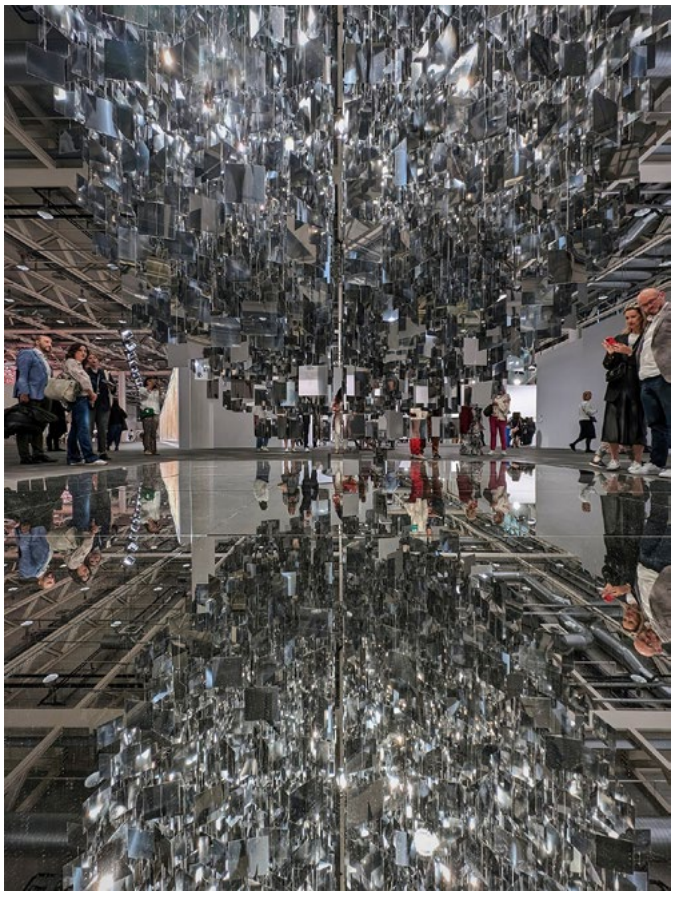
COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	From the 'State of the Art Fair' to the 'State for the Art Fair'. The Hybridisation of Contemporary Art Fairs through Urban Development Strategies, Curatorial Practices and Internationalisation Policies
TUTOR(S)	Sara BONINI BARALDI, Carlo SALONE

ACADEMIC CONTEXT

– Bourdieu, P., 1985. The Market of Symbolic Goods. *Poetics*, 14(1-2), pp. 13-44.
– Jay, J., 2013. Navigating paradox as a mechanism of change and innovation in hybrid organizations. *Academy of Management Journal*, 56(1), pp. 137-159.
– Pache, A. C. and Santos, F., 2013. Inside the Hybrid Organization: Selective Coupling as a Response to Competing Institutional Logics. *Academy of Management Journal*, 56(4), pp. 972-1001.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

The research investigates contemporary art fairs as complex organisational phenomena, addressing a critical gap in the literature, which has mainly portrayed them as market events or networking platforms while neglecting their organisational structures and entanglements with public policies. It adopts an abductive and multi-article research design, integrating qualitative interviews, ethnographic observations, document analysis, and quantitative data. The study is theoretically grounded in the institutional logics perspective on hybrid organisations, enriched by Bourdieu's (1985) conceptualisation of the 'art logic'.



The first article provides the first international organisational overview of contemporary art fairs, revealing a highly polarised field dominated by two intercontinental conglomerates and a growing reliance on hybrid governance arrangements, employed by about 30% of all organisations. The paper underscores public institutions' involvement in art fair ownership, governance and funding structures, as well as a growing adoption of non-profit organisational forms to manage the fair or complement its mission.

The second article focuses on Artissima in Turin, conceptualising it as a hybrid organisation where market, public policy and art logics intersect. It shows how Artissima's curatorial identity emerged as a strategic response to competitive pressures and public ownership, and how tensions with its trademark owner – the City of Turin – arose around audience development, venue costs, and profit allocation. It illustrates how curators' cross-sector trajectories hybridised the organisation, and how it navigated conflicting logics through compromise, defiance, and decoupling.

The third article situates Artissima within Turin's post-Fordist urban strategies, assessing how contemporary art was mobilised to support tourism. It shows that while Artissima anchored a local art ecosystem and fostered international visibility, unstable funding, weak coordination and limited monitoring hampered long-term outcomes, warning that legitimising art primarily through tourism may lead to future disinvestment in culture.

The fourth article compares 19 European schemes supporting art galleries' participation in art fairs and shows how they were shaped by the divide between internationalisation of national culture and support for entrepreneurship. While highlighting policy tensions between fostering market competitiveness and promoting the international visibility of national culture, it underscores how public funders address the commercial or non-commercial nature of galleries unevenly.

NAME **Angelina GRELLE**
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COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	From Ararat to Rome and Beyond. Migrants' grassroots organization in the autonomous space of Ararat, Rome
TUTOR(S)	Silvia ARU, Francesco CHIODELLI

ACADEMIC CONTEXT

- Grelle, A., 2025. Political urban solidarity: A tool for empowerment and social change. *Partecipazione e Conflitto*, 18(2), 365-384.
- Wynter, S., 1984. The Ceremony Must Be Found: After Humanism. *boundary 2*, 12/13, (3/1), 19-70.
- Saleh, M. and Landau-Donnelly, F., 2024. Reimagining hope through the political: A post-foundational reading of urban alternatives beyond postpolitics. *Urban Studies*, 61(9), pp. 1625-1644.
- Santamarina, A., 2024. Racial Capitalism, Political Reproduction, and the Commons: Insights from Migrant Solidarity Politics in Glasgow. *Antipode*, 56(1), pp. 229-248.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research explores liminality through the lens of possibility and alterity, focusing on the autonomous space of Ararat, a Kurdish socio-cultural center in Rome, Italy. Ararat emerges in the interstices of the city– simultaneously tolerated and contested, provisional yet enduring– shaped by practices that navigate between exclusion and political potential.

Ararat is a threshold, a liminal space existing between different geographies and temporalities: it is a political outpost of the Kurdish freedom movement, embedded in a transnational struggle, and a site through which radical democracy takes root on the fringes of the city. The study shows how the center operates as an autonomous site where migrants, together with local activists, develop forms of political urban solidarity, engage in political reproduction, and reshape alternative infrastructures of mobility.

Although marked by contradictions and compromises, Ararat enables the expression of cultural and political identities, the creation of grassroots networks, and the pursuit of lives beyond restrictive national and EU policies. The research therefore calls for rethinking how migrant spaces– often neglected – generate alternative forms of belonging, solidarity, and empowerment in the urban context.

To explore this liminal condition, the research follows three main directions, through tree main research papers. These papers, taken together, examine three distinct yet interconnected processes, summarized by the key themes of social reproduction, political solidarity, and alternative infrastructure. Together, these themes help us understand how the "possibility of liminality" is constituted within the context of Ararat.

This thesis interrogates how, within conditions of liminality, emergent political imaginaries are produced by re-centering political labor in everyday organizational practices. It further investigates how solidarities – rooted in movements born out of distress and persecution– underpin enduring geographies of activism and reflects on how diasporic and grassroots organizational forms actively contest the immobility regimes that typically constrain migration through the creation of alternative infrastructures.

In doing so, the work foregrounds the conflictual and exclusionary dimensions inherent to liminality, deliberately avoiding its romanticization, even as it engages with its transformative possibilities.

NAME **Sofia Beatriz LEONI**
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COURSE XXXVIII cycle - 3rd year

RESEARCH TITLE The Rural Reinvention. Emerging Taobao Villages and the Infrastructural Modification of the Invisible China

TUTOR(S) Antonio DI CAMPLI, Niccolò CUPPINI, Michele BONINO

ACADEMIC CONTEXT

- Zhang, L., 2023. *The Labor of Reinvention. Entrepreneurship in the New Chinese Digital Economy*. New York: Columbia University Press.
- Wang, C-M., Maye, D. and Woods, M., 2023. Planetary rural geographies. *Dialogues in Human Geography*. https://doi.org/10.1177/20438206231191731.
- Choplin, A. and Pliez, O., 2015. The inconspicuous spaces of globalization. *Articulo – Journal of Urban Research*, 12. Available at: https://doi.org/10.4000/articulo.2905.
- Leoni, S., 2024. *Rivoluzioni rurali: Villaggi Taobao tra controurbanizzazione, reinvenzione e infrastrutture umane*. CONTESTI. Città, Territori, Progetti. FU press.

EXTERNAL COLLABORATIONS

- Shenzhen University, GBA Lab, Brown University, China Room Research Group

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research agenda investigates how the entanglement of logistics and platform practices produces new forms of spaces and inhabitation, foregrounding the opaque condition of non-Western ruralities, that of Rural China, which has been long theorised – and treated – as "invisible". Rather than considering it as a hinterland, a backward of urban modernity, the aim is to position Rural China as a distinctive arena where globalisation materialises from below.
The central object of inquiry is a major public–private initiative that led to the emergence of the so-called Taobao Villages, or e-commerce villages, rural administrative settlements where annual e-commerce transactions exceed 10 million RMB and at least 10% of households engage in online business. Rather than treating them as virtuous rural-development models to be emulated, this made-in-China phenomenon is examined as an inconspicuous space of globalisation. The aim is to reconstruct a spatial reading that overcomes corporate definitions, highlighting instead the heterogeneous, situated, and contested socio-spatial dynamics that underpin their emergence. As such, the study is centred around two main questions that, while opposing, are deeply interconnected. The first one analyses the transformation of rural spaces resulting from the emergence of digital platform and logistics. Conversely, the second challenges the logistics-infrastructural debate as it is mobilised in reading peripheral and marginal areas, regarded as "off the map". Throughout this work I argue that the phenomenon of Taobao Villages represents a twofold reinvention. First, of rural space and labour: they are not passive recipients of urban logic but active producers of new socio-spatial forms based on traditional patterns merged with digital entrepreneurship. Secondly, of infrastructure: logistics here rely not on high-tech alone but on 'human infrastructure', informal networks, social collaboration, and adaptive reuse of domestic spaces, suggesting a process of 'ruralisation of infrastructure'.

Organised through a circular narrative, the first section addresses the "rural question" by examining transformations in rural China, tracing shifts from the Maoist commune to contemporary conditions, while engaging with debates on planetary ruralisation. The second section explores the logistics paradigm and platform practices, analysing their impacts as projects that regulate the circulation of goods, bodies, and finances. The third section introduces Taobao Villages, examining their spatial growth and patterns through statistics, infographics, and mapping. The fourth, structured as an atlas, presents ethnographic accounts of Junpucun (Guangdong), specialised in clothing and leather, and Dongfeng (Jiangsu), focused on furniture and imitation Ikea, studied through fieldwork combining mapping, interviews, and observation. The conclusion returns to the starting point, questioning what remains rural and what does not, while proposing a twofold reinvention: of rural labour and spaces, and of infrastructure itself.

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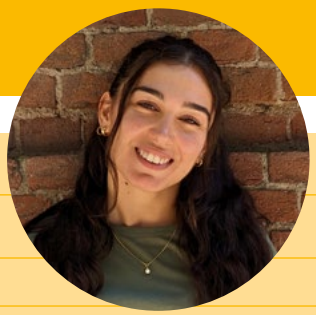

COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	The Evaluation of Cultural Heritage Projects in Armed Conflict Areas: the Case of "Heritage for Peace"
TUTOR(S)	Sara BONINI BARALDI, Isber SABRINE

ACADEMIC CONTEXT

– Cicmil, S. and Hodgson, D., 2006. New possibilities for project management theory: A critical engagement. *Project Management Journal*, 37(3), pp. 111-122.
– Ika, L.A., 2009. Project success as a topic in project management journals. *Project Management Journal*, 40(4), pp. 6-19.
– Smith, L., 2006. *Uses of Heritage*. London: Routledge.
– Teijgeler, R., 2013. Safeguarding cultural heritage in post-conflict environments. *International Journal of Heritage Studies*, 19(5), pp. 449-462.

EXTERNAL COLLABORATIONS

– Research collaboration internship at the NGO "Heritage for Peace", based in Barcelona, Spain.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

The objective of this research is to investigate how cultural heritage (CH) project evaluations are conducted in conflict-affected areas and to contribute to the development of more context-sensitive and equitable evaluation methodologies. The study conceptualizes evaluation not only as a technical exercise but as a socially constructed practice shaped by interactions and power relations between donors, implementers, and local actors (Linde and Linderith 2006).
The protection of cultural heritage in armed conflict zones raises important ethical and operational questions. International institutions, funding agencies, and NGOs have increasingly recognized the implications of their interventions (Meskell 2018). A major concern lies in the dependence of local organizations on Western aid, which often reinforces structural power imbalances and echoes colonial legacies (Badran et al. 2022). Furthermore, heritage management has frequently relied on top-down approaches, in line with the Authorized Heritage Discourse, which have been criticized for sidelining the participation of local communities (Smith 2006). In recent years, however, international actors have sought to integrate social, economic, and environmental considerations into their practices in order to foster more inclusive and sustainable impacts (ICOMOS 2011).

In this framework, project evaluation has become a crucial mechanism to ensure accountability, learning, and effectiveness. Despite its growing importance, evaluation in cultural heritage projects remains fragmented and lacks common guidelines adapted to conflict contexts. These environments present additional obstacles such as limited access, instability, and shifting priorities, which make the design and implementation of evaluations especially challenging (Jewiss and Laven 2021).
To address this gap, the research adopts an embedded case study approach. It focuses on three multi-phase projects in Syria and Yemen implemented by the international NGO *Heritage for Peace* and supported by major international donors, including the ALIPH Foundation, the UK Cultural Protection Fund, and the U.S. Ambassadors Fund. Data are drawn from project documentation, donor evaluation frameworks, and qualitative interviews with funders, project managers, evaluators, and other stakeholders. The research develops an analytical framework that examines evaluation across dimensions such as definitions of success, design and methods, donor–implementer dynamics, local participation, adaptation to challenges, and sustainability. The findings aim to advance academic debate and inform more effective evaluation practices in cultural heritage protection in conflict zones.

NAME **Qiurun LU**
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COURSE XXXVIII cycle - 3rd year

RESEARCH TITLE Transit oriented development (TOD) for multi-level station: taking an example of urban station in Chengdu

TUTOR(S) Luca STARICCO, Andrea AJMAR

ACADEMIC CONTEXT

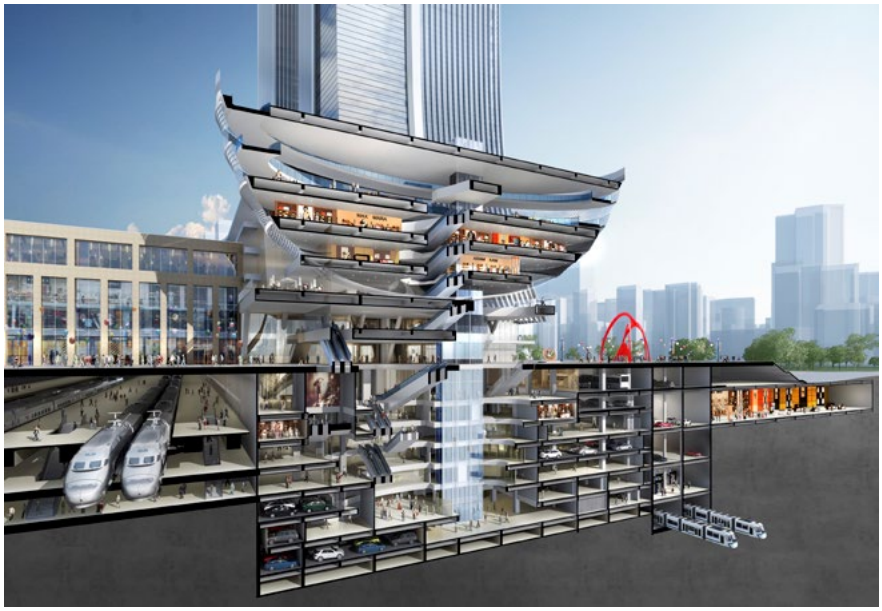
– Cervero, R. and Kockelman, K., 1997. Travel demand and the 3Ds: Density, diversity, and design. *Transportation Research Part D: Transport and Environment*, 2(3), pp. 199-219. https://doi.org/10.1016/S1361-9209(97)00009-6.
– Singh, Y.J. *et al*., 2017. Measuring TOD around transit nodes - Towards TOD policy. *Transport Policy*, 56, pp. 96-111. https://doi.org/10.1016/j.tranpol.2017.03.013.
– Zhou, J. *et al*., 2019. Can TODness improve (expected) performances of TODs? An exploration facilitated by non-traditional data. *Transportation Research Part D: Transport and Environment*, 74, pp. 28-47. https://doi.org/10.1016/j.trd.2019.07.008.

EXTERNAL COLLABORATIONS

– Supported by China Scholarship Council

HIGHLIGHTS OF THE RESEARCH ACTIVITY

In China, urban growth has converted from incremental development into stock development. For full land resources utilization and redevelopment, urban planning theories such as Transit Oriented Development (TOD) are proposed, and TOD planning put forward new requirements for the coherent development in the underground and ground space of station impacted areas. A good underground plan in TODs binges on the benefits of enlarging the density, enriching the diversity, and improving the design. Thus, the underground development in station areas becomes pinpoints to satisfy this new demand.



However, many studies only consider the urban underground space as an auxiliary extension of the urban ground space in TODs. It is few to formulate and concentrate on the role of underground development in TOD planning and how the underground space affects TODs. Furthermore, the underground space is usually overlooked in TOD performance assessments. Thus, this study endeavours to clarify the relationships between the underground and ground spatial development in TODs and offer a new TOD evaluation including underground space.

In the beginning, this thesis illustrated the importance of researching underground space in the TOD areas and recalled the development of the relative theories. Then, the meaning of TOD to develop underground space coherently was explained. Taking the TOD cases which had well-established underground systems as an example, the relationships between underground development and TOD were revealed. Afterward, combining the criteria of TOD performance and underground built environment, a new evaluation system for both ground and underground space of TOD was established. Furthermore, to verify the new evaluation system, the database of TODs in Chengdu was constructed with two categories: TODs without coherent underground development and TODs with complete underground systems. To conclude, it was found that the coherent underground development in TOD areas can improve TODness through the new assessment system.

NAME **Giulia MASSENZ**
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COURSE XXXVIII cycle - 3rd year

RESEARCH TITLE (Dis)encounters around places of worship: urban law, street-level practices and everyday racism in Italian cities

TUTOR(S) Francesco CHIODELLI, Mariachiara GIORDA

ACADEMIC CONTEXT

- Chiodelli, F., and Moroni, S., 2017. Planning, pluralism and religious diversity: Critically reconsidering the spatial regulation of mosques in Italy starting from a much debated law in the Lombardy region. *Cities*, 62, pp. 62-70.
- Saint-Blancat, C. and Schmidt di Friedberg, O., 2005. Why are mosques a problem? Local politics and fear of Islam in northern Italy. *Journal of Ethnic and Migration Studies*, 31(6), pp. 1083-1104.
- Valverde, M., 2013. *Everyday Law on the Street. City Governance in an Age of Diversity*. The University of Chicago Press.
- Wise, A. and Noble, G., 2016. Convivialities: An Orientation. *Journal of Intercultural Studies*, 37, 5: 423-431.

EXTERNAL COLLABORATIONS

- Host for visiting or research period at Simon Fraser University, Department of Geography

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This project, situated within the broader framework of everyday multiculturalism (Wise & Noble, 2016), examines how ethno-religious diversity is accommodated in Italian urban contexts. Although Italy has experienced unprecedented immigration flows in recent decades, policies and practices aimed at inclusion remain limited. On the contrary, as noted by many scholars, political parties often capitalize on xenophobic sentiments, channeling social anxieties onto the figure of the immigrant in a context marked by deepening socioeconomic and spatial inequalities. Against this backdrop, the project investigates everyday practices of negotiating diversity around places of worship in order to capture the dynamics at play in encounters between long-standing residents and newcomers. Contributing to the stream of Italian scholarship that focuses on the new confessional pluralism's place of worship as a result of spatial regulation (Saint-Blancat & Schmidt di Friedberg, 2005; Chiodelli & Moroni, 2017), the research asks: how do current regulatory practices shape the accommodation of ethno-religious diversity around places of worship? Through which mechanisms? And do these mechanisms compress or expand discrimination if compared to other to more direct forms of institutional exclusion? To answer those questions, the research adopts a multisite analysis based on qualitative interviews and qualitative legal documents analysis and focuses on two distinct religious groups African Pentecostals and Muslims.

NAME **Virginia PELLEREY**
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COURSE XXXVIII cycle - 3rd year

RESEARCH TITLE Inclusive Climate Actions for the Climate Resilience Transition: Foresight of Nature-based Solutions in European Cities

TUTOR(S) Sara TORABI, Giancarlo COTELLA, Patrizia LOMBARDI

ACADEMIC CONTEXT

– Pellerey, V., Torabi Moghadam, S. and Lombardi, P., 2025. A systematic review of justice integration to climate resilience: Current trends and future directions. *Urban Climate*, 59, p.102250.
– Pellerey, V. and Torabi Moghadam, S., 2025. A place-based framework for assessing the effectiveness of inclusive climate actions for nature-based solutions in cities. *Journal of Cleaner Production*, 486, 144566.

EXTERNAL COLLABORATIONS

– University of Tokyo – host for visiting research period
– GREEN-INC consortium (University of Amsterdam, Vrije Universiteit Brussel, Université libre de Bruxelles, University of Bucharest, Luleå University of Technology)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Nature-based Solutions (NbS) are recognised as an important strategy for achieving climate resilience by acting as mitigation and adaptation measures for climate change. However, citizens and ecosystems benefit differently from the wider functions that NbS can provide, and NbS can even exacerbate existing inequalities between communities or create new ones. To address this, Inclusive Climate Actions (ICAs) are proposed as tools that enable a structural and systemic implementation of NbS, thus fitting within a comprehensive just resilience framework. This research project proposes an innovative interdisciplinary approach to complement the study of climate resilience in the urban context with a focus on inclusivity. Specifically, the research aims to study the efficiency of ICAs on NbS for the comprehensive achievement of climate resilience in the urban context. This systematic and holistic analysis will result in the identification of planning principles under which ICAs can flourish, helping the uptake of NbS, and promoting transitions towards inclusive and resilient future cities. The research project is subdivided in three phases: (i) a systematic literature review for the identification of research gaps and future research trajectories, (ii) an empirical analysis which combines quantitative, qualitative and spatial methodologies for assessing the effectiveness of NbS as ICAs in enhancing environmental, social and economic indicators, and (iii) the co-development, digital visualization and assessment of future scenarios for the implementation of ICAs in future cities. This PhD research falls within the European project GREEN-INC: GRowing Effective & Equitable Nature-based Solutions through INClusive Climate Actions, funded by the European Driving Urban Transition Partnership (DUT). The project aims to assess the performance of ICAs in European cities and to define institutional conditions and design principles under which ICAs can flourish to deliver the full potential of NbS.

NAME **Emanuele SCIUVA**
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COURSE XXXVIII cycle - 3rd year

RESEARCH TITLE Collateral Infrastructures of Silicon Valley Mimicry: Digital Nomadism, (Geo)Arbitrage, and the Making of Lisbon into a Nomadland

TUTOR(S) Francesca GOVERNA, Sonia ARBACI SALLAZZARO, Andrea POLLIO

ACADEMIC CONTEXT

– Florida, R., 2012. *The rise of the creative class*. Basic books.
– McElroy, E., 2025. Silicon Valley Imperialism: Contemporary conjunctures. *Dialogues in Urban Research*, 3(1), pp. 136-141.
– Peck, J., 2005. Struggling with the creative class. *International Journal of Urban and Regional Research*, 29(4), pp. 740-770.
– Sequera, J., 2025. Struggling with the digital nomad: Transnational teleworkers as the new 'creative class' in the urban marketplace?. *International Journal of Urban and Regional Research*, 49(1), pp. 204-213.

EXTERNAL COLLABORATIONS

– University College London (Bartlett School of Planning) – Visiting Scholar
– Institute of Social Sciences, University of Lisbon (ICS-UL) – Visiting Scholar
– Ermenegildo Zegna Founder Scholarship – Co-sponsor (Visiting period UCL)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This dissertation examines how Silicon Valley Mimicry unfolds in Lisbon as a multifaceted process of spatial and socio-economic transformation, driven by practices of arbitrage – understood not only as a financial strategy but also as a cultural and social logic – operating across multiple levels and actors.

Following the 2008 financial crisis, Lisbon's repositioning as a startup hub and a destination for creative workers reflected an early embrace of knowledge-economy paradigms. These strategies were not only about attracting capital and entrepreneurs but also about cultivating a new image of Lisbon as a cosmopolitan and future-oriented city able to compete within the circuits of global urban economies. Innovation, within this framework, became a new urban and national narrative, one that positioned entrepreneurship and the knowledge economy as the keys to regeneration. As public discourse increasingly emphasized Portugal's need to reinvent itself, Lisbon was reimagined not as a peripheral capital on the margins of Europe, but as a nimble, affordable, and cosmopolitan hub for startups and creative workers.

More recently, digital nomads have been targeted as a "new creative class," extending and updating this project of urban and national repositioning. While several scholars have started to question the extent to which this new phenomenon represents a new "wave" of creative workers and a "creative class 2.0", less attention has been paid to the emergence of the infrastructures that support it, and how these crystallize within, and beyond, urban areas. This is the gap the dissertation fills. It argues that Silicon Valley Mimicry, or the act of mimicking a virtuous model of economic growth, brings with it a number of "collateral" infrastructures which are produced through the entanglement of multiple operations of arbitrage enacted by a range of actors – digital nomads, state(s), startups, platforms, and local businesses. Ultimately, these collateral infrastructures highlight how processes of valuation, spatial restructuring, and mobility strategies co-produce new hierarchies of value, access, and belonging, reshaping Lisbon's position within global urban economies – in the shadow of, and through the promise of, Silicon Valley-ness.

NAME **Yahya SHAKER**
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COURSE XXXVIII cycle - 3rd year

RESEARCH TITLE The Multi-Level Meta-Governance of the Just Green Transitions of the European Union

TUTOR(S) Giancarlo COTELLA, John MOODIE, Zora ŽIVANOVIĆ

ACADEMIC CONTEXT

– Jessop, B., 2004. Multi-level Governance and Multi-level Metagovernance: Changes in the European Union as Integral Moments in the Transformation and Reorientation of Contemporary Statehood, in Bache I. and Flinders M., eds., *Multi-level Governance*. Oxford: Oxford University Press, pp. 49-74. https://doi.org/10.1093/0199259259.003.0004.
– European Commission, 2021. *Commission Staff Working Document on the Territorial Just Transition Plans*. Brussels, 23.9.2021 SWD (2021) 275 final. https://ec.europa.eu/regional_policy/sources/funding/just-transition-fund/swd_territ_just_trans_plan_en.pdf.
– Cedergren, E., Tapia, C., Gassen, N.S. and Lundgren, A., 2022. *Just Green Transition – key concepts and implications in the Nordic Region*. Nordregio discussion paper 2022:2. Stokholm: Nordregio. http://doi.org/10.6027/WP2022:2.1403-2511.
– Tavares, M., 2022. *A Just Green Transition: concepts and practice so far. United Nations Department of Economic and Social Affairs*. Future of the World. Policy Brief No. 141. https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/PB_141.pdf.

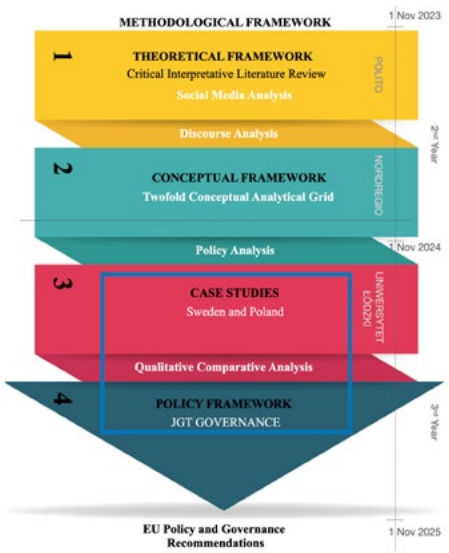
EXTERNAL COLLABORATIONS

– European HORIZON- WIDERA-2021-ACCESS-02-01. GreenFORCE Western Balkans Twinning - Foster Research Excellence for Green Transition in the Western Balkans

HIGHLIGHTS OF THE RESEARCH ACTIVITY

In perspective to the European Green Deal and contributing to the growing debate on the European Union's "Green Transition" and "Just Transition" (European Commission, 2020), this doctoral research is scrutinizing the Multi-level Meta-Governance of the so-called Just Green Transitions (JGT); investigating how these transitions are conceptualized and operationalized both at the EU level and that of the Member States (MS), across levels, actors, sectors, policies and levels of decision-making, while putting into question: how far the JGT are truly just.

This interdisciplinary exploratory research recognizes JGT as context-dependent, socially constructed realities, exposed to high level of geopolitical and economic uncertainties, that are subject to ideological, political, philosophical, societal, environmental interpretations; meaning that, what is considered just is relative, intangible, and arguable according to different geographies, cultures, and institutions, and is an antagonism of the commons (Žižek, 2009). Based on the nature of this research JGT are viewed from a bounded relativism ontological perspective (Moon & Blackman, 2014).



The research design strategy is based on multimethodology and explorative methods which are to be combined accordingly across the different research articles of this PhD thesis, including a critical interpretive literature review, discourse analysis, case studies, qualitative comparative analysis, policy analysis, interviews, and social media analysis. As a reason of the uncertainty and plurality regarding the so-called JGT, abductive reasoning has been found suitable.

A theoretical framework (Shaker & Berisha, 2025) supported by social media analysis (Shaker & Persico, 2024) is informing a Twofold Pan-European Analytical Grid and currently being applied to two MS (Sweden & Poland), to analyze the various models of JGT governance.

The expected results are: (a) a Socio-Spatial Conceptual framework to investigate how socially and spatially just are the JGT at the EU level and in the MS, (b) a Pan-European matrix of the actual state of the conceptualization and operationalization of JGT across the MS, (c) critical analysis on the role of ML-MG in actualizing JGT across levels, sectors, and actors across different MS and the EU.

The thesis is directed mainly to policy-makers active at the EU and the Member States levels, the main domains of interest are political and social. The thesis is expected to inform the development of policy recommendations aimed at advancing JGT in the EU.

NAME **Ammj TRAORE**
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COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	Beyond automobility. Investigating the potential of the 15-minute city model as a catalyst for reducing car dependency
TUTOR(S)	Luca STARICCO, Federico CAVALLARO

ACADEMIC CONTEXT

– Guzman, L.A., Oviedo, D., Cantillo-Garcia, V.A., 2024. Is proximity enough? A critical analysis of a 15-minute city considering individual perceptions. *Cities*, 148. https://doi.org/10.1016/j.cities.2024.104882.
– Pokharel, R., Miller, E.J. and Chapple, K., 2023. Modeling car dependency and policies towards sustainable mobility: A system dynamics approach. *Transportation Research Part D: Transport and Environment* 125, 103978. https://doi.org/10.1016/j.trd.2023.103978.
– Steg, L., 2005. Car use: lust and must. Instrumental, symbolic and affective motives for car use. *Transportation Research Part A*, 39(2-3), pp. 147-162. https://doi.org/10.1016/j.tra.2004.07.001.
– Shoup, D., 2011. *The High Cost of Free Parking*, 1st Updated Edition. ed. Routledge, New York.
– Werner, C., Wendel, R., Kaziyeva, D., Stutz, P., Van Der Meer, L., Effertz, L., Zagel, B. and Loidl, M., 2025. NetAScore: An open and extendible software for segment-scale bikeability and walkability. *Environment and Planning B: Urban Analytics and City Science* 52, pp. 265-274. https://doi.org/10.1177/23998083241293177.

EXTERNAL COLLABORATIONS

– KTH Royal Institute of Technology (Stockholm, Sweden) - visiting period of 6 months

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research investigates the conceptual foundations, implementation challenges, and practical limitations of the x-minute city model within contemporary spatial planning discourse. Given the popularity of the model as a strategy for promoting sustainable, liveable and accessible urban environments, the research critically examines whether and how the model addresses a key barrier to sustainable mobility: car dominance.

The first research phase (Paper 1, https://dx.doi.org/10.1080/02697459.2025.2533292), consists of a systematic literature review of academic and grey literature, to evaluate whether the x-minute city effectively integrates strategies to reduce car use. Using four analytical categories – time thresholds, attractiveness of destinations, walkability and preferences – the study evaluates in the literature the balance between incentive-based (pull) measures but also disincentive-based (push) policies targeting car use. Findings reveal that, although proximity is widely emphasised, most strategies overlook car-restrictive policies such as parking management or street reallocation. Behavioural, cultural, and emotional dimensions of car use are also underexplored, limiting the model's transformative potential. Paper 2 builds on these insights by adopting a systems-oriented perspective that frames car dominance as a result of interconnected infrastructural, cultural, and policy dynamics. Rather than relying on fixed evaluation tools, the study analyses how and where proximity-based planning combined with targeted push/pull measures, can act as leverage points to disrupt self-reinforcing patterns of car use.

This approach is applied in the third research phase (Paper 3), a case study in Stockholm – a city with high multimodal accessibility and active experimentation with proximity planning. The study evaluates how road space allocation, road space reallocation through parking management and speed limit reductions can enhance walkability and bikeability. Scenario simulations were conducted using NetAScore (Werner et al. 2025), a segment-level scoring tool that computes walkability and bikeability based on contextual indicators from OpenStreetMap data with local adjusted indicator weights (Paulusová & Sharmeen 2025). Final scores were mapped and compared with baseline conditions to visualise potential improvements. Five semi-structured interviews with stakeholders from Stockholm Municipality – transport and urban planning specialists – were conducted to ensure local relevance and validate the scenarios. Interviews explored the City's parking strategy, road space management, political constraints, and the city's evolving x-minute city implementation approach. One key insight was the potential use of NetAScore as a participatory tool – capable of supporting decision-making by visualising outcomes for political stakeholders and engaging citizens through scenario exploration and feedback.

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COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	Resilience Models for Large Hydropower Diversions: Insights from Calcinere, Italy
TUTOR(S)	Anna OSELLO, Francesca Maria UGLIOTTI

ACADEMIC CONTEXT

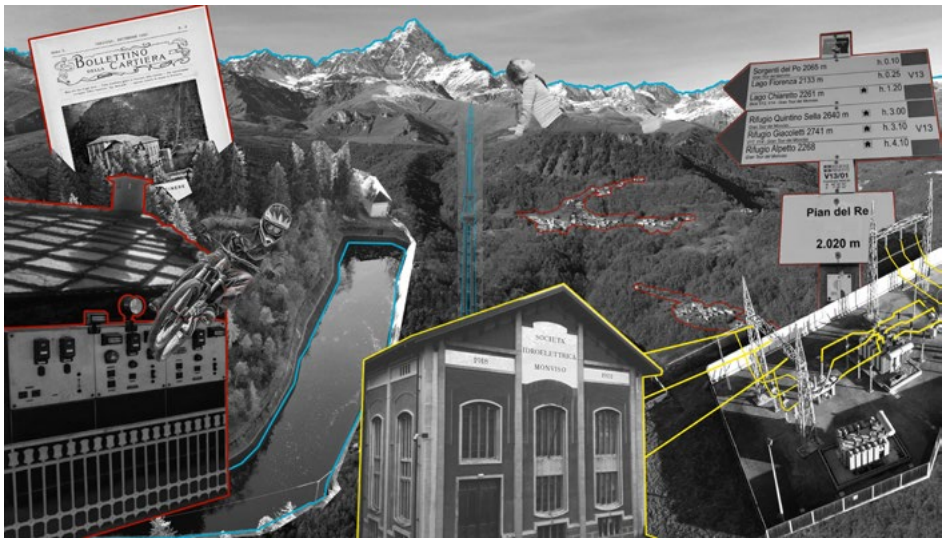
– Ruggeri, G. and Adami, S., 2011. Lo sviluppo dell'energia idroelettrica in Italia. *L'acqua*, 6, pp. 69-78.
– Barbera, F. and De Rossi A., eds., 2021. *Metromontagna. Un progetto per riabitare l'Italia*. Roma: Donzelli.
– Mehvar, S., Wijnberg, K., Borsje, B., Kerle, N., Schraagen, J. M., Vinke-de Kruijf, J., Geurs, K., Hartmann, A., Hogeboom, R. and Hulscher, S., 2021. Review article: Towards resilient vital infrastructure systems – challenges, opportunities, and future research agenda. *Nat. Hazards Earth Syst. Sci.*, 21, pp. 1383-1407.
– Osello, A., Fonsati, A., Semeraro, F. and Rapetti, N., 2019. *InfraBIM: Il BIM per le infrastrutture*. Roma: Gangemi Editore.

EXTERNAL COLLABORATIONS

– The PhD grant is co-funded by the PNRR under DM no. 352 and Calcinere (the project's case study), a hydropower plant in Piedmont that is part of the SIED group, which owns 24 hydropower plants across northern Italy and Chile. Currently, an exchange period is being undertaken at KTH Royal Institute of Technology in Stockholm under the supervision of Professor Kjartan Gudmundsson.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Against the backdrop of the growth of renewables, the research proposal is geared towards the study of resilience models for large hydroelectric generation systems. The history and characteristics of this type of plant, mainly built in the early 1900s, and their management concerning climate change requires specific attention to the potential and feasibility of revamping interventions, as well as the complex regulatory framework. The challenge is to achieve production, energy and environmental efficiency objectives through an integrated approach aimed not only at modernisation interventions with a green perspective but also at promoting resilient development of the local territory with social and economic spin-offs. The redevelopment strategy of the Italian power plant park therefore requires the evaluation of a systemic approach to the reference ecosystem to activate actions that can generate a value chain oriented towards sustainable development. The increasingly complex management of networks will also have to exploit the possibilities offered by digital technologies through digitalization, interconnectivity, and interconnection.



In this context and with these ambitions, one would like to test advanced methods and tools to support the digitizing Calcinere hydropower plant located in the western Piedmont Pre-Alps in the homonymous fraction of the municipality of Paesana (CN) and deepening innovative solutions to support the creation of a resilience model that aims to aspire to become a virtuous example scalable to other similar contexts.

The pilot case is studied using digital and mental models. The BIM-GIS model is implemented in facility management operations and as a fundamental digital basis for the Digital Twin, supporting versatile applications in different use cases. On the other hand, different design guidelines are proposed to establish possible development strategies from an environmental and social point of view. The proposed methodology will be used to develop an integrated model to improve the resilience of the hydroelectric system to achieve sustainable implications for the mountain area, its permanent and temporary guests.

NAME **Marco VOLPATTI**
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COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	Integrated evaluation for supporting the new concept of urban sustainable districts and communities. A focus on Positive Energy Districts and Climate Positive Circular Communities
TUTOR(S)	Marta Carla BOTTERO, Adriano BISELLO

ACADEMIC CONTEXT

– Volpatti, M., Mazzola, E., Bottero, M.C. and Bisello, A., 2024. Toward a certification protocol for Positive Energy Districts (PED). A methodological proposal. *TeMA - Journal of Land Use, Mobility and Environment*, 1, pp. 137-153. https://doi.org/10.6093/1970-9870/10301.
– Bertolami, I., Bisello, A., Volpatti, M., Bottero, M.C., 2024. Exploring Multiple Benefits of Urban and Energy Regeneration Projects: A Stakeholder-Centred Methodological Approach. In: *Energies*, 17(12), 2862. https://doi.org/10.3390/en17122862.
– Volpatti, M., Mazzola, E., Bottero, M.C., Bisello, A., 2024. Algoritmi basati sul Causal Loop Diagram a supporto dei processi di rigenerazione urbana. Un focus sui quartieri a energia positiva. *Urbanistica Informazioni*, 317, pp. 69-75. https://doi.org/10.62661/ui317-2024-069.
– Volpatti, M., Mazzola, E., Bottero, M.C., Bisello, A., 2023. The Role of Positive Energy Districts through the Lens of Urban Sustainability Protocols in the Case Studies of Salzburg and Tampere. In: *Buildings*, 14(1), 7. https://doi.org/10.3390/buildings14010007.

EXTERNAL COLLABORATIONS

– EURAC RESEARCH

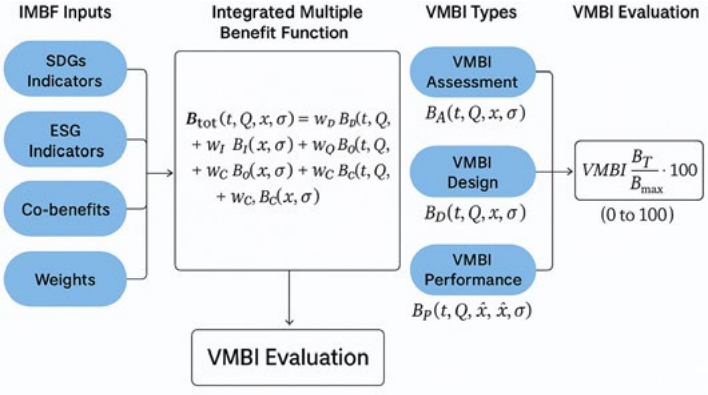
HIGHLIGHTS OF THE RESEARCH ACTIVITY

The research presented here focuses on the integrated assessment of the urban district, which represents both the smallest form of community and the most complex, due to the multitude of components that characterize it. Projections indicate that by 2050 more than 70% of the world's population will live in urban areas, leading to a sharp increase in energy infrastructure demand (European Commission, 2021). In this context, the urban energy transition requires a change of scale: from highly efficient buildings to zero-emission neighborhoods, up to Positive Energy Districts (PEDs). PEDs integrate energy sharing, waste heat recovery, electric mobility, and storage systems, and thus represent a new urban paradigm that combines the built environment, mobility, and sustainable production and consumption models. Their aim is to enhance energy efficiency, reduce greenhouse gas emissions, and create added value for citizens.

My doctoral research is part of the European project ARV, funded by Horizon 2020, which seeks to create Climate Positive Circular Communities and to accelerate the renovation rate of the building stock in Europe. The specific objective of the PhD is to identify decision support systems able to evaluate and guide urban transformations, by highlighting shared strengths and defining common development trajectories.

Over the past year, the work has progressed along two complementary lines. First, I developed the Volpatti Multiple Benefits Index (VMBI), a tool designed to measure and compare the multiple benefits of district-scale projects, providing a synthetic index that supports investment and planning decisions. Second, I advanced a certification proposal for PEDs and Climate Positive Circular Communities, aimed at promoting shared standards for sustainability assessment.

Further progress was achieved through engagement with the living labs of the six European case studies within ARV, which allowed the validation of the developed tools and the collection of feedback from local stakeholders involved in the transition process. In parallel, participation in the international research group ANNEX 83 of the International Energy Agency offered the opportunity to extend the discussion to a global scale, reinforcing the methodological framework. Overall, the research has produced innovative outputs in terms of evaluation tools, guidelines, and proposals for standardization. These results contribute to shaping a concrete pathway for the implementation of the urban energy transition and for the recognition of multiple benefits at the district level.



VMBI Framework – From Inputs to Normalized Evaluation

NAME **Yogender YADAV**
E-MAIL yogender.yadav@polito.it

COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	Landscape goes Digital: Development of Energy Digital Twins (EDTs) for Sustainable Urban Built Environment
TUTOR(S)	Piero BOCCARDO, Sisi ZLATANOVA

ACADEMIC CONTEXT

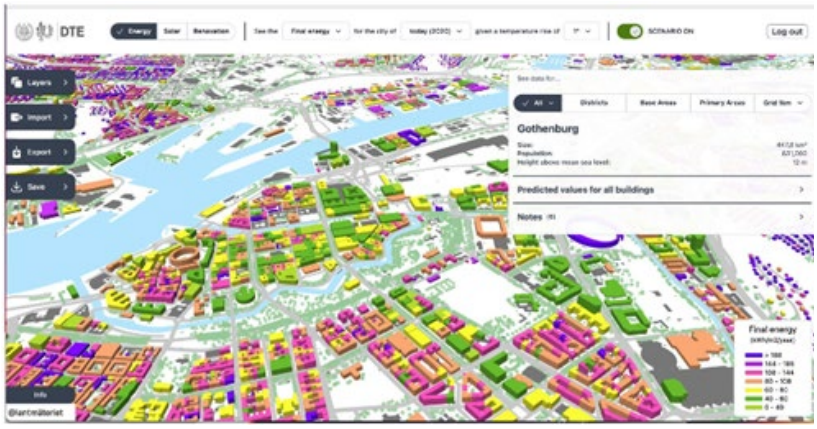
– Maiullari, D., Nageli, C., Rudena, A. and Thuvander, L., 2023. Gothenburg Digital Twin. Modelling and communicating the effect of temperature change scenarios on building demand. *Journal of Physics Conference Series*, 2600(3), pp. 032006-032006. doi: https://doi.org/10.1088/1742-6596/2600/3/032006.
– Boccardo, P., La Riccia, L. and Yadav, Y., 2024. Urban Echoes: Exploring the Dynamic Realities of Cities through Digital Twins. *Land*, 13(5), pp. 635-635. doi:https://doi.org/10.3390/land13050635.

EXTERNAL COLLABORATIONS

– Spatial Data Lab (SDL), Harvard University, USA (Internship)
– University of New South Wales (UNSW), Sydney, Australia (Research Visiting Period)
– Indian Institute of Technology (IIT), Roorkee, India (Research Visiting Period)
– Delhi Technological University, New Delhi, India (Teaching Assistant and Research Visiting Period)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

As cities worldwide grapple with growing energy demands and the transition to sustainable urban development, the need for accurate digital representations of the built environment has become increasingly pressing. Energy Digital Twins (EDTs) are emerging as a promising solution, linking remote sensing with dynamic energy modeling to support evidence-based planning. By incorporating rooftop and window features derived from photogrammetry and mobile mapping point cloud data, EDTs extend beyond conventional 3D city models. Advanced techniques such as LiDAR, SLAM, and aerial photogrammetry allow these twins to capture not only geometric detail but also temporal dynamics, ensuring models evolve in line with urban change. In this way, EDTs provide interactive, web-based environments for analysing energy behaviour across complex urban systems.



This research advances the development of an EDT for the city of Torino, aiming to create a continuously updated framework capable of supporting smart energy management. The work addresses major technical challenges, including the processing of large datasets, the management of rapid urban transformations, and the limitations of current commercial solutions for 3D model updates. The central difficulty lies in constructing and maintaining a comprehensive, city-scale model that remains both computationally efficient and practically manageable.

While several platforms already integrate multi-source data into urban models, few offer operational and user-oriented tools that municipalities can readily adopt. The approach pursued in this doctoral research seeks to bridge that gap by delivering an accessible, web-based EDT platform tailored to Torino. The envisioned system will provide a detailed representation of the city's energy consumption patterns and their dynamics, offering a means to visualize both current performance and future scenarios.

The anticipated outcome is a practical decision-support tool for local authorities, enabling them to evaluate the impacts of urban development on energy demand and efficiency. By connecting digital representations with real-world dynamics, the EDT will contribute to informed policy, sustainable planning, and the transition toward a smarter, energy-resilient city of Torino.

NAME **Michele ZUCCO**
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COURSE	XXXVIII cycle - 3rd year
RESEARCH TITLE	New strategies for Building Information Modelling (BIM) to Facility Management (FM) training and integration in public administration
TUTOR(S)	Anna OSELLO, Matteo DEL GIUDICE

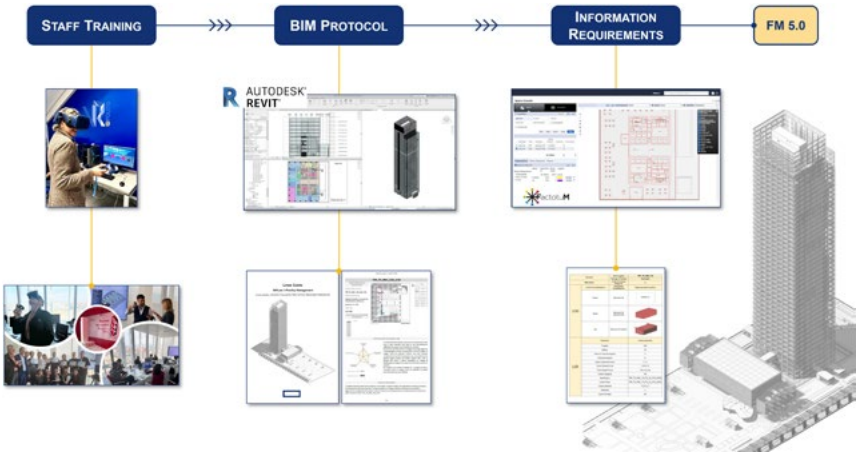
ACADEMIC CONTEXT

- Salzano, A., Parisi, C.M., Acampa, G. and Nicolella, M., 2023. Existing assets maintenance management: Optimizing maintenance procedures and costs through BIM tools. *Automation in Construction*, 149. https://doi.org/10.1016/j.autcon.2023.104788.
- Zucco, M., Del Giudice, M. and Osello, A., 2024. Digital Twin for BIM-FM Data Comparison: A Decision Support System Based on Graphical Interfaces. In: A. Giordano, M. Russo, R. Spallone, eds. *Advances in Representation. New AI- and XR-Driven Transdisciplinarity*. Cham (CH): Springer. https://doi.org/10.1007/978-3-031-62963-1_36.
- Pinti, L., Codinhoto, R. and Bonelli, S., 2022. A Review of Building Information Modelling (BIM) for Facility Management (FM): Implementation in Public Organisations. *Applied Sciences*, 12(3). https://doi.org/10.3390/app12031540.
- Osello, A., Zucco, M., Iacono, E. and Del Giudice, M., 2024. Hidden logic of complexity – Graphical interfaces and algorithms for the building system. *AGATHÓN | International Journal of Architecture, Art and Design*, 16, pp. 202-211. https://doi.org/10.19229/2464-9309/16172024.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Within the anthropocentric Society 5.0 paradigm, the governance of public assets requires digital strategies capable of transcending the inefficiencies of analogue and fragmented practices.

This study formalizes a methodological framework for the structured integration of Building Information Modelling (BIM) and Facility Management (FM) – explicitly incorporating the organizational People dimension – into the management of public buildings, with the aim of ensuring data quality and operational continuity. Although BIM underpins contemporary information processes across the built environment, its use in the operation and maintenance (O&M) phase remains limited. We therefore introduce the Record Model, a 3D BIM-based information model, as the foundational layer of the Digital Twin (DT) and as an enabler of integration with FM platforms. If it were continuously fed by Internet of Things (IoT) sensors and Virtual/Augmented Reality (VAR) tools, and governed within a Common Data Environment (CDE), the Record Model would convert design deliverables into traceable, real-time-updateable operational information.



In the Italian context, despite progressive mandates for BIM in public procurement, the management phase is still constrained by immature standards and limited competencies; the study addresses this gap through operational guidelines and targeted capacity-building.

The case study of the *Palazzo Unico of the Piedmont Region* enables the validation of pipelines for data acquisition, normalization, and integration; the training of civil servants; and the deployment of 3D BIM models linked to FM systems and VAR-supported inspection. The methodology is articulated around the triad People–Model–Documents: (i) development of training programmes and role definition for robust data governance; (ii) specification of Asset/Exchange Information Requirements (AIR/EIR) to deliver a verifiable and maintainable Record Model; and (iii) preparation of the Capitolato Informativo, defining classification and naming rules, delivery plans, verification/validation criteria, and CDE governance.

From the combination of People, Model–Tools, and Documents emerges the FM 5.0 paradigm, grounded in interoperability, data-driven decision-making, and replicability across the public sector. Expected outcomes include reduced operational times and non-conformities, strengthened digital capabilities, and the availability of reliable, continuously updateable information models oriented.

XXXIX CYCLE – 2nd YEAR STUDENTS

NAME **Irene ARDITO**
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COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	Sense of Place for Socio-Ecological Resilience in Flood-Prone Territories: The Case of the Valencian province in Catarroja
TUTOR(S)	Angioletta VOGHERA, Camilo Vladimir DE LIMA AMARAL

ACADEMIC CONTEXT

– Jorgensen, B.S. and Stedman, R.C., 2001. Sense of place as an attitude: Lakeshore owners attitudes toward their properties. *Journal of environmental psychology*, 21(3), pp. 233-248.
– Meetiyagoda, L., Mahamana, P.K.S., Amarawickrama, S. and Ley, A., 2023. Collaborative Place-making: Some Theoretical Perspectives on. *Journal of Urban Culture Research*, p. 89.
– van Heel, B.F. and van den Born, R.J., 2020. Studying residents' flood risk perceptions and sense of place to inform public participation in a Dutch river restoration project. *Journal of Integrative Environmental Sciences*, 17(1), pp. 35-55.
– Verbrugge, L., Buchecker, M., Garcia, X., Gottwald, S., Müller, S., Præstholm, S. and Stahl Olafsson, A., 2019. Integrating sense of place in planning and management of multifunctional river landscapes: experiences from five European case studies. *Sustainability science*, 14(3), pp. 669-680.

EXTERNAL COLLABORATIONS

– FULL, Future Urban Legacy lab of Politecnico di Torino
– EGAP (Ente Gestione Aree Protette) del Parco del Po Piemontese
– INGENIO (CSIC-UPV) Research Center – UPV Valencia - host for visiting

HIGHLIGHTS OF THE RESEARCH ACTIVITY

In the context of the international debate, there is an increasing focus on river territories related to climate change, which is the cause of frequent catastrophic flooding events. This focus is evidenced by the various directives beginning with Directive 2000/60/EC which calls for integrated action to enhance aquatic territories, landscapes and their safety, including communities and their awareness of risk in these fragile environments. These issues are revisited in the discourse on the role of river territories and community engagement for climate change adaptation (SNACC 2015 and associated plan) and for the implementation of the European Biodiversity Strategy 2030. Consequently, there is a need to investigate both the spatial strategies to be adopted in planning to mitigate flooding impacts and the methods by which communities can be engaged into the place-making process of the river restoration projects with the aim of strengthening the territories' resilience. To address these issues, this research analyses the sense of place, as a potentially effective factor in participatory planning of flood-prone territories examining the case study of Catarroja, in the province of Valencia which was recently affected by a catastrophic flood on October 29th, 2024. The concept of sense of place has been theorised by numerous studies, primarily in the field of environmental psychology. This is due to the fact that sense of place has been attributed particular relevance because it intervenes in the human-environment relationship, potentially playing a crucial role in land use planning and natural resource management (Jorgenson & Stedman, 2001; Verbrugge et al., 2019) although the relationship with the spatial context through collaborative place-making is lacking of evidences as well as its relation to flood risk perception (Meetiyagoda et al., 2023; Van Heel, van den Born, 2020). By using quantitative and qualitative tools addressed to post-flood communities, the research analyses how local actors' sense of place can be a guiding factor to define river restoration scenarios promoting an integrated approach in accordance with the municipalities' vision of requalification of the Valencian province. This place-based approach is intended to facilitate the inclusion of a greater number of stakeholders' perspectives in the planning process for the restoration of river risk zones to identify regeneration scenarios that respond to ecological, social and local needs.

NAME **Sebastiano BARBIERI**
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COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	Tools and methods for multi-dimensional landscape assessment: a web-GIS for UNESCO management support
TUTOR(S)	Marta BOTTERO, Marco VALLE, Caterina CAPRIOLI

ACADEMIC CONTEXT

– Barbieri, S., Caprioli, C., Baronetto, B., Bottero, M. and Valle, M., 2025. Assessing the Tourist Carrying Capacity of a UNESCO World Heritage proposed site. In: Gervasi O., et al. *Computational Science and Its Applications – ICCSA 2025 Workshops. ICCSA 2025. Lecture Notes in Computer Science*, vol 15893. Springer, Cham. https://doi.org/10.1007/978-3-031-97645-2_3.
– Assumma, V., Barbieri, S., Bottero, M. and Caprioli, C., 2024. Supporting the Planning Management of UNESCO Sites: A Literature Review Between Urban Showcase and Gentrification. In: Gervasi O., Murgante B., Garau C., Taniar D., C. Rocha, A.M.A., Faginas Lago, M.N., eds., *Computational Science and Its Applications – ICCSA 2024 Workshops*. Lecture Notes in Computer Science, vol 14821. Cham: Springer, pp. 147-162. https://doi.org/10.1007/978-3-031-65308-7_11.
– Barbieri, S., Bottero, M., Caprioli, C. and Mondini, G., 2023. Supporting the Management Plan of a World Heritage Site Nomination Through a Multi-step Evaluation Approach. In: Gervasi O. et al. *Computational Science and Its Applications – ICCSA 2023 Workshops*. Lecture Notes in Computer Science, vol 14108. Cham: Springer, pp. 498-511. https://doi.org/10.1007/978-3-031-37117-2_34.
– Stellin, G. and Rosato, P., 1998. *La valutazione economica dei beni ambientali: metodologia e casi di studio*. Torino: CittàStudi Edizioni.

EXTERNAL COLLABORATIONS

– Fondazione LINKS, Turin (co-financer of the PhD grant)
– University of Edinburgh (host for visiting period)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

The cultural landscape inscribed on the UNESCO World Heritage List represents an extraordinary and priceless value, evidence of the cultural and natural diversity of our planet. The preservation and management of this heritage is essential to preserve not only the past but also to promote intercultural understanding, social cohesion, and sustainable development. Moreover, these elements can be drivers for the social and economic development of an entire territory. Therefore, evaluations that can support decision-making regarding the management of cultural and environmental assets are of great importance (Stellin & Rosato, 1998). The different types of valuation must be able to consider not only economic but also social and environmental aspects (United Nations General Assembly, 2015) that allow a cultural landscape to develop sustainably while protecting the exceptional value it represents.
The research aims to propose a methodological framework for the selection of evaluation methods best suited to capture the complexity of World Heritage List candidates and inscribed cultural property management. To identify the challenges that these territories are about to face, it is necessary to conduct both a study of existing literature and an analysis of the spatial context of relevant cases. This will enable the selection of the most appropriate evaluation method to address the complex issues that characterize the Sites on the World Heritage List. In fact, most of the existing research on the matter has a tendency to treat the topic with a partial or unsystematic approach, basing its analyses exclusively on traditional evaluation methods. This work attempts to systematize the research and explore new methods, integrated with GIS, which can effectively be applied in managing cultural heritage. Among the case studies, the "Old and New Towns of Edinburgh" was crucial in validating the methodology. After a spatial SWOT analysis identified the main needs and critical issues of the site, a multicriteria analysis (AHP-BWM) was used to support decision makers in defining priorities for the management of this complex site. Management guidelines were thus proposed according to the main priorities identified. The result of the research aims to be a Web-GIS that could be used by academics, professionals, and public administrators who are responsible for managing these extraordinary territories, offering them decision support.

NAME **Ikram Ahmad Hajeras BATAINEH**
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COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	Urbanisation in the Middle East: Transnational Development and Global Imaginaries
TUTOR(S)	Carlo SALONE, Francesco CHIODELLI

ACADEMIC CONTEXT

- Graham, S. and Marvin, S., 2001. *Splintering urbanism: Networked infrastructures, technological mobilities and the urban condition*. London: Routledge.
- McFarlane, C., 2021. *Fragments of the city: Making and remaking urban worlds*. University of California Press.
- Schindler, S. and Kanai, M., 2021. Getting the territory right: Infrastructure-led development and the re-emergence of spatial planning strategies. *Regional Studies*, 55(1), pp. 40-51.
- Schindler, S. and Di Carlo, J., 2022. *The rise of the infrastructure state: How US–China rivalry shapes politics and place worldwide*. Bristol: Bristol University Press.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

The Middle East has recently witnessed a wave of infrastructure-led transnational development initiatives amid a renewed engagement of governments in regional and territorial planning. Arab states have promoted investment-ready enclaves as a culmination of decades of neoliberal enthusiasm for the market and its promise of prosperity. Projects such as ports, logistics corridors, and economic zones, often framed as pathways to modernisation, global integration, and connectivity, have materialised through partnerships between state actors, private investors, multilateral agencies, and transnational capital, triggering territorial transformations and debates on state restructuring.

Aqaba, Jordan's only coastal city, located at a crossroads of trade routes linking Asia, the Middle East, and Europe, is being reshaped through ambitious projects that exemplify the emerging geographies of global infrastructure. As a Special Economic Zone and logistics hub on the Red Sea, Aqaba has become a strategic site where national development ambitions converge with global capital. Drawing on critical urban theory on extended urbanization, international development regimes, and fragmented urbanism, this research examines Aqaba as a case of transnational development, where the geopolitical dimensions of development are made visible through spatial restructuring, capital flows, and regulatory reforms.

Methodologically, the research centres on an ethnography of expertise, complemented by participatory observations, interviews with residents and stakeholders, and document analysis of masterplans and regulatory frameworks. This approach illuminates the transnational networks and imaginaries at play, from Aqaba's branding as a "world-class" hub to everyday negotiations over ports, railways, industrial zones, and urban infrastructure. The findings reveal a tension between integration and fragmentation: while large-scale projects connect Aqaba more closely to regional and global circuits of trade and capital, they also generate fragmented spaces, uneven access, and competing institutional arrangements. In tracing these dynamics, the research shows how international development regimes are reshaping Aqaba's governance and territory in uneven ways, offering insights into the co-production of new urban geographies in the Middle East.

NAME **Sarah Elizabeth BRAUN**
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COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	Participatory Practice as a Living System: Assessing Approaches for Innovative Action in Urban Regeneration at the Local Level
TUTOR(S)	Patrizia LOMBARDI

ACADEMIC CONTEXT

- Braun, S.E., 2023. The Power of local government policy for building resilient cities and communities: the city of Edgerton, Wisconsin as a case study. In: Ripp, M., Gustafsson, C., eds. *Climate Change Related Urban Transformation and the Role of Cultural Heritage*. Lago (CS), Italy: Il Sileno Edizioni, pp. 39-55.
- Fayad, S., Kendal, L., 2020. Local values driven change management and leadership from the regions: Ballarat and UNESCO's HUL approach. In: Edmondson, B., Campbell, A., Duffy, M., eds. *Located research: regional places, transitions and challenges*. London: Palgrave Macmillan, pp. 71-88.
- Pignatelli, M., Torabi Moghadam, S. and Lombardi, P., 2023. Spatial clustering-based method for Italian marginal areas toward the sustainable regeneration. *Valori e Valutazioni*, 32, 77. https://doi.org/10.48264/vvsiev-20233207.
- Deakin, M., Lombardi, P. and Cooper, I., 2011. The IntelCities Community of Practice: The Capacity-Building, Co-Design, Evaluation, and Monitoring of E-Government Services. *Journal of Urban Technology*, 18(2), pp. 17-38. DOI:10.1080/10630732.2011.601107.

EXTERNAL COLLABORATIONS

- Visiting researcher and facilitator, Sant'Anna Institute, Sorrento,(IT)
- Visiting researcher and facilitator, Latrobe University, Bendigo, VI (AUS)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

There has been increasing recognition of the importance of local participation and community engagement to successfully address complex urban challenges for regeneration. However, there has not been a single, widely recognized comprehensive review or assessment of participatory practice frameworks for collective action in urban regeneration. Furthermore, there is a limited understanding of how utilizing that system of participation more efficiently to optimize problem solving and ownership, motivation, and execution of innovative, collective action manifests within the context of smaller cities.

Resilient cities are urban areas designed as a cohesive system and managed to anticipate, absorb, and adapt to various shocks and stresses—including environmental, social, economic, or institutional challenges. Central to resilience is the capacity to drive institutional innovation, enabling cities to proactively transform governance structures, policies, and stakeholder collaboration throughout the process. Through adaptive planning, responsive governance, and inclusive decision-making, resilient cities continuously foster innovative solutions that enhance long-term sustainability, social equity, and quality of life for their communities.

While each case of urban regeneration requires its own plan and approach with different objectives and goals, small cities must often confront the complex problems of modern urban planning and development with significantly less financial resources, human capital, and technical expertise. Mobilization through an innovative system of collaboration and participation throughout the development process suggests a greater probability of successful project implementation. This research seeks to demonstrate both the existence and importance of a living system of participation in urban regeneration and grass-roots implementation of international and European frameworks such as the UN Declaration of Human Rights, theSustainable Development Goals (SDGs) for advancing sustainability and cultural policies in urban regeneration. It will examine and assess respective limitations with the intent to bridge gaps and identify themes and/or motivational mechanisms from multi-disciplinary perspectives and frameworks, resulting in actionable knowledge for all relevant stakeholders across urban systems to utilize in urban regeneration projects and initiatives.

NAME **Martina CAPUTO**
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COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	Functional Adaptation Areas: Rethinking functional areas for climate adaptation governance
TUTOR(S)	Grazia BRUNETTA; Giancarlo COTELLA

ACADEMIC CONTEXT

- Conference of Ministers responsible for Spatial Planning (CEMAT), 2017. *Functional areas in member states of the Council of Europe: Preparatory study for the 17th session of the Council of Europe Conference of Ministers Responsible for Spatial Planning (CEMAT)*. Strasbourg: Council of Europe.
- Faludi, A., 2016. The poverty of territorialism: Revisiting European spatial planning. *disP – The Planning Review*, 52(3), pp. 73-81.
- Fioretti, C. and Pertoldi, M., 2020. Exploring the functional area approach in EU urban strategies. *Transactions of the Association of European Schools of Planning*, 4(2), pp. 146–162.
- IPCC, 2022. *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.

EXTERNAL COLLABORATIONS

- Responsible Risk Resilience Centre (R3C)
- University of Southern Denmark (SDU) - Visiting period at the UNESCO Chair in Urban Resilience

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Climate impacts transcend administrative boundaries, exposing the limitations of municipal planning and fixed jurisdictions. This research investigates how the concept of *Functional Areas* (FAs) can be reinterpreted to address climate change adaptation, proposing the analytical model of *Functional Adaptation Areas* (FAAs).

The theoretical foundation integrates three strands of literature. Debates on new territorialism highlight the inadequacy of fixed administrative boundaries in facing modern challenges, emphasising the importance of fuzzy boundaries, soft spaces, and soft governance. This perspective frames the research problem and the formulation of the guiding question and objective. Second, European institutional frameworks, which recognise FAs as territorial units that transcend administrative borders and are delineated by functional interdependencies, provide the conceptual basis for identifying the defining features of FAs. Third, climate risk literature frames risk as a systemic outcome of the interaction between hazards, exposure, and vulnerability, with adaptation actions mediating impacts and shaping resilience. Building on this, the FA × Climate Risk matrix is developed and refined through empirical case study and interviews, operationalising the concept of FAAs.

Methodologically, the research combines a case study of the Øresund cross-border region, where Danish and Swedish municipalities collaborate on climate adaptation, with semi-structured interviews. Two types of interviewees are engaged: (a) stakeholders involved in the case study, and (b) experts in climate change adaptation, functional areas, cross-border cooperation, and climate risk governance. The interviews inform and refine the FA × Climate Risk matrix, which maps 20 intersections between FA features and climate risk components. Each intersection is examined, enabling a systematic exploration of functional interdependencies and their adaptive potential.

This research contributes conceptually by advancing FAAs as an innovative model for adaptation governance, and operationally by providing policy-makers with guidance to design strategies aligned with functional interdependencies and shared climate risks.

NAME **Caterina CIARLEGLIO**
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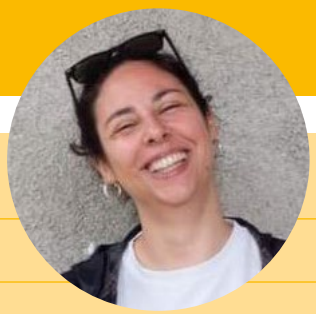

COURSE XXXIX cycle - 2nd year
RESEARCH TITLE Worlding Athens: neo-colonial urban experiments in the Attica region
TUTOR(S) Francesca GOVERNA

ACADEMIC CONTEXT

– Lancione, M. and McFarlane, C., eds., 2021. *Global urbanism: Knowledge, power and the city*. Abingdon: Taylor & Francis.
– Roy, A. and Ong, A., eds., 2011. *Worlding Cities: Asian Experiments and the Art of being Global*. Malden, Mass: Wiley-Blackwell (Studies in urban and social change).
– Peck, J. and Theodore, N., 2012. Follow the policy: A distended case approach. *Environment and Planning A*, 44(1), pp. 21-30.
– Souliotis, N. and Kandylis, G., 2013. Athens and the politics of the sovereign debt crisis. In Fujita K., *Cities and Crisis: New Critical Urban Theory*, pp. 236-269.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research project aims to investigate the structures of global capital and their neocolonial dimensions at work in The Ellinikon urban regeneration project, along the Athenian Riviera.

The Ellinikon is currently the largest urban development project in Greece, aimed at promoting the city of Athens as a global destination through the privatization of the former Hellinikon airport, now disused since 2001. As many other state-owned properties in the context of the 2008 economic crisis, and thanks to the implementation of the Hellenic Republic Asset Development Fund (a financial institution for the management and privatization of state-owned real estate), the space of the former airport has been sold in 2014 to the Greek company LAMBDA Development S. A., with the aim of building the first gated and financial community of the country, following the now proven Singapore model, developed in the Asian city-state.

Currently under construction along the Athenian Riviera, The Ellinikon is structured as a smart and green gated community, consisting of residential complexes, shopping centers, hotels, offices and green areas.

In analyzing The Ellinikon and dialoguing with the literature on global urbanisms (Lancione & McFarlane, 2021), this thesis has three main goals:

1. contribute to the literature and debate interested in the problem of knowledge production on the urban phenomenon between the Global North and South, challenging the possibility of using the Singapore model and the concept of "worlding" (Roy & Ong, 2011) in reading urban transformation in the European context;

2. analyze the ways in which the movement and mutation of rapidly changing policies through globalizing networks and translocal contexts (Peck, 2011) impact Greece.

3. produce a politically positioned reading of debt policies' implementation in Greece (Souliotis & Kandylis, 2013), unraveling their neocolonial nature and observing their spatial effects in terms of urban development.

NAME	**Tommaso COSENTINO**
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COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	'Where people live matters'. Challenging post-apartheid spatial injustice through insurgent home-making practices in Cape Town's Cissie Gool House occupation
TUTOR(S)	Elisa BIGNANTE, Mara FERRERI

ACADEMIC CONTEXT

– Levenson, Z., 2021. Post-apartheid Housing Delivery as a (Failed) Project of Remediation. In: Home, R., ed. *Land Issues for Urban Governance in Sub-Saharan Africa*. Cham: Springer International Publishing, pp. 189-206.
– Makhulu, A.M., 2015. *Making freedom: apartheid, squatter politics, and the struggle for home*. Durham: Duke University Press.
– Miraftab, F., 2009. Insurgent Planning: Situating Radical Planning in the Global South. *Planning Theory*, 8(1), pp. 32-50. https://doi.org/10.1177/1473095208099297.
– Roy, A., Rolnik, R., Graziani, T. and Malson H., eds., 2020. *Methodologies for Housing Justice Resource Guide*. Los Angeles: UCLA Publications. https://escholarship.org/uc/item/41g6f5cj.

EXTERNAL COLLABORATIONS

– African Centre for Cities, University of Cape Town - Hosting institutions for research period abroad

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research project is concerned with the role played by housing occupations and housing movements in challenging the reproduction of spatial segregation and spatial injustice in post-Apartheid South African cities. Across the country's major cities, aggressive real estate market and the neoliberal turn of housing policies make the access to dignified, well-located housing extremely difficult. In addition to their material impact on people's lives, homelessness and segregation of historically dispossessed people seriously affect people's sense of home and belonging in the city. This project therefore focusses on how the articulation of insurgent home-making practices and claims to well-located affordable housing by racialized and impoverished people attempt to counter historical and current forms of dispossession, displacement, and racial segregation inherited from centuries of colonial and apartheid spatial planning and race-based manufacturing of the urban fabric. It does so by looking at the work and collective organizing performed by residents, leaders and allies of a large housing occupation in Cape Town's inner-city called Cissie Gool House (CGH), part of the Reclaim The City (RTC) movement for housing and spatial justice. This research specifically focusses on the work of the 'CGH Co-Design' project, a self-organized 'invented space' of participation that aims to collaboratively imagine and plan long-term, inclusive housing solutions preventing the mass eviction of the about 1500 residents. This project's first paper will focus on CGH's fight for dignified, affordable and well-located housing in relation to the reproduction of racial segregation and expulsion as a result of post-Apartheid urban governance. The project initially adopted a participatory framework which, however, clashed with the scarce time availability of the research participants, turning therefore to mixed qualitative methods. Based on this, the second paper of this project will reflect critically on the role of participatory methods in marginalized contexts questioning the widespread perception of participatory methods as inherently less extractive than conventional ones. The last paper will discuss the politics and knowledge-making practices explored in the collaborative design efforts I observed over the past 4 years at CGH.

NAME	**Sofia DARBESIO**
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COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	Contemporary Architecture Construction Site in the Historic City: Interactive Multimedia Solutions to Make and Share the History of Sites in Transition
TUTOR(S)	Rosa TAMBORRINO, Alessandro IPPOLITI

ACADEMIC CONTEXT

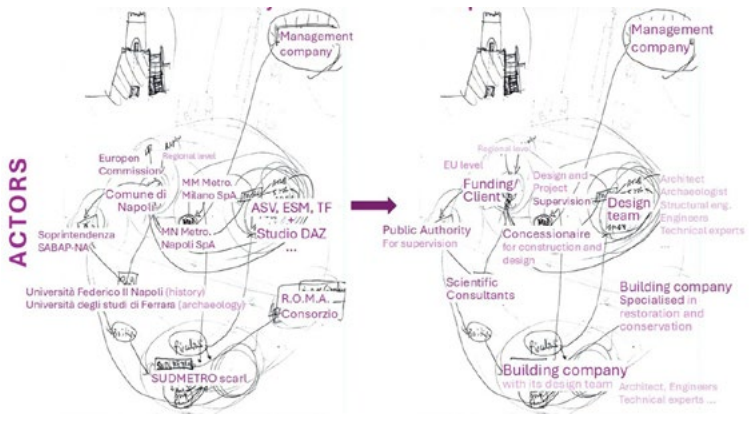
– Castagnaro, A., 2014. Infrastructural Systems toward the Valorisation of the History of Architecture: the Case of the Metro-Art in Naples. *Advanced Engineering Forum*, 11, pp. 508-513.
– Esposito, A., Leoni, G. and Rispoli, M., 2023. La Stazione Municipio della metropolitana di Napoli. Rifondare l'immagine e la materia della città. *U+D, Urbanform and Design*, X, pp. 108-115.
– Falotico, A., 2003. *Cantiere e costruzione: le strategie esecutive nella formazione del progetto di architettura*. Naples: Liguori.
– Pucci, P. and Colleoni, M., eds., 2016. *Understanding mobilities for designing contemporary cities*. Cham: Springer International Publishing.

EXTERNAL COLLABORATIONS

– IT company Inmatica SpA – co-financer of the PhD grant
– Institute for Digital Cultural Heritage Studies (DKES), at the Ludwig-Maximilians-Universität München (LMU) in Munich, Germany – hosting period abroad
– Faculty of Architecture of the University of Porto (FAUP) – hosting for research period

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Construction sites are a relevant part of cities' contemporary developments. They also produce a high amount of diversified data, tools, and information that are complex and challenging to access or communicate. However, especially in the case of historic cities, they embody inventive capabilities, innovation, and processes, representing relevant information for architectural and urban history. By applying Digital Humanities methodologies, it is possible to explore new ways of documenting, studying and narrating inherent complexities such as decision-making processes, the interaction of interdisciplinary urban history actors, and the contextualisation of spatial-heritage relationships, while framing these dynamics in the framework of the historic city and its past.



Construction processes are investigated in multiple international case studies, such as the Piazza Municipio metro station in Naples, designed by Álvaro Siza and Eduardo Souto de Moura. The project was driven by the need to incorporate a large-scale infrastructure within the historic urban fabric. Considering the newly designed space in connection with the intangible dimension of the place, the second demonstrator is the project by EMBT Architects for the Clichy-Montfermeil metro station within the Paris Grand Express transport system.

The research addresses the challenges of recording and preserving construction site materials through the production of a critically structured AI-powered digital library of diverse (born-digital, digitised and non-digitised) data, metadata and resources coming from multiple archives. By leveraging historical and contemporary materials through computer vision methods, the outcome could provide a dynamic virtual representation of the urban space and its past. Through a spatialised digital reconstruction of phases and interactions, the system can document and interpret architectural worksite processes, offering transparency and insight into the spatial-cultural relationships that shaped the present identity of the urban space. Concluding, the system will make it possible to improve the understanding of the urban development's dynamics through different historical-critical narratives.

Funded by MUR D.M. 117/2023, the research aligns with Italy's National Recovery and Resilience Plan (PNRR), and promotes research to enterprise transfer and cross disciplinary synergies focused on Digital Transition and societal impact.

NAME **Emanuele DELL'OCA**
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COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	Real estate market and housing accessibility. Valuation tools and regulation paradigms
TUTOR(S)	Marta Carla BOTTERO

ACADEMIC CONTEXT

– Azmi, N. and Bujang, A.A., 2021. The gap between housing affordability and affordable house: A challenge for policy makers. *Planning Malaysia*, 19(17), pp. 387-399.
– Battisti, F., Campo, O., Forte, F., Menna, D. and Perdonò, M., 2025. Residential mobility: The impact of the real estate market on housing location decisions. *Real Estate*, 2(3), p. 9.
– Dell'Oca, E. and Bottero, M., 2025. Housing Market Comparison in Milan and Turin: Assessing Affordability Through a Synthetic Indicator. *Real Estate*, submitted for publication.
– Iqbal, J., Brdedthauer, J. and Decker, C.S., 2025. Determinants of housing affordability in the USA. *International Journal of Housing Markets and Analysis*, 18(1), pp. 158 177.

EXTERNAL COLLABORATIONS

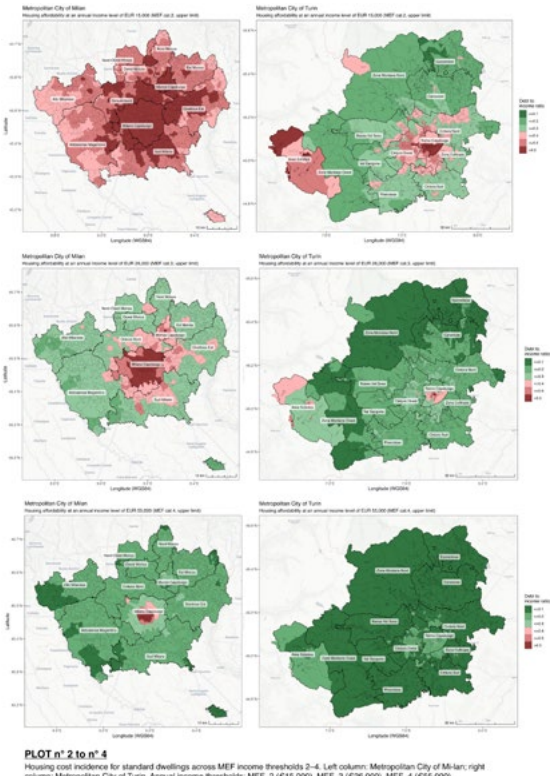
– PoliS-Lombardia – Istituto di ricerca e supporto alle politiche della regione Lombardia (funder of the PhD grant)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

The research investigates the dynamics of the real estate market and its impact on housing accessibility, focusing on the interplay between property value formation, urban transformations, and regulatory frameworks. It analyses how land valorisation and market pressures affect affordability and identifies indicators capturing housing sustainability across different population groups. The work is framed within broader European and OECD debates on housing affordability, recognizing that rising costs and unequal access are pressing challenges for metropolitan areas across the EU.

The most recent research activity has concentrated on an empirical application quantifying housing pressure. Among available metrics, a synthetic but widely recognized Debt-to-Income (DTI) indicator was selected, offering an effective measure of residents' financial exposure to housing costs relative to income. Two metropolitan contexts were chosen as cases of study: Milan and Turin, providing contrasting yet representative examples of Italian urban dynamics. The empirical results confirm three key dynamics in Italy: strong disparities between urban and rural property values, low accessibility to housing for lower-income groups in major cities, and extreme property value polarizations, especially in highly attractive urban contexts such as Milan. The integrated analysis of market data, income statistics, and housing cost indicators establishes a coherent methodology for monitoring housing pressures and supporting evidence-based policy discussions.

The research also considers the role of fiscal instruments and urban regulations as potential levers to address affordability, situating empirical findings within debates on value capture, urbanization charges, and social housing provision. These insights provide a foundation for subsequent analyses of policy interventions and planning strategies, highlighting where targeted measures could improve accessibility and reduce inequalities. By combining rigorous empirical evaluation with a comparative perspective, the study contributes to knowledge on inclusive and sustainable urban development, informing local policy in Milan and Turin and broader discussions on housing affordability in Italy and the EU.



PLOT n° 2 to n° 4
Housing cost incidence for standard dwellings across MEF income thresholds 2–4. Left column: Metropolitan City of Milan; right column: Metropolitan City of Turin. Annual income thresholds: MEF_2 (€15.000), MEF_3 (€26.000), MEF_4 (€55.000)

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COURSE XXXIX cycle - 2nd year
RESEARCH TITLE Storytelling 2D and 3D visualisation of the city of Torino
TUTOR(S) Piero BOCCARDO, Alessandra CIMADOM

ACADEMIC CONTEXT

- Cheng, G. and Han, J., 2016. A survey on object detection in optical remote sensing images. *ISPRS journal of photogrammetry and remote sensing*, 117, 11-28. http://dx.doi.org/10.1016/j.isprsjprs.2016.03.014.
- Naftali, M.G., Sulistyawan, J.S. and Julian, K., 2022. Comparison of Object Detection Algorithms for Street-level Objects. *arXiv* 2022. arXiv preprint arXiv:2208.11315. https://arxiv.org/abs/2208.11315.
- Sharma, A., Kosasih, E., Zhang, J., Brintrup, A. and Calinescu, A., 2022. Digital Twins: State of the art theory and practice, challenges, and open research questions. *Journal of Industrial Information Integration*, 30, 100383. https://doi.org/10.1016/j.jii.2022.100383.
- Wei, G., Wen, Y., Haijian, Z. and Guang, H., 2018. Geospatial Object Detection in High Resolution Satellite Images Based on Multi-Scale Convolutional Neural Network. *Remote Sensing*, 10(1), 131; https://doi.org/10.3390/rs10010131.

EXTERNAL COLLABORATIONS

- Torino Urban Lab
- University of Konstanz, Germany (Research Visiting Period)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Digital Twins (DT) have rapidly evolved into crucial technology that is enabling many industries. Today, DTs are integral to enhancing efficiency, reducing costs, and improving decision-making across manufacturing, healthcare, urban planning, and energy sectors. They enable predictive maintenance, reducing downtime and extending the lifespan of equipment. The growing importance of digital twins lies in their ability to bridge the physical and digital worlds, driving innovation, sustainability, and transformative growth in the modern era.

The growth of DT is developing in many areas to create virtual replicas. In planning, virtual copies of cities are being developed in real-time to analyse what is happening in urban spaces, not only for the urban field but also for areas such as vegetation, sustainability, and mobility, among others. Remote sensing (RS) and geographical information systems (GIS) are used to develop this process.

The techniques used in RS have developed new approaches in the research and creation of DT based on LiDAR, high-resolution satellite imagery and photogrammetry, among others. Not only have RS techniques made progress in creating DTs, but the development of artificial intelligence (AI) has also eaten and analysed DTs.

The research group is working on the creation of a DT of the city of Turin. In this doctoral study, the research focuses on identifying areas of transformation in the city and making this information available to the population.

To carry out this study, we are using artificial intelligence models of image processing that can detect objects and areas in order to determine changes in the city. We also use information about where changes are being made and where they will be made in the city by the city council.

In this study, we are also creating an open-source space where the population can see the different transformations that are taking place in the city and understand the reasons for these changes using a 2D and 3D map of the city of Turin.

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COURSE XXXIX cycle - 2nd year

RESEARCH TITLE New geodata for innovative urban environmental management

TUTOR(S) Piero BOCCARDO, Andrea AJMAR

ACADEMIC CONTEXT

- Yao, X., Li, G., Xia, J., Ben, J., Cao, Q., Zhao, L., Ma, Y., Zhang, L. and Zhu, D., 2020. Enabling the Big Earth Observation Data via Cloud Computing and DGGS: Opportunities and Challenges. *Remote Sensing*, 12(1), 62. https://doi.org/10.3390/rs12010062.
- Robledo Ceballos, J., 2021. Interoperability at the core: strategic role in the Spatial Data Infrastructure of the Aerophotogrammetric Service of the Air Force of Chile. *Proceedings of the ICA*, 4, 93. https://doi.org/10.5194/ica-proc-4-93-2021.
- Pizzorni, M., Innocenti, A. and Tollin, N., 2024. Droughts and floods in a changing climate and implications for multi-hazard urban planning: a review. *City and Environment Interactions*, 24, 100169. https://doi.org/10.1016/j.cacint.2024.100169.
- Destefanis, T., Guliyeva, S., Boccardo, P. and Fissore, V., 2025. Advancing flood detection and mapping: a review of Earth Observation services, 3D data integration, and AI-based techniques. *Remote Sensing*, 17(17), 2943. https://doi.org/10.3390/rs17172943.

EXTERNAL COLLABORATIONS

- Ithaca SRL - Host for visiting research period (Feb–Jul 2025) within Space It Up (Spoke 7: Space for the Sustainable Development of the Planet).
- NASA Ames Research Center - Contributor to the Sensors & Optics chapter for NASA's State-of-the-Art of Small Spacecraft Technology report.
- Space Agency of the Republic of Azerbaijan (Azercosmos) - Research collaboration on analysis of national policies for EO use in climate resilience and disaster management.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

In recent years, Earth Observation (EO) has entered a new "big data" paradigm, with more than 1,000 EO satellites launched globally in the past five years alone (Space Insider, 2025). Continuous advances in spatial, temporal, and spectral resolution are accelerating this trajectory. With the EO satellite fleet projected to triple over the next decade owing to sustained public investment and expanding commercial constellations (Novaspace, 2025), the systematic incorporation of EO into disaster management frameworks is becoming not only technically feasible but also strategically essential. In terms of data volumes, the EU Copernicus programme now produces more than 20 terabytes of geospatial data per day (Copernicus, 2025), while global repositories such as NASA's Earth Observing System Data and Information System have surpassed 120 petabytes (NASA, 2024). Although these resources hold transformative potential for disaster risk governance, their operational uptake remains constrained by persistent challenges of interoperability, harmonisation, and institutional integration.

The research to date has investigated pathways for making EO data actionable within operational disaster management workflows. The first peer-reviewed article (Destefanis et al., 2025) introduced a framework for flood detection and mapping that combines artificial intelligence with 3D geodata. A second review, currently under assessment, broadens the scope to floods and droughts as interconnected hazards, highlighting the importance of technical standards and multi-source data integration in ensuring that EO outputs translate into reliable decision-support.

By bridging scientific innovation with policy mechanisms, this work strengthens the science–policy interface and supports the transition from research prototypes to systematic operations. The next phase will involve case studies to test the integration of Copernicus Emergency Management Service products into municipal planning workflows and to explore digital twin methodologies for anticipatory planning. The ultimate goal is to deliver methodological guidelines that enable policymakers and local authorities to enhance climate resilience through data-driven strategies.

NAME **Amelia ILE**
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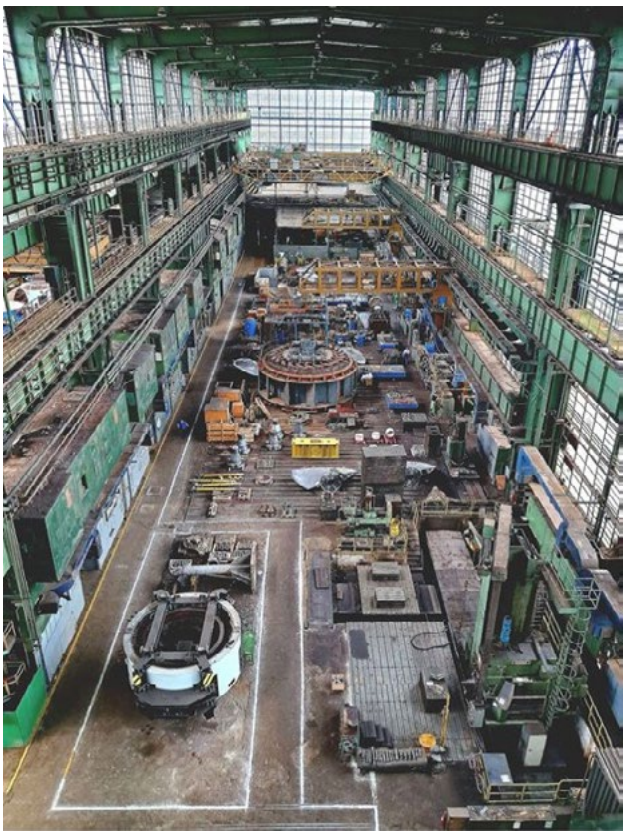
COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	Urban Regeneration through Creative Valorisation of Industrial Heritage: From Abandonment and Degradation to Aspiration and solution for Socio-Territorial Reconstruction in the Banat Mountains
TUTOR(S)	Nicolae POPA, Egidio DANSERO

ACADEMIC CONTEXT

- Alfrey, J. and Putnam, T., 2003. The industrial heritage: Managing resources and uses. *The Industrial Heritage: Managing Resources and Uses*, pp. 1-269. https://doi.org/10.4324/9780203392911/INDUSTRIAL-HERITAGE-TIM-PUTNAM-JUDITH-ALFREY/ACCESSIBILITY-INFORMATION.
- Boix-Domènech, R. and Rausell-Köster, P., 2018. The Economic Impact of the Creative Industry in the European Union. In: Santamarina-Campos V., Segarra-Oña M., eds., *Drones and the Creative Industry*, pp. 19-36. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-95261-1_2.
- Chebuţiu, A., 2010. *Secole de industrie în Banatul montan. Evoluţie şi impact. Studiu de caz: UCM Reşiţa, platforma MOCIUR : Teză de doctorat*. Timişoara: Editura Politehnica.
- Ghisellini, P., Cialani, C. and Ulgiati, S., 2016. A review on circular economy: The expected transition to a balanced interplay of environmental and economic systems. *Journal of Cleaner Production*, 114, pp. 11-32. https://doi.org/10.1016/j.jclepro.2015.09.007.
- Dansero, E. and Spaziante, A., 2016. Scoprire i vuoti industriali: analisi e riflessioni a partire da censimenti e mappature di aree industriali dismesse a Torino. In: Armano E., Dondona C.A. & Ferlaino F., eds. *Postfordismo e trasformazione urbana. Casi di recupero di vuoti industriale e indicazioni per le politiche nel territorio torinese*, pp. 45-106. Torino: Ires Piemonte.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Deindustrialization, shifting industrial needs, and urban expansion have left many industrial structures abandoned in city centers, disrupting the urban fabric and degrading surrounding areas. Despite these challenges, industrial heritage offers a valuable link to the past, with historical and cultural significance that can be leveraged for present and future use (Alfrey & Putnam, 2003; Dansero & Spaziante, 2016). The Banat Mountains region of Romania, the country's first classic industrial zone (Chebuțiu, 2010), exemplifies these issues, particularly in its mono-industrial cities, which were heavily impacted by deindustrialization.



This research focuses on repurposing industrial heritage to foster socio-territorial reconstruction in deindustrialized cities. The project aims to evaluate the potential of creative industries as catalysts for urban regeneration and socio-economic redevelopment in small and medium-sized mono-industrial cities.

Aligned with Romania's 2022 National Circular Economy Strategy and the circular economy's principles of Reduction, Reuse, and Recycling (Ghisellini et al., 2016), this study emphasizes the reuse of industrial heritage over greenfield development. Such an approach mitigates urban sprawl while revitalizing disused industrial sites. Historically, industrial sectors not only drove economic growth but also fostered social cohesion and a strong local identity. Leveraging creative industries and embracing cultural openness and sustainability can transform deindustrialized cities into vibrant, regenerated spaces.

The study employs a mixed-method approach, combining qualitative and quantitative methods, including observation, questionnaires, interviews, and geospatial analysis. By providing a geographical perspective, the research aims to inform strategies for repurposing industrial heritage through creative industries. It also explores how these reconversion projects can drive economic growth, strengthen community ties, and support sustainable urban regeneration in the medium term.

NAME **Valeria LONGHI**
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COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	Geomatics for seagrass monitoring: underwater hyperspectral imagery and aerial photogrammetry
TUTOR(S)	Andrea Maria LINGUA, Filiberto CHIABRANDO

ACADEMIC CONTEXT

– Foglini, F., Grande, V., Marchese, F., Bracchi, V.A., Prampolini, M., Angeletti, L., Castellan, G., Chimienti, G., Hansen, I.M., Gudmundsen, M., Meroni, A.N., Mercorella, A., Vertino, A., Badalamenti, F., Corselli, C., Erdal, I., Martorelli, E., Savini, A.and Taviani, M., 2019. Application of Hyperspectral Imaging to Underwater Habitat Mapping, Southern Adriatic Sea. *Sensors* 19, 2261. https://doi.org/10.3390/s19102261.
– Costa, V., Serôdio, J., Lillebø, A.I. and Sousa, A.I., 2021. Use of hyperspectral reflectance to non-destructively estimate seagrass Zostera noltei biomass. *Ecol. Indic.* 121, 107018. https://doi.org/10.1016/j.ecolind.2020.107018.

EXTERNAL COLLABORATIONS

– Biru srl Agricola - co-financer of the PhD grant
– University of California, San Diego - host for research period abroad

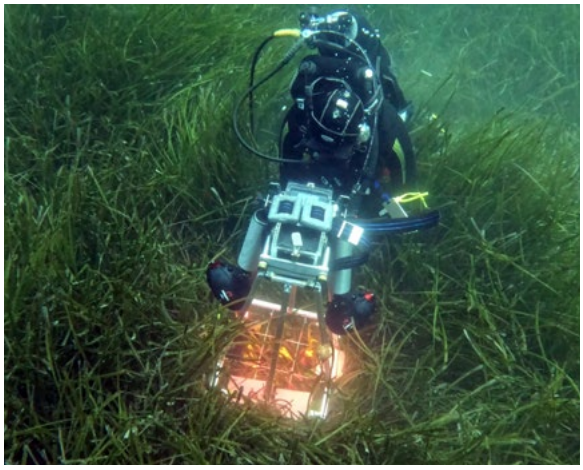
HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research project addresses the growing need for high- and ultra-high-resolution monitoring of coastal and underwater ecosystems. It focuses specifically on the application of innovative geomatics approaches to support marine conservation, with a particular emphasis on seagrass habitats. While geomatic methods are well-established for terrestrial and aerial surveys, their use in underwater environments remains comparatively underdeveloped. This study aims to contribute to bridging this gap.

The research is carried out in northern Sardinia, with two key study areas: the Culuccia Peninsula– home to the company Biru, which co-funds this PhD– and Porto Conte Bay. The main object of study is Posidonia oceanica (PO), a seagrass endemic to the Mediterranean, known for its key ecological roles and sensitivity to environmental change.

The project explores the use of underwater hyperspectral imagery (UHI), acquired with the Senop Rikola camera, to assess the spectral signature of PO and facilitate non-invasive monitoring of its health status. During this second year, efforts focused on refining the acquisition setup to better meet the challenges of the underwater environment. This included the design and production of custom system components, followed by testing both in the Geomatics Laboratory at DIATI and in the field. The project is now entering its operational phase, with upcoming data acquisition and processing activities aimed at developing a robust monitoring methodology and assessing the effectiveness of this technology in the context of marine seagrass conservation.

In parallel, during my research stay at the University of California San Diego (UCSD), I began a complementary study on Zostera marina, another ecologically important seagrass species. In this case, hyperspectral measurements were performed using a spectrometer, and were paired with physiological assessments using a PAM fluorometer to measure chlorophyll fluorescence (e.g., Fv/Fm). Preliminary results showed promising correlations between spectral reflectance and photosynthetic efficiency, suggesting the potential for identifying early indicators of stress. This ongoing work will contribute to a broader understanding of seagrass responses to environmental changes and expand the applicability of hyperspectral monitoring beyond Posidonia oceanica. Additionally, aerial RGB photogrammetry is being used to monitor the accumulation and seasonal dynamics of PO banquettes (deposits of detached leaves along the shoreline). This analysis enhances our understanding of the seagrass lifecycle and its interaction with coastal processes.



In summary, this second year of the PhD has focused on consolidating the theoretical framework, improving experimental setups, and initiating fieldwork and data collection. As the project transitions into its core operational phase, the next steps will integrate data acquisition, processing, and analysis to develop new tools and indicators for seagrass ecosystem monitoring and coastal conservation.

NAME **Alessio MAZZARO**
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COURSE XXXIX cycle - 2nd year

RESEARCH TITLE The wetness of knowledge: agonism and failure in amphibious territories

TUTOR(S) Antonio DI CAMPLI, Paul RAMIREZ JONAS, Elisa BIGNANTE

ACADEMIC CONTEXT

- Bueno, J., de Campos, L., Mazzaro, A. and Granceri Bradaschi, M., 2024. Rediscovering Rivers in the Brazilian megacity of San Paolo: Leveraging Water Sensitivity in the urban governance. In: M. Granceri Bradaschia, F. Magni and F. Musco, eds. *Climate Change Adaptation, Flood Risk, and Beyond. Planning for Climate Proof Cities*. Cham: Springer, pp. 259-283.
- Da Cunha, D., 2019. *The invention of rivers*. Philadelphia: University of Pennsylvania Press.
- Dewey, J., 1938. *Logic: The Theory of Inquiry*. New York: Henry Holt and Company
- Mazzaro, A. and Faccini, A., 2024. Prefiguration, Complicity and Afterlife in Contextual Practices: A Conversation on What Happens When Art Encounters Reality. *Journal of global studies and contemporary art*,10, pp. 105-125.

EXTERNAL COLLABORATIONS

- Lab Itaim Paulista & Universidade Presbiteriana Mackenzie (visiting period in São Paulo)
- Instituto de Investigaciones Sociales, UNAM (visiting period in Ciudad de Mexico)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

The research reflects on the relationship between two different forms of spatial knowledge production: the one defined through socially engaged artistic practices, and the one resulting from the criticisms of modernist thought in the current phase of permanent ecological crisis. It does so by observing water: the design of spaces for rainwater and floods; the different actors involved; their relationships and the worldviews underlying the solutions proposed. Tracing in this way, specific ecologies of knowledge and focusing on how failures of drainage infrastructures generate knowledge and forms of organization among inhabitants. Finally, methodologically the investigation explores the meaning of an artistic approach in Planning research and in the production of knowledge about water-related crises.

Two case studies were identified in the peripheries of Sao Paulo and Mexico City as advantageous sites to observe how water re-manifests in the uncanny space not assigned to it. There the disruption of water bodies, urban development and conflicts between competing interests and visions are so intense that no definitive solution to water-related problems can be conceived. It is studied how such situations hold the potential for developing incremental planning approaches where other forms of knowledge—especially those of local inhabitants—can be incorporated and innovative ways of co-producing drainage infrastructure can emerge. Secondly, it is hypothesized that citizen participation, producing new ecologies of knowledge, serves to define conditions of coexistence -new forms of amphibious dwelling- rather than definitive forms of government. Doing so, the research posits a new model of knowledge production and rewriting of citizen participation through the lenses of failure (Fisher & Katsouraki 2019), agonism (Mouffe, 2013) and cognitive justice (Santos, 2015).

The state of the art of the case studies are reconstructed using literature, conversation with local subjects and microhistories, moreover, knowledge are co-produced using context based narrative forms (radionovela, fanzine, simulation of an infrastructure footprint). Observed dynamics are interpreted through the lenses of failure, presence (Taylor 2020) and calibration (Dewey 1938, Latour 2005), interpretative categories related by thinking of the territory as a stage where, to respond to a water management problem, actions are rehearsed and updated -with the aid of the public- by observing their effects.

NAME **Belal NEAZI**
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COURSE XXXIX cycle - 2nd year

RESEARCH TITLE Shaping a Sustainable, Inclusive, and Digitally Enabled Greener Future: Evaluation of Affordable Positive Energy Districts

TUTOR(S) Sara TORABI MOGHADAM, Patrizia LOMBARDI, Adriano BISELLO

ACADEMIC CONTEXT

- Neazi, B., Torabi Moghadam, S. and Lombardi, P. 2025. Social Life Cycle Assessment in Construction: A Bibliometric Analysis. *CIB Conferences*, 1(1). https://doi.org/10.7771/3067-4883.2063.
- Bouillass, G., Blanc, I. and Perez-Lopez, P., 2021. Step-by-Step Social Life Cycle Assessment Framework: A Participatory Approach for the Identification and Prioritization of Impact Subcategories Applied to Mobility Scenarios. *The International Journal of Life Cycle Assessment*, 26(12), pp. 2408-2435. https://doi.org/10.1007/s11367-021-01988-w.
- Benoît Norris, C., Traverso, M., eds., 2020. *Guidelines for Social Life Cycle Assessment of Products and Organizations 2020*. Paris: United Nations Environment Programme (UNEP).
- Torabi Moghadam, S., Delmastro, C., Corgnati, S. P. and Lombardi, P., 2017. Urban Energy Planning Procedure for Sustainable Development in the Built Environment: A Review of Available Spatial Approaches. *Journal of Cleaner Production*, 165, pp. 811-827. https://doi.org/10.1016/j.jclepro.2017.07.142.

EXTERNAL COLLABORATIONS

- EURAC Research, Bolzano, Italy (Visiting Research Period in a Scientific Research Institute)
- Aalborg University, Aalborg & Copenhagen, Denmark (Visiting Research Period Abroad, based in Copenhagen)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Urban areas contribute 60% of greenhouse gas emissions. From 1990-2019, global energy consumption rose by 38% and global CO2 emissions from buildings increased by 50%. An important aspect of any research is the "Background Problem." In this case, the problem is "Climate Change", which has "led to the need for Near Zero-Energy Buildings (NZEB) and now Positive Energy districts (PEDs)." These alterations need heavy investments, and it is currently unclear how the "vulnerable class" of society will be involved in this process, presenting another problem.

The ProLight project was developed to solve these problems. It focuses on social inclusion, lifestyle improvement, reduction of GHGs and sustainable development. This will help in fostering dialogue between diverse cultures and ages.

The three sustainability pillars – economic, environmental, and social – are vital to assess in a development project. However, the social aspect is often omitted or is not paid much heed, a postulation which was upheld in the literature review as well. Therefore, this research principally focuses on the social aspects of the Horizon EU's ProLight and ARV Project and seeks to understand how social housing for vulnerable people can be made better and more effectively assessed.

Among the available social assessment techniques, Social Life Cycle Assessment (S-LCA) was selected to evaluate the refurbishments carried out in the social housing units of ProLight and ARV demo districts. Reference values were taken from the country in which the demo site is located. Indicators for assessment were identified through stakeholders' and experts' interviews, as well as a comprehensive literature review. Furthermore, qualitative data will be gathered through questionnaires, workshops, and interviews, while the quantitative data will be collected directly from the site and the city's databases.

S-LCA will assess impact categories and subcategories that affect the stakeholders, both positively and negatively, across different life cycle stages. The results of this S-LCA study will help in understanding whether the refurbishments helped in enhancing the stakeholders' well-being and social inclusion. This research will support the decision makers in determining whether the refurbishments are worth replicating at other places. Finally, a reference guide and a digital tool will be developed for this methodology.

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COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	Paperless Urbanism. Urban planning innovation and the digital transition of spatial government
TUTOR(S)	Carolina GIAIMO, Andrea AJMAR

ACADEMIC CONTEXT

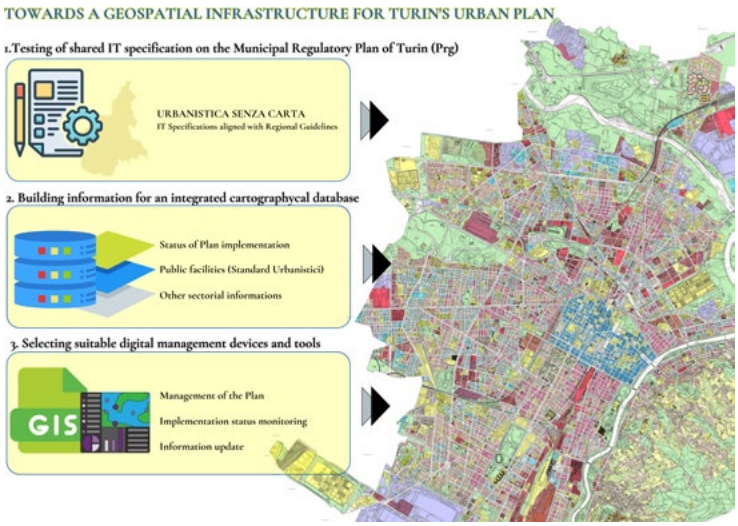
- Arena, A. 2017. I GIS per l'implementazione e la gestione dei dati nei Piani Urbanistici Comunali. In: *Atti della 21° conferenza nazionale ASITA*, Salerno, 21-23 November 2017.
- Burrough, P.A., McDonnell, R.A. and Lloyd, C.D., 2015. *Principles of geographical information systems*. Oxford: Oxford University Press.
- Baioni, M., Basso, S., Caudo, G., Franzese, A., Marchigiani, E., Munarin, S., Renzoni, C., Tosi, M.C. and Vazzoler, N., 2021. *Diritti in città: gli standard urbanistici in Italia dal 1968 a oggi*. Roma: Donzelli.
- Regione Piemonte, 2020. *Urbanistica Senza Carta. Sistema informativo per la gestione dematerializzata dei procedimenti urbanistici*. https://www.regione.piemonte.it/web/sites/default/files/media/documenti/2018-10/usc_presentazione.pdf.

EXTERNAL COLLABORATIONS

- Host for research period in Italy: Città di Torino, Divisione Urbanistica e Qualità dello spazio costruito

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Since the 1990s, the growing availability of data, information and open-source software capable of managing spatial information has made Geographic Information Systems (GIS) and Spatial Data Infrastructure (SDI) increasingly important in planning processes at various scales. Since the 1970s, GIS have evolved from basic databases for cataloguing technical and thematic cartography to advanced tools for the analysis and geo-statistical processing of spatial data. Nowadays, some Italian regions such as Piedmont, Tuscany and Emilia-Romagna are experimenting with projects aimed at simplifying urban planning processes involving different administrative levels and supporting strategic environmental assessment or land consumption monitoring, through the dematerialization of processes and the provision of shared databases.



However, despite regional efforts to address issues related to shared databases and the efficiency of urban planning through common digital data protocols, there remain open questions about how to effectively use digital tools and technologies to monitor the implementation and day-to-day management of general urban planning tools at the local level. These challenges need to be addressed locally, in line with regional initiatives and in compliance with international standards such as the INSPIRE Directive of 2007.

In this context, through the realization of 2 spatialized information layers, the research explores strategies, addresses and operational proposals for innovating urban planning procedures, integrating service management and facilitating the digital transition of urban planning in the City of Turin, identified as the case study area. The first layer concerns the state of implementation of the current PRG, which regulates regeneration interventions within the transformation areas called Zut and Ats. However, to date the City of Turin does not have spatialized databases that keep track of each transformation, which have involved more than 100 Zut and Ats.

Contextually to the elaboration of this level of information, which recognizes the state of implementation of these areas, a census of existing urban facilities (Standard Urbanistici) was carried out, according with the classification criteria of the Urban Regional Law 56/77 and the Regional USC Protocol. Both layers represent essential knowledge, supporting the Variante Generale (currently being drafted) and a good soil project, towards concepts of spatial justice and urban welfare.

NAME **Anja PEJOVIC**
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COURSE XXXIX cycle - 2nd year

RESEARCH TITLE Thermal comfort as a factor of street redesign for active mobility

TUTOR(S) Riccardo POLLO, Luca STARICCO

ACADEMIC CONTEXT

- Cruz, S. and Paulino, S., 2020. Urban commons in active mobility experiences. *International Journal of the Commons*, 14(1), pp. 539-552.
- Nieuwenhuijsen, M., 2021. New urban models for more sustainable, liveable and healthier cities post covid19; reducing air pollution, noise and heat island effects and increasing green space and physical activity. *Environment International*, 157, 106850.
- Wang, Y. *et al.*, 2022. Assessment of walkability and walkable routes of a 15-min city for heat adaptation: Development of a dynamic attenuation model of heat stress. *Frontiers in Public Health*, 10.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Car-centric urban planning has marginalised the social dimension of the streets and continues to cause various environmental and health issues. In response, cities have been rethinking streets as public spaces that encourage active mobility. However, such efforts often lack two important aspects noted in the literature as highly important: community involvement and thermal comfort considerations.

This research addresses the connection between these high-priority topics in the context of climate change mitigation and adaptation in urban areas: redesigning streets as open, healthy spaces that foster and promote active mobility through participative processes, and thermal comfort as an essential requirement for the usability of public spaces and the mitigation of heat-related health risks. It aims to support the integration of microclimate considerations and participation into the planning and design of street transformations that promote active mobility, creating comfortable outdoor spaces.

To achieve this, the thesis develops a four-phase participatory framework that combines citizen science-based methods, such as thermal walks, with technical and administrative expertise. The framework encompasses citizen engagement, data collection and analysis, co-design of adaptation scenarios and their evaluation, combining the lived experience with the scientific knowledge and administrative considerations. The framework is being tested within the Interreg Alpine Space project "COMMONAIR", at the pilot sites Barriera di Milano and Regio Parco in Turin. Citizens are involved in thermal walks activities, collecting both climate data and personal thermal perceptions while walking or cycling. The data are then elaborated and presented to the community in participatory workshops, followed by the co-designing of the heat mitigation scenarios. The scenarios will be evaluated not solely in terms of thermal comfort but also to account for different trade-offs and benefits of such interventions.

The outcomes of these processes will inform the development of guidelines for urban planners and policymakers, providing design principles, strategies for community engagement and monitoring protocols to evaluate the effectiveness of the interventions. This approach provides inclusive and context-sensitive adaptation scenarios, enhancing both community acceptance and heat stress mitigation.

NAME **Rosamaria RANDAZZO**
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COURSE XXXIX cycle - 2nd year

RESEARCH TITLE Bridging the gap: social innovation practices in the third sector in student housing in Turin

TUTOR(S) Loris A. SERVILLO, Magda BOLZONI

ACADEMIC CONTEXT

– Brandsen, T. and Pestoff, V., 2006. Co-production, the third sector and the delivery of public services: an introduction. *Public Management Review*, 8(4), pp. 493-501.
– Moulaert, F., MacCallum, D., Mehmood, A. and Hamdouch, A. (eds.), 2013. *The International Handbook on Social Innovation: Collective Action, Social Learning and Transdisciplinary Research*. Cheltenham: Edward Elgar.
– Franz, Y. and Gruber, E., 2022. The changing role of student housing as social infrastructure. *Urban Planning*, 7(4), pp. 457-469.
– Sansen, J. and Ryckewaert, M., 2025. Mainstreaming collaborative housing: a framework to analyse temporal and vectorial variations in actor and user involvement. *International Journal of Housing Policy*, advance online publication.

EXTERNAL COLLABORATIONS

– FULL – the Future Urban Legacy Lab (co-financer)
– PRIN LINUS - LIviNg the UniverSity city: student housing as driver of changes

HIGHLIGHTS OF THE RESEARCH ACTIVITY

The research examines the student housing system in Turin as a field of tension between public policies, market dynamics, and social practices, using the third sector as its primary lens. The aim is to describe and interpret innovative housing configurations, relationships between actors, and alternative spatial practices in relation to dominant models.

The main question guides three integrated axes: (i) mapping the actors and their intervention logics; (ii) reconstructing the positioning and recognition of the third sector in urban governance; (iii) analysing the proposed housing models from within and how they are configured as practices of social innovation compared to the dominant forms of housing.

The methodological design is multi-level and triangulated. On the institutional side, the PNRR, regional policies for the right to education and municipal instruments are examined, with quantitative analyses of ISTAT/EDISU sources and interviews with decision-makers and technicians. On the social side, case studies, interviews with promoters and operators, and focus groups with students.

The Turin case is addressed as a polycentric ecosystem, comprising universities (UniTO, PoliTO), EDISU, and the Municipality; PBSA operators and religious residences; collaborative networks and platforms; co-housing and social housing projects promoted by cooperatives, foundations, and associations. The analysis of interdependencies and joint strategies allows us to identify convergences, conflicts and grey areas in governance.

The theoretical-operational framework intertwines social innovation, co-design and urban mutualism to interpret hybrid practices that lie between politics, social initiative and active citizenship. The chapters of the thesis articulate frameworks and contexts, research design, mapping of actors/policies/networks and an entry "into the models" on access, economic sustainability, daily practices, participation and management devices.

The choice of case study stems from a combination of structural factors, including growing demand, scarce public supply, market pressure, and gentrification processes, which have exclusionary effects for students with lower spending power. In the absence of systemic responses, intermediate solutions from the third sector and student self-organisation practices emerge, producing situated knowledge, mutualistic actions and claims to the right to the city. The research examines organisational, planning, and regulatory mechanisms, questioning the conditions of effectiveness and limitations without anticipating outcomes, but constructs an interpretative and valuable framework for policy and planning.

NAME **Majeeb Ur REHMAN**
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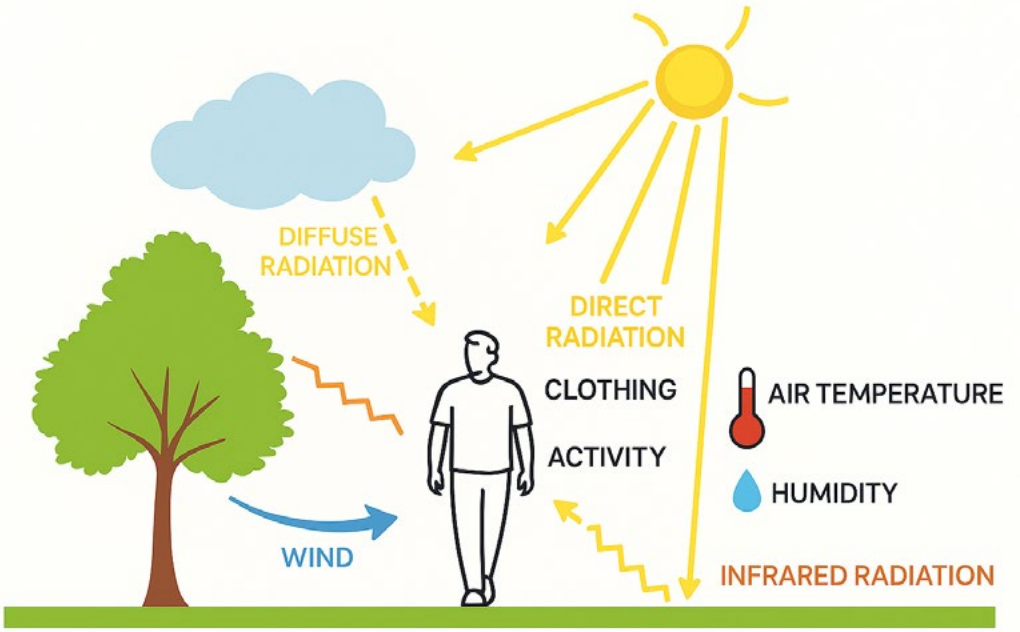
COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	Analysis of Urban Green Infrastructures for Improving Pedestrian Thermal Comfort and Walkability
TUTOR(S)	Andrea AJMAR, Fabio Giulio TONOLO, Luca STARICCO

ACADEMIC CONTEXT

– Cheung, P.K. and Jim, C.Y., 2017. Determination and Application of Outdoor Thermal Benchmarks. *Building and Environment*, 123, pp. 333-350.
– Jamei, E., Rajagopalan, P., Seyedmahmoudian, M. and Jamei, Y., 2016. Review on the impact of urban geometry and pedestrian level greening on outdoor thermal comfort. *Renewable and Sustainable Energy Reviews*, 54, pp. 1002-1017.
– Zhang, Y., Feng, S., Liu, J., Mo, Q., Yin, H. and Zhang, J., 2025. Campus microenvironmental factors and their effects on people's outdoor thermal perceptions under different conditions. *Scientific Reports*, 15, Article 12335.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This study is concerned with thermal comfort of pedestrians. Besides the physical environmental factors such as air temperature, humidity, wind velocity and radiant heat, human thermal comfort is not only inherently subjective but also affected by social, psychological, cultural, and personal factors. Objective measurement may not reflect the feelings of people under different circumstances. It is common that there is a discrepancy between objective thermal indices and perceived comfort, and that people may have different tolerance of comfort/discomfort of different objective conditions based on non-environmental moderators.



It implies that planning/design that solely depends on physical measures may not be sufficient to deal with actual comfort.
The effect of perceptual variables such as vegetation presence, views, maintenance and even safety or fatigue was found to have a strong effect on walking thermal comfort in Béjaïa, Algeria, in a study that combined microclimatic measurements with questionnaires and mental maps, although the study did not focus on temperature-and-radiation effects only. The study titled Integrating Objective and Subjective Thermal Comfort Assessments in Urban Park Design: Monteria, Colombia has spatial patterns of discomfort as a result of perception surveys and relates them to shade, surface materials, ventilation etc., providing more practical results. According to the case study of Romanian students (Timisoara), personal influence such as nationality and gender would predict thermal sensation, i.e. that range of comfort would vary according to the individual that was perceiving.
Subjective measures aid in approximating of neutral or acceptable thermal range of particular populations, which can vary on the basis of climate, culture, gender, age etc. In the absence of subjective data, indices can be inaccurate in terms of what comfortable is in that context. According to the review article, Outdoor human thermal perception in various climates, numerous studies employ calculated thermal conditions as well as subjective sensation votes, to some extent to justify that indexes are functioning in different climates, but also to establish thermal comfort ranges which are locally pertinent.

NAME **Alexandra STANKULOVA**
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COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	Rethinking the accessibility and configuration of Urban Green Areas under the impact of summer heat waves. An application to South-European cities
TUTOR(S)	Luca STARICCO, Riccardo POLLO

ACADEMIC CONTEXT

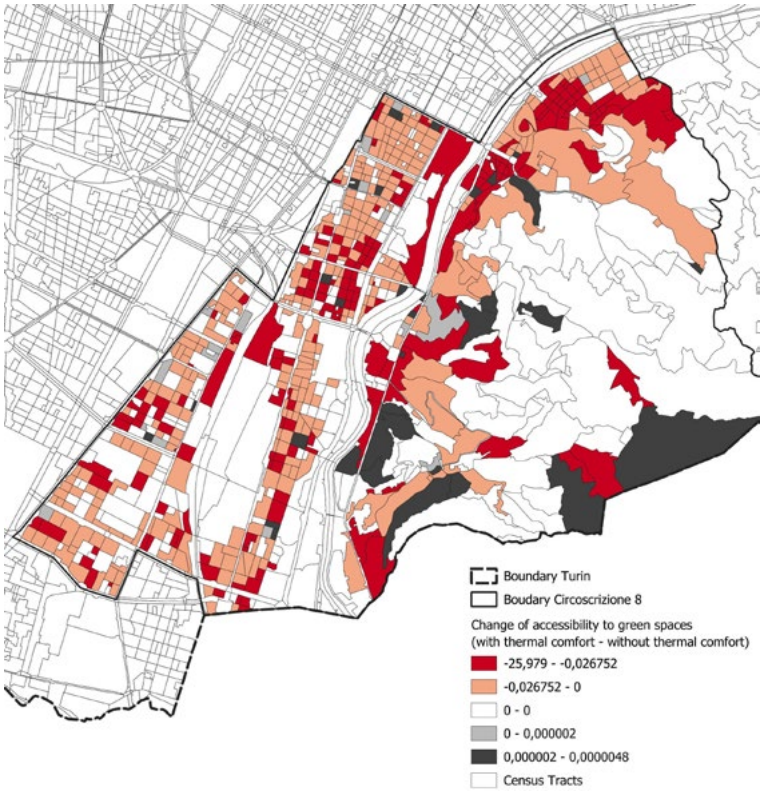
– Li, M., Gu, S., Bi, P., Yang, J. & Liu, Q., 2015. Heat waves and morbidity: Current knowledge and further direction-a comprehensive literature review. *International Journal of Environmental Research and Public Health*, 12(5), pp. 5256-5283. https://doi.org/10.3390/ijerph120505256.
– Aram, F., Higueras García, E., Solgi, E., Mansournia, S. and García, E.H., 2019. Urban green space cooling effect in cities. *Heliyon*, 5, 1339. https://doi.org/10.1016/j.heliyon.2019.e01339.
– Jia, S., Wang, Y., Wong, N.H., Chen, W. and Ding, X., 2022. Influences of the thermal environment on pedestrians' thermal perception and travel behavior in hot weather. *Building and Environment*, 226, 109687. https://doi.org/10.1016/j.buildenv.2022.109687.

EXTERNAL COLLABORATIONS

– CITTA Research Centre for Territory, Transports and Environment, from the Faculty of Engineering of the University of Porto

HIGHLIGHTS OF THE RESEARCH ACTIVITY

In the context of always increasing frequency of extreme heat events it emerges the necessity to mitigate and adapt our cities to these phenomena in order to provide higher liveability and quality of life and decrease the morbidity and mortality associated with these events.
One of the most effective strategies to counteract these phenomena is the regeneration and creation of green spaces, which can effectively serve as climate shelters during these extreme events. The green spaces provide also a significant decrease of the temperatures thanks to their shading qualities and evapotranspiration characteristics and their cooling effect can actually be observed not only within the limits of the green area itself but also in its surroundings.



From the other side, the walking behaviour of people, and as a consequence the accessibility, is affected by the thermal conditions present along the open spaces within the city, making the people to walk slowly and preferring paths characterised by less heat stress.
So, the specific objective of the current work is two-folded.
Firstly, it is aimed to redefine the accessibility model by incorporating components that would reflect the impacts of the thermal environment on the pedestrian behaviour. On one hand, it will be studied the cooling effect of the green areas (as part of the attractiveness component), on the other hand the pedestrian thermal discomfort experienced along the routes of access (as part of the generalised cost of travel).
The second objective is to develop a methodology for identifying the priority zones for interventions within the cities, using the proposed redefined accessibility measure and the heat risk evaluation.
With this research, it is believed that it will be given an important support to the local authorities for the planning of more healthy and just cities.

NAME **Francesca TATULLI**
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COURSE XXXIX cycle - 2nd year

RESEARCH TITLE Climate change impacts on winter proximity tourism in the north-west Italian Alps

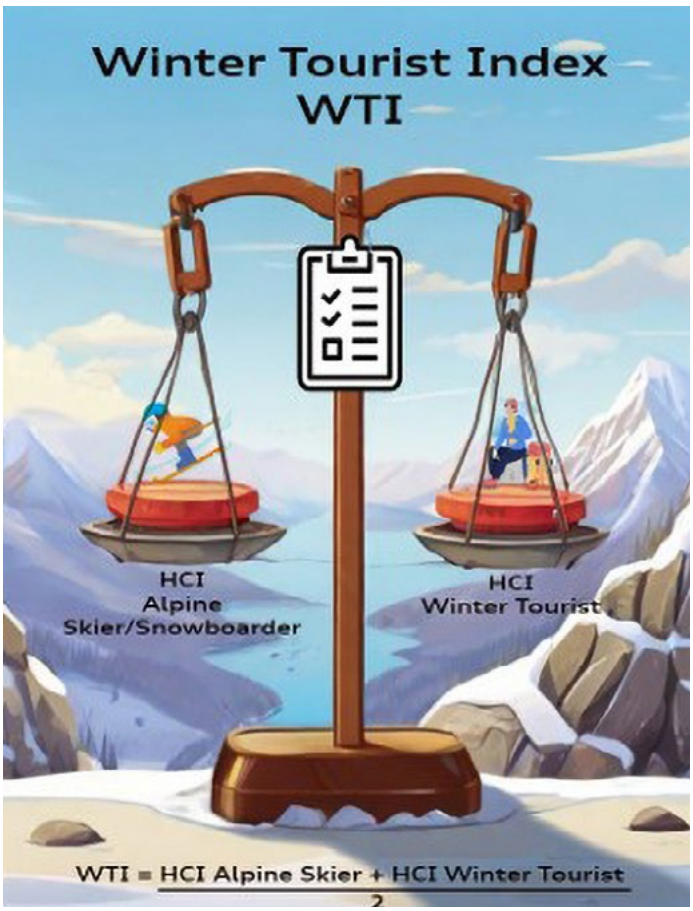
TUTOR(S) Alessandro PEZZOLI, Francesca Silvia ROTA

ACADEMIC CONTEXT

– Steiger, R., Knowles, N., Pöll, K. and Rutty, M., 2022. Impacts of climate change on mountain tourism: a review. *Journal of Sustainable Tourism*. https://doi.org/10.1080/09669582.2022.2112204.
– Scott, D., Rutty, M., Amelung, B. and Tang, M., 2016. An inter-comparison of the Holiday Climate Index (HCI) and the Tourism Climate Index (TCI) in Europe. *Atmosphere*, 7(6), p. 80. https://doi.org/10.3390/atmos7060080.
– Salmela, T., Nevala, H., Nousiainen, M. and Rantala, O., 2021. Proximity tourism: A thematic literature review. *Matkailututkimus*, 17(1), pp. 46-63. https://doi.org/10.33351/mt.107997.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

As is well known, proximity tourism is gaining ground as an emerging trend in the post pandemic era, with an increasing number of people choosing destinations within easy reach of urban areas. In this context, mountain and alpine areas become favoured locations for those seeking refuge from the city, prompting practitioners to carefully evaluate the impact of such flows on the local economic and environmental fabric. At the same time, climate change presents new challenges for mountain tourism, particularly winter tourism, negatively affecting the reliability of seasons and the availability of natural resources. These changes require a strategic response from mountain destinations, which must reconsider and adapt their tourism offerings to the new climatic conditions. Prominent in this context is the importance of measurement tools such as the Holiday Climate Index (HCI) and the Climate Index for Tourism (CIT) used to assess a specific location's climatic propensity for tourism. These indices consider variables such as temperature, rainfall, and wind to determine the ideal periodicity of tourist visits, orienting proximity flows accordingly. To implement this research, a comprehensive methodology has been devised. It consists of (1) Climate Analysis: The study utilises climate data from both model and station. This data, combined with tourist information, forms the basis for developing two questionnaires to understand tourist preferences. (2) Questionnaire Development: The first questionnaire is designed to capture the preferences of skiers, focusing on both climatic factors and the tourist service offerings. The second one explores alternative preferences among tourists, considering both skiers and non-skiers, and considers the presence or absence of snow. (3) Creation of the Winter Tourist Index (WTI): By averaging the results from both questionnaires, the study will construct the WTI, which reflects the overall preferences of winter tourists in the mountains and is expected to serve as a valuable tool for assessing and adapting tourism offerings to the evolving climatic conditions. The research aims to offer an integrated approach to sustainably enhancing tourism in mountain regions. By combining climate data with tourist preferences, the study seeks to provide a comprehensive assessment of the appeal of mountain destinations during the winter season.



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COURSE XXXIX cycle - 2nd year

RESEARCH TITLE Student Housing and the Urban Geography of Turin: Spatial Patterns, Market Dynamics and Modelling Perspectives

TUTOR(S) Marco SANTANGELO, Giovanna SEGRE, Roberto LEOMBRUNI

ACADEMIC CONTEXT

– Smith, D., 2005. "Studentification": the gentrification factory?. In: Atkinson R., Bridge G., eds., *Gentrification in a Global Context: The New Urban Colonialism*. London: Routledge, pp. 72-89.
– Cenere, S., Mangione, E., Santangelo, M. and Servillo, L., 2023. Setting up a University City. Geographies of Exclusion in North Turin. *Tijdschrift voor Economische en Sociale Geografie*, 114, pp. 400-414.
– Boeing, G. and Waddell, P., 2017. New Insights into Rental Housing Markets across the United States: Web Scraping and Analyzing Craigslist Rental Listings. *Journal of Planning Education and Research*, 37, pp. 457-476.
– Jackson, J., Forest, B. and Sengupta, R., 2008. Agent-Based Simulation of Urban Residential Dynamics and Land Rent Change in a Gentrifying Area of Boston. *Transactions in GIS*, 12(4), pp. 475-491.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This doctoral research investigates the housing geographies of non-resident students in Turin, with a focus on their interaction with the city's rental market and urban transformation processes. It combines administrative student data, a large-scale web-scraped database of rental listings, and a dedicated student survey (2024/25), producing a comprehensive picture of student demographics, housing supply, costs, and lived experiences. Particular attention is given to the biases in domicile declarations and the need to triangulate quantitative and qualitative sources.

Methodologically, the research develops a simulation module embedded in a Civic Digital Twin framework, in collaboration with Fondazione Bruno Kessler. The model is structured as a Discrete Event Simulator (DES), drawing on agent-based logics but operating at an aggregated level of statistical zones. It incorporates spatial accessibility, saturation thresholds, and penalisation functions to explore how student demand redistributes under different housing and policy scenarios.

The aim is not prediction but heuristic exploration: the simulation tests how accessibility, housing availability, and policy interventions—such as the creation of new PBSA or improved transport infrastructure—affect student housing allocation, concentration, and displacement across the city. Preliminary results highlight the sensitivity of spatial patterns to accessibility penalties and saturation thresholds, underscoring the precarious and uneven nature of student housing geographies.

By integrating large-scale data, survey insights, and a simulation framework, the research contributes to debates on studentification, housing precarity, and urban governance. It provides both a grounded empirical account of student housing in Turin and a methodological platform for scenario building and policy reflection.

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COURSE	XXXIX cycle - 2nd year
RESEARCH TITLE	River Sensitive City. Sensible Gaze to Reassemble Entanglements within Urban Water
TUTOR(S)	Loris Antonio SERVILLO, Daniel Julien FLORENTIN

ACADEMIC CONTEXT

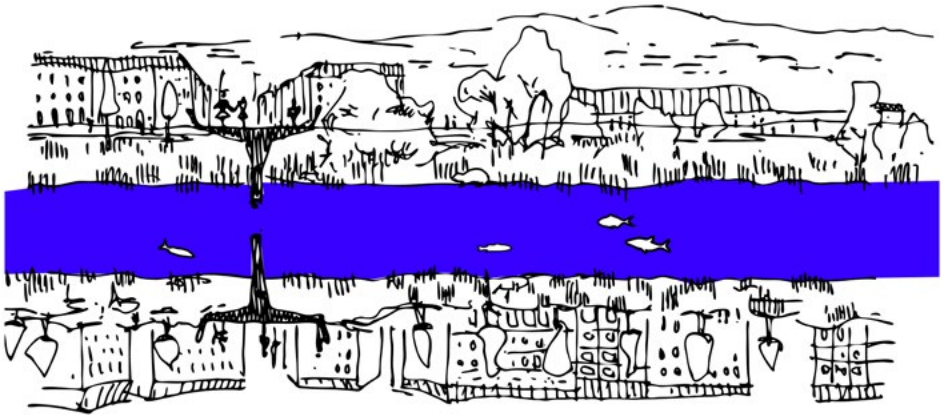
– Barchetta, L., 2021. *La Rivolta del Verde. Nature e Rovine a Torino* (I). Milano: Agenzia X.
– Wong, T.H.F., Rogers, B.C. and Brown, R.R., 2020. Transforming Cities through Water-Sensitive Principles and Practices. *One Earth*, 3, pp. 436-447.
– Boelens, R., Hoogesteger, J., Swyngedouw, E., Vos, J.and Wester, P., 2016. Hydrosocial Territories: a Political Ecology Perspective. *Water International*, 40(1), pp. 1-14.

EXTERNAL COLLABORATIONS

– Financiers / Associated Entities: Compagnia di San Paolo, Città di Torino
– Associated research lab: Future Urban Legacy Lab at Politecnico di Torino

HIGHLIGHTS OF THE RESEARCH ACTIVITY

In recent decades, prevailing approaches to governing water and aquatic spaces are increasingly recognized as inadequate in addressing evolving social expectations and growing environmental vulnerabilities. Despite the proliferation of strategies, projects, and political frameworks regarding the transformation of current water systems, hydraulic-bureaucratic administrations and capitalist imaginaries still dominate. At the same time, decentralized and sustainable models such as the *Water Sensitive City* remain difficult to mainstream. Following these premises, this doctoral thesis asks how new sensitivities to urban water can generate operational responses that redefine the river-city relationship in the European context?



The research aims to contribute to the ongoing debate on the alternative ways of urban water management and their implications on planning, urban design, and spatial norms. Similarly to many other European cities, Turin historically developed around water, but urbanization favored functional, hydraulic approaches, leading to pollution, privatization of riverfronts, and weakened socio-natural ties. Recently, the Municipality has expressed renewed interest in its rivers through initiatives such as *Torino e i suoi fiumi* and participation in the Water Sensitive City EU Urban Agenda Partnership. This positions Turin's riverscape as a case study for exploring the practical application of novel theoretical perspectives on urban water.

Adopting an inductive approach, this doctoral thesis qualifies the recent theoretical shifts related to urban water across Urban Water Management, Political Ecology, and Environmental Humanities. Subsequently, through a study of references, it explores how the specific concerns in these renewed water frameworks are addressed by local governments in Europe. Finally, it focuses on the Turin case study to discuss alternative imaginaries informed by theoretical and practical inputs and the planning tools that can support their realization in the local context.

This doctoral thesis aims to contribute to the debate on how novel approaches to urban water management, such as the *Water Sensitive City*, can be operationalized. Additionally, it offers concrete suggestions for strategic urban transformation, positioning water not only as a global challenge but also as an opportunity to generate local benefits. This perspective is especially relevant for cities like Turin, which aspire to long-term resilience and economic prosperity and view water as a central driver of transformation.

XL CYCLE - 1st YEAR STUDENTS

NAME **Sabina ACCOGLI**
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COURSE XL cycle - 1st year

RESEARCH TITLE metaPoliTO: XR Strategies for Designing the University Metaverse and Academic Heritage

TUTOR(S) Anna OSELLO, Francesca Maria UGLIOTTI

ACADEMIC CONTEXT

- Ball, M., 2022. *The metaverse: And how it will revolutionize everything*. New York: Liveright.
- Kamińska, D., Sapiński, T., Wiak, S., Tikk, T., Haamer, R.E., Avots, E., Helmi, A., Ozcinar, C. and Anbarjafari, G., 2019. Virtual Reality and Its Applications in Education: Survey. *Information*, [e-journal] 10(10), p. 318. https://doi.org/10.3390/info10100318
- Mitra, S., 2023. Metaverse: A Potential Virtual-Physical Ecosystem for Innovative Blended Education and Training. *Journal of Metaverse*, [e-journal] 3(1), pp. 66-72. https://doi.org/10.57019/jmv.1168056.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Immersive technologies are emerging as new visual and communicative languages, extending the possibilities of representation beyond two-dimensional boundaries. Within this framework, the metaverse is conceived not as a replication of physical reality, but as a designed space that interprets it, transforming data, relationships, and intangible content into experiential and interactive forms.

This research, developed through the case study of the Politecnico di Torino, aims to define a methodology for designing a university metaverse capable of communicating the three institutional missions — teaching, research, and third mission. The objective is to make accessible and intelligible the themes, interdisciplinary relationships, collaborative dynamics, and symbolic content that constitute the intangible heritage of the university. The work is based on a process of inquiry and critical analysis aimed at identifying requirements, characteristics, and indicators to capture the complexity of the metaverse in relation to its content. The aggregation of knowledge into conceptual clusters provides the foundation for an initial methodological framework articulated in three phases. First, semantic analysis and data collection from scientific publications, research projects, and disciplinary themes are conducted, using clustering and conceptual mapping to highlight interdisciplinary connections. Second, the data are translated into spatial forms through formal criteria, architectural metaphors, and generative algorithms, producing configurations such as disciplinary archipelagos, bridges between fields, and semantic gradients. Finally, XR design techniques create immersive and multisensory environments that enhance the three university missions through visual and navigable representations, in which space and form act as narrative interfaces for academic knowledge.

Tested at the Politecnico di Torino and conceived as a replicable framework for other educational contexts, the project proposes a communication model where space functions as a cognitive device and form as a narrative interface. The metaverse is thus envisioned not as a mere simulation of reality, but as an interpretative tool that renders knowledge experiential while enhancing and disseminating the intellectual heritage of the university.

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COURSE XL cycle - 1st year

RESEARCH TITLE Development of People-Centric Generative Urban Design for Smart Districts: An AI-based approach

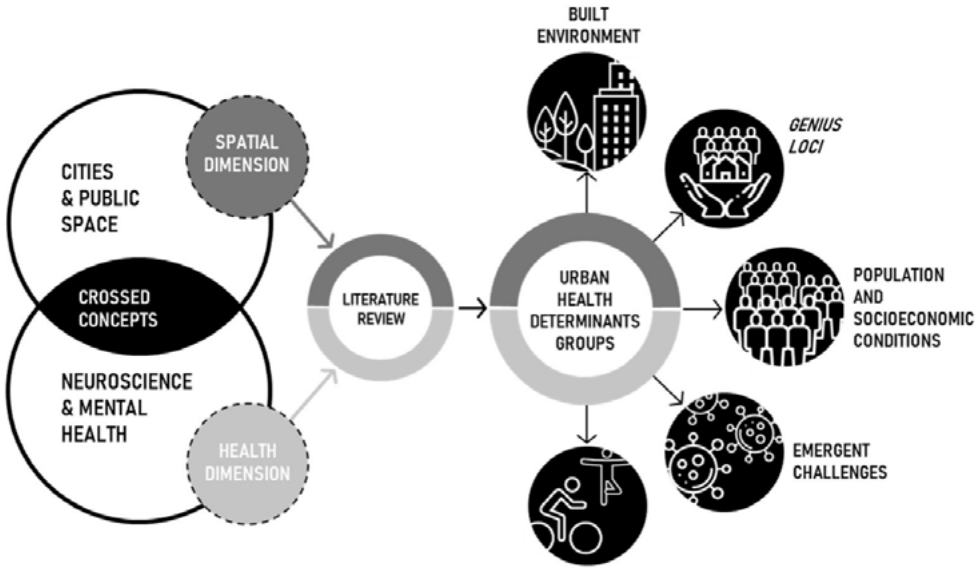
TUTOR(S) Sara TORABI MOGHADAM, Gianvito URGESE, Patrizia LOMBARDI

ACADEMIC CONTEXT

– Abed, A. *et al*., 2025. Neurourbanism and its influence on public outdoor spaces and mental health. *International Journal of Low-Carbon Technologies*, 20, pp. 249 268. https://doi.org/10.1093/ijlct/ctaf001.
– Egbosimba, B., 2025. Urbanization and Mental Health: Rethinking Public Spaces to support well-being. *International Journal of Healthcare Sciences*, 12(2), pp. 71-83. https://doi.org/10.5281/zenodo.14788866.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Based on World Bank in 2021, 70% of urban residents live in informal settlements lacking amenities which increases stress and adverse mental health outcomes. Global population is projected to reach 68% by 2050 based on United Nations in 2022. The rapid urbanization in smart districts has transformed societies and possessed significant challenges to mental health through urban design, green innovation, migration, urban infrastructure, and urban stress associated with living in the city. While artificial intelligence (AI) and digital infrastructure optimize traffic flow, energy use, and surveillance, they are often prioritizing technological efficiency over human well-being which make them neglect the psychological and social needs of urban residents. Neuro-urbanism is a multi-disciplinary field that integrates psychology, neuroscience and urban science to enhance the health and well-being of individuals through addressing mental health challenges within built environments. They help shape human responses while consistently affecting our cognition and perception of stress. The major aim of this thesis is to develop an AI-based digital solution to develop people-centric design based on machine learning models and stakeholder's input to enhance decision-making process. The research, therefore, is also dealing with the integration of participative decisional processes of urban planners, mental health organizations, and the citizens. The expected result of this thesis is to develop a participatory AI-based tool where stakeholder's input will refine the generative algorithms to co-create spaces in smart districts that enhance mental health and well-being. The tool will be implemented through quantitative and qualitative methodologies on a real-world case study. This thesis, by merging neuro-urbanism and AI-based digital solutions with participatory approach, will create a path toward cities where technology benefit the mental well-being while developing cities that support healthier and more resilient populations.



NAME **Pietro BATTAGLINI**
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COURSE XL cycle - 1st year

RESEARCH TITLE De-commodifying homeownership? The French OFS-BRS at the crossroads between public policies and housing tensions

TUTOR(S) Umberto JANIN RIVOLIN, Francesco CHIODELLI

ACADEMIC CONTEXT

- De Filippis, J., Stromberg, B. and Williams, O.R., 2018. W(h)ither the community in community land trusts?. *Journal of Urban Affairs*, 40(6), pp. 755-769.
- Le Brun, P., 2025. *Les organismes de foncier solidaires : les limites de la démarchandisation*, Métropolitiques.
- Madden, D.J. and Marcuse, P., 2016. *In Defense of Housing: The Politics of Crisis*. London and New York: Verso Books.
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HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research examines French Community Land Trusts – institutionalized through the *Organismes de Foncier Solidaire* (OFS), and the instrument of the *Baux Réels Solidaires* (BRS) – as forms of de-commodified housing policies.

The hypothesis holds that, in contexts marked by political opposition to social housing, OFS-BRS are implemented as instruments of formal compliance, fulfilling statutory zoning obligations while simultaneously eluding the "*très social*" ethos underpinning the law.

This contributes to legitimize the disinvestment in traditional public housing and preferences for homeownership strategies over support for vulnerable groups. The theoretical framework draws on Luigi Mazza, who conceives urban planning as a political practice that can be instrumentalized while remaining within legal boundaries.

Through qualitative methodology, the aim is to investigate how these policies (re)define the meaning of social housing within the framework of French legality.

NAME **Matteo BELTRAMO**
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COURSE XL cycle - 1st year

RESEARCH TITLE Housing as Asset: between financialization and regulation of short-term rentals. Evidence from Europe and Italy

TUTOR(S) Francesco CHIODELLI, Mara FERRERI

ACADEMIC CONTEXT

– Gil, J., 2024. Not gentrification, not touristification: Short-term rentals as a housing assetization strategy. *J. Urban Aff.*, 46, pp. 1125-1145.
– Gyódi, K., Mazur, J. and Cocola-Gant, A., 2025. Barcelona as a case study for the effectiveness of short-term rental market regulations. *Cities*, 162, 105915.
– Aguilera, T., Artioli, F. and Colomb, C., 2025. *Housing Under Platform Capitalism: The contentious regulation of short-term rentals in European cities.* University of California Press.

EXTERNAL COLLABORATIONS

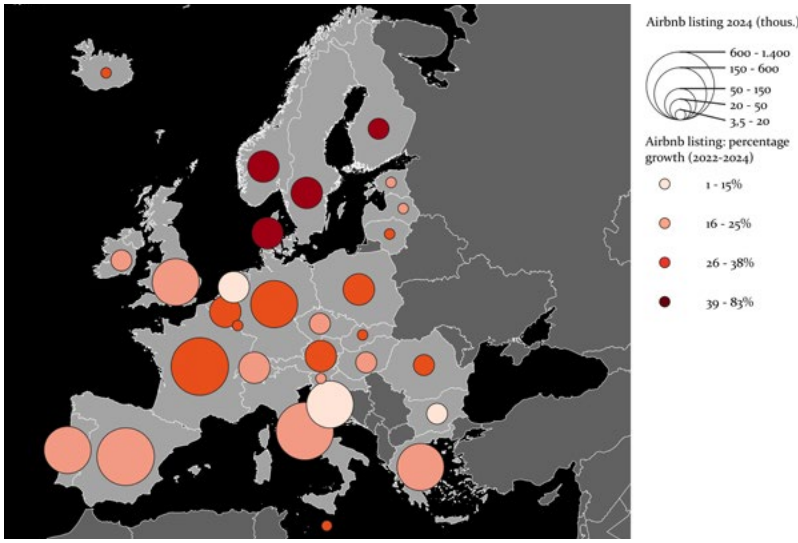
– FULL – Future Urban Legacy Lab

HIGHLIGHTS OF THE RESEARCH ACTIVITY

In the last fifteen years, digital platforms for short-term rentals, with Airbnb at the centre of political and academic debate, have had a profound impact on the transformation of the tourism and housing markets. While the rhetoric of the sharing economy initially legitimised them, it is evident that they have, in fact, encouraged speculation and assetisation of housing, thereby affecting rents and the availability of long-term accommodation. These effects have fuelled conflicts with traditional hospitality and generated regulatory pressure, with very different approaches: in cities such as Berlin, Barcelona and Amsterdam, restrictions are well established; in other contexts, indirect regulation of the rental market acts as a price cap; elsewhere, such as in Italy, the debate remains fragmented and lagging behind.

Adopting an analytical perspective that highlights the processes underlying the large-scale spread of short-term accommodation, the research focuses on a comparative analysis at European level. The present investigation is predicated on the assumption that the pervasive growth of platforms has been facilitated by long-term structural processes. The gradual decline of the welfare state in the 1970s, the deregulation of mortgage markets and the global financialisation of real estate markets between the 1980s and the 2008 crisis have contributed to the establishment of the concept of housing primarily as a financial asset. In this context, platforms that mediate the supply of short-term accommodation have established themselves as significant economic and political actors, thereby exacerbating existing problems of access to housing.

The survey is based on a dataset of over 5.2 million Airbnb listings in 30 states, processed using statistical analysis and GIS mapping, integrated with socio-economic variables relating to rental systems, housing welfare and real estate markets. The following essay will provide a comprehensive overview of the relevant literature on the subject. The initial results reveal clear distinctions. Countries with unitary systems and a structured social rental sector – Germany, the Netherlands and Sweden – show less professionalisation among hosts. In contrast, dualistic Mediterranean markets – Italy, Spain, Greece and Portugal – are characterised by high private ownership and heavy use of STRs as a strategy for generating additional income or for buy-to-let investment.



Interpreting the phenomenon through different theoretical and analytical lenses is useful to recognise the platformisation of tourist rentals as a significant factor in the economic and social changes occurring in contemporary housing markets. The broader objective of the research is to provide empirical evidence that can inform scientific and political debate and contribute to the development of effective, contextualised policies.

NAME **Giulia CORGNIER**
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COURSE XL cycle - 1st year

RESEARCH TITLE The reproduction of carcerality within the city of Turin: racialized detention and control in ordinary Europe

TUTOR(S) Michele LANCIONE

ACADEMIC CONTEXT

– Gilmore, R.W., 2022. *Abolition Geography: essays towards liberation*. Verso, London New York.
– Moran, D., Gill, N. and Conlon, D., eds., 2013. *Carceral spaces: mobility and agency in imprisonment and migrant detention*. Ashgate Publishing Limited, Farnham, Surrey.
– Moran, D., Turner, J. and Schliehe, A.K., 2017. Conceptualizing the carceral in carceral geography. *Progress in Human Geography*, 42, pp. 666-686.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research explores how carcerality is reproduced and diffused across the urban fabric of Turin, with a particular focus on the experience of racialized and undocumented migrant and refugee populations. The fieldwork is situated in the neighborhood of Barriera di Milano, in the northern part of the city, a highly stigmatized, policed, and militarized neighborhood according to crimmigrating narratives.

Turin's political and geographical configuration offers a crucial context for understanding how carcerality materializes beyond the CPR (Pre-Removal Detention Centre) and constitutes in the everyday life of those undocumented. The project thus explores the carceral life of undocumented individuals living with the constant threat of detention and deportation in the context of Barriera di Milano in Turin.

Building on critical carceral geographies and border studies, the project conceptualizes carceral continuums as processes unfolding across legal, spatial, and affective spheres beyond normally conceived detention spaces. The analysis is structured around three interrelated levels. First, carceral continuums are examined within the legal and bureaucratic spheres – namely the wider fortressed and national power frameworks. Second, particular attention is given to the wider affective political economy of diffused carcerality in the urban space. Third, the spread of carcerality beyond conventional detention facilities is examined focusing on the inherent affective and subjective dimensions.

The project employs an ethnographic methodology, combining long-term participant observation with semi-structured interviews. This approach enables a grounded understanding of how carcerality is lived, negotiated and resisted in the urban space, drawing entanglements among urban space, carcerality and migration, and conceiving carcerality as a continuum that extends beyond topographical borders and normally conceived carceral spaces. To this end, I draw upon four main conceptual frameworks – decolonial approach, feminist theory, relational spatiality and abolitionism.

NAME **Elena CORONA**
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COURSE XL cycle - 1st year

RESEARCH TITLE Land Surface Temperature Reduction in Semi-Arid African Cities: N'Djamena, Niamey, and Ouagadougou

TUTOR(S) Maurizio TIEPOLO, Alessandro PEZZOLI, Fabio GIULIO TONOLO

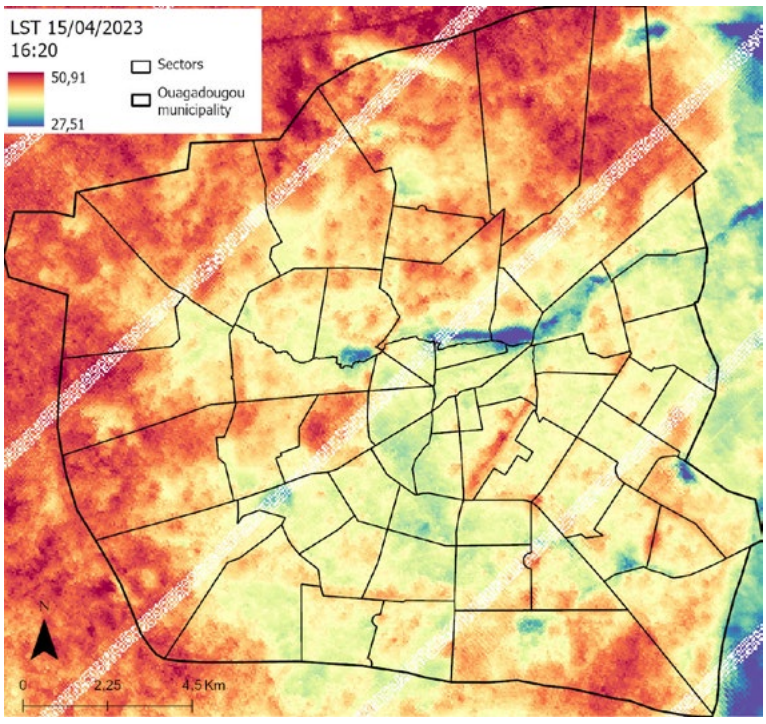
ACADEMIC CONTEXT

– Chakraborty, T., Biswas, T., Campbell, L.S., Franklin, B., Parker, S.S. and Tukman, M., 2022. Feasibility of afforestation as an equitable nature-based solution in urban areas. *Sustainable Cities and Society*, 81, p.103826. https://doi.org/10.1016/j.scs.2022.103826.
– Simwanda, M., Ranagalage, M., Estoque, R.C. and Murayama, Y., 2019. Spatial analysis of surface urban heat islands in four rapidly growing African cities. *Remote Sensing*, 11(14), p.1645. https://doi.org/10.3390/rs11141645.
– Tiepolo, M., Galligari, A., Tonolo, F.G., Moretto, E. and Stefani, S., 2023. LST-R: A method for assessing land surface temperature reduction in urban, hot and semi-arid Global South. *MethodsX*, 10, p.101977. https://doi.org/10.1016/j.mex.2022.101977.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Urban areas in hot, semi-arid regions are becoming increasingly vulnerable to climate change, with surface temperatures often exceeding 40°C during the dry season. Rapid urban growth, combined with limited adaptive capacity, aggravates heat-related risks, threatening populations, infrastructures, and urban sustainability. Nevertheless, research on urban heat dynamics and mitigation remains mostly focused on cities in the Global North, leaving a notable gap in the knowledge for semi-arid African contexts.

This research investigates the Land Surface Temperature (LST) in three Sahelian large capital cities – N'Djamena (Chad), Niamey (Niger), and Ouagadougou (Burkina Faso) –, its relationship with urban morphology, and the feasibility and equity of reducing it. These cities are characterized by large size, rapid physical expansion, and increasing exposure to extreme heat, making them critical contexts for developing effective and equitable adaptation strategies.



The research adopts a multidisciplinary approach integrating satellite data analysis, spatial statistics, and field interviews. The study is structured in three main phases. First, characterize LST in this area, using high-resolution satellite imagery acquired during the hottest periods, enabling a comprehensive understanding of temperature distribution patterns. Second, identify the relationship between LST and urban morphology (land use/land cover). Instead of conventional Local Climate Zones, cities' administrative subdivisions are used as the reference spatial units, ensuring that findings are directly applicable to governance and planning processes. Third, assess the feasibility and social equity of potential LST reduction policies (e.g., greening and barren land reduction). This phase focuses on concrete, actionable solutions: How much greening is needed? Where exactly should interventions occur? Will these measures be sufficient and socially equitable? These are crucial questions for cities facing climate, economic, and governance pressures.

The project aims to provide policymakers, urban planners, and grassroots groups with suggestions supporting feasible and equitable heat mitigation strategies. Additionally, the research aligns with the Sendai Framework for Disaster Risk Reduction 2015–2030 and the United Nations Sustainable Development Goals (SDGs) 11 and 13, contributing to the development of more sustainable and resilient cities in hot, semi-arid African regions.

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COURSE	XL cycle - 1st year
RESEARCH TITLE	Nature-based Solutions in vulnerable coastal settlements: Experiences, challenges, and opportunities in the Brazilian context
TUTOR(S)	Angioletta VOGHERA, Israa MAHMOUD

ACADEMIC CONTEXT

- Iwama, A.Y., Araos, F., Anbleyth-Evans, J., Marchezini, V., Ruiz-Luna, A., Ther-Ríos F., Bacigalupe G. and Perkins P.E., 2021. Multiple knowledge systems and participatory actions in slow-onset effects of climate change: Insights and perspectives in Latin America and the Caribbean. *Current Opinion in Environmental Sustainability*, [e-journal] 50, pp. 31-42. http://dx.doi.org/10.1016/j.cosust.2021.01.010.
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HIGHLIGHTS OF THE RESEARCH ACTIVITY

The debate about the effects of climate change has become increasingly relevant as natural hazards grow more frequent. Although the consequences of climate change are global, countries in the Global South experience greater impacts from climate-related disasters. Coastal communities are particularly affected, whether due to their proximity to the coast or the degradation of local ecosystems.

In the Brazilian context, riverine, quilombola, and fishing communities are often affected by climate-related disasters. The frequency and intensity of these events increase the environmental and social fragility of these territories, which already suffer from contamination of water bodies, landslides, biodiversity loss, and pressures related to urban expansion, mining, and agribusiness (Ministério do Meio Ambiente, 2016).

To mitigate the effects of climate change, cities are pursuing long-term, cost-effective solutions that reduce disparities between urban and natural environments. In this context, the application of Nature-based Solutions (NBS) has emerged as a promising approach to adapt and transform cities into spaces that are integrated with local ecosystems, leveraging natural landscape features and employing low-cost technologies (European Commission, 2019).

To address these challenges, NBS must be adapted to local conditions, taking into consideration traditional local knowledge (Lam et al., 2020) and engaging the population in initiatives that ensure co-production (Brandsen & Honingh, 2018) in the development of strategies and governance plans. The co-production of knowledge can be a tool to amplify the voices of multiple actors in the process of developing tools for local governance, advancing environmental justice, and strengthening democratic processes to tackle climate-related challenges.

This research project aims to: (i) investigate the extent to which NBS in Brazil are developed through participatory, inclusive, and context-specific processes; (ii) examine the integration of local knowledge in the planning and implementation of NBS in coastal areas of Brazil; and (iii) compare NBS initiatives across diverse Brazilian coastal cities in order to identify good practices related to the co-production of NBS.

NAME **Federico FARINA**
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COURSE	XL cycle - 1st year
RESEARCH TITLE	Move for clean air. Urban planning as a vector for sustainable mobility actions
TUTOR(S)	Carolina GIAIMO, Fabio ROMEO

ACADEMIC CONTEXT

- Donati, A. *et al*., 2024. *7° Rapporto Mobilitaria 2024: Qualità dell'aria, sicurezza stradale e città 30 per spazi sicuri. La giusta transizione nelle grandi città italiane*. Kyoto Club - CNR-IIA.
- Lanza, G., Pucci, P. and Carboni, L., 2024. Accessibility Through Active Mobility for Sustainable and Inclusive Cities: An Inclusive Accessibility by Proximity Index (IAPI). In: Tira M., Tiboni M., Pezzagno M. and Maternini G., eds. *New Challenges for Sustainable Urban Mobility: Volume I*. ECOOP 1987. Cham: Springer. https://doi.org/10.1007/978-3-031-62248-9_1.
- Unione Europea, 2008. Direttiva 2008/50/CE del Parlamento Europeo e del Consiglio del 21 maggio 2008 relativa alla qualità dell'aria ambiente e per un'aria più pulita in Europa. *Gazzetta ufficiale dell'Unione europea*, L 152, 11 giugno 2008, pp. 1-44. https://eur-lex.europa.eu/legal-content/IT/ALL/?uri=CELEX:32008L0050.

EXTERNAL COLLABORATIONS

- Ministero dell'Ambiente e della Sicurezza Energetica

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Italy is currently facing an urgent environmental and legal challenge in the form of aligning with the European Union's air quality standards. The European Commission has issued a formal notice under Article 260(2) of the Treaty on the Functioning of the European Union (TFEU) as part of infringement procedure INFR (2014) 2147 for failing to comply with the Court of Justice of the EU's judgment dated 10 November 2020 (Case C-644/18). The Court of Justice of the EU ruled that Italy had persistently and systematically exceeded PM10 particulate matter concentration limits in several air quality zones, in violation of Directive 2008/50/EC. In light of this, the research focuses on identifying strategic and operational tools to reduce atmospheric pollutants and climate-altering agents. The approach emphasises the need for coordinated, multi-sectoral planning to avoid isolated and ineffective interventions. Planning instruments, such as Air Quality Plans, Sustainable Urban Mobility Plans, Urban Traffic Plans and General Regulatory Plans, must be harmonised to ensure coherent and impactful action. Rather than operating in isolation, these tools should work in synergy with a shared vision and integrated objectives. A key element of this strategy is the active involvement of local authorities, who are best placed to develop site-specific solutions that address the unique characteristics of each area. The domain of sustainable mobility in particular offers significant potential to reduce emissions, especially in densely populated urban areas. Investments should prioritize public transportation, active mobility (walking and cycling), and the transition to low-emission vehicles. Furthermore, improving air quality should be viewed as not only a technical and regulatory challenge, but also a cultural one. Engaging local communities, raising public awareness and promoting sustainable behaviours are essential to achieving long-term results. Citizens must be empowered to understand the impact of their choices and encouraged to adopt environmentally responsible habits. In order to support this transition, the regulatory and financial framework must be reviewed and updated based on a comprehensive assessment of the impact of the measures that have been implemented so far. Only through integrated planning, local engagement and strategic investment can Italy effectively respond to EU requirements and improve the health and well-being of its population.

NAME **Greta MAZZOCCHI**
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COURSE	XL cycle - 1st year
RESEARCH TITLE	Fire (Im)Mobilities: Exploring the Relationships between human and non-human Mobilities and Fires in Brazil
TUTOR(S)	Lorenza B. FONTANA, Giovanni BETTINI

ACADEMIC CONTEXT

– Bilbao, B.A., Ferrero, B.G., Falleiro, R.M., Moura, L.C. and Fagundes, G.M., 2025. Traditional fire uses by Indigenous Peoples and Local Communities in South America. In: A. Fidelis and V.R. Pivello, eds. *Fire in the South American Ecosystems*. Cham: Springer, pp. 39–81. https://doi.org/10.1007/978-3-031-89372-8_3.
– Boas, I., Wiegel, H., Farbotko, C., Warner, J. and Sheller, M., 2022. Climate mobilities: migration, im/mobilities and mobility regimes in a changing climate. *Journal of Ethnic and Migration Studies*, 48(14), pp. 3365-3379. https://doi.org/10.1080/1369183X.2022.2066264.
– Coradin, C. and Oliveira, S.S., 2024. Contribuições do conceito de corpo-território e dos feminismos comunitários para pensarmos na construção de Territórios Saudáveis e Sustentáveis. *Saúde em Debate*, 48(Special 1), e8731. https://doi.org/10.1590/2358-28982024E18731I.
– Ringrose, J., Warfield, K. and Zarabadi, S., eds., 2021. *Feminist Posthumanisms, New Materialisms and Education*. London: Routledge.

EXTERNAL COLLABORATIONS

– University of São Paulo (USP), Department of Anthropology, Brazil: visiting and research period.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Fire is an inherently dynamic force, embodying movement and transformation at its core. It does not only shape ecosystems but also sets into motion a wide array of mobilities – of people, animals, plants, and even ideas – challenging static notions of place, belonging, and adaptation. Fire challenges conventional understandings of mobility and immobility itself: its movement is not always geospatial, nor linear. It can recur, linger, or transform in the very same location – making it a form of mobility that unfolds through cycles, intensities, and temporal ruptures. In this sense, fire is mobile even in its apparent immobility. Rural fires are a complex phenomenon with ecological, social, and political dimensions, and they are increasingly becoming significant in the context of climate change, both as a consequence of shifting environmental conditions and as a factor causing destruction. While traditional fire studies have focused on environmental impacts and mitigation, and climate migration research has prioritized large-scale human displacement, the small-scale and context-specific relationships between fire and (im)mobility – particularly in the Global South – has remained largely underexplored. When this nexus is considered, scholarly attention often concentrates on post-disaster recovery in Global North settings, overlooking the entangled socio-political, ecological, and epistemic factors shaping fire (im)mobilities. This thesis introduces and develops the concept of fire (im)mobilities to investigate how fires influence patterns of movement and stillness across human and more-than-human worlds, specifically in Brazil. Influenced by a feminist posthuman methodology, it explores how fire-related (im)mobility is co-produced through structures of gendered powers, economic inequalities, speciesism, and colonial legacies. It challenges dominant Western, eco-managerial approaches that frame fire primarily as a risk to be suppressed, exposing the epistemic injustices embedded in the marginalization of rural and Indigenous fire knowledge systems. Through these lenses, fire is better understood as an anthropo-ecological agent that reflects broader issues of environmental and social governance, land use, and capitalist exploitation, as well as an agent of life and reproduction. By doing so, this work reconceptualizes movement and stillness beyond the human scale, expanding the field of climate mobilities beyond anthropocentric tendencies.

NAME **Saba MIRZAHOSSEINI BAROUGH**
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COURSE	XL cycle - 1st year
RESEARCH TITLE	Participatory Spatial Decision Support System for Nature-Based Solutions Planning and Monitoring
TUTOR(S)	Sara TORABI MOGHADAM, Stefano PENSA

ACADEMIC CONTEXT

- EU PROJECT VARCITIES – EURAC Research (Oct 2022- Oct 2024).
- WP7 – Social Return Investment Analysis for 7 Pilot Cities, through co-creative workshops.
- Mirzahosseini Barough, S., Bonoli, A. and Bisello, A., 2024. *Valuation of cultural ecosystem services of innovative nature-based solutions in an urban context: the case study of the EU project VARCITIES in Gzira, Malta*. University of Bologna. Dissertation or Thesis. DOI: 10.13140/RG.2.2.23153.08806.
- Vasiliu, E.E., Torabi Moghadam, S., Bisello, A. and Lombardi, P., 2024. Visionary Nature-Based Solutions Evaluated through Social Return on Investment: The Case Study of an Italian Urban Green Space. *Smart Cities*, 7(2), pp. 946-972. DOI: 10.3390/smartcities7020040.

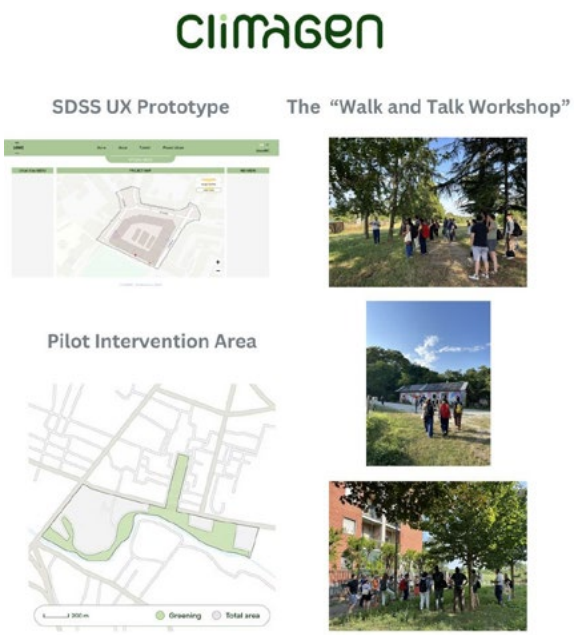
EXTERNAL COLLABORATIONS

- LINKS Foundation (Co-financer of the PhD grant)
- EU Project CLIMAGEN (Research collaboration)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Traditional urban planning suffers from rigid top-down processes and fragmented thinking that fail to address complex, interconnected urban challenges. Most critically, conventional planning excludes communities it serves, creating a democratic deficit that undermines intervention effectiveness while leaving local knowledge, cultural values, and lived experiences as untapped resources. This research develops and validates a Participatory Spatial Decision Support System (SDSS) for Nature-Based Solutions (NBS) planning and monitoring, aiming to enhance urban resilience, environmental quality, and social equity through democratic participation that bridges technical expertise with local community knowledge.

The methodology integrates qualitative participatory approaches with quantitative spatial analysis, creating dynamic iterative feedback loops. Key technical SDSS components include advanced GIS functionality, Multi-Criteria Analysis utilizing AHP-TOPSIS methodology across environmental, social, and economic dimensions, and a comprehensive NBS Catalogue categorizing 6 NBS groups, mapping 17 ecosystem services (provisioning, regulating, cultural), and linking them to 12 urban challenges including Climate Resilience and Social Justice. The system enables Scenario Building and Dynamic Impact Visualization, allowing real-time exploration of intervention alternatives while facilitating Co-benefits and Trade-offs Visualization to ensure transparent, multifaceted decision-making.



The integrated participatory framework encompasses co-diagnostic (community-led priority identification), co-design (user-centered workshops), co-implementation (community-engaged execution), co-evaluation (collaborative outcome assessment), and continuous feedback integration. This framework is actively applied through co-design workshops in Mirafiori Sud, Torino, within EU Project CLIMAGEN, focusing on needs assessment, citizen knowledge integration, expert validation, and incorporation of citizen science data from community gardens like Orti Generali.

Expected contributions include developing a robust Participatory SDSS delivering structured NBS classification, comprehensive multi-dimensional impact assessment, and dynamic co-benefits/trade-offs visualization. The research aims to accelerate NBS adoption, demonstrate participatory governance effectiveness, and empower communities to co-create resilient, inclusive cities through democratized planning. Current progress includes completed PhD courses, ongoing Systematic Literature Review, and active tool development with co-design workshops.

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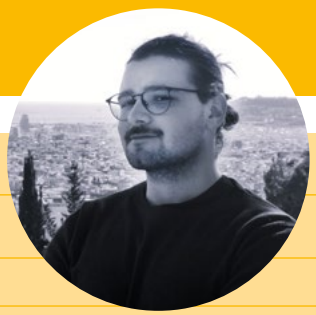


COURSE	XL cycle - 1st year
RESEARCH TITLE	Urban Green Space Planning for Safety: Strategies to Enhance Security, Resilience and Social Cohesion
TUTOR(S)	Carolina GIAIMO, Michele GRIMALDI

ACADEMIC CONTEXT

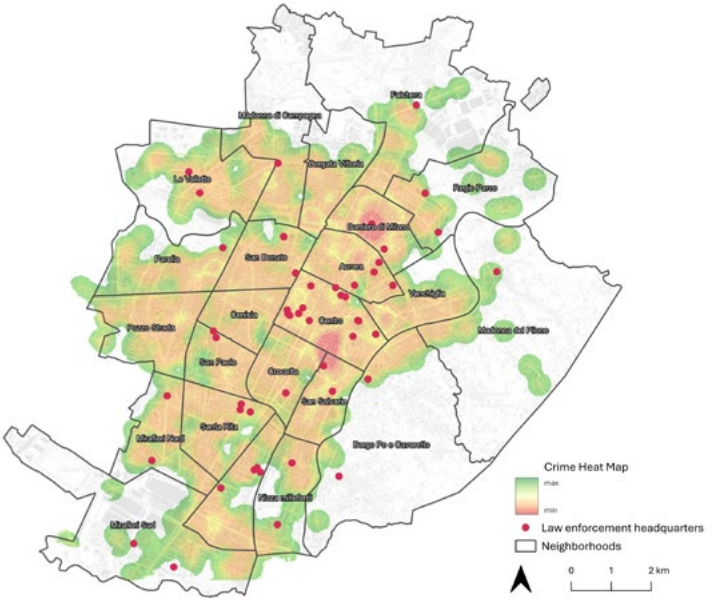
- Coppola E., Fasolino I. and Grimaldi, M., eds., 2025. La città si-cura a partire dagli spazi verdi urbani. *Urbanistica Informazioni*, 319, pp.13–57.
- Cozens P. and Love T., 2015. A review and current status of Crime Prevention through Environmental Design (CPTED). *Journal of Planning Literature*, 30(4), pp. 393-412.
- Ekblom, P., 2011. Deconstructing CPTED… and reconstructing it for practice, knowledge management and research. *European Journal on Criminal Policy and Research*, 7(1), pp. 7-28.
- Nobili, G., 2020. Le politiche di sicurezza urbana in Italia: lo stato dell'arte e i nodi irrisolti. *Sinappsi*, 2 Monographic issue, pp. 120–137.

EXTERNAL COLLABORATIONS

- Università di Salerno (co-financer)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Urban security has become a major concern for local governments, necessitating integrated strategies that encompass situational prevention, urban regeneration, and advanced technologies. The theoretical framework underpinning this research is Crime Prevention Through Environmental Design (CPTED), which emphasises the role of spatial design in reducing crime and enhancing perceived safety. Despite the extensive research that has been carried out on CPTED, there is still a significant lack of knowledge regarding the application of advanced spatial analysis techniques to assess the impact of specific morphological features of urban parks on crime patterns, particularly within the Italian context. This research addresses this gap through an in-depth case study of Turin, a city that has implemented several regeneration initiatives aimed at improving safety but still ranks among the least secure in Italy according to the Crime Index (Il Sole 24 Ore). The study pursues three main objectives:(to evaluate the correlation between morphological variables and reported crime rates in public parks; to develop design recommendations grounded in CPTED principles for the regeneration of selected parks; to formulate operational guidelines for integrating security-oriented design into urban planning regulations. The methodology employed in this study is a mixed-method approach, combining GIS spatial analysis, structured on-site observations, and user perception surveys. Spatial analysis, informed by crime data from 2018 to 2023, facilitates the identification of recurring patterns in crime hotspots. Environmental audits and perception studies, in turn, inform the development of context-sensitive design strategies. Preliminary findings reveal a negative correlation between morphological quality – such as line-of-sight, maintenance, and pathway legibility – and the density of nighttime offences, thereby highlighting the effectiveness of interventions aimed at improving visibility and spatial legibility. Notwithstanding the limitations of the research, which are associated with data availability and sample size, the objective is to furnish transferable recommendations for municipal policies that promote safer urban environments. The integration of CPTED principles with urban morphology studies introduces an innovative perspective with both scientific and operational implications, contributing to the achievement of SDG 11 on inclusive, safe, resilient, and sustainable cities.



NAME **Marco OBIALERO**
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COURSE	XL cycle - 1st year
RESEARCH TITLE	Very-High-Resolution (VHR) Optical Satellite Data for Environmental Monitoring
TUTOR(S)	Piero BOCCARDO

ACADEMIC CONTEXT

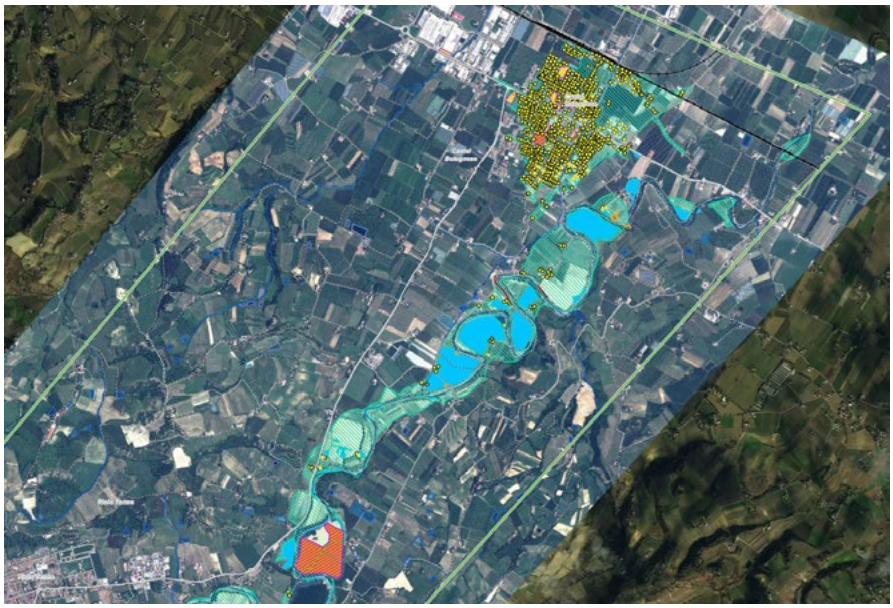
– Obialero, M. and Boccardo, P., 2025. Segmentation of Multitemporal PlanetScope Data to Improve the Land Parcel Identification System (LPIS). *Remote Sensing*, 17, 1962.
– Ghaffarian, S., Kerle, N. and Filatova, T., 2018. Remote Sensing-Based Proxies for Urban Disaster Risk Management and Resilience: A Review. *Remote Sensing*, 10, 1760.
– Eckerstorfer, M., Bühler, Y., Frauenfelder, R. and Malnes, E., 2016. Remote sensing of snow avalanches: Recent advances, potential, and limitations. *Cold Regions Science and Technology*, 121, pp. 126-140.

EXTERNAL COLLABORATIONS

– PIARC World Road Association
– AGEA AGenzia per le Erogazioni in Agricultura

HIGHLIGHTS OF THE RESEARCH ACTIVITY

The present research stems from the expanding role of Very High Resolution (VHR) optical constellations within the Earth Observation (EO) domain. Indeed, Very-High-Resolution (VHR) optical satellite data – defined as imagery with a ground sampling distance below four meters – has significantly transformed Earth Observation (EO) practices over the past decade. Such datasets are increasingly pivotal in environmental monitoring applications by merging high spatial resolution with variably high spectral and temporal performances, facilitating new analytical possibilities across environmental domains. This research investigates the scientific and operational potential of VHR optical satellite data for environmental monitoring through three focused fields of application: flood-induced road damage assessment, multi-temporal avalanche inventory construction, and delineation and characterization of agricultural parcels. The research adopts an inductive, case study-based methodology. Each case study evaluates current operational workflows employed by public agencies, identifies methodological bottlenecks, and tests alternative approaches that integrate VHR optical data to improve workflows accuracy, timeliness, and scalability. The expected contributions include the development of semi-automated procedures for flood damage mapping, scalable avalanche inventory protocols, and dynamic agricultural parcel characterization. Beyond technical improvements, the research aims to deliver actionable recommendations for public agencies responsible for disaster response, hazard monitoring, and agricultural management, thereby supporting the broader goals of environmental resilience, sustainable development, and data-driven governance. By critically assessing the integration of VHR optical satellite data into real-world operational practices, the study bridges the gap between technological innovation and practical application, offering insights that can inform both scientific advancement and policy-making in environmental monitoring.



NAME **Cristina PEZZOTTI**
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COURSE XL cycle - 1st year

RESEARCH TITLE Counter-mapping Bodyscapes. Investigating the Interscalar Continuum of Border Internalisation through the City

TUTOR(S) Giacomo PETTENATI, Magda BOLZONI

ACADEMIC CONTEXT

- Zaragocin, S. and Caretta, M.A., 2021. CuerpoTerritorio: A Decolonial Feminist Geographical Method for the Study of Embodiment. *Annals of the American Association of Geographers*, 111(5), pp. 1503-1518.
- Fauser, M., 2024. Mapping the internal border through the city: an introduction. *Ethnic and Racial Studies*, 47(12), pp. 2477-2498.
- Cruz Hernández, D.T. and Bayón Jiménez, M., 2020. *Cuerpos, Territorios y Feminismos. Compilación latinoamericana de teorías, metodologías y prácticas políticas*. Quito: Ediciones Abya-Yala.
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HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research investigates the multiscalar and multi-actor assemblages of power that produce a continuum of bordering practices experienced by forced migrants. These practices are conceptualised as *bodyscapes*, a term that builds on and extends the notion of *borderscapes* (Brambilla, 2015) by centring the experiences of migrants in the relational processes of bordering as well as their roles as carriers of the situated embodied knowledge capable of defining these conjunctural processes (Mignolo and Tlostanova, 2006). Building on conjunctural analysis (Schiller, 2018), this research argues that bodyscapes must be understood beyond state-centric frameworks, by examining the specific power assemblages that give rise to particular bordering practices in distinct contexts, and how these assemblages relate structurally across scales.

Preliminary Mapping of Governance Places

National	
Symbol	Place
	Police Headquarters
	Prefecture
	Territorial Commission for the recognition of international protection
	Revenue Agency
	Courthouse
Regional	
Symbol	Place
	Local Health Authority (ASL)
	Immigrants' Information and Health Center
	Employment Centers
Municipal	
Symbol	Place
	Registry Office

While border studies have extensively addressed processes of externalization (Casas Cortes et. al, 2016) and, more recently, internalization (Fauser, 2024), few contributions conceptualize these dynamics as part of a continuum and focus on embodied experience as the approach through which it is possible to deconstruct the power assemblages behind their reproduction both beyond methodological nationalism and Eurocentric epistemologies. Taking the city of Turin as the entry point for this analysis, this research aims at mobilising embodied experience through the Cuerpo Territorio methodology to counter-map borders (Colectivo Miradas Críticas del Territorio desde el Feminismo, 2017). Forced migrants partaking in the research will be asked to counter-map processes of bordering they have experienced on a body map, which will in turn construct a cartography of processual borders that, without the burden of scale, will allow for the representation of many and intertwined ones. Oral histories elicited by the maps will allow for the interpretation of how the border was felt and who partake in that construction according to the participants' own experiences and interactions. These data will be finally contextualised within and compared to the analysis of the geographies of governance and policies that lie behind these processes, in an effort to understand what unseen actors, practices, and scales are put in motion to enforce bodyscapes and according to which logic.

NAME **Bruna PINCEGHER**
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COURSE	XL cycle - 1st year
RESEARCH TITLE	Accelerating Urban Climate Action: Mainstreaming Climate Shelters in Europe and Beyond
TUTOR(S)	Ombretta CALDARICE, Nicola TOLLIN

ACADEMIC CONTEXT

- Caldarice, O., Pincegher, B., Pizzorni, M. and Tollin, N., 2025. Urban Climate Shelters: A Nature-Based Solution for Urban Resilience. In: Firoz C. M., Kumar Dashora L., Shaw R., eds. *Nature-Based Solutions for Urban and Peri-Urban Areas for Resilient and Sustainable Urbanization*. Singapore, Springer, pp. 103-122.
- Pincegher, B., Pizzorni, M., Caldarice, O. and Tollin, N., 2025. Urban Climate Shelters to Adapt Cities to Climate Change: A Proposal for Schoolyards in Turin (Italy). In: *Designing Resilience: Strategies for the Sustainable Development and Understanding of Urban Complexity*. Genoa: Genoa University Press (GUP). [In press]
- Ruiz-Mallén, I., Baró, F., Satorras, M., Atun, F., Blanc, N. *et al.*, 2023. Nature-Based Solutions for Climate Adaptation in School Environments: An Interdisciplinary Assessment Framework. In: Allam, Z., eds., *Sustainable Urban Transitions*. Urban Sustainability. Springer, Singapore. https://doi.org/10.1007/978-981-99-2695-4_6.
- Baró, F., Camacho, D.A., Perez del Pulgar, C., Ruiz-Mallén, I. and García-Serrano, P., 2022. Nature-Based Climate Solutions in European Schools: A Pioneering Co-designed Strategy Towards Urban Resilience. In: Ruiz-Mallén, I., March, H., Satorras, M., eds. *Urban Resilience to the Climate Emergency*. The Urban Book Series. Springer, Cham. https://doi.org/10.1007/978-3-031-07301-4_6.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Accelerated climate change and rapid urbanisation have intensified the risks of extreme weather events in cities, particularly with urban heat islands as a critical factor in heat-related illnesses and mortality. Despite growing awareness, local governments still face challenges in integrating effective climate mitigation and adaptation measures. In this context, European cities have begun experimenting with transforming public spaces into climate shelters, with recent pioneering projects focusing on schoolyards as multifunctional refuges during heatwaves. While these initiatives show promise, they remain fragmented, lacking a coherent scientific framework, systematic evaluation, and clear guidelines for replication and upscaling. The PhD research, developed within the MAINCODE project (MAINstreaming nature to CO-DEsign urban climate shelters in schoolyards), addresses this gap by investigating how Urban Climate Shelters (UCS) can serve as scalable and replicable solutions to transform critical urban spaces, enhance climate adaptation, and foster regenerative urbanism. Building on MAINCODE's framework, the research advances theoretical and applied perspectives on UCS, positioning them as innovative, nature-based, socially co-designed strategies to tackle climate risks.

The study adopts a mixed-methods approach, articulated around four thematic axes. First, Conceptualisation traces the evolution of the climate shelter concept, consolidating its academic and policy foundations. Second, Methodological Testing is conducted through pilot applications in Turin and Halandri, where the MAINCODE methodology is implemented and validated, integrating hazard mapping, stakeholder engagement, and co-design processes. Third, Policy and Governance analysis focuses on identifying institutional enablers and regulatory barriers that shape the integration and scaling of UCS within local planning strategies. Finally, Global Scalability explores the transferability of UCS approaches beyond Europe, with a focus on Brazil, testing their potential as adaptable tools for climate adaptation in the Global South. In a nutshell, the research contributes directly to MAINCODE while expanding its scope globally, aiming to provide a robust conceptual basis, validated methods, and policy recommendations that strengthen cities' capacity to design heat-resilient, inclusive, and healthy environments.

NAME **Neshat RAHMANI**
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COURSE	XL cycle - 1st year
RESEARCH TITLE	Sustainable Active Transportation Infrastructure for Urban Heat Adaptation and Mitigation
TUTOR(S)	Sara TORABI MOGHADAM, Patrizia LOMBARDI

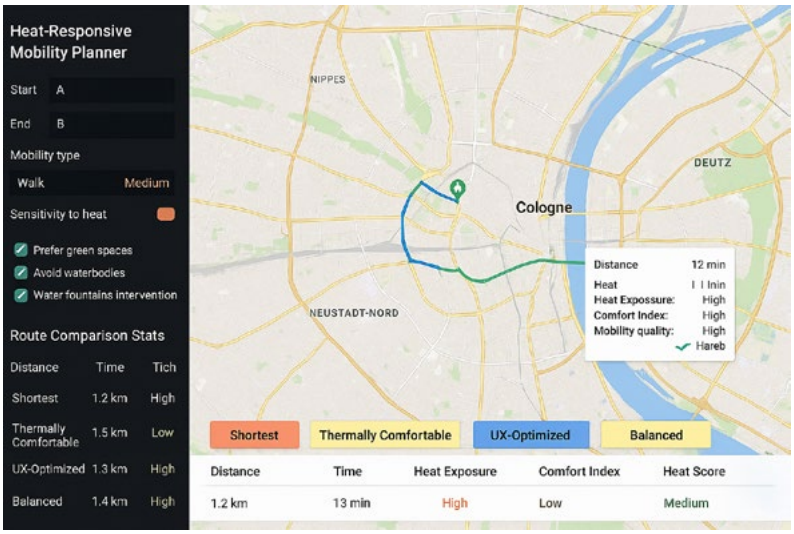
ACADEMIC CONTEXT

– Karner, A., Hondula, D.M. and Vanos, J.K., 2015. Heat exposure during non-motorized travel: Implications for transportation policy under climate change. *Journal of Transport & Health*, 2(4), pp. 451-459.
– Macintyre, H.L., Heaviside, C., Taylor, J., Picetti, R., Symonds, P., Cai, X.-M. and Vardoulaki, S., 2018. Assessing urban population vulnerability and environmental risks across an urban area during heatwaves. Implications for health protection. *Science of The Total Environment*, 610–611, pp. 678–690.
– Han, D., Zhang, T., Qiu, Y., Tang, Y. and Liu, J., 2023. A comparative review on the mitigation strategies of urban heat island (UHI): a pathway for sustainable urban development. *Climate and Development*, 15(5), pp. 379-403.
– Rahmani, N. and Sharifi, A., 2025. Urban heat dynamics in Local Climate Zones (LCZs): A systematic review. *Building and Environment*, 267, 112225.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research focuses on the growing challenge of heat exposure in cities, which directly affects thermal comfort, public health, and the usability of active modes of transport such as walking and cycling. Since active mobility is essential for sustainable urban development, addressing its vulnerability to rising temperatures is a priority. The project aims to build a solid evidence base and to propose practical tools that help integrate climate resilience and thermal comfort into both everyday mobility choices and long-term urban planning.

The first step of the work involved a large bibliometric and systematic review of 1,661 publications, complemented by a PRISMA-based synthesis of 178 studies. This review examined how urban form and design influence microclimate and, in turn, the quality of active mobility networks. Specific factors such as sky view factor, street canyon geometry, building density and orientation, material properties, and vegetation cover were analyzed. The results highlight the significant contribution of trees, shading from buildings, reflective and permeable surfaces, water features, and passive cooling infrastructure in improving thermal conditions. From these findings, the study developed a framework of strategies that includes green and blue infrastructure, ventilation corridors, shading devices, reflective materials, and mobility guidelines informed by microclimate data.



The secound part of the thesis is the development of an integrated platform that combines a citizen-oriented route planner with a planning and policy simulation tool. The route planner allows users to choose a trip (for example, from point A to B), set their preferences (shortest distance, shaded path, least heat exposure, best infrastructure), and compare alternative routes in real time. In parallel, the simulation tool supports planners and decision makers in testing adaptation strategies before implementation. For instance, adding trees lowers surface temperature, shading structures improve comfort indices, and introducing blue infrastructure such as fountains increases cooling capacity. These interventions can be modelled and compared to identify the most effective measures for specific locations.

The platform is being developed using GIS-based modelling, remote sensing, spatial analysis, and user clustering methods. By addressing both the individual and policy levels, the research provides practical solutions for reducing heat exposure along active mobility routes while also offering guidance for long-term planning. In this way, the project contributes to urban planning, climate adaptation, and mobility research, and supports the creation of healthier, more resilient, and more inclusive urban environments.

NAME **Luca RAMELLO**
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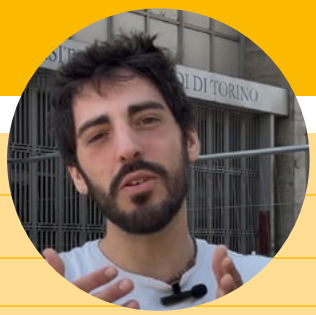

COURSE	XL cycle - 1st year
RESEARCH TITLE	The Infrastructures of EU Border Violence: A Critique of Illegalisation from Sfax, Turin and Oulx/Clavière
TUTOR(S)	Silvia ARU, Wael GARNAOUI

ACADEMIC CONTEXT

- Dijstelbloem, H., 2021. *Borders as infrastructure: the technopolitics of border control*. Cambridge, MA: MIT Press.
- Garnaoui, W., 2022. *Harga et désir d'Occident: étude psychanalytique des migrants clandestins tunisiens*. Cité El Ghazala: Nirvana.
- Pelizza, A., 2020. Processing alterity, enacting Europe: migrant registration and identification as co-construction of individuals and polities. *Science, Technology & Human Values*, 45(2), pp. 262-288.
- Tazzioli, M., 2025. Assembling traces of border violence: counter-mapping as counter-archiving. *Environment and Planning D: Society and Space*, 43(3), pp. 525-542.

EXTERNAL COLLABORATIONS

- Université de Sousse – (host for visiting period)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research demonstrates that EU border violence is not a failure of legality, but the infrastructural effect of the very legal regimes that govern migration in continuity with colonial management of populations in the region. In the Central Mediterranean – one of the world's most lethal border zones – (im)mobility is not merely forced by states, sovranational and international institutions through acts of refoulement or orchestrated non-reception, but filtered from the outset by infrastructures of registration and identification (R&I): Schengen visa systems, asylum and residency procedures, Dublin readmission protocols, and post-mortem bureaucracies. This fundamental type of border infrastructures fabricate (il)legality and regulate access to rights, space, and life itself through categorisation – functioning under the threshold of detectability and accountability.

The research investigates how these infrastructures operate through paper trails that haunt people in a continuum of border violence across three key sites within the Central Mediterranean border regime – Sfax/Tunis, Turin, and the Clavière/Oulx–Briançon corridor – tracing the spatial, legal, and political effects of three key moments of illegalisation: (1) Schengen visa refusals and the post-mortem erasure of identities in Sfax/Tunis; (2) the Italian Ministry of the Interior's obstruction of asylum and residency rights within Turin's urban bureaucracies; and (3) the Police aux Frontières' use of refus d'entrée and re-admissions at the Alpine frontier.

Three interconnected counter-archives as counter-maps – reconstructed through scattered legal and administrative documents, alongside testimonies – will expose a number of silences and violences embedded in the fabric of related border infrastructures, exposing the modes and geographies of containment, control, and exploitation illegally employed by state and international authorities on migrant-ised people, leading to mass violence and death of tens of thousands especially since the 1990s.

Rather than studying "migrants'" counter-conducts as objects, the project takes them – refusals of legibility, tactical invisibility, sabotage – as immanent critiques that denaturalise the classificatory infrastructures of the EU migration regime and pose the question of how to oppose border violence without reproducing its (colonial) terms.

NAME **Letizia SACCO**
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COURSE XL cycle - 1st year

RESEARCH TITLE Technical universities and the 'Green Transition': public and organisational communication strategies facing the global challenges

TUTOR(S) Sara MONACI, Silvia BARBERO

ACADEMIC CONTEXT

– Doyle, J., 2020. Creative communication approaches to youth climate engagement: Using speculative fiction and participatory play to facilitate young people's multidimensional engagement with climate change. *International Journal of Communication*, 14, pp. 2749-2772.
– Monaci, S., Persico, S. and Morreale, D., 2022. The Eurabia Conspiracy Theory: Twitter's Political Influencers, Narratives, and Information Sources. *Mediascapes Journal*, 19, pp. 55-76.
– Thompson, J.B., 1998. *Mezzi di comunicazione e modernità. Una teoria sociale dei media*. Bologna: il Mulino.
– Monaci, S., 2022. Odio social: tecnologie e narrative della comunicazione in rete. In: *Odio online. Conflitti, emozioni e strategie comunicative sui social media*, Milano: FrancoAngeli, pp. 47-64.

EXTERNAL COLLABORATIONS

– Department of Computer Science, Aalto University, host for visiting or research period
– University of Amsterdam, Social and Behavioural Science, Summer School Project

HIGHLIGHTS OF THE RESEARCH ACTIVITY

My PhD research investigates how European technical universities communicate their commitment to the green transition, focusing on the interplay between public communication strategies and internal organizational practices. The project explores how these institutions present themselves as sustainable actors while navigating potential tensions between their declared values and operational realities.

The study adopts a mixed-methods approach. Qualitative methods include interviews with communication officers, sustainability managers, and students, as well as the analysis of institutional documents and communication materials. Quantitative and digital methods are employed to study the circulation of green narratives and misinformation on social media platforms, especially X (formerly Twitter). The project maps the main discursive frames and examines how greenwashing accusations, climate denial, and eco-terrorism narratives circulate and intersect with institutional communication.

A key case study is focused on Aalto University and the Helsinki Social Computing group, providing insight into a context where technological innovation and environmental responsibility are deeply intertwined. The research also draws from fieldwork at Politecnico di Torino, allowing for a comparative angle on how different European technical institutions engage with sustainability at both strategic and symbolic levels

The project contributes to the understanding of how higher education institutions act as mediators of environmental discourses and how they respond to the challenges posed by public scrutiny, disinformation, and the need for credible sustainability communication. It also investigates how internal communication and student engagement reflect or contrast with the university's public image.

This work aims to bridge the fields of science and technology studies, environmental communication, and media studies, providing both theoretical insights and practical recommendations for institutions committed to the ecological transition.

NAME **Aida SHANEH**
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COURSE XL cycle - 1st year

RESEARCH TITLE A justice-oriented approach to teenagers' active mobility and autonomy

TUTOR(S) Elisabetta VITALE BROVARONE, Giancarlo COTELLA

ACADEMIC CONTEXT

– Martens, K., 2016. *Transport justice: Designing fair transportation systems*. Routledge.
– Rawls, J., 1971. *A theory of justice*. Harvard Press, Cambridge.
– Sheller, M., 2018. Theorising mobility justice. *Tempo social*, 30(2), pp. 17-34.
– Verlinghieri, E. and Schwanen, T., 2020. Transport and mobility justice: Evolving discussions. *Journal of Transport Geography*, 87, p. 102798.

EXTERNAL COLLABORATIONS

– Research fellowship (Horizon Europe project JUST STREETS – Mobility justice for all: framing safer, healthier and happier streets)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

Children and adolescents are central to the future of cities, yet they remain excluded from decision-making. A paradigm shift in urban design and governance is needed to secure their right to the city by ensuring safe, accessible, equitable urban spaces where they are recognised as active participants. Teenagers are rarely addressed as a distinct group; their mobility needs are often merged with those of other demographics. This omission raises justice concerns about fair resource distribution, recognition as legitimate urban users, and the redesign of mobility planning to restore their participation.

Active mobility, especially walking and cycling, is key to sustainability goals. However, access to these modes remains uneven. Inequities in infrastructure provision, spatial planning, and policy disproportionately affect those who are living in peripheral or disadvantaged neighbourhoods. Promoting active mobility thus requires attention to equitable resource allocation, inclusive participation, and recognition of diverse mobility needs.

To address these challenges, the research applies a justice framework (i.e., distributive, procedural, recognitional, and restorative justice) to evaluate how active mobility function for teenagers in a just manner. Initially, the research undertakes a systematic literature review and policy analysis to examine how teenager's behaviour and mobility needs are conceptualised in research and planning. Then, a mixed-methods approach combines qualitative and quantitative analysis in Turin (Italy) to assess how infrastructures align with justice principles and support adolescents' autonomy, accessibility, and right to the city. Moreover, the comparative neighbourhood analysis highlights differences in spatial provision, governance and participatory processes while also addressing historical inequalities. Therefore, this approach clarifies how justice dimensions are embedded in mobility planning and identifies opportunities to strengthen them. Ultimately, the research bridges policy and practice by providing co-design strategies that empower teenagers to move safely and independently through the city.

NAME **Elisa STRADIOTTO**
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COURSE XL cycle - 1st year

RESEARCH TITLE From BIM to Digital Twin: Enabling Data-Driven Management in Hydropower Facilities

TUTOR(S) Anna OSELLO, Francesca Maria UGLIOTTI

ACADEMIC CONTEXT

– Chehab Canto Pereira, R., Nogueira de Resende, P., Côrtes Pires, J.R. and Cuperschmid, A.R. M., 2024. BIM-enabled strategies for dams and hydroelectric structures: a comprehensive analysis of applications from design to operation. *Architectural Engineering and Design Management*, 21(3), pp. 491-512.
– Hananto, A.L., Tirta, A., Herawan, S.G., Idris, M., Soudagar, M.E.M., Djamari, D.W. and Veza, I., 2024. Digital Twin and 3D Digital Twin: Concepts, Applications, and Challenges in Industry 4.0 for Digital Twin. *Computers*, 13(4).
– Tao, F., Xiao, B., Qi, Q., Cheng, J. and Ji, P., 2022. Digital twin modeling. *Journal of Manufacturing Systems*, 64, pp. 372-389.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

In recent years, the concept of the Digital Twin (DT) has gained increasing relevance as a tool to address the complexity of infrastructures and respond to the need for efficiency, sustainability, and resilience. In the energy sector, and particularly in hydropower plants, its application is still at an early stage. However, integrating DT with Building Information Modelling (BIM) offers a significant opportunity to enable new forms of digital management and to support the digital transition of critical infrastructures. This research develops a scalable methodology for BIM-DT implementation, focusing on defining information requirements, managing heterogeneous data, and exploring the DT's role in monitoring and decision support. A distinctive strength lies in the possibility to test the framework in a real context: a new hydropower plant, managed by CVA (Compagnia Valdostana delle Acque - Compagnie Valdôtaine des Eaux S.p.A.). Working on an actual case allows theoretical assumptions to be confronted with practice and helps identify challenges, limitations, and opportunities, while also generating insights of practical value for infrastructure management. The methodological path is conceived as a sequence of steps: (I) analysis of information requirements to understand stakeholder needs; (II) collection and systematization of data from models, geospatial inputs, IoT sensors, technical, operational, and maintenance records; (III) development of a BIM model as an integrated digital environment; (IV) exploration of connections between BIM and dynamic monitoring systems to move towards DT conceptualization; and finally, (V) validation through the case study. An enabling approach stems from the combined use of BIM and Visual Programming Language (VPL), which supports complex dataset management and ensures information consistency throughout the lifecycle of the infrastructure. The DT is thus seen not as a static replica but as an active tool for monitoring, optimization, and decision-making. Expected outcomes include improved monitoring and strategic control of hydropower plants, support for construction digitalization, and enhanced resilience, efficiency, and safety. Overall, the methodology contributes to the scientific debate on digital transformation in energy infrastructure, offering a model that is designed to be replicable and adaptable to other contexts.

NAME **Cristina TREY**
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COURSE XL cycle - 1st year

RESEARCH TITLE New Frontiers for the Welfare State? An enquiry about Social Concierges as Innovative Welfare Mix Policy

TUTOR(S) Fabrizio DI MASCIO, Lorenzo CICATIELLO

ACADEMIC CONTEXT

– Capano, G. and Malandrino, A., 2022. Mapping the use of knowledge in policymaking: barriers and facilitators from a subjectivist perspective (1990-2020). *Policy Sciences*, 55(3), pp. 399-428. https://doi.org/10.1007/s11077-022-09468-0.
– Di Mascio, F., Coletti, P. and Natalini, A., 2025. How institutional design and leadership sustain collaborative public sector innovation: the case of administrative simplification in Italy. *Policy Design and Practice*, 8(2), pp. 183-198. https://doi.org/10.1080/25741292.2025.2514341.
– Torfing, J. 2016. *Collaborative Innovation in the Public Sector*. Washington, DC: Georgetown University Press.
– Trey, C. , 2024. Piazza Garibaldi Commons. *The Commoner*. https://thecommoner.org/piazza-garibaldi-commons/.

EXTERNAL COLLABORATIONS

– L'Orientale University of Naples, which co-supervises the research
– Free University of Brussels for methodological support and case studies

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research program, titled "New Frontiers for the Welfare State?", investigates the emergence of innovative welfare models in response to the systemic crisis of Western welfare states. It focuses on "social concierges" or "community gatehouses" – low-threshold, context-embedded social services – as emblematic cases of a flexible, hybrid governance approach. The study integrates theoretical frameworks from collaborative public sector innovation, emphasizing multi-actor co-creation. It has a dual objective: to theoretically bridge the gap between welfare mix and social innovation literature, formulating an original definition of "innovative welfare mix," and to empirically analyze these gatehouses as laboratories for new organizational models in marginalized contexts.

Initial fieldwork in Naples, Paris, Brussels, and Turin reveals a significant variety of governance configurations, confirming that collaborative innovation is highly dependent on local socio-political contexts and pre-existing actor networks. The mixed-methods methodology is sequential, comprising a systematic literature review (SLR), policy mapping via snowball sampling, Social Network Analysis (SNA) to examine actor interactions, and a comparative ethnographic study focusing on three phases of the policy cycle (agenda-setting, decision-making, implementation).

Key dimensions of analysis include the degree of marketization, professionalization, ethical tensions, and hybridization with the public sector, assessed using Rogers' innovation attributes. Expected outcomes are an original theoretical framework, the identification of context-specific enabling factors and barriers, and practical guidelines for policymakers. The research contributes to debates on knowledge commons and policy transfer, arguing that such collaborative, bottom-up models are essential for crafting adaptive, empowering welfare services and ensuring fundamental rights in an era of growing inequality and global crises.

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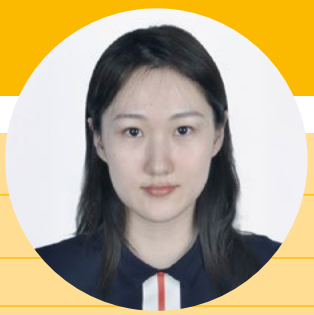

COURSE	XL cycle - 1st year
RESEARCH TITLE	Sustainable approaches for rural development: A comparative study of traditional plant-based villages in china and italy
TUTOR(S)	Federica LARCHER; Marco DEVECCHI

ACADEMIC CONTEXT

– Dianfeng, L., Fuxiang, L., Mingli, Q., Yang, Z., Xiang, Z. and Jianhua, H., 2024. An integrated framework for measuring sustainable rural development towards the SDGs. *Land Use Policy*, 147, p. 107339.
– Hualou, L., Li, M., Yingnan, Z. and Lulu, Q., 2022. Multifunctional rural development in China: Pattern, process and mechanism. *Habitat International*, 121, p. 102530.

EXTERNAL COLLABORATIONS

– University of Turin (UNITO)
– Henan Agricultural University (HAU)

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research aims to explore how rural communities can achieve sustainable development under the dual pressures of climate change and market globalization by adopting different transformation measures. At the current initial stage, several representative villages in China and Italy have been selected as tentative case studies. In China, the preliminary focus includes Matou village renowned for its cherry cultivation, Houdi village centered on ancient jujube orchards, and communities linked to the unique Taihang chrysanthemum. In Italy, attention is directed to mountain areas where traditional plants of ornamental or edible value are being rediscovered and utilized as rural resources. These cases are not yet finalized and may be further refined and adjusted as the fieldwork and research progress.

The main research pathway is to compare the transformation measures taken by different villages in response to market pressures and climate change, and to evaluate their sustainability outcomes across economic, social, environmental, and cultural dimensions. To achieve this, the study will first establish a comprehensive evaluation framework by drawing on established theoretical tools such as the Triple Bottom Line (economic, social, environmental aspects), the Sustainable Livelihoods Framework (different forms of capital), and resilience theory (adaptive and transformative capacities under external shocks). On this basis, an indicator system will be developed to systematically assess the effectiveness of different measures. Subsequently, the research will conduct cross-case comparisons to examine why similar villages with comparable resource endowments have achieved divergent outcomes. For example, some villages have successfully leveraged cooperatives and branding to improve market integration and social mobilization, while others, despite crop grafting or substitution efforts, have struggled due to weak organization and limited market embeddedness. In other cases, unique local plants carry high ecological and cultural value but face difficulties in economic conversion and scaling.

The academic contribution of this research lies in developing a cross-case sustainability assessment framework and applying it to empirically analyze the outcomes and limitations of different transformation strategies. This approach will help to explain why similar resources can lead to contrasting development trajectories, and it will identify the decisive roles of organizational forms, market positioning, policy support, and community participation.

Ultimately, the goal is to summarize the key factors that influence rural sustainability and to propose targeted recommendations. By systematically linking measures with sustainability outcomes, the study seeks to answer the central question: to what extent can different village-level strategies achieve sustainable development when facing the combined challenges of climate change and marketization? The findings will enrich theoretical debates on rural sustainability while also offering practical guidance for policymakers, local communities, and other stakeholders engaged in rural development.

Field Research in China

Houdi village, Lingbao, China

(1) Jujube damaged after heavy rain
(2) Villagers selling jujube
(3) Jujube tree grafted with Ziziphus jujuba
(4) Jujube orchard were removed to plant yams

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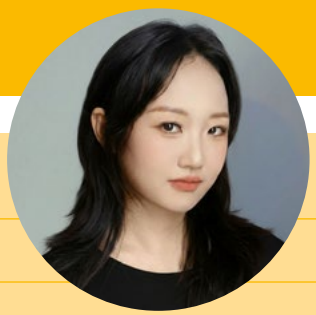


COURSE XL cycle - 1st year
RESEARCH TITLE Italian Platform for Renewable Energy Communities
TUTOR(S) Guglielmina MUTANI, Francesca PARASECOLO

ACADEMIC CONTEXT

– Mutani, G., Morando, V., Zhou, X., Tayefinasrabad, M. and Tundo, A. 2024. An Italian geoportal for renewable energy communities. *Journal of Sustainability for Energy*, 3, pp. 244-264.
– Belloni, E., Fioriti, D. and Poli, D., 2024. Optimal design of renewable energy communities (RECs) in Italy: Influence of composition, market signals, buildings, location, and incentives. *Electric Power Systems Research*, 235, 110895.

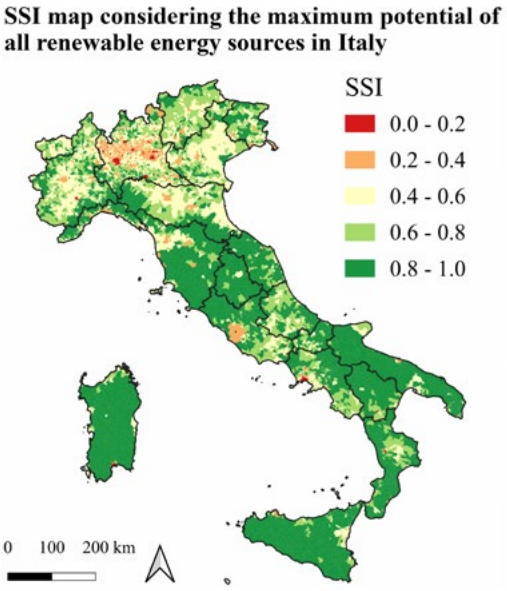
EXTERNAL COLLABORATIONS

– ENEA – Italian National Agency for New Technologies, Energy and Sustainable Economic Development
– Open Fiber S.p.A.

HIGHLIGHTS OF THE RESEARCH ACTIVITY

This research aims to develop a national platform for Renewable Energy Communities (RECs) in Italy. The platform is designed to integrate multi-source Geographic Information Systems (GIS), energy indexes, combined with scenario simulation and modelling tools, to systematically assess the spatial distribution of energy consumption and renewable energy production. Beyond the balance of municipalities, the research particularly focuses on coordinated analysis at the primary cabin level, a critical grid node,

A data integration and modelling framework has been established. National datasets on buildings, population, weather data, and energy consumption were collected, combined with renewable energy potential data (solar, wind, biomass, hydro, and geothermal) to generate standardised geo-packages.



Automated modelling was implemented using Python, SQL, and GIS, enabling scenario-based evaluation of different renewable deployments, energy sharing mechanisms. At the building level, a top-down method was developed: municipal or sectoral energy consumption is progressively distributed to individual buildings based on volume, use type, and construction period, producing detailed consumption curves. Hourly consumption was then derived through typical load profiles. Furthermore, high-resolution Digital Surface Models (DSM) were generated using Sentinel imagery and InSAR techniques, replacing TINITALY 2007 DEM or outdated DSM, in order to correct building heights and surface features. This provides more accurate input for consumption modelling as well as reliable shading and orientation conditions for solar potential analysis.

Future work will focus on following directions: (1) further improving the accuracy of consumption and production modelling, particularly by integrating building attributes and user behaviour; (2) continuous creation and updating of the national DSM database using Sentinel and InSAR; (3) deepening scenario simulations, especially evaluating REC feasibility at the primary cabin scale under different policy and market incentives; (4) advancing the development of the platform prototype to ensure direct applicability of research outputs to REC implementation; and (5) Collaborating with Open Fiber by integrating fibre-optic and data centre data to support future REC.

PAST CYCLES

XXXVII CYCLE

Farzaneh ALIAKBARI
Historical perspective on Cultural Natural Heritage (CNH) as a resource for local communities: Qeshm Island post-colonial narratives

Arthur BOHN
Studies and observation about two sustainable construction techniques: hemp-lime as a loadbearing material and recycled aggregates gabions for housing basement

Giorgio CAPELLO
Innovation in the management of vineyard soils through the adoption of good practices and tools to support field activities

Giulio CAVANA
Preference Learning approach to evaluate the optimization of the energy renovation of the building stock within the Renewable Energy Communities framework

Marco DEL NIBLETTO
Valuing the presence of retailers in the housing market evidence from Turin

Juri Igor FARDIN
Figures of an(other) Play: Francis Alÿs's Children's Games, Skateboarding in Milano Centrale and Ugo La Pietra's *Gioco dell'Uso*

Feiran HUANG
Digitalisation of the Agriculture and Its implication on Rural Landscape

Redina MAZELLI
Non-conventional materials: opportunities for a paradigm shift in the construction sector

Alessandra MOSSA
Post-asylum geographies of madness. Finding space for getting mad

Simone PERSICO
Social Media Ecosystem & Disinformation: the nuclear energy debate and the atomic conflict narrative between platforms' fragmentation and the Digital Services Act regulation

Maurizia PIGNATELLI
An interactive Spatial Decision Support System to co-recovery sustainable villages and marginal areas

Andrea Marco Raffaele PRANZO
Biogeographical detection of "Holocene Refugia" in Italian ecoregions. An applied proposal

Francesco PULETTI
The Spatial Politics of Italian Philanthropic Action: Alternative Cultural Production, Sustainable Development and Social Innovation

Alice RE
Assessment of coastal vulnerability in semi-enclosed sea basins: focus on a spatially explicit analysis of exposure

Andrea RICCI
Migration Governance and Transnational Municipal Networks: Traces of Policy Knowledge Exchange in Four Italian Cities

Sofia Beatriz RIVERA GARCIA
Between violence and care: Socio-spatial practices of (un)care amid extreme and chronic violence in El Salvador

Daniela SANTANA TOVAR
Definition of a standard framework for ESG assessment in construction companies

Saanchi SAXENA
Negotiating Spatial Inequality: Caste and Gender Dynamics among Women Street Vendors in Mumbai, India

Elia SILVESTRO
The Geography of Logistics Real Estate in Northern Italy. Financialized Growth and Governance of Logistical Hinterlands in a Global City-Region

Anthony SUPPA
Climate-neutral Turin: evaluating energy, emissions, and financial costs and savings in district-scale building retrofit scenarios

Giorgio TOSATO
Urban Evolution: a dynamic model for development, sustainability and resilience

Matteo TRANE
shapEUrbe. SHAPing the green transition in the EU for sustainable URBan Environment under the European Green Deal and the 2030 Agenda

Anna TREVES
A spatial dynamic integrated approach for beavers management as Nature-based Solution for freshwater ecosystem restoration

XXXVI CYCLE

Marco ALIONI
Gravitational Geometries of Exclusion: Infrastructuring injustice in Brescia (Italy) and Newark (New Jersey, US)

Deepan ANBARASAN
ICT in Public Transport: Exploring the Potential of IoT and Machine Learning in the context of Automatic Passenger Counting Systems

Simone BELTRAMINO
Spatial Planning for Energy-Resilient Territories and Cities

Luca BERTOCCI
The Archipelago. Envisioning the Urban Revolution amid the Planetary Flood

Francesco BRUZZONE
A methodological framework for evaluating the equity impacts of High-Speed Rail

Donato CASAVOLA
Characters in Search of an Author. Unfolding the territorial governance of Italian Metropolitan Cities

Jhon Ricardo ESCORCIA HERNANDEZ
A Digital Spatial Assessment Framework for Sustainable Social Housing in the Post-Pandemic Era - A Case Study of Bogotá, Colombia

Allegra EUSEBIO
When the plan is not enough. Civil Protection Emergency planning for effective Disaster Risk Reduction

Mauro FONTANA
Beyond marginality: welfare, governance and institutions, spatial imaginaries and policies. Insights from 'Terres Monviso'

Ximena Rocio GARZON RUIZ
From Data to Decisions: A Comparative Study of Machine Learning and Statistical Approaches in Estimating Passenger Counts

Alessio GENTILE
Understanding hydrological processes at different scales through stable water isotopes: a focus on alpine ecosystems

Lorenzo MAULONI
From the border to the street: migrants' inhabitation and politics of life in the surroundings of Tiburtina station, Rome

Beatrice MECCA
Fostering value creation in architecture

Michele MONDANI
Cryosphere processes and hydrogeological systems: analysis and interactions

Richard Lee PERAGINE
The project of emptiness Sovereignty, the weaponization of space and architecture in the Bosnian krajina

Maria Cristina PINTO
Opportunities and challenges of green hydrogen in the energy transition framework: analysis of potential cross-border cooperations through a multi-dimensional approach

Caterina POZZOBON
Bodies of water: an intersectional geography of waters in rural Tanzania

Mattia SCALAS
Framing the local resilience unit as a post pandemic planning paradigm. A case study in the city of Turin, Italy

Agostino STRINA
How Food Logistics Is Changing Our Cities. Large-Scale Retail Trade Distribution Centers in Italy

Cristina Maria Dorina VIANO
Blockchain for civic initiatives in the urban space

Valeria VITULANO
Spatial Planning & Ecological Transition. How to integrate Green Infrastructure into the Urban Plan

XXXV CYCLE

Martina BOCCI
Rehabilitation of traditional heritage and local development. The role of the transmission of traditional construction knowledge and the empowerment of local communities in the reactivation of marginal places. A case-study approach

Daniela DE LUCA
Digital, Interactive and Sensory Experiences exploiting VAR technologies for the Cultural Sector in Society 5.0

Karl Benjamin KRAEHMER
Degrowth at a Global Scale? Geographies of Chile¿s Fruit Production and Export between Extractivism and Socio-Ecological Transformation

Marco MASSANO
GIS-based model-coupling platform for smart energy and renewable technologies integration in Energy Communities

Cecilia MEREGHETTI
Analyzing cultural initiatives: effects on subjective wellbeing in urban areas. Capitals of Culture compared through textual analysis and Machine Learning

Francesco NURRA
The diversity of retail trade in contemporary cities: a geographical perspective. From informal street vending to halal landscapes

Carlotta QUAGLIOLO
Spatial biophysical-economic impact assessment of Nature-Based Solutions (NBS) for Urban Climate Change Adaptation

Manuela RONCI
Designing coexistence. European strategies to plan and design biodiverse urban landscapes

Federica ROTONDO
Reinterpreting Urban Transitions. Spatial conditions, actors and implications in energy renovation of public housing neighbourhoods. Insights from Italy and France

Ornella SALIMBENE
Participatory Approach for the Monitoring of Air Pollution in urban environments (PA-MAP)

Kibrom TESFAY
Urban-rural linkages for food: related opportunities and challenges in both municipal planning and governance of the food system; in case of Addis Ababa City and its hinterland, Ethiopia

Ingrid VIGNA
Wildfire risk: a participatory approach in an alpine socio-ecological system

XXXIV CYCLE

Fabrizio AIMAR
Social Resilience and UNESCO Cultural Landscapes. The Relation between Social Resilience

Velia BIGI
Vulnerability to Natural Resilience and the Lanscape Identity

Francesca BLANC
Testing Comparative Spatial Planning Studies in Latin America. Case Studies from Ecuador and Bolivia

Francesca Caterina BRAGAGLIA
Ruling the Unruled? The Institutionalisation of Social Innovation in Spatial Planning

Alessandra BUFFA
Integrating Resilience Concept and Urban Form: the Pandemic Crisis Experience of Covid 19

Caterina CAPRIOLI
Agent-Based Model and Geographic Information System (GIS): an Integrated Approach to Test Sustainable Policies and Urban Transformation Scenarios

Elisabetta COLUCCI
Development of a Geo-Spatial Ontology to Support the Documentation of Minor and Abandoned Historical Centres

Giulia DATOLA
Toward Resilient Cities: Assessing Urban Resilience Performance Using a System Dynamics Approach

Valerio DELLA SALA
The Olympic Villages and Olympic urban planning. Analysis and evaluation of the impact on territorial and urban planning (XX-XXI centuries)

Arianna FONSATI
InfraBIM Tools and Methods Applied to Organizations' Implementation Process

Chiara GENTA
Exploring Assessment Frameworks and SDGs Interlinkages for Implementing Circular Economy Strategies in European Urban Contexts

Elena GIGLIO
The Future of Energy Transition between Critical Materials and Geopolitics. Lithium and the South American Context

Martina GIZZI
Geothermal Resources Exploitation from Disused Hydrocarbon Wells: an Investigation Tool for the Reuse Strategies Analysis

Pinky KUMAWAT
Using Attitudes and Green Consciousness as a Determinant of Travel Behaviour and Market Segmentation

Erica MANGIONE
Housing the Student Population in the Post-Industrial University City

Danial MOHABAT DOOST
Social Equity and Urban Resilience: Investigating the Compatibility of Resilience Theory and Practice to Address Social Equity in Cities

Stefano QUAGLIA
Urban Forestry and Governance: Assessing the capacity of governance arrangements in peri-urban woodlands

Carlotta SCIOLDO
European Transnational Networks between Global Governance and Local Changes in the Cultural and Creative Sector. If Not Harmonizing policies, then What?

Francesca TAORMINA
Participation in World Heritage Site's Governance: the Case of the World Heritage Arab-Norman Palermo and the Cathedral Churches of Cefalù and Monreale Serial Site

XXXIII CYCLE

Vanessa ASSUMMA
Assessing the Resilience of Socio-Ecological Systems (SES) to Shape Scenarios of Transformation

Maurizio BACCI
Multi-Hazard Risk Analysis in Developing Countries under Climate Change

Andrea BARBERO
BIM Methodology tandardization for Facility Management: Data Organization, Integration and Visualization for a New Concept of Stadium

Elena BELCORE
Generation of Land Cover Atlas of Environmental Critic Zones using unconventional tools

Giacomo CAZZOLA
Back to the Roots of Socially Constructed Disaster Risk. Envisioning and Revisioning Disaster Aid and Governance

Sara CRAVERO
Sustainable Cities as Serious Games. How Games Application Can Contribute to Achieving Sustainable Urban Development

Maria Valentina DI NICOLI
The Role of the Build Environment and the Human Dimension Towards a Sustainable Energy Transition

Agata ELIA
Geospatial Data and Information in Emergency. Information for Displacement Contexts

Davide GISOLO
Water, Carbon and Energy Fluxes on Grasslands of an Alpine Region

Chiara IACOVONE
Airbnb in the Real Estate Financial Chain - Housing and Policies in Southern Europe Post-Crisis Territories

Eloy LLEVAT SOY
Spaces for Production in a Service Society

Viola MARI
Working a Way Out? Geographies of Women at the Margins

Francesca MATRONE
Deep Neural Networks for Cultural Heritage Point Cloud Semantic Segmentation

Maria Angela MUSCI
Automatic Data Extraction Using Remote Sensing for Service Robotics

Giuditta SOCCALI
The Neoliberal Heritage City between Abuse and Reclaim.Insights from Varanasi (Benares), India

Roberta TARAMINO
Consumers, City Networks and Commercial Patterns. An Investigation of Retail locations in the City of Turin, Italy

Alberto VALZ GRIS
Urban Metabolisms of the Green Transition. The Commodity Chain of Lithium-Ion Batteries from the Atacama Plateau to Zero-Emission Cities

XXXII CYCLE

László CSEKE
Securing and optimising more-than-human value production in the 'mozzarella landscape' in Italy Campania Italy

Federico DELL'ANNA
Energy and Economic Evaluations to Desig Urban Tranformation and Requalification Programs

Massimiliano GRANCERI
Mainstreaming Climate Change Adaptation into Local Planning. Insights from Barcelona and Turin municipalities

Fabio IAPAOLO
De-Individuation of the Moderm Subject in the Age of Artificial Intelligence. The case of Self-Driving Cars and Algorithms for Decision Making

Lucia LUPI
Mirroring the City Toward Web-Based Technologies to Support City Stakeholders in the Orchestration of Local Development Actions

Andrea MORA
Collective labour in practice. Infrastructures and facilities in Lima neoliberal stage of popular urbanizations

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Built Heritage Conservartion in Perspective of Development

Maurizio PIOLETTI
Spatial governance in the Latin American and Caribbean region: a survey on metropolitan areas in Brazil, Bolivia and Cuba

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Spaces of Participation Commoning and the Shared Management of Urban Spaces

Leonardo RAMONDETTI
The Enriched Field. Urbanising the Central Plains of China

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Digital built heritage: use cases of existing building through BIM-based approach

Astrid Coromoto SAFINA ALMEIDA
Beyond globalized visions .Problematizing urban theory through spatial readings of the Pearl River Delta

Francesco SEMERARO
The Building Information Modelling and Management approach for Public Contracting Authorities of infrastructure projects

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Making in the making. Performing new forms and spatialities of production

Merve DEMIRÖZ
Conservation of Izmir Historical City from Traditional Plans to Entrepreneurial Governance

Vincenzo DI PIETRA
Seamless Positioning and Navigation in Urban Environment

Camilla GUADALUPI
Undisciplined expertise. Reflections on an emerging profession within Tactical Urbanism

Luca LAZZARINI
Urban/rural co-productions. Planning and governance approaches for improving the relationships among city and countryside in Italy and England

Davide LONGHI
Mobility as a Service (MaaS) in suburban and rural areas: concept design and challenges

Erminia MARTINI
Power dynamics and aid governance in a post disaster context: a case study of Haiti's recovery

Valerio OPERTI
Travellers' Preferences and Attitudes to understand Travel Behaviour and define Market Segmentation

Constantin SANDU
Feature Extraction from Remotely Sensed Imagery for Emergency Management and Environmental Assessment

Diego Danilo VITELLO
Planning for the New Geography of Manufacturing

XXX CYCLE

Emere ARCO
Geomatics for Mobility Management. A comprehensive spatial database model for Mobility Management

Chiara BASILE
Making arrival, making the city. Newcomers' becoming through and with Brussels

Erblin BERISHA
The evolution of spatial planning systems in the Western Balkan Region. Between international influences and domestic actors

Amandine DUBOZ
Willingness to use real-time multimodal information to change travel behaviour. The use of psycho-social variables for the market segmentation

Benedetta GIUDICE
Ecological planning strategies for a qualitative land take

Nives GRASSO
Visibility analyses using 3D urban models generated by low-cost multi-sensor approaches

Gian Gavino PAZZOLA
The socio-spatial relations of innovative artistic production in Piedmont and Liguria

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Alys SOLLY
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Francesca Maria UGLIOTTI
BIM and Facility Management for smart data management and visualization

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