Climatic Urbanism

From City Climates to Climate Cities

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10–11 November 2022

Accademia di architettura

Mendrisio
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Istituto di studi urbani e del paesaggio

3rd Symposium
of the
Istituto di studi urbani
e del paesaggio
(ISUP)

Climatic Urbanism

From City Climates to Climate Cities

organised by
Jonathan Sergison
Sascha Roesler
Frédéric Bonnet
João Nunes

with the support of
Mosè Cometta
and Enrico Sassi

The challenges posed by global warming to the disciplines of architecture, landscape architecture and urban design are unprecedented. Being responsible for "one-third of global final energy consumption," the construction sector is also one of the primary causes of "total direct and indirect CO_2 emissions" ("nearly 40%") and as such, is one of the key drivers of climate change (International Energy Agency, 2021). The transformation of ecosystems and rising temperatures will lead to the comprehensive and continuous adaptation of the built environment. The political goal of net-zero emissions will have to be transferred not least by the planning disciplines into reality.
In the twenty-first century, cities are not only main contributors to climate change; they are also particularly affected by global warming. Cities will have to adapt by creating new infrastructures, decarbonizing material cultures and introducing new forms of climate control. In Swiss cities for example, ever warmer summers are leading to the increased use of air conditioning during the summer months where two decades ago such mechanical cooling was virtually inexistent. Energy transition and climate adaptation should be conceived as one and the same process: cities are not easily governable entities but they are *"the communities, spaces and political arenas through which change is invented, implemented, enacted and experienced in always specific and different ways"* (Rutherford and Coutard 2014).

The symposium sheds light on the growing capacities of societies to provide climatic data (via thermal measurements, simulation techniques etc.), while highlighting evidence-based design strategies referring to urban climates. Each presenter foregrounds one specific city. Based on urban design projects and empirical case studies from cities around the world, the future practice of climate adaptation shall be discussed. The objective is to assess the different scales of urban climate adaptation and their cultural, political and economic contexts.

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Cities & Speakers

Eilat (Israel)
Els Verbakel

Low-carbon and zero-carbon cities such as Masdar City in the United Arab Emirates, Dongtan in China and Rawabi City in Palestine have been presented to a global audience as promoting alternative forms of environmentally responsible urban life, yet little progress has been made beyond these cities' boundaries, at a broader, regional and global scale. What forms of urbanism can allow the juxtaposition of a new global regime with territorial contiguity? The example of Eilat, a city on the Southern border of the state of Israel with Jordan and Egypt can perhaps provide new insights. Climate change requires a rethinking of the urban development model and calls for a geo-social paradigm where every human presence is evaluated by its effects and consequences for the planet at large. Can we then re-define the challenge for cities in the new global regime as one of 'grounding', bringing global processes down to earth and giving physical form to intangible narratives?

Els Verbakel is a founding partner of Derman Verbakel Architecture and Head of the Department of Architecture at Bezalel Academy of Arts and Design Jerusalem where she also directs the Masters Program in Urban Design, the UNESCO Chair in Urban Design and Conservation Studies at Bezalel and the Bezalel UNI Habitat Program. Els obtained a PhD in Architecture at Princeton University, a Master of Science in Architecture and Urban Design at GSAPP, and a Graduate Degree in Civil Engineering and Architecture from the University of Leuven, Belgium.

Milan (Italy)
Niccolò Aste

The Milan Metropolitan Area has a population of over 3 million and encompasses 133 municipalities extending over approximately 1,500 km^2. Among the many planning activities, special attention is dedicated to urban, environmental, and territorial regeneration projects, and significant results are expected by 2030.
The role of architecture (both in terms of building and landscape design) and urban planning is evidently of primary importance, as attested by the many and varied interventions aimed at regenerating entire neighbourhoods and parts of the urban area. These range from exemplary projects, such as the renowned Bosco Verticale and the City Life neighbourhood, to a set of much smaller focused interventions which gradually contribute to the regeneration of various local areas. European and national policies on the retrofitting of buildings offer strategic opportunities. The presentation illustrates some recently completed projects which are inspired by this broad-based approach. The role of compositional, aesthetic, behavioural, social, and cultural aspects of interventions on the existing historical urban fabric should not be neglected.

Niccolò Aste graduated with honours in Architecture from Milan Polytechnic in 1994, and received his PhD in Technical Innovation and Design in Architecture from the same university in 2000. Since 1995, he has been actively engaged in research activities related to the energy efficiency of the built environment and the exploitation of renewable energy sources in the building sector, on an urban and territorial scale. Since 2002, he has been working at Politecnico di Milano, first with the role of Researcher, then with that of Associate Professor. He has been full professor since 2017. He has participated in numerous national and international research programmes on the topics of sustainable architecture, energy efficiency and renewable energy sources.

Lisbon (Portugal)
João Seixas

My reflections will be developed through an analysis of places, people, urban knowledge, politics and trends in the city of Lisbon. In addition to being the locus of experience and interpretation, places are also forms of proposition. Much is open, in terms of proximity values, of ecological capacities, of community and economic energies, new abilities to combine everyday lives and global dynamics. Old dichotomies – between home and work, private and public space, centre and suburbs, urban and rural areas – give way to new transversalities, overcoming contradictions and time-space limitations, developing evolutionary synapses and commitments. Despite the enormous ecological and economic pressures we are facing, perhaps both people and places are still in the neolithic era of possibilities in terms of the development of new capacities for cognitive and intellectual immateriality, as well as for relational and communitarian materiality.

João Seixas is professor and researcher in the Faculty of Social Sciences and Humanities of the Universidade Nova de Lisboa. His fields of work are on the areas of the urban studies, of city and metropolitan politics and of urban cultural strategies. He is PhD in Urban Geography (Autonomous University of Barcelona), PhD in Sociology of the Territory and the Environment (ISCTE-IUL – Lisbon) and Msc in Urban and Regional Studies (London School of Economics and Political Science). Among other projects, he has been: commissioner for the Strategic Charter of the city of Lisbon and coordinator of the Political-Administrative Reform of the Portuguese capital city; member of the jury for the European Capital of Culture, consultant for the URBACT Programme (DG Regio and Urban, European Commission), commissioner for the public exhibition *Futures of Lisbon*.

Nantes (France)
Florian Dupont

Three case studies ranging from the city centre to the rural South enable us to address the challenges ahead, the complexity of climate policies and their implementation. (1) *Lac Grand Lieu* is the largest lowland lake in France, a natural reserve. The surrounding countryside has seen both a significant population growth and the extension of the local airport without dealing with the consequent environmental impact. (2) *Pirmil-Les Isles*, a significant property development at the edge of the city centre, put sustainability at the centre of the urban design process, reversing the conventional value chain. (3) As the most recent extension of the city centre, *L'île de Nantes* is an iconic urban project known for working with the existing urban fabric and embracing its cultural identity.
The climate change challenge takes different forms depending on geographical context, political will, and technological options, and balancing demographic growth and carbon emissions reductions requires specific answers.

Florian Dupont co-founded Zefco in 2018 with François Peyron, in which they champion the environmental approach to urban design and architecture. Trained in a Master's degree in environmental engineering for architecture at the Center for Alternative Technologies in Wales after a degree in environment and a Master's degree in urban planning at the Sorbonne and the Lisbon University. Florian worked at EDAW (now AECOM) in London before joining the engineering group Burgeap, then the agency Franck Boutté Consultants where he took over the management of the City and Territories division. Having been co-editor-in-chief of the Revue Urbaine he contributed to several publications, he is the author with Ariella Masboungi of *Energy at the heart of the urban project' and '200 initiatives for the energy transition of territories*. Florian has been awarded of the 'National French Youth Award for Urban Design' in 2007.

Paris (France)
Umberto Napolitano

The work of Georges Eugène Haussmann in Paris represents the attempt to change everything, for all of Paris to be "embellished...expanded...rehabilitated." In his seventeen years in office, the Prefect of Paris laid 600 km of sewers and 175 km of streets, built municipal halls and schools, designed squares, parks, and woods, stimulated private investment, rebuilt neighbourhoods in the city centre, and envisioned others in the outskirts. Rarely has a public official had such an impact on popular culture. Resolutely advocating progress, Haussmann aspired to turn Paris into a tool of industrial society while implementing a programme of beautification. *Paris Haussmann,* the research on which this presentation is based, attempts to qualify, quantify and calibratie the criteria that underpin this model, which is well-known but still little understood. What is revealed invites us to revisit the axioms of contemporary urban design, in a context where sustainability requirements coexist with the pleasures of architecture.

Umberto Napolitano (Naples, 1975) studied architecture at the Università Federico II in Naples and then at the Ecole Nationale Supérieure d'Architecture de Paris-La Villette. Founder of LAN (Local Architecture Network) with Benoit Jallon in 2002, he also conducts a theoretical work through research projects, exhibitions and conferences all around the world. Umberto was professor at the Columbia University GSAPP of New York (USA) and currently teaches at the AA (Architecture Association) School of Architecture in London (UK). He is a member of the French Academy of Architecture since 2016 and was appointed *Chevalier de l'Ordre des Arts* et des Lettres in 2018.

Rio de Janeiro (Brazil)
Carla Juaçaba

In my lecture, I will firstly present a student project as a case study on Rio de Janeiro. We worked on the artificial borders of the city, proposing the demolition of a 500m-long concrete wall built to segregate a dense favela from the surrounding

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Opening	9.00	Registration
	9.15	Welcoming address, Walter Angonese (Dean ARC-USI)
	9.20	Introduction, Jonathan Sergison (Director of ISUP-USI)
	9.30	Introduction, Sascha Roesler (ARC-USI)
Session 1 **10.11. 2022**	10.00	Introduction, Moderator: João Nunes
	10.15	**Milan (Italy)** Niccolò Aste (Politecnico di Milano)
	10.45	**Eilat (Israel)** Els Verbakel (Bezalel Academy, Jerusalem)
	11.15	**Lisbon (Portugal)** João Seixas, (Universidade Nova de Lisboa)
	11.45	Discussion with all speakers, João Nunes, and Mosè Cometta
	12.30	Lunch break
Session 2 **10.11. 2022**	14.30	Introduction, Moderator: Frédéric Bonnet
	14.45	**Paris (France)** Umberto Napolitano (Columbia GSAPP)
	15.15	**Nantes (France)** Florian Dupont (Engineer, Zefco Company, Nantes)
	15.45	**Rio de Janeiro (Brazil)** Carla Juaçaba, (guest prof. ARC-USI)
	16.15	Discussion with all speakers, Frédéric Bonnet, and Mosè Cometta

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Session 3 **11.11. 2022**	10.00	Introduction, Moderator: Jonathan Sergison
	10.15	**San Juan (Puerto Rico)** Monica Rivera (Lopes Rivera Arquitectos, Barcelona)
	10.45	**Bucharest (Romania)** Irina Davidovici (GTA, ETH Zürich)
	11.15	**Munich (Germany)** Muck Petzet (ARC-USI)
	11.45	Discussion with all speakers, Jonathan Sergison, and Giulia Scotto
	12.30	Lunch break
Session 4 **11.11. 2022**	14.00	Introduction, Moderator: Sascha Roesler
	14.15	**Manchester (United Kingdom)** Hannah Knox (University of London)
	14.45	**Jakarta (Indonesia)** Kian Goh (UCLA, Los Angeles)
	15.15	**Valencia (Spain)** Francisco Leiva (University of Alicante)
	15.45	Discussion with all speakers, Sascha Roesler, and Giulia Scotto
	16.30	Conclusions

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rainforest, and explored new typologies of collective living between nature and city through design. The second project I will present, also from Rio de Janeiro, was a temporary pavilion built for the United Nations' Conference on Sustainable Development in 2012. This was an urban object and made from scaffolding like many other built to host sports or music events on Copacabana beach. It was naturally part of the city, and was understood as a public space rather than a building. The intention was to remind people of their vulnerability to nature, by allowing wind, rain, and sun to permeate the spaces and strongly affect the way they are experienced.

Carla Juaçaba developed her independent practice of architecture and research-based in Rio de Janeiro since 2000. Her office is currently engaged in both cultural programs and private projects. She is constantly part of the academic and teaching realms, research studies, and Lectures: Harvard GSD; Columbia University GSAPP; Accademia di architettura di Mendrisio. Workshop at IUAV di Venezia 2014 and 2020 where she won the best studio for public space projects; Jury at BIAU Bienal Ibero Americana in Madrid 2012 and 2019. In 2022 she is invited to be the president of the jury of the Simon Architecture Prize organized by Fundació Mies van der Rohe, Barcelona.

San Juan (Puerto Rico)
Mónica Rivera

The US New Deal programs introduced in Puerto Rico in 1934 turned the Caribbean island into a testing ground for urban development. From the late 1940s to the 60s, rapid modernization transformed the former Spanish colony — since 1898 a territory of the United States — from a rural society into an urban one. During this period, the capital city of San Juan experienced a process of privatised urbanisation. Standardised, single-family subdivisions were introduced at a massive scale primarily through private developers encouraged by the US mortgage insurance system — which required the use of concrete to withstand hurricanes — and the narrative that home ownership could combat socialism. Houses of oversimplified modernism, with flat, low, uninsulated concrete roofs that turn into heat radiators, predominate and give form to the hot and humid tropical city. These ubiquitous suburbs have crystallized into a perverse form of social isolation where people live behind gates because of security concerns, insulated from the climate by air conditioning or overheating, as a result of a disregard for intermediate spaces and cross-ventilation. In light of the island's current political, social, economic, and energy-production crises and recent natural catastrophes, the explorations by students of the repair, reuse, and open-ended reprogramming of these overlooked architectures could call attention to strategies, albeit hypothetical, for both social and climate adaptation.

Mónica Rivera is principal and co-founder of the Barcelona-based practice Emiliano López Mónica Rivera Arquitectos, alongside with her partner Emiliano López. Their practice focuses on carefully crafted works that understand architecture as a social and cultural endeavor that is deeply engaged with the environment. Working with circumstances and contingencies as positive values, their completed work encompasses multiple scales, ranging from public housing and schools to hotels, houses, furniture and planning consultancies. She is currently professor of architecture and, since 2018, chair of graduate architecture at Washington University in St. Louis. Her current teaching explores the making of places that mediate changing situations, latent uses, and climate in housing design studios based in Rivera's native Puerto Rico. She holds a Bachelor of Fine Arts and a Bachelor of Architecture from Rhode Island School of Design and a Master of Architecture degree from Harvard University Graduate School of Design.

Munich (Germany)
Muck Petzet

Munich is presented as a model of economic power and attractiveness, but its long-lasting, constant success prevents the fundamental changes that are necessary to achieve its declared climate goal of net zero by 2035. The city still lives on the architectonic legacy of the post WWII reconstruction, and the success of the 1972 Olympic Games and the infrastructure created at the time. Rather than densification and intelligent renewal, it is still standard procedure to tear down buildings and replace them with some mediocre but efficient 'new'

ones. Munich portrays itself as a showcase for a spurious kind of success based on efficiency – typical of rich countries like Germany that still approach all problems by throwing technology at them rather than doing less. Problems are often outsourced to poorer countries or regions – for instance the former East Germany, where the majority of renewable energy infrastructure is located. Embodied energy is not taken into account in the shiny sustainability balance sheets showing the way to 'climate-neutral' Munich 2035.

Muck Petzet is an architect, curator and since 2014 professor for sustainable design at the Accademia di architettura USI in Mendrisio. He graduated from TU Munich after studying philosophy at LMU Munich and architecture at HdK Berlin and TU Munich. After initially working at Herzog & de Meuron in Basel he founded his own office in Munich 1993 - working in different partnerships. Since 2015 he is also practicing in Berlin. Muck Petzet was general commissioner of the German pavilion *Reduce/Reuse/Recycle* at the 13th International Architecture Exhibition La Biennale di Venezia 2012, introducing a value system of avoidance, reuse and reclamation in the architectonic context. Muck Petzet's extensive engagement with transformation projects set the basis for his development of a 'minimal intervention - transformation theory' and his dedication to propagate a reevaluation of existing buildings as a valuable resource for our future through lectures, exhibitions and publications.

Bucharest (Romania)
Irina Davidovici

Urban climates are conditioned not only by the buildings and spatial relationships visible above ground, but also by the invisible power relations and static conditions below it. Soil composition, parcellation, ownership, land clearance and ground reserves have played an inestimable role in the shaping, landscaping, and climatic performance of urban spaces. This historical contribution focuses on the old centre of Bucharest, an Eastern European city largely overlooked by early industrialization. As a result, the urban fabric remained disproportionately rural in character. Pre-modern societal structures and corresponding low-density residential typologies have created an environment with a more bearable micro-climate than the modernist outskirts. At the interface of Western and Eastern cultures, the Bucharest case study illustrates the interdependencies between ground conditions, socio-cultural features, and housing types in the construction of urban climate. In comparison to contemporary typical configurations in London and Amsterdam, the paper highlights the formation of a city micro-climate in the conspicuous absence of urban industry.

Irina Davidovici is the Director of the gta Archives at ETH Zurich, where she is also active as private lecturer and senior scientist. Prior, she led the Doctoral Programme at the gta Institute and was guest professor at EPFL Lausanne. Her Doctorate on contemporary Swiss architecture (2008) and Habilitation thesis Collective Grounds: *Housing Estates in the European City, 1865-1934* (2020) illustrate a range of research interests that straddle housing and urban studies with the history and theory of contemporary Swiss architecture. She is the author of Forms of Practice. *German-Swiss Architecture 1980–2000* (2012, 2018) with two manuscripts in production for 2023, *Common Grounds: A Comparative History of Early Housing Estates in Europe* (Triest Publishers, Zurich) and *The Autonomy of Theory: The Critical Reception of Ticinese architecture* (gta Publishers, Zurich).

Manchester (United Kingdom)
Hannah Knox

In my presentation I will discuss a project which took place in 2021-2022, that sought to use diverse forms of energy and climate data to help communities in two local neighbourhoods to develop their own situated responses to climate change and energy crises. Drawing on the experience of those participating in this project, I explore the role of environmental and energy data in turning communities into 'infrastructural publics' oriented to reworking energy infrastructure. In particular, I look at what happens when an abstracted urban energetics oriented to achieving net-zero targets and focused on building local area energy plans (LAEPS), meets the energetic potentialities and leakages that structure social relations in everyday life. Hannah Knox is Professor of Anthropology at University College London. Her work explores the relationship between technology, environment and the social change with a particular interest in infrastructures, climate change and urban life. Her books include: *Roads: An Anthropology of Infrastructure and Expertise*; *Ethnography for Data Saturated World*; *Digital Anthropology* and her most recent monograph, *Thinking like a Climate: Governing a City in Times of Environmental Change*.

Valencia (Spain)
Francisco Leiva

In the twentieth century, the coastal cities began to attract more and more people, and underwent rapid expansion. This unprecedented growth caused new problems and new solutions began to be adopted systematically which often ran counter to the specific ways those territories had been occupied until then. Over time, the unique character of these cities became so blurred that people lost sight of the geographical features that had given rise to them. Immersed as we are in a process of paradigm change, the twenty-first century will herald a geographical reconnection and mark the necessary rebalancing of our cities. We will illustrate these urban transformation processes by focusing on Valencia and Alicante, two Mediterranean cities that are as close as they are different from each other, and we will highlight some of the interventions that have led to reconnecting citizens with their geography, such as the Turia Garden in Valencia and the proposed Alicante Coastal Corridor. Reinforcing local identity can be a powerful argument to help us distance ourselves from the dynamics of globalisation that have disfigured our cities.

Francisco Leiva Ivorra graduated from the Valencia School of Architecture (ETSAV) in 1998, and in 2017 was awarded a Doctorate in Architecture by the University of Alicante (UA) for his thesis entitled *Redrawn Choreographies*. He has taught architectural design at ETSAV from 2003 to 2006 and Alicante School of Architecture from 2006. Since 1998, him and the agronomist Marta García Chico, have directed the multidisciplinary team Grupo Aranea. Established in Alicante, its projects seek to be deeply anchored to the place where they are located. They are characterized by the creation of places that induce to social encounters, a continuous commitment to the revitalization of public space, blurring the boundaries between landscape, architecture and art. Their work has been recognized with numerous awards.

Jakarta (Indonesia)
Kian Goh

From the flooding along one river, one watershed, how do we understand broader regional and global concerns about climate change and cities? The problem of cities and environments takes on different forms depending on point of view, framework of understanding, and scale of investigation. In this presentation I trace the conceptual and physical contours of urban waterscapes in Jakarta across conflicting ideas and narratives and link them to emerging debates around climate change responses around the world and critical concerns of justice. Building on research explored in my book *Form and Flow: The Spatial Politics of Urban Resilience and Climate Justice* (MIT Press 2021), which examined the politics of urban climate change responses within and between Jakarta, New York, and Rotterdam, I focus on what it means, riffing on Ananya Roy's exhortation, to view all urban ecologies from this particular place on the map. Here I take seriously – and attempt to hold in view, if not resolve – contested claims and questions about worldviews, knowledge production, privilege and positionality in urban environmental research.

Kian Goh is Associate Professor of Urban Planning at UCLA Luskin School of Public Affairs, and Associate Faculty Director of the UCLA Luskin Institute on Inequality and Democracy. She researches the relationships between urban ecological design, spatial politics, and social mobilization in the context of climate change and global urbanization. Dr. Goh's recent research investigated the spatial politics of urban climate change responses, with fieldwork sites in cities in North America, Southeast Asia, and Europe. Her current research explores the implications of the global climate justice movement for more equitable and sustainable cities. Goh received a PhD in Urban and Environmental Planning from MIT, and a Master of Architecture from Yale University. She is the author of the book *Form and Flow: The Spatial Politics of Urban Resilience and Climate Justice*, published by the MIT Press in 2021.

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