

1. Introduction to the volume

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In a time of social, cultural, and economic crisis, it is safe to say that the question of the ‘urban future’ is at the forefront of public attention. Socially, cities are places where violence, poverty, and inequality are concentrated and very visible. Culturally, urban populations segregate and individualize. Economically, urban infrastructures and housing stock are highly dependent upon financial fluctuations, considering the urban fabric’s worsening material conditions after the 2008–2009 economic crisis. But beyond these dynamics, something else is going on: The city suffers vastly from the consequences of anthropogenic climate change.

On the one hand, cities are major contributors to changing ecological and climatic patterns, given the extraction of natural resources such as coal and gas for electrification and heating, and the emission of greenhouse gases due to the insatiable thirst for automobility. On the other hand, cities suffer disproportionately from the effects of climate change, becoming places of extreme and unforeseeable weather patterns. Rising temperatures lead to urban heat island effects, meaning that urbanized areas are subject to higher temperatures than their hinterlands, rendering cities vulnerable in terms of droughts and fires. Moreover, as cities have historically been established along rivers or in coastal areas, today this makes them severely affected by floods and even dynamics of sinking. Additionally, minuscule objects such as carbon particles and microplastics now permeate every pore of the urban fabric, from building materials to the bodily cells of urbanites via the water they drink and the air they breathe. One may thus argue that there exists a ‘to-and-fro’ between the socio-material system of the city and the broader climatic conditions in which it exists.

It is therefore not surprising that built environment professionals as well as ever-larger groups of urbanites are asking what the future of the city shall entail (Savini, 2019). However, adding to the current malaise is the element

of uncertainty. In the 19th century, architects, engineers, and planners, confronted with the experience of life-threatening epidemics such as cholera, sought to tame the future through sanitation systems and hygienic measures. In the 20th century, urban reformers, also aiming to ameliorate social and health problems, began to anticipate urban futures using statistical analysis and forecasting. In our current regime of volatile geopolitical relationships, environmental depletion, new epidemics, and changing climatic conditions, the reliability of prediction and control has largely receded into the background (Scoones and Stirling, 2020). The linear and upward trajectory through which 19th- and 20th-century architects and planners imagined the modern metropolis to evolve has decidedly started to crumble (Adam and Groves, 2007). Uncertainty, also, has its consequences: collective anxiety and a sense of urgency. As cities continue to suffer the consequences of droughts, fires, and floods, the phenomenon of 'climate anxiety' continues to spread through the urban world's collective consciousness. Simultaneously, the notion of urgency has become prevalent, expressing the fact that taking action in the face of the crises described above should be on urban agendas today, not tomorrow (Wallace-Wells, 2020). As those active in the world of 'post-apocalyptic' urban thinking rightfully argue, the crumbling of the urban life-world is happening now, as we speak, and it is precisely the realization of such ruination that might instigate concerted action for safe, just, and equitable urban futures to emerge.

Against this backdrop, actions are being taken which seek to reduce the anthropogenic impact on planetary ecosystems and to pave the way for alternative urban futures. These actions address a multiplicity of built environment domains through forward-looking measures designed to tackle problems such as greenhouse gas emissions, resource depletion, pollution, and environmental degradation. In the field of energy, for instance, initiatives tailored to develop alternative energy infrastructures and to lower carbon emissions are spreading in many cities, both in Europe and around the globe. By experimenting with restorative projects such as energy retrofitting in existing building stock, alternative energy communities, or zero-net districts, such initiatives intend to showcase tangible low-impact alternatives (Bulkeley et al., 2011). Yet the effects of climate change are unevenly distributed, and such environmentally led interventions are not always engaged in addressing social justice challenges (Castán Broto and Westman, 2019). Energy transition strategies need continued monitoring and refinement in order to ensure that benefits are equally shared across diverse communities.

In the field of sustainable transport, projects and policies aiming to foster alternative uses of space, based on pedestrian or sustainable mobility, are trying to leave their mark on cities amidst the dominance of car-oriented developments. City administrations in Barcelona, Paris, Milan, New York, and elsewhere have been leading the way towards new patterns of sustainable mobility, often building on the momentum of grassroots experiments emerging from local communities (Evans et al., 2018). Many localities across Europe and the globe have been imitating pioneer examples yet have often faced opposition from diverging interests and contrasting agendas over the course of urban development. A key question then becomes how the many local experiments can be transformed into a new norm, not only in discourses but also in practices of future-making (Bertolini, 2020).

Urban greening interventions such as nature-based solutions, green infrastructures, edible landscaping, and other types of nature- or food-driven actions constitute a further field of future-making. These interventions are praised for their potential to combine ecological goals – such as nature restoration and biodiversity enhancement – with the fostering of socio-economic benefits for citizens and users (Kabisch et al., 2017). As such, nature-based interventions feature in policy discourses and public debates at multiple levels as desirable strategies for developing synergetic relations between nature and city, and between humans and non-humans. Climate mitigation and adaptation plans that seek to connect urban greening interventions with other fields of future-making action, in order to have an impact that exceeds policy demarcations and overcomes spatial and temporal boundaries, are flourishing (Smeds and Acuto, 2018). Ultimately, the hope is that the emerging experiments, far from remaining exceptional projects, will provide concrete guidance on what the future city might look like.

In a broader sense, one might argue that the notion of the 'future city' has intrinsically permeated the urban public sphere and thus become, as anthropologist Arjun Appadurai (2013) argues, a 'cultural fact'. Yearly conferences such as Futurebuild (London), Ecopolis (Brussels), and Urban Future (nomadic) have seen the light of day. Media platforms and publications such as *The Guardian* and *The Atlantic* now contain thematic sections on urban futures. Corporations including Siemens and IBM claim to offer technological solutions for the city of tomorrow. It is within this context that the 2023 International Architecture Exhibition in Venice – themed 'The Laboratory of the Future' – can be read. Whilst world-renowned architect Rem Koolhaas has long been concerned with the future of cities since his Project on the City at

the Harvard School of Design (Jameson, 2003), 'the city of the future' plays an equally pivotal part in the designs and discourses of architects and planners newly entering the scene. As Austin Zeiderman and Katherine Dawson (2022: 262) rightfully argue, 'If one takes time to notice, it can easily begin to feel like the urban future is everywhere'.

Professionals in the fields of architecture, engineering, and planning have long taken up the call for a fundamental transformation of cities in the light of evident demands. Whereas in earlier times, issues involving the natural sciences, medicine, or economics often dominated public debates, the built environment disciplines have since raised their public profile. Professionals in these fields are sought out as relevant experts in the various urban initiatives and programs noted above (da Schio and van Heur, 2022). In public discourse, they are even addressed as 'the new heroes' of our times (Matzig, 2021). This dovetails with research and academic discourses of the past years becoming largely reoriented around the themes of urban transformation. The outcome is a remarkable spectrum of new technologies, innovations in building materials, experimental architectural concepts, and new planning schemes that built environment professionals are able to offer to local governments and the private sector, with the promise of addressing ecological and, at least in part, social challenges.

It is notable how this search for the 'city of the future' has also led to the intensification of the transnational exchange of ideas between cities along with new forms of cooperation between science, practice, administrations, and citizens. Knowledge about successful pilot projects and urban experiments is circulated widely within the various types of city-to-city networks that have emerged over the past two decades. These networks answer the need of local governments and public sector officials for first-hand experience and peer-to-peer exchange. By now, it has become clearer that learning from 'best practice' examples, which dominated policy transfer in the past, also needs personal encounters and communication (Healey, 2012). Such city-to-city networks, particularly involving built environment professionals as officials in public administration, are also supported by the proliferation of funding schemes that prioritize transdisciplinary research and require cooperation between science and the public sector.

The techno-optimism of some ideas currently circulating certainly raises doubts. Some approaches of geoengineering and large-scale remaking of cities and infrastructural systems are reminiscent of earlier periods of modernism (Hajer and Versteeg, 2019). Also, the narrow and policy-driven logic

found in the funding streams of European and national research agencies does not necessarily lead to innovation. Yet, it is evident that a more fundamental rethinking of the disciplinary foundations of built environment disciplines is also going on: well aware that resource use in construction as well as land use for new building must be drastically reduced, many practitioners are exploring more radical approaches of reuse, circularity, and degrowth. This goes along with new social roles: They transgress disciplinary boundaries, initiate projects also from the bottom up, and act as experts in civil society initiatives.

Planning projects and interventions are, as documented by the contributions to this volume, often heavily contested, or even a source of societal polarization and political conflict. However, there is hope that these conflicts can contribute to a more fundamental change in the ways in which the built environment is governed. The current reconfiguration of the professional field has the potential to expand opportunities for transformative action for multiple reasons: First, professional expertise mobilized to address issues of the built environment is putting into question market-based systems of norms and standards, dominated by lobby groups of the large building companies and suppliers. Second, professional associations in built environment domains are acquiring greater political voice and presence in public debates. Additionally, new collaborative practices are emerging that have put together diverse actors and interdisciplinary constellations. This, finally, might open up opportunities for new modes of involving civil society and addressing the public good.

This volume offers an intellectual journey throughout the conflictual dynamics arising from imagining, negotiating, and materializing different urban futures in contemporary times of crisis. Under the header of 'Urban Future-Making as a Lens', two theoretical excursions will set the scene. In the first of two chapters in this section, Monika Grubbauer, Louis Volont, and Alessandra Manganelli theorize the notion of conflict within the larger scheme of urban future-making practices. The chapter opens by exploring how debates about urban futures unfold within key 'arenas of conflict'. The authors then argue that amidst these conflictive arenas, built environment professionals emerge as 'agents of conflict', faced with the complex task of applying scientific knowledge and communicating with conflictive publics while invariably holding their own values and worldviews. The chapter subsequently outlines three 'modes of negotiating conflict', whereby differing urban imaginaries, layered political frames of reference, and clashing temporalities enter professionals' day-to-day practice. Lastly, the authors delve into the role of affect and emotion in conditions of conflict. It is argued that urban future-

making, beyond its seemingly rationalistic outlook, constitutes an affective practice, unlocking emotionalized responses from citizens and professional peers alike. This is not surprising, given the highly symbolic value that is more often than not attached to urban materiality. In the second chapter, Monika Grubbauer, Katharina Manderscheid, and Joachim Thiel endeavour to conceptualize agency, namely social actors' ability to act, within the world of urban future-making. In the first part of the chapter, the authors examine different theoretical approaches, from various strands of practice theory to concepts of agency found within mainstream economics. This is put into dialogue with literature that is more closely concerned with the professional cultures of architects, engineers, and planners. The second part of the chapter explores the field of action constituted by these built environment disciplines. The authors highlight how uncertainty profoundly affects decision-making of professionals on different levels. The paper then gives an overview of responses to uncertainty, showing how professional agency is currently transformed through new modes of action, new actor constellations, and new modes of dealing with the future. In the conclusion the authors argue that, while incorporated routines and dispositions of built environment disciplines are called into question, taking into account socio-material contexts as a key to professional agency might also open up opportunities for enlarging the scope of action.

The book's first thematic cluster, 'Contested Governance and Policy-Making', assembles four chapters that zoom in on conflictive futures within political contexts. Emilie D'Amico opens the discussion by examining cities' net-zero pledges in the post-Paris Agreement climate regime. D'Amico shares rich empirical insights derived from ethnographic work at the COP26 climate conference in Glasgow in 2021. Mobilizing dramaturgical theory, the chapter focuses on how narratives of urban futures are shaped through practices of scripting, staging, performing, and reframing. D'Amico also reflects on the transformative potential of the net-zero pledges made in Glasgow. She advances the argument that despite the mayors' commitment to a decarbonized urban commonwealth, they have nevertheless continued to embrace the neo-liberal paradigm of green capitalism. Consequently, more painful debates concerning high levels of urban consumption and inequality are kept in the background. The cluster then continues with Alessandro Arlati's chapter on how futures of urban greening are discussed within national parliamentary contexts in Germany and Italy. Arlati finds that despite the general parliamentary agreement on the importance of urban greening, several latent lines

of conflict can nevertheless be identified as running between step-by-step approaches and immediate action; between differing imaginations of urban futures; between majority statements and oppositional critique; between differing interpretations of the notion of 'nature'; and, finally, between possible relationships with the European Union. Next, Per Carlborg and Sophie-Marie Ertelt analyse the prospects of urban energy futures. More specifically, the authors ask whether the European project of Positive Energy Districts (PEDs) allows for a just and equitable energy transition in European cities. Guided by the concept of restorative justice, the chapter tests whether the PED programme eliminates or rather reproduces urbanites' structurally unequal access to green modes of living. It is found that policy discourse on PED development is intrinsically permeated by a threefold conflict: technocratic modes of decarbonization clash with the overall mission of citizen inclusion; imperatives of economic viability are at odds with the mitigation of citizens' vulnerability; and the construction of new buildings clashes with the alternative of energy-positive retrofitting. The book's first cluster ends with Fabian Namberger's chapter on the conflicts arising during the development of autonomous driving and its corresponding prerequisite, HD mapping. Deploying the Testfeld Autonomes Fahren Baden-Württemberg (TAF BW, a test field for autonomous driving) in south-west Germany as a central case, Namberger highlights in detail how digital replicas of the city aim to manage and mitigate the unpredictability of urban streetscapes. This, however, stirs up a threefold conflict, namely a conflict of governance (as diverse actors at different institutional levels have to align goals and preferences); a conflict of regulation (regarding safety aspects, technical requirements, and data laws); and a conflict of imagination (as different visions of the 'machine-readable city' are publicly dispersed through a variety of visual and videographic carriers).

The second thematic cluster, titled 'Contrasting Cultures and Institutions', focuses on how place-based action can induce wider-scale transformations in the presence of divergent institutional logics and cultural worlds. Taking the city of Hamburg as a case study, Tom Hawxwell's chapter illustrates how the hegemonic status of car-oriented urban development has shifted over time. The author embeds this account in the larger field of transition studies and is specifically interested in 'pressure fronts' (from civil society, political ideologies, material circumstances, budgetary constraints, and so on) and 'turning points' (ruptures between different phases and styles of urban development). Five historical blocks are investigated, spanning the period from the

late 1970s until the present, tracing incremental steps as well as more radical changes in transportation planning and policy. For each period, the author explains which pressure fronts effectively generated the shift in governmental direction. In their chapter, Malene Freudendal-Pedersen and Sven Kesselring designate the world of mobility future-making as one permeated by friction, but promptly add that such friction constitutes a highly needed and valuable asset for democratic mobility futures to materialize. The chapter firmly links urban mobility with the issue of climate change and takes an explicitly critical stance towards the lack of significant efforts in the transportation sector to reduce greenhouse gas emissions. In doing so, Freudendal-Pedersen and Kesselring shed an analytic light on the mobility transition in the German state of Baden-Württemberg. Although unfinished and continuously subject to debate, Baden-Württemberg's Climate Protection and Climate Change Adaptation Act reinvigorates hope for sustainable mobility futures to emerge. Such futures, the authors argue, may become a reality only when the state's technooptimistic focus is combined with the insights, practices, and participation of urban citizens. The contribution by Hannes Langguth delves into the conflicts arising in Eastern Germany during the implementation of Chinese gigafactories for the production of electric vehicle batteries. The chapter focusses in detail on the largely overlooked 'internal' conflicts occurring between planners, policy-makers, and administration professionals. The methodology of institutional ethnography allows the author to shed light on the planning and approval processes related to one successful implementation case in Thuringia and one failed case in Saxony-Anhalt. These conflicts are analysed as 'formations of the political', in which the underlying actor and power relations merge and clash at the crossroads between different state and local levels, and with global investors. Langguth shows how deviating planning cultures, different expectations, and even issues of deception and false promises complicate Sino-German cooperation on this new generation of factories. The chapter by Lucas Pohl closes the cluster by depicting the effect of sea level rise on coastal cities – Bangkok in particular – yet stresses that sea level rise does not affect (urban) communities in equal measure. The chapter's key argument is that sea level rise exerts both challenges and potentials upon the urban fabric. In terms of challenges, sea level rise reproduces pre-existing urban inequalities. As rising shorelines gradually erode habitable land, water becomes a key determinant that demarcates who can afford to live in waterfront areas and whose lives and homes are sacrificed. However, the author sees profound potential in the chal-

lenges of sea level rise. It demands that urbanites experiment with new forms of life and politicize the unequal effects of a changing climate.

Finally, the third and final cluster, 'Grounding Conflicts in Everyday Practices' zooms in on place-based practices of introducing and negotiating material interventions in cities. In his contribution, Robbie Gilmore expands on the role that greening may play in conflicts about urban futures. Examining actors' imaginaries around a greenway project in the Northern Irish city of Belfast, Gilmore shows how greening interventions are ascribed with multiple political meanings. Digging into struggles around urbanized nature, the author shows how different actors create and form relationships with different forms of greenness in order to exert agency over the development and maintenance of urban projects and borders. In doing so, Gilmore disentangles how greening features as a means to articulate, mediate, or negotiate actors' conflicts between different urban futures. The cluster continues with Melis Günay's analysis of conflictual dynamics in a traffic experiment in the German municipality of Giessen, aimed at reallocating street space for active forms of mobility, such as walking or cycling. Providing an alternative lens to two common modalities of theorizing conflicts – communicative planning theories on the one hand, and agonistic planning approaches on the other – Günay's focus is on how conflicts are practically 'done', and for whom such conflicts become productive. Thus, by analysing 'conflicts in action', Günay generates original perspectives on the diverse modalities through which relevant actors negotiate conflicts. Finally, Alessandra Manganelli closes the cluster and the book by investigating urban experiments in the cross-cutting domains of urban mobility, nature-based solutions, and public space design. Through the experience of the Barcelona Superblocks and green axes, her chapter frames conflicts as tensions between opposing or contradictory dynamics around place. In particular, while tensions reveal deep frictions between a particular experiment and underlying power dynamics and structural challenges of the city, Manganelli shows how these tensions can open up opportunities for transformative action. By identifying tensions in dynamics of governance, participation, socio-ecological justice, power, and politics, Manganelli seeks to unravel what happens when a transformative idea is translated into a concrete and potentially disruptive urban intervention.

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