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Introduction: The metabolic city

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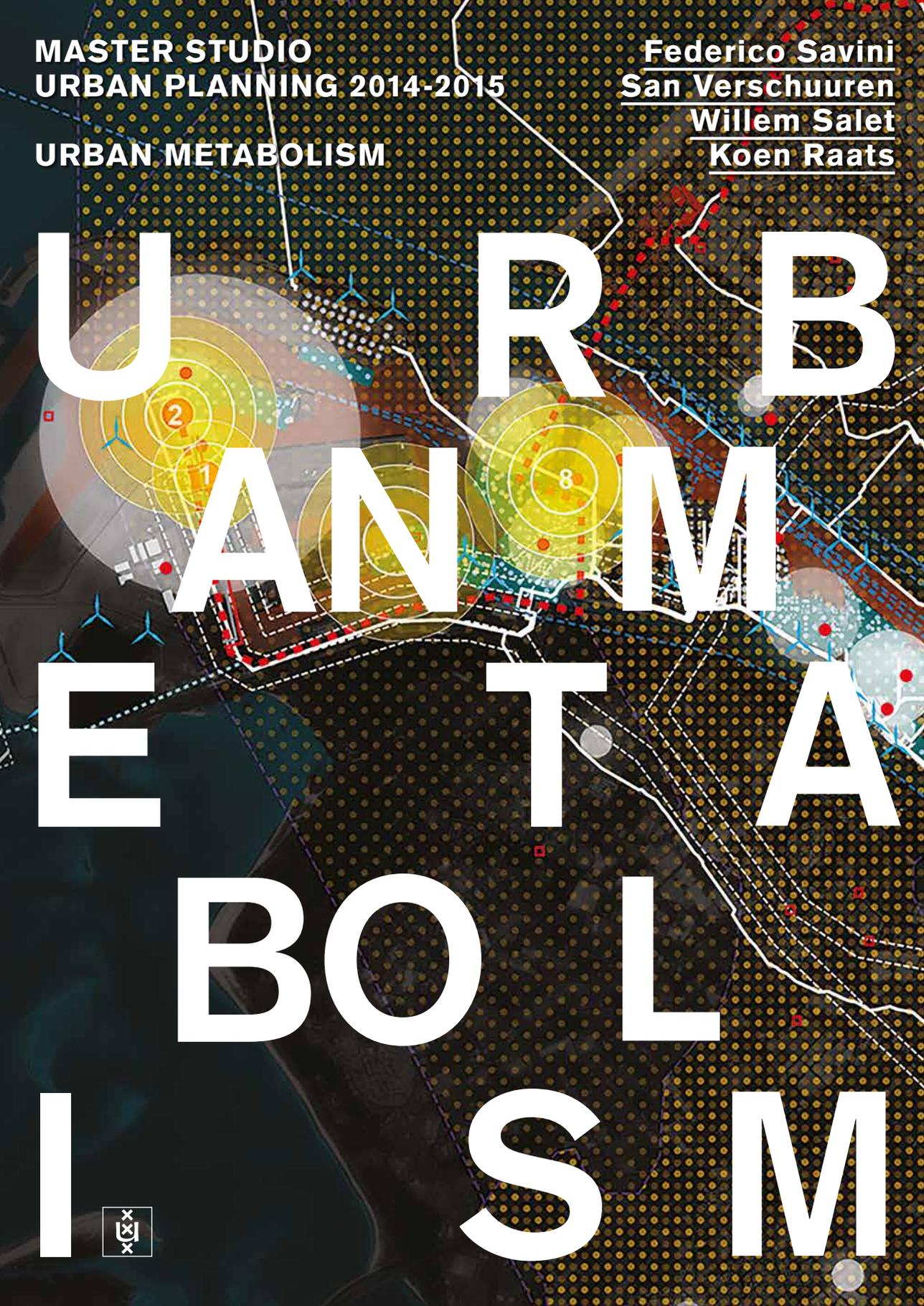
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MASTER STUDIO
URBAN PLANNING 2014-2015

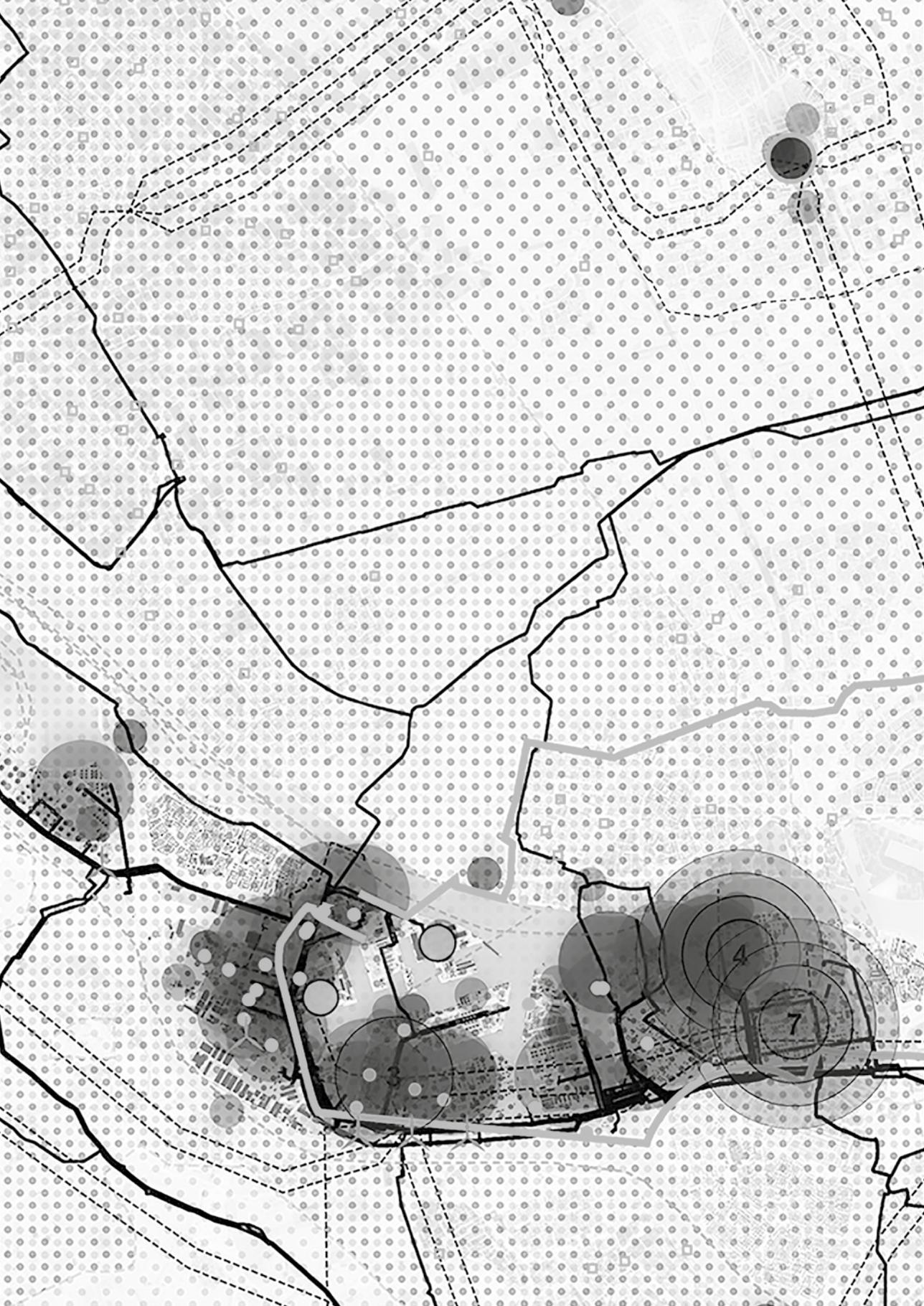
Federico Savini
San Verschuuren
Willem Salet
Koen Raats

URBAN METABOLISM

The background is a detailed aerial urban planning map. It features a grid of streets, various colored zones (yellow, green, blue, red), and several circular diagrams with numbers (1, 2, 8) overlaid on them. The text 'URBAN METABOLISM' is written in large, white, sans-serif capital letters across the center of the map.

URBAN
METABOLISM





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THE METABOLIC CITY

It is almost impossible to disagree that climate change is an urgent issue today, and that cities are at the center of discussions addressing this phenomenon. Environmental sustainability has been a central policy concept for 20 years. Several institutional, legal, and economic reforms have been put in place to favor transition to a system of economic growth that is more sensitive to the long-term future of our planet. Yet, today's debate is colored through the issues that emerge when this problem is addressed. The role of cities has become extremely prominent in political thinking. Cities are seen as the space where climate change can be mitigated and where adaptation can be experimentally tested and successfully implemented. Climate change remains a global issue, regarding macro balances between developed and developing regions; between wealth and poverty. However, planners and policy analysts look to urban areas for new inspiration. Cities, as composite entities made of different social and economic dynamics, are considered breeding places for creative solutions.

Is that so? To what extent does city planning and urban policy provide room for truly radical innovation in the field of environmental sustainability? Amsterdam is no different from other global cities within this debate. New and old political forces acclaim the innovative potential of urban neighborhoods, creative enterprises and progressive governments to stimulate new thinking over sustainable urbanism(s). Here the frontier of innovative thinking is grounded in known concepts. Recently published agendas for sustainable development reclaim the innovative potential of metabolic approaches. They emphasize the circularity of urban life, the systemic nature of cities, and the dynamic combination of material flows in understanding and addressing urgent urban problems.

The notion of *urban metabolism* has been around for 50 years. Yet, it has gained a rejuvenated interest in the field of urban studies, planning and architecture, becoming one of the most hip concepts of our time. The idea of metabolism is based on the assumption that the environmental pressure generated by urban life needs to be assessed in a systemic way: a (as much as) comprehensive view on the functioning of an ecosystem through a continuous process of input, throughput and output. The city is viewed by its 'material flows', generally defined into water, energy, materials (including food) and waste. These flows consist of inputs (local, regional, global inflow of resources), throughputs (energy required to transform these resources and waste produced by any process) and outputs (the material outcome of this process). The challenge for policy makers is to design ways to govern each material flow, enabling the reintegration of waste outputs into the cycle.

Technological solutions to improve material flows in cities are numerous. Technical advancement have made it possible to know and adapt almost every dimension of our daily living in cities. Yet, cities do exhibit highly conservative unsustainable behaviors. Even waste recycling

remains limited in the city of Amsterdam. Why does this happen? The social, cultural and institutional dimension of sustainable policies is the key to a radical change. This is the fundamental starting statement of our education program at the University of Amsterdam. Innovation and experimentation must look at how people and communities behave and approach urban flows, and at the system of rituals, habits, norms and values that govern our behavior.

The Master Studio Urban Planning, which took place in January 2015, built upon this mission: research and practice need to better problematize the social nature of urban metabolism. New policies, hence, do not need to focus exclusively on technological innovation, but must consider how these material aspects interrelate with the socio-cultural environments of cities.

The University of Amsterdam has a long tradition of research-based practical studios. Since the early '90s we have annually addressed a new innovative and urgent topic in the field of urbanism and planning, using critical theoretical and methodological instruments to design new ideas. The 2014-2015 edition has brought together 45 students, more than 15 speakers and several experts and local politicians in the field of urban sustainability to discuss, reflect and experiment with the idea of urban metabolism. The publication here presented contains a snapshot of the studio and of the ideas rotating around it. The UvA, organizers and the coordinator of the studio are happy to thank the sLIM foundation, the EFL stichting, the Pakhuis de Zwijger and Waternet for making this possible.

We look forward for next year's edition, with a new groundbreaking topic.

The organizers
Federico Savini
San Verschuuren
Willem Salet