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Sustainable Urbanism in Digital Transitions

From Low Carbon to Smart Sustainable Cities

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Preface

The idea of urban sustainability has experienced important transformations in the past decades. The emphasis on eco-cities and the low carbon agenda due to climatic challenges is increasingly combined with the rise of smart cities. Sustainable urbanism, thus, re-emerges in an upscaled fashion to engulf smart cities and innovative technical solutions embracing information and communication technology or ICT. The initial driver was to work towards service and resource use efficiency at a smaller scale, but the concept of the smart city has developed from this original ambition to one that applies to entire cities and urban areas, and no longer just the transportation system or buildings. Modern applications involve increasingly greater connectivity or integration, with the involvement of multiple stakeholders and city components. The smart city is based on automation and monitoring by sensors and Big Data collection, which are used to improve performance and to inform governance. This transformation, however, raises new critical questions, including whether smart sustainable cities become too technocratic in actual operation, but also with regard to citizen involvement in such a technologically automated environment. Moreover, problems that are associated with cybersecurity and the use of Big Data, including personal privacy—and ultimately democracy—need to be addressed. This brief reviews these important contemporary concerns. It also discusses the degree to which smart cities function to improve the quality of life for urban citizens and their role in enacting the 'simple life' concept for sustainable urban development.

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Dr. Mary J. Thornbush is presently Researcher in the Ecological Footprint Initiative based in the Faculty of Environmental Studies at York University, Canada. She has over 80 publications in the areas of applied geomorphology and environmental and urban sustainability. Her doctoral thesis at the University of Oxford addressed urban sustainability through a study of air emissions from transport in central Oxford and investigated their impacts on the weathering of its historical limestone buildings. Her relevant publications include a special section on Geography, Urban Geomorphology and Sustainability in the journal *Area* (2015) as well as books such as *Vehicular Air Pollution and Urban Sustainability: An Assessment from Central Oxford, UK* (2015, Springer) and a volume on *Urban Geomorphology: Landforms and Processes in Cities* (2018, Elsevier) in the area of sustainability research.

Dr. Oleg Golubchikov is Reader in Human Geography at the School of Geography and Planning at Cardiff University. He previously worked as an academic at the Universities of Oxford and Birmingham. He has also held visiting academic positions in Sweden, Finland, and Russia. His research interests lie with urban political geography, sustainable cities, and energy geography. His recent research interrogates the relationships between spatial governance and urban and regional transformations in the context of major contemporary societal 'projects' including post-socialist and post-carbon transitions. He has developed research projects and collaborations across Europe and in the BRIC countries. His research also informs international policies. He has advised the United Nations on aspects of sustainable housing, urban development, and low carbon cities.