

# TeMA

Journal of  
Land Use, Mobility and Environment

There are a number of different future-city visions being developed around the world at the moment: one of them is Smart Cities: ICT and big data availability may contribute to better understand and plan the city, improving efficiency, equity and quality of life. But these visions of utopia need an urgent reality check: this is one of the future challenges that Smart Cities have to face.

Tema is the Journal of Land use, Mobility and Environment and offers papers with a unified approach to planning and mobility. TeMA Journal has also received the Sparc Europe Seal of Open Access Journals released by Scholarly Publishing and Academic Resources Coalition (SPARC Europe) and the Directory of Open Access Journals (DOAJ).



CITIES, ENERGY AND BUILT ENVIRONMENT

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Cover image: The ZCB Zero Carbon Building, designed by Ronald Lu & Partners, conceived to promote a low carbon emission lifestyle and to be a showcase of technologies to initiate a cultural change.

TeMA. Journal of Land Use, Mobility and Environment offers researches, applications and contributions with a unified approach to planning and mobility and publishes original inter-disciplinary papers on the interaction of transport, land use and environment. Domains include: engineering, planning, modeling, behavior, economics, geography, regional science, sociology, architecture and design, network science and complex systems.

The Italian *National Agency for the Evaluation of Universities and Research Institutes* (ANVUR) classified TeMA as scientific journal in the Area 08. TeMA has also received the *Sparc Europe Seal* for Open Access Journals released by *Scholarly Publishing and Academic Resources Coalition* (SPARC Europe) and the *Directory of Open Access Journals* (DOAJ). TeMA is published under a Creative Commons Attribution 3.0 License and is blind peer reviewed at least by two referees selected among high-profile scientists. TeMA has been published since 2007 and is indexed in the main bibliographical databases and it is present in the catalogues of hundreds of academic and research libraries worldwide.

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## EDITORIAL PREFACE:

### CITIES, ENERGY AND BUILT ENVIRONMENT

ROCCO PAPA

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The improvement of energy efficiency is one of the main challenges we need to address to reach the objectives set by the EU 20-20-20 Strategy. Cities are responsible for two-thirds of the global energy consumption and this proportion is expected to grow further. Cities represent complex systems in which physical assets, strategic and economic activities as well as most of the world population are concentrated. Hence, to achieve relevant and enduring results in addressing energy efficiency issues, it is necessary to broaden our vision from the building scale to the whole urban structure. Urban planning is increasingly considered a crucial element in the long-term energy efficiency strategies. Hence, relevant and enduring results in addressing energy efficiency issues can be achieved, broadening our vision from the building scale to the entire urban system, and considering the relationships between the different urban components and energy consumption.

This issue of TeMA focuses on the topic of Cities, Energy and Built Environment. The first article, titled "Urban Planning Dealing with Change and Infrastructure", by Sonja Deppisch and Daniel Dittmer (Hafencity University Hamburg), deals with urban planning and the transformation processes that potentially affect local infrastructure. The overarching theoretical social-ecological resilience-thinking frame and its potential application as well as implications for urban land-use development. The paper illustrates two explorative studies in Germany. One study gains its material from a scenario process with planning practitioners and urban stakeholders of a medium-sized city. The second explorative study presents research results on the readiness to apply the resilience concept to urban planning, dealing with change and local infrastructure in a small community. The simulation shows that applying social-ecological resilience thinking to urban planning helps to critically consider the paths taken so far in building local infrastructure. Nevertheless, such a process requires additional financial, as well as human, resources and implementation tools. Also, the given path dependency as well as financial constraints are impeding the perception of any leeway in infrastructure development at the political level. The second article titled "Smart City and Metropolitan Area: the Energy Component in the Case Studies of Genoa and Naples" presented by Rosaria Battarra, Chiara Lombardi e Marco Raimondo deals with the metropolitan levels and proposes a survey of the experimentations carried out in the two Italian cities of Naples and Genoa referring in particular to the energy component. In order to define the inclination towards "smartness" of these two metropolitan Italian cities a methodology is developed. This survey was structured in two macro-phases: the first one aimed at collecting information

studying documents, databases, projects, programmes and actions, the second one based on stakeholder interviews. Authors highlight that from the analysis of the experiences and policies initiated in the metropolitan areas of Genoa and Naples, among the many themes defining Smart City, the energy component emerges as a central subject. In both case studies, in fact, smart actions are primarily aimed at energy saving or, alternatively, at environmental protection. The need to mainstream, in the regular urban planning process, actions and tools aimed at implementing energy saving is highlighted by the authors as one of the necessary condition to action.

The section Land Use, Mobility and Environment collects four articles. The first one titled "Less Smart More City" focuses on the Smart City concept evolution and its relationship with urban planning. The paper presents the results of research aimed at analyzing and interpreting the different formulations that are made of the term smart city mainly, but not exclusively, through lexical analysis, applied to a textual corpus of 156 definitions of smart city formulated in the last 15 years. In particular, the study identified the main groups of stakeholders that have taken part in the debate, and investigated the differences and convergences that can be detected between the approaches of the: Academic, Institutional, and Business worlds. Beyond the differences that characterize these three groups, it demonstrates that the debate is increasingly in the hands of businesses, while institutions take a secondary role and the scientific community tries to carve out its own space with difficulty within the themes promoted by research funding. The second one, titled "Urban development in Tuscany. Land uptake and landscapes changes", written by a group of researchers from the Universities of Aquila and Florence, addresses the phenomenon of urban sprawl. It has been already recognized as one of the major anthropic threats to natural ecosystems and landscapes while the negative aspects of the phenomenon are still only marginally taken into consideration in the scientific and local government circles. The study regards the processing of data on urban land conversion over the past 50 years and the effects in the areas of high environmental vulnerability in Tuscany, one of the most important Italian regions. The historical data was compared from a qualitative and quantitative point of view with the present-day geography of settlements, which showing changes found in today's settlement-territorial structure. The conclusions focuses on collated environmental criticalities and the margins for recovery of the compromised territories that still today receive little attention from central institutions and local authorities and that are scarcely taken into account by land management tools. The third one, titled "Smart City, Metropolitan Areas and Competitiveness: the case study of Florence", like Giffinger et al., considers the Smart City articulated in six dimensions. One of these is the Smart Economy, which refers to the activation of development processes that increase the competitiveness of urban systems. Among the results of the research activities, it suggests that some metropolitan areas, such as Florence, have invested in policies and actions aimed at implementation of Smart City in order to increase their competitiveness in key sectors of their economy. Therefore, after the description of the relationships identified in the scientific literature between Smart City and territorial competitiveness, this paper describes the policies and the measures adopted in Florence, regarding the sector of cultural heritage and tourism, for the constitution of the Metropolitan City. The last one, titled "Sustainable Urban Mobility Towards Smart Mobility: the Case Study of Bari Area. Italy", discusses preliminary findings of a Research Project conducted at University of Naples, DICEA, funded by EU (PON REC 04A2\_00120 Asse II), "Smart Energy Master – Toward Energy-based approaches for Regional Planning". The primary goal of the work is to review policies, programs, projects for sustainable urban mobility and smart mobility solutions in the Bari area. The second goal is assess the trends of urban mobility in order to evaluate its sustainability and smartness. A comparison, focused on matching the local strategies to European programs, is presented. Finally, a consideration on how the "smart" framework may improve urban mobility planning is proposed.

Finally, the Review Pages define the general framework of the theme of Smart City, Energy and Built Environment with an updated focus of websites, publications, laws, urban practices and news and events on this subject.