

Call for Papers

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Special Issue on: 'Digital technology and renewable energies for eco-sustainable knowledge cities'

Guest Editors

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The knowledge economy as well as the planning and development of increasingly "smart" cities, ecological cities (eco-cities) have sparked great interest in a certain number of metropolises all over the world, including the comprehensive value-balance of "knowledge cities" (Carrillo, 2006). No matter their size (small, medium-sized or large), cities are prone to urban re-development schemes which emphasize some qualities to be displayed by the city of the future, including innovation and eco-sustainability. Decision-making actors are increasingly favouring this type of knowledge-based development projects in order to enhance the economic competitiveness and the urban attractiveness, as well as the long-term viability of the territories they are managing (Ashein, Coenen, and Vang, 2007). On the other hand, the current "hyper-connected" and highly mobile societies are dependent on the use of new technologies. This hyper-connected (Castells and Cardoso, 2005; Sassen, 2011) and knowledge-based world, built upon new spaces, creates or transforms non-residential spatial practices, but also transforms spaces in the perception and the representation of their inhabitants.

A new type of city growth, through the system of clusters (Huggins, 2008; Cooke and Lazzeretti, 2008) is spreading out across the world, via the creation of collaborative platforms associating universities, firms, and public institutions (Ternouth, Garner, Woold and Forbes, 2012). Following this trend, the most prolific cities are characterized as "knowledge hubs". Hence, territorial clustering pertains to larger territories or regions having a development strategy based upon the creation of clusters, where universities play a central role (Charles, 2007; Ingallina, 2012). The main purpose of these urban transformation schemes is to capture the largest amount of flows of ideas, in order to innovate in the economy and all important dimensions of city life. This is also convergent with the concept of the smart city.

Global warming and increasing urban air pollution result in serious health issues, especially in public spaces purporting to be the most democratic, the most crowded and the most threatened locations in cities (Newman and Jennings, 2008). As a result, knowledge-based cities shall aim at a new objective: protecting the environment as well as natural resources. Furthermore, the exhaustion of natural resources, entices cities to develop new forms of energy, namely renewable and alternative ones. The concept of eco-city is thus on its way (Joss, 2011; Register, 2006). Smart city or eco-city...in either case, the question of innovation (Cohen and Levinthal, 1990) is first being raised from an economic standpoint, and pinpoints the lack of adaptation of these urban ambitions to the current economic model. As a result, a new economic model, adapted to our current social model but capable of evolving as well, should be envisioned.

3 main approaches:

1. *Knowledge city, smart city, or eco-city?*

The Anglo-Saxon literature has explained the development of current cities and has introduced the new concepts of: KBUS (Knowledge-Based Urban Development, Ygitcanlar, 2008) or UKBP (Urban Knowledge-Based Project, Ingallina, 2016). Whereas Knowledge Cities encompass the universe of urban capital, smart and digital cities deal with very specific aspects of digital infrastructure. Hence, this special issue looks at interpretative models at work, not only in the specific literature, but also in the case of long-term strategies (individual and collective, private and public), and how these models are being implemented (design, tools, actions...).

2. *The influence of digital technologies in the construction of the urban space*

The “Digital City” is viewed as specific to services based on digital technologies, offering their users (local or “global” citizens or firms) a great deal of services and free access to data (open data). The digital city is underway, a city where technology transforms the use of spaces and their functioning. The ongoing territorial transformation processes must now heed this dimension in the frame of this transition towards the digital city. As a result, the question of the new typologies of urban spaces, better adapted to new uses (designed for instance according to data offer and access to information), may be raised. The construction of digital buildings creates a new rhetoric in the conception of an architectural project.

3. *The status of energy in urban projects*

Certain cities, such as Masdar City, strive to combine the requirements of the “smart city” (based on the use of digital technologies), with the creation of collaborative platforms (university-firm-TTO) which define the Knowledge-Based city, for the purpose of eco-development (build zero-energy cities). The construction of positive-energy buildings is embedded within this framework ensuring that a building’s energy consumption is at the very least equal to its energy production. As a result, self-consumption spreads out from the scale of the building to the one of a large territory, and thus questions the relevance of energy networks in the city of the future. How are these issues being tackled by the decision-making actors with regard to development strategies, urban planning and operational projects in a territory? What criteria are being adopted in order to qualify the results of these actions as a success or a failure (ex-post evaluation)?

Important Dates

Submission of abstracts (300 words):	30 May 2016
Submission of full paper:	30 September 2016
Notification of review results:	15 December 2016
Final Paper Submission:	30 January 2017

Editors and Notes

All papers must be submitted online. To submit a paper, please go to Online Submissions of Papers. If you experience any problems submitting your paper online, please contact submissions@inderscience.com, describing the exact problem you experience. (Please include in your email the title of the Special Issue, the title of the Journal and the name of the Guest Editor). For more information on the special issue, please contact either Guest Editor directly:

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