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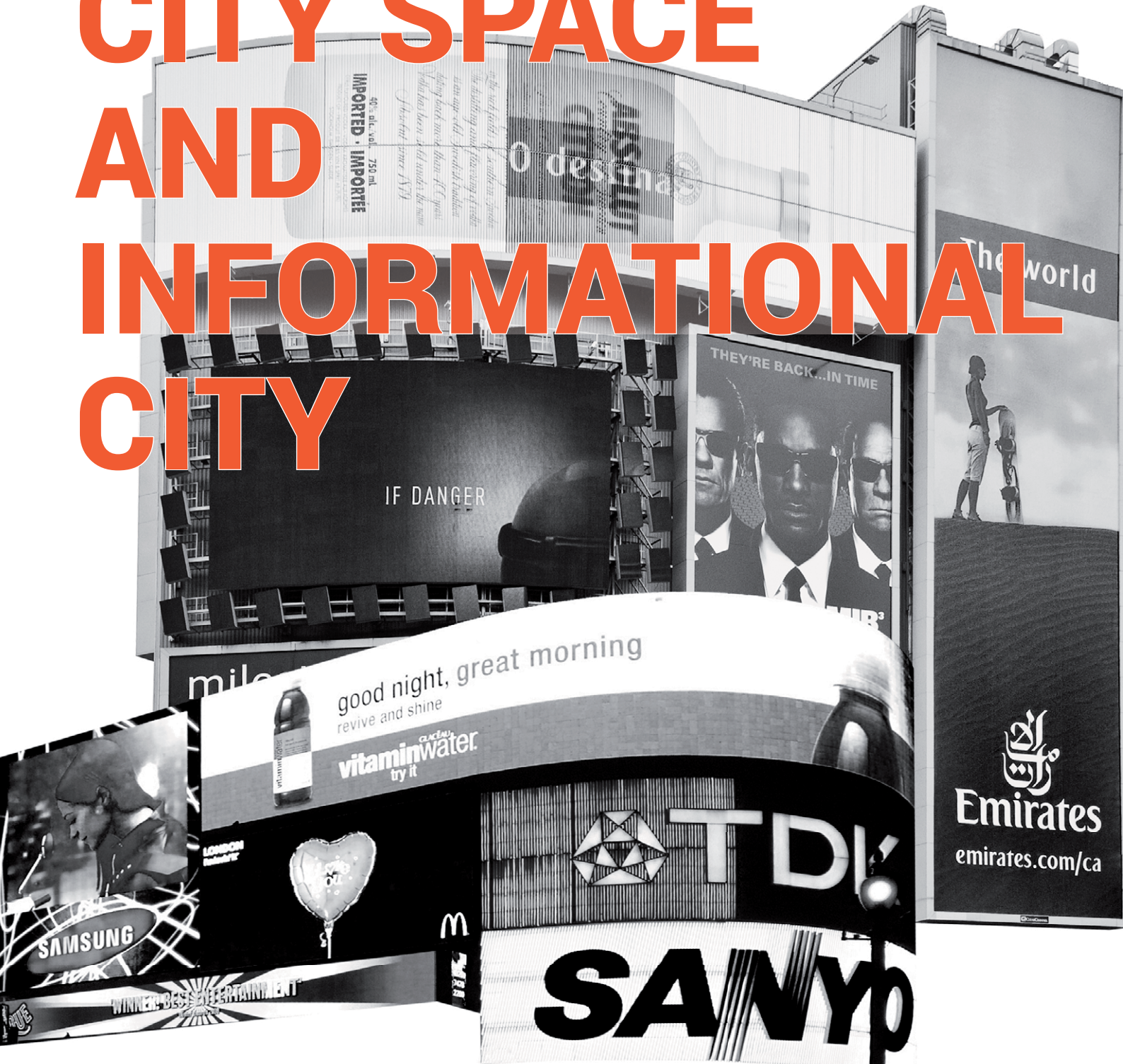
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# Screen-city Journal

1 / 2013

## CITY SPACE AND INFORMATIONAL CITY



Edited by S. Arcagni, M. De Rosa, K. Gasparini

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## **MAKING PUBLIC OUTDOOR SPACE IN TRANSITION**

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### **Abstract**

In urban public outdoor space, the possibility to define multi-functional islands, to create “fusion” of socialization, leisure and work spaces – for example lounges with wireless connectivity, quiet corners to work as well as areas for socializing and relax ... – reduces isolation and increases innovation opportunities.

The development of electronic live/work areas and villages is becoming an attractive option for the rehabilitation of open space in historic and post-industrial cities. There are multiple application fields: pedestrian spaces, streets and meeting points, “relaxation” places, commercial spaces, multi-functions spaces, structures for temporary demonstrations or for urban art.

The importance of public space is highlighted in providing support that can facilitate the different types of social interaction with new media technologies, to overcome the digital divide in deprived neighborhoods.

A neglected dimension of the multimedia in European open space is the sound. The soundscape design corresponds to the visual design field of landscape design. Sound sculptures and sound digital installations can create symbiotic landscapes and contribute to the atmosphere of space to the creation of a livable and intelligent physical environment.

### **Keywords**

Urban Outdoor Space, Multifunctional and Multimedia

### **Introduction**

The “spatialization” (Lefebvre: 1985) – in sociology and urban planning – refers to the spatial forms that social activities and material things, phenomena or processes take on. In view of new media technologies, the term regards the actual and overall changing of sense of social space typical of a time and a place.

Outdoor space is defined as that part of the urban area which positively contributes to the socialization, public outdoor space is defined as that open space to which there is public access, even though the land may not necessarily be in public ownership. It is therefore a combination of civic services, street frontages and barriers, green and paved areas. From an architectural and landscaping perspective, new technologies often provide new ways of adding value.

## Fusion Space

William Mitchell has been the first to show that the technologies of the network society tend to produce a “fusion space: an architectural space in which digital electronic technology enables new and socially valuable combinations of people or activities” (Mitchell: 2005).

The fast wireless channels allow an inexpensive movement of information, the growth of an efficient and low cost urban infrastructure that reduces the demand for mobility and the rigid and functional assignment of activities (office, commercial and residential areas, low environmental impact industries) to locations. A new local *quality of life* is increasing its importance in location choices. The emerging paradox associated to wireless connectivity is that it does not require a space looking “high tech”, but despite this the existing outdoor spatial pattern is subjected to pressure to meet new needs.

The ever growing – electronically enabled – fusion space leads to a request for aesthetics and comfort, resulting in the recombination of space types and of urban patterns. The historical European towns and villages have a particular opportunity to take advantage of the architectural and urban potentials, in order to *adaptive reuse* and to add value to places, introducing digital connectivity infrastructure. Many activities can be moved from classically conceived, single-purpose, assigned space to fusion space: park benches, cafe dehors, bus stops ...

The prospect of multifunctional and multimedia spaces for urban quality has now many *partial* applications. An open issue of interdisciplinary research is probing the potential for sustainable improvement in the quality of relaxation and residual spaces to stimulate the local *sustainable and smart* redevelopment.

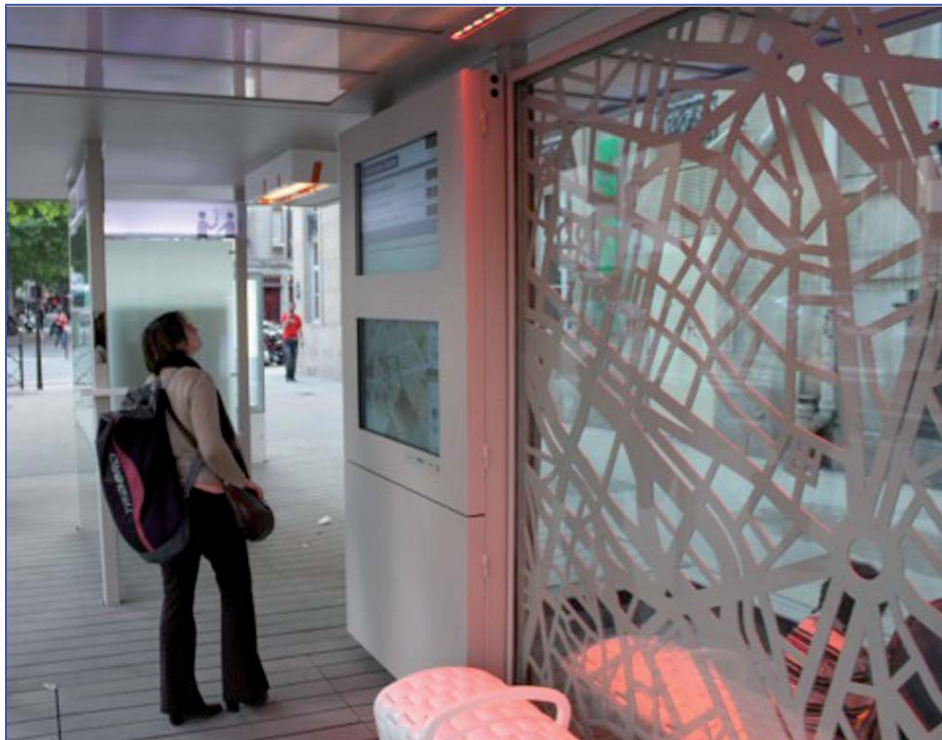
With this perspective, intelligent and liveable outdoor urban spaces can combine different concepts of quality and functions:

- Polysemic quality, through the preservation / enhancement / reconstruction of signs of cultures and history in order to enhance the identity and sense of place;
- General enhancement of the place perception and attractiveness, through the integrated design (architecture, sound, light, green landscape, multimedia);
- Promotion of transformation actions and use of space involving groups and local communities, forms of partnership between the public and private sectors;
- Provision of mobile wireless accessibility;
- Availability of ICT systems based on interoperability (human-centric solutions, community and touristic blog ...) and Public Virtual Doors for integration services between citizens and public administration;
- Presence of specialized equipment for relaxation, leisure, sport;
- Presence of “loose” areas, available to stimulate innovative creative uses and practices of individuals and groups;
- Introduction of sensorial and cultural value elements in vegetative and “edible urban landscape”
- Control of outdoor comfort, through visual, acoustic, climatic performance;
- In the future, the digital monitoring of perception, accurately sensing and interpreting the state of users and the physical world;- Tendency to self-sufficiency through local renewable energy generation.

For example, since 2012, the RATP – the Parisian Public Transport Company – has introduced a new vision in urban transport, experimenting new interactive bus stations in the city. The “OSMOSE project” – conceived by architect Marc Aurel – is made of steel shelters that cover a 85 m<sup>2</sup> area. The project provides support services to urban transport: a comfortable open waiting room, a central wall with decorative glass

heated to a low temperature, a station for electric bikes with self-service recharge, a ticket office, two backlit touchscreen information posts for signage, a library (take a book, leave a book), a cafeteria and a make-up area. The digital equipment includes real time information screens and interactive displays that allow you to identify nearby transport points or places of interest. The lighting inside the structure varies throughout the course of the day, the sound diffusion is through a crystal vibration system around the waiting area and alerts users when the bus is approaching. The innovative bus stop is accessible to users with visual and auditory disabilities.

The perception of an urban open space can significantly affect they use that space, and the collective opinion that a community has of such a space shape influences the wider community's image of urban spaces.



Figs. n.1 - OSMOSE bus-stop, RATP Gare de Lyon, Paris



Figs. n. 2 - OSMOSE bus-stop, RATP Gare de Lyon, Paris

## Human-Oriented Approach

In order to develop a cooperative space, Streitz follows a “human centered design approach” for the urban spaces (Streitz: 2009). “Hybrid City” is a concept for integrating the real city and the parallel virtual city, “Human City” is a concept for a city where people have multiple opportunities to exploit their human potential and lead a creative life.

The human-oriented approach and vision for future cities, supporting responsible citizenship and engagement, are direct to a Creative and Inclusive Society. The urban social traditions, the places identity and the heritage forms will provide a relevant orientation versus concepts like Smart-Hybrid-Human Cities.

In the case of urban peripheries, the innovation of information networks, the introduction of interactive elements, the promotion of creative practices can help reconstruct a sense of identity, starting from the traces – material and immaterial – of collective memory.

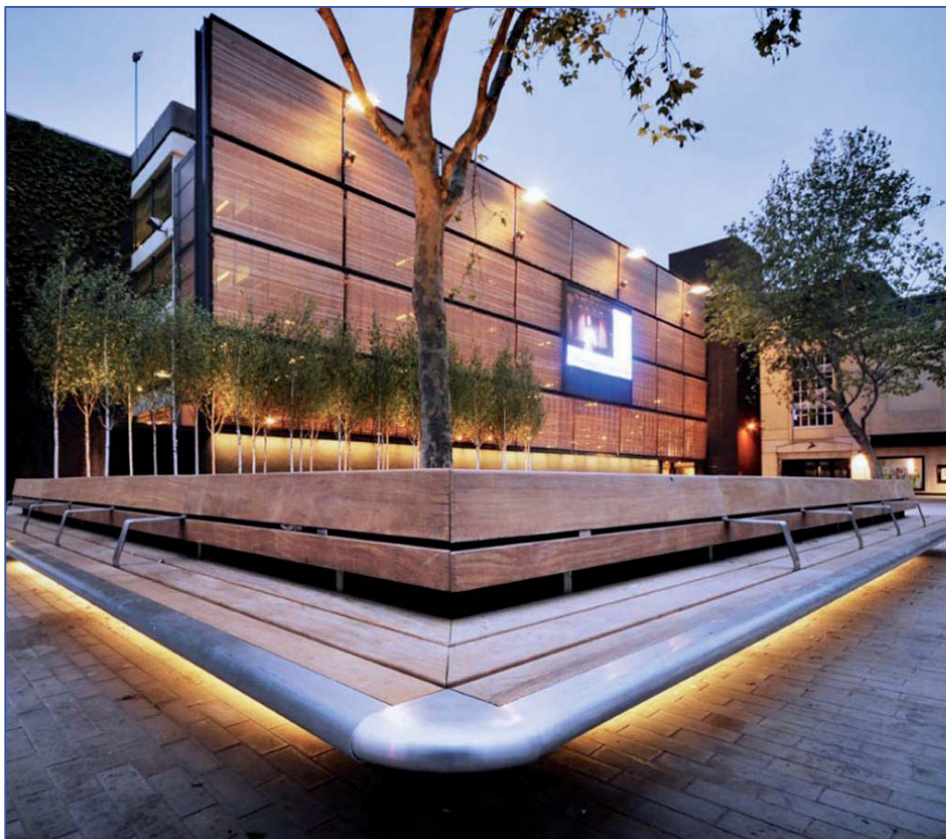
The residual and low-quality spaces in existing neighborhoods can then become an interconnected and emotional environment through creative interventions, implying a slight recovery.

The *experience* of space – parks, squares, stations and undergrounds – is growing linked to multi-dimensional elements and multi-media tools. The integration of signals and devices in outdoor public spaces can facilitate disadvantaged users – depending on the age, culture, disability, economic status ... – to access digital information and it is aimed at reducing the digital divide and increasing inclusion. Neglected green spaces and urban “void spaces” are, then, targeted as a resource, a focal points for neighborhood regeneration initiatives.

In a complex and multicultural society, public open city spaces must be interpreted in a polysemic perspective. The design requires consideration of a plurality of visions, using different forms of cognitive analysis and representation, promoting factors such as pleasantness, safety, ergonomics, acoustic and visual comfort, digital devices, free wireless.

Increasing the level of community involvement in decision making and management of public outdoor space can result in the enrichment of the space, in terms of use, quality of maintenance, range of facilities, visitor experience and security, as a guarantee anti-vandalism.

The new connectivity and the fusion of previously distinct activities are the potential source of new value. In a development area between the old and new town of Swindon (England), the masterplan study explored ways in which the quality of the town centre public realm – surrounded by under-trading retail – could be raised. Another aim was to evoke the canal that ran along the street 100 years ago and to propose a square as a metaphor of a “Wharf Green”, along the canal. The project (LDA Design, 2005-7) played a key role in a regeneration change. The new uses, destinations and connections have shown how relevant quality improvements can be achieved injecting creativity and a real sense of place. The design team developed ideas for screening the 1960 multi-storey car park on one side of the square, the resulting timber-louved architectural screen and the digital urban screen have created the setting for an uncluttered public realm. The continuous of stone paving replaces the convoluted level changes that previously restricted the use of the space for events. The light design (Speirs & Major) emphasizes the limits of space through horizontal bands and evokes the presence of water. “Wharf Green” accommodates the space by skateboarders, the seating-planter in the center, the timber double-sided seating on one side. The marginal square has transformed into a flexible events space, it has become an important space buzzing with activity, café life and events.



Figs. n. 3 - Wharf Green, outdoor public space rehabilitation, Swindon (England)

The general assertion of Mitchell “the digital technology can add value to a space in two ways” (Mitchell: 2005) is valid even for outdoor space:

- directly, it is a way by increase comfort, efficiency, or versatility of the space itself;
- indirectly, it is a way by increase the accessibility and attractiveness of the space, enhancing the economic and social value of the place within the networked urban system.



## Underlying Order

Arnheim asserts that “the observer perceives an organized structure in the shapes and colors or sounds facing him. ... Rather, the perceivable order tends to be manifested as a reflection of an underlying order, whether physical, social, or cognitive” (McGookin: 2004). The presence of the digital network gives a different meaning to the concept of “underlying order”, because the network is perceptible only through the web connection. Wi-fi squares, streets and parks need to be recognized through a real, visual or auditory, signal, as well as conditions of quality performance and pleasantness.

Giving a recognizable image, modulating the offer of physical and digital services, building a new quality of places where sharing experiences are the issues that we have to face today in the re-design the public open space.

The remote control systems for street lighting, in which the power supply becomes the means of transmission, go so far as to imagine a radical transformation of the urban environment, through the insertion of additional networks and of access to services of public and social utility (infopoint, touchscreen, urban screen ...). The Power line communication (PLC) carries data on a conductor that is also used simultaneously for AC electric power transmission and distribution, the technologies as HomePlug shall allow different applications, ranging from home automation to Internet access, allowing devices to share video and data.

Furthermore, the attitude to experience real-virtual (cyber space), changes the traditional relationship of space – time: cyberspace has no boundaries, is iterative and it allows the “closeness” of how far the perception that everything happens in its “present”, with the transition from “diachronic” to “synchronic”.

The “mediascape” regards the electronic capabilities of production and dissemination, the role of electronic and print media in “global cultural flows,” as well as “the images of the world created by these media” (Appadurai: 1990).

The “mediascape” is also a digital media artifact in a digital network, allowing a person to walk around an area, to hear digitally stored sounds and perceive digital and visual signals associated with different places in that area.

## Landscape and Soundscape

Another dimension of the open space is the sound one, that characterizes the perception and quality and induces to use it, not only auditory signals, but specific soundmark to increase the attractiveness of multimedia areas.

The urban soundscape is a form of virtual public urban space and a part of the city soft architecture, in relation to the “social spatialization” (Lefebvre: 1985), it is another way to shape the space and the experience of places.

“Soundscape” is the term often used to describe natural and anthropic sounds in local outdoor environments, “soundmarks” are defined as sounds that are symbolic of a community and that increase awareness of the importance of sounds in everyday life.

Street traffic, aircraft overflights, and other urban noise sources can negatively affect the character and even prevent the intended uses of public spaces. There are many examples of collaboration between sound, multimedia and visual art works, such as use of symbolic earcons, environmental audio sounds (McGookin: 2004). In Nauener Platz, at Berlin, the ideas for creating a new attractive and sonic park were collected through public stakeholders. The contribution was to identify the noisy areas to build a “psychoacoustic infrastructure” based on the concept of Soundscape. This was achieved by installing digital devices in sculptures and benches, playing recorded sounds of birds and water.

## Conclusions

The auditory aspects should be developed to fit into a process of outdoor space design, the virtual reality (VR) modeling has considerable potential and an architectural poetry concerning the properties of sound and the acoustic poetry should be included in the multimedia urban design process.

In the Pascal Amphoux's work on the sonic identity of European cities (Amphoux: 1991), an approach is described as 'creative' if composes the sonic landscape. The sonic environments (urban parks, squares, pedestrian zones ...) form part of time-space context and the intelligent space can become a continuity between domains of sound processing, machine vision, perception of nature and sensory fusion.

In the transition to the smart city, the public open space must always invent itself in its own tradition, it is essential in the life of citizens and in the continuing re-construction of the collective identity. The image and sound, the physical and virtual reality can be important in deciding whether people will make use of innovative *intelligent areas*.

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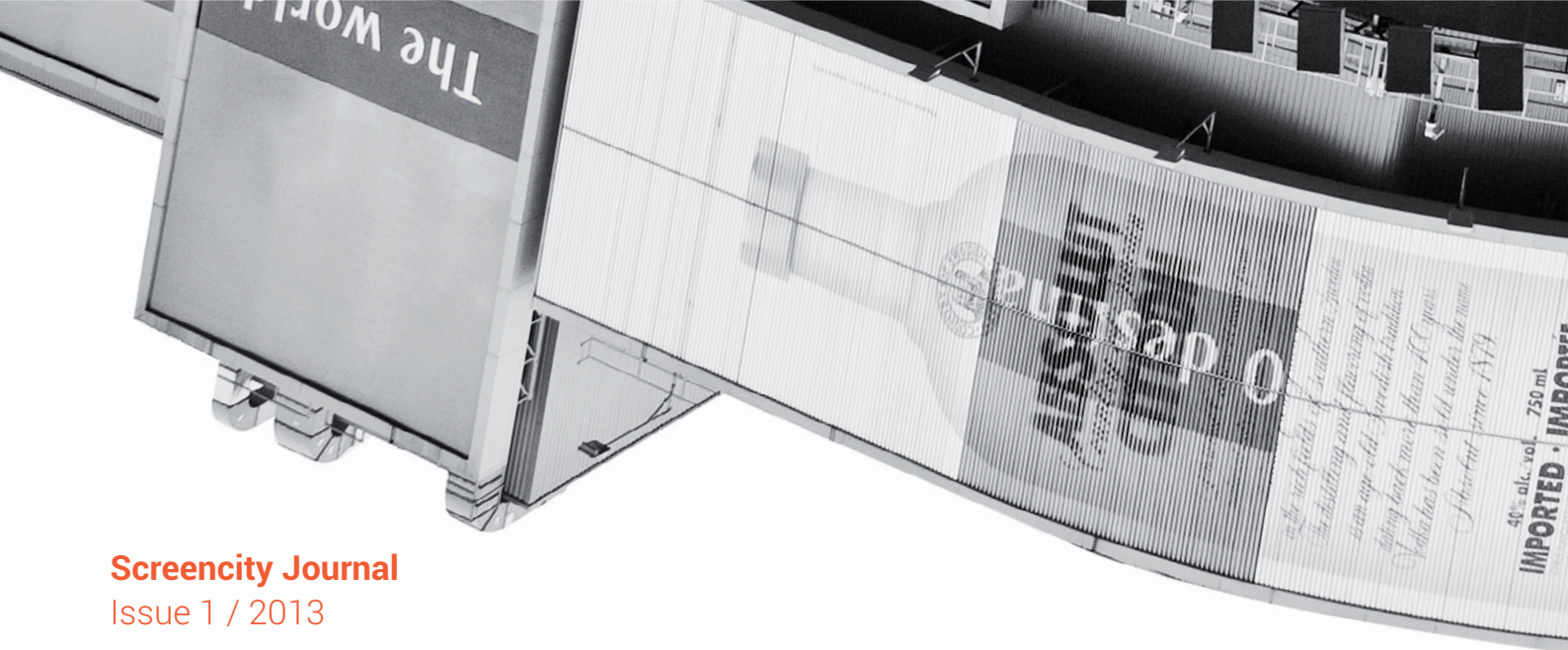
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## Biography

Rossella Maspoli is a PhD doctor in "Building and environmental rehabilitation" (1992); researcher of Architecture Technology; professor at the School of Architecture, Politecnico of Torino. Member of the PhD course in "Technological Innovation for the Built Environment", she has coordinated the Master of Politecnico of Torino in Facilities Management of the Real Estate (2003-4) and various workshops (Vetri imagine&innovazione 2011, Art and the city. Architecture of outdoor public places in the Smart Cities 2012). She has edited over 100 publications and carries out activities of research and advising in the fields of historical architectural technologies, enhancement of heritage, public art in community open spaces in connection to architecture – within the realm of urban regeneration, in view of the smart city.

She has worked on research projects, in the Programs of National Interests (PRIN) on the subjects: "Insediative shapes and infrastructures" (1999-2002), "Use of nanotechnologies in cultural heritage" (2005-6); in the European Culture Program "Arch/Art" (2003-4) and in the "Polight – Bamboostic" (2012-14).

She is coordinator in research projects "Archi.Pla-Architecture and Places" (2010-12) and on issues as art, architecture and micro-landscape in urban peripheral housing regeneration, in "Urban 3 – Barriera di Milano" European project (2012-13).



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