



## The impact of small-scale design interventions on the behaviour patterns of the users of an urban wasteland



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### ABSTRACT

Urban derelict space can form a valuable complementary element to the formal green spaces of a city: wastelands are often biologically diverse and their unregulated status can provoke innovative spatial activities by a wide range of users. Using the case of an urban brownfield in Tallinn, Estonia, this paper examines how such a space is used and evaluates the magnitude of the impact of minor design interventions – so-called urban acupuncture – on the activities carried out by the users. The study used field observations and behaviour mapping to compare the spatial pattern of the users before and after small design interventions. Although there was widespread use beforehand there was both an increase in use and a different pattern afterwards, which was clearly detectable from the composite behaviour maps of both arrangements, where users follow the properties of the particular environment. The small improvements tested showed the largest effect on the female and the older user groups, raising the number of overall visits and increasing the occurrence of active behaviour almost five times. The research demonstrates that small, inexpensive and possibly temporary interventions can have a major positive effect.

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### Introduction

Mixed feelings occur concerning urban derelict places. To some people, they seem ugly and offensive (Armstrong, 2006), crying out to be wiped away and redeveloped. For others, the ruinous character may provoke the sense of an overwhelming sublime wilderness, representing the *absent presences* of the past and telling stories (Edensor, 2008), or as a rich playful environment, evoking a desire to improvise (Edensor, 2005; Franck and Stevens, 2007; Unt et al., 2013). The question of how different people react to and find different values in such spaces is of interest when discussions over their future use arise, but in-depth documentation of the uses of derelict sites and their evolution over time often remains absent.

The main aim of this paper is to demonstrate not only the vitality and richness of urban derelict places, by introducing an urban wasteland in Tallinn, Estonia, but to explore the role of small-scale physical design interventions in enriching such an environment and also the effect these changes have on the behaviour of green space users. Unregulated space can successfully function as an attractive outdoor environment and green space does not need to be built to be a park or a playground. The paper compares user behaviour patterns before and after minor design interventions, in

order to study the influence of very small changes on the usability of the place and also their possible wider impact.

In many recent examples of brownfield and other derelict urban sites, especially following the economic crisis of recent years, it is often the case that large-scale interventions are infrequent or unlikely to occur due to financial or legal constraints. Occasionally, in derelict places small changes are made either formally or informally which can have an influence on user behaviour – positively or negatively – out of all proportion to their scale and expense. *Urban acupuncture* is a term which can be traced back to the Finnish urbanist Marco Casagrande's (Casagrande, 2010) and the urban revivalist architect Jamie Lerner's ideas (Tortosa et al., 2010). It is the practice of making small targeted interventions – like that of the acupuncturist needle – in order to solve a specific larger problem. According to this idea, a city can be viewed as a living organism containing certain fulcrum points or places of high potential that begin to act as catalysts in the processes that go on to affect the entire city. In the urban acupuncture approach, the attention paid towards certain hotspots slowly starts driving the overall urban development. Here the main role is carried by local potentialities and no dramatic spatial change is necessary: typical examples include community-led activities with small budgets, often temporary in nature. It is not often possible, however, to test the real effect on a community of users of a space by conducting before and after studies. The fishing harbour site in Tallinn and its acupuncture provided an opportunity to test this effect.

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### Use of observational tools for understanding environment–behaviour relationships

Various studies have been conducted covering the aspects of environment–behaviour relationships, such as the effect of the environment on the behaviour of children (Kytta, 2002, 2003), the connections between the positive effect of natural environments on children’s mental health (Roe, 2008; Roe and Aspinall, 2011), teenagers’ utilisation of urban public space (Travlou, 2004, 2007) and the influence of the elements of public parks in the spatial distribution of individuals and groups (Goličnik and Ward Thompson, 2010). Roe and Aspinall (2011) have emphasised the relevance of people’s emotional reaction towards landscapes, or, as Gibson (1986) has termed it, *affective space*.

Behaviour mapping is one of the tools which have received recent attention amongst a range of observation techniques used in landscape architecture, urban design, planning and other public or open space-related research. The task of any designer is to develop solutions that are aesthetically pleasing, practically useful and well-functioning (Lawson, 2005). As outdoor space is a “living environment”, observing how people use it is an efficient way of assessing the constant adaptation between people and space. Gathering empirical data by observational methods in the field provides a subject for design and also enables questions for research to be defined (Goličnik and Ward Thompson, 2010). Furthermore, as to Hofmann et al. (2012) claim, user preference should be a key criterion in the design of open spaces in order to assure that the design matches with people’s expectations for the spaces. Urban derelict places are no exception – users can be strongly attached to particular unregulated settings and current user behaviour may suggest functions and properties worth keeping, adding to or avoiding when regeneration is considered.

According to Cooper Marcus et al. (1998), there was no clear tradition of observation and research on public open space use before the early 1970s. Since then, questionnaires and surveys have been conducted in order to find out the actual use patterns of parks. Shortly after that, during late 1970s and early 1980s specific park-related themes began to be studied in detail, e.g. the impact of certain types of vegetation in parks and reasons and effects of vandalism on public places. “The direct participation of local residents, together with systematically recorded behavioural data,” Cooper Marcus et al. (1998, p. 88) claim, “is seen as the best way to obtain credible data for use in park design. Collecting information about how existing layouts function is vital for making the right decisions and also for avoiding mistakes.

The essence of behaviour mapping is not to reveal a complete range of user preferences in outdoor spaces, but to reflect upon the effects of a certain chosen setting. Studies that concern user preferences in open space are often conducted by presenting photographs for respondents to rate, sort or describe (see e.g. Kaplan, 2001; Hofmann et al., 2012; Nordh and Østby, 2013). Articulating responses to a preselected range of outdoor settings depicted on pictures gives an overview of what the selected respondents prefer, as shown, e.g. in a study by Hofmann et al. (2012) or Nordh and Østby (2013). Responses for these kinds of studies may be limited to their remoteness from actual environments and may be dictated by how and what is shown on the photographs. Behaviour mapping is one of the tools that studies people in their immediate physical environments.

### Urban acupuncture

This paper examines a derelict, unregulated open space in order to grasp how people react to small-scale spatial alterations. It

was hypothesised prior to the experiment that using minor spatial interactions in open space design has a proportionately strong and far-reaching effect on the users. The assumption is based on the concept of urban acupuncture. It is an experimental strategy that has been followed in urban renewal in numerous cases (e.g. New Orleans, Tijuana, Curitiba, Taipei) (Cruz, 2005; Landry, 2005; Casagrande, 2010; Harrison, 2013) and various themes such as transport planning (Stupar and Savcic, 2009), vernacular urban space renewal (Casagrande, 2010), post-disaster regeneration, rehabilitating nomadic architecture, etc. Despite the applications of the strategy in practice, too little attention has so far been directed towards it by academics.

Urban acupuncture is a bottom-up kind of tactical urbanism that organises local potential to solve site-specific issues. It was developed as a critical reaction towards the more typical large-scale, top down development approach (Casagrande, 2010). This way of thinking is not novel per se, but acts as a guiding concept when looking for realistic and responsible ideas.

Marco Casagrande, an architect and urban innovation instigator has used urban acupuncture as a method in various metropolises in order to seek out their own hidden social values. A lot of cities are gradually changing, mainly through de-industrialisation, but their direction and ideals in urban regeneration do not yet have a clear identity. According to Casagrande, a sort of “street level humanistic energy” (Casagrande, 2010, p. 1) has huge potential to lead the city in its urban ecological awakening. This *third landscape* (Weltman-Aron, 2005) or *third generation city* (Harrison, 2013) is a discourse that builds upon human scale activities happening in places or sites whose status and ownership is unclear or undefined. Where the *first generation city* signifies a moderately urbanised context that respects its constraints and the *second generation city* an overly industrialised urban setting that exploits resources then the third, as Casagrande asserts, is a new sensitive urban layer that is socially and biologically diverse, informal, experimental and sustainable and its interventions are minimal (Casagrande, 2010; Harrison, 2013).

As this third landscape or third generation city follows ecological ideals rather than economic goals, being the “organic ruin of the industrial city” (Harrison, 2013, p. 309, citing Casagrande), the strategy of urban acupuncture offers a corresponding toolkit for accomplishing change. It recycles materials, systems and ideas, using a minimal amount of effort to scale down the input. The effect of applying the strategy may be, conversely, impressive and bold if the pressure points are chosen wisely. The example studied in this paper promised to present similar features. The site appears unclaimed at the moment, lying in ruins, but being intensively used by a diverse group of urban anarchists, *flâneurs* and activists. Also, a series of small spatial changes took place at the site that promised to upgrade the environment. It was thus possible to observe the effect of the acupuncture by conducting a before and after survey of the users’ behaviour.

### Research aims and objectives

The research applied a version of fieldwork and data analysis that can easily be used in planning and design practice in order to gain insight into how the behaviour patterns of open space users and spatial properties are interdependent and how they change as a result of small alterations in the physical and perceptual character of a space.

The study presented here aims to answer the following research questions: firstly, what kinds of activities are users engaged in at an unregulated urban green space? And secondly, to what extent do minor design interventions affect the pre-existing functional spatial choices of users?

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