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INTRODUCING A METHOD FOR MAPPING RECREATIONAL EXPERIENCE

Innovation in two pilots in Sheffield

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Andrej Christian Lindholst,
Nicola Dempsey
Mel Burton

Summary
The provision of recreational opportunities for urban populations forms an important and long-standing planning and management objective. In this paper, 'rec-mapping', an innovative method of analysing and mapping positive recreational experiences in urban green spaces is explored and piloted within the UK planning context. Originating in the Nordic countries, this on-site method can provide urban planners and designers with data about the extent to which specific green spaces provide a range of user experiences to develop and support appropriate recreational use. Considering a range of experiences encountered when in such spaces currently does not form part of existing open space assessment tools. The investigation reported here is based on the application of rec-mapping in two test sites in Sheffield, South Yorkshire in early summer 2010. This paper critically appraises a small-scale application of rec-mapping and recommends further explorations within the UK planning context, as it adds to existing open space assessment by providing an extra layer of information to analyse more fully the recreational function of urban green spaces.

Keywords
Recreational facilities, town and city planning, urban generation

1. INTRODUCTION

One long-term value and function of urban green spaces can be attributed to their potential to support recreation activity which in turn contributes positively to the wellbeing and health of urban populations. In the UK, this is reflected in the origins of public park establishment during the industrialization era when they were created as spaces in which residents could escape temporarily from everyday urban life, get some fresh air and take a walk: all long identified as having health benefits (Conway, 1991). While leisure and recreational activities today are different to those of the Victorian age, it can be argued that the ecological, social and, economic values and functions remain mostly the same (Newton, 2007). In this way, urban green spaces and their recreational function continue to form an important component of the urban landscape. In a planning perspective, the challenge is to deal with the recreational qualities of urban green spaces in a way that is meaningful and connects to the urban population use of these spaces.

UK planning authorities often approach the conceptualization of recreational functions through categorisations of urban green space using broad and arguably vague terminology such as *country park*, *city park*, *local park*, *garden*, *sports facility*, *woodland* and *playground* provided in inventories such as Planning Policy Guidance 17 (DCLG, 2002). Minimum quality standards for facilities and levels of maintenance are set by national bodies and measured using tools such as the Local Environmental Quality Survey of England (LEQSE) and the Green Flag Awards. However, these tools do not measure the recreational value of these urban green spaces or the experience to be had therein. Perhaps because recreational quality is so deeply rooted in our understanding of urban green spaces, and these spaces are routinely assessed through objective characteristics, standards and designs, this quality is often not acknowledged in any systematic way as dependent on one's personal experience of a space rather than objective and quantitative measures.

It is argued in this paper that there is a real gap in methodological tools used in the UK which measure use of urban green space which should be addressed in relation to one's experience in a space. What is here called 'rec-mapping' is part of a body of methodological tools developed in Scandinavia which measure users' experiences in green space to inform the urban planning and design process. This paper puts forward the proposal that 'rec-mapping' could form part of this process in the UK by incorporating an assessment of recreational experience, and provides a discussion of how 'rec-mapping' might address this. The methodology is critically presented and has been tested in a small-scale pilot study with planning professionals in two sites in Sheffield. The paper then discusses the methodological challenges of applying 'rec-mapping' and provides reflections and recommendations.

2. QUALITATIVE ASSESSMENT IN THE UK PLANNING AND DESIGN CONTEXT

The benefits of green and open space in urban areas have long been cited and recognised in UK policy (DCLG, 2006: Bell *et al*., 2007). There has been a sustained commitment to improving green and open space over the last decade or so in an attempt to stem the long-term decline in quality of parks and green spaces during the late 1970s-1990s (DCLG, 2007). It is too early on in the current government's tenure (from May 2010) to assess their political

influence on the quality of parks and green spaces, although factors such as the abolition of the Playbuilder programme alongside local authority budget cuts suggest that continuing such open space improvements may be a considerable challenge. This sits within a suite of policies which relate to sustainable communities and liveability which support the claims that high quality living environments can have a positive influence on the everyday life of users and residents (Dempsey, 2009). In practice, this manifests itself as the increasing use of consultation which has become an important part of the formal urban planning and design process in the UK. The 1999 Local Government Act made it a legal requirement for local authorities to consult widely with users on aspects of the activities and services provided, marking a move towards a modernised agenda of localised decision-making (Burgess *et al*, 2001).

In relation to open space provision in general, the planning process can be broken down into a number of broad steps which are succinctly summarised by Cowan *et al*. (2010). Firstly there are pre-application discussions which involve the client/ developer, the design team and the local authority and include the creation of the project brief, the initial proposal and any initial consultations. This is followed by the creation of the design and access statement by the design team which is informed by a design review panel which may revise the proposal itself. The application is then submitted which is followed by a process of appraisal by firstly, consultees which follows formal consultation and secondly, the local authority. The planning decision is then made by the local authority, with reference to these preceding stages. It can be argued that qualitative assessment should form a part of consultation in the planning process from the outset to ensure that user needs are fully taken into account.

There are several existing methods of qualitative assessment which measure open spaces at varying levels of detail. These methods differ in terms of who provides the assessment and how, the depth of the information provided and how it is used. At one end of the spectrum, where relatively broad-brush data are collected, one example is the **Local Environmental Quality Survey of England** (LEQSE). This is conducted by Keep Britain Tidy and measures local environmental quality using a range of indicators including cleanliness, 'environmental crime' such as graffiti and standards of maintenance of soft and hard landscaping (Keep Britain Tidy, 2010) in identified areas of different land uses, including 'recreation areas'. Surveyors are specially trained and subjectivity is kept to a minimum. As they do not ask users about their opinions this can be described as an 'expert-led' assessment method. A more inclusive approach can be found in **GreenSTAT**, which allows residents to comment on the quality of their local open spaces, and how well they are maintained and managed (GreenSpace, 2006). This is an online tool which collates and aggregates individually entered data anonymously for the use of park providers and managers as well as GreenSpace, the charity which oversees GreenSTAT (CABE Space, 2010). Respondents are asked to comment on aspects including their use of a particular green space and why they do so as well as reasons for *not* using these spaces. The questions are closed providing little opportunity for respondents to provide any in-depth commentary on what they like or dislike about their local green spaces. The resulting datasets of 'accurate and reliable visitor feedback' cannot be accessed by the general public: they can only be used by local authority practitioners as part of their process of 'informed decision making' (GreenSpace, 2010). In

this way, they can be used to inform green/ open space strategies and management plans for specific spaces to identify where, for example, physical improvements might be made (ibid.).

GreenSpace advises that GreenSTAT can be incorporated into entries for the **Green Flag Award**. Partly developed in response to declining standards and a growing awareness of the importance of urban green spaces in the UK, the Green Flag scheme has become a significant benchmark for parks and green spaces which assesses and promotes high quality urban green-spaces (DCLG, 2006). The Green Flag is awarded to parks and green spaces according to a range of criteria, including objective measures such as cleanliness and pesticide use, and the presence and implementation of a management and marketing plan (Greenhalgh and Parsons, 2004). It also includes a qualitative assessment which measures perceptions of how welcoming, safe and healthy a place feels. This is measured by the visiting Green Flag judges who are drawn mainly from local authorities and the wider green space sector (ibid.). While the Green Flag does not directly call on users for their perceptions of, and attitudes towards, a particular green space, evidence must be provided to the judges of community involvement, consultation and community-led activities. Specific reference is made to recreation insofar as the management plan must 'demonstrate that there are appropriate levels of recreational facilities and opportunities for all sectors of the community' (Civic Trust, 2008, p. 12). So while there may be some data collected which calls on users' recreational experiences, they are aggregated and subsumed into the overall Green Flag assessment: there is no formal place for such assessment in the method. While the Green Flag Award puts the onus on the park providers and managers to forge and maintain good, long-term relationships with community members, indicating that community consultation is an ongoing process, and not just form a part of an evaluation exercise, there is no focus on users' recreational experience *per se*.

A more direct assessment of green space is provided by **Spaceshaper** which was developed in the UK by the now defunct Commission for Architecture and Built Environment (CABE) as a method of measuring quality of space combining quantitative and qualitative assessments for application to spaces in need of improvement (CABE Space, 2007). Like the Green Flag scheme, Spaceshaper is designed to form an ongoing evaluation tool as part of a long-term approach to open space management. It is a participatory appraisal method which uses site visits conducted by a group of stakeholder participants made up of residents and users, led by a trained Spaceshaper facilitator. The workshops can be adopted into consultation exercises, which can 'help widen the discussion beyond just litter and anti-social behaviour' (ibid., p. 14). This allows the park or green space under scrutiny to be examined as a whole, rather than as a group of individual components. Spaceshaper asks participants to rate the site against a range of characteristics which relate to use, access, community, design and how the space makes them feel. Spaceshaper has been used by local authorities (such as Nottingham City Council) to gauge different users' opinions of, and attitudes towards, their green spaces and adopted as a means of assessment of quality before and after investment (CABE, 2011). While Spaceshaper allows participants to comment on the activities and opportunities provided by a space, it does not measure the recreational experience further than asking how the participants 'feels' about a green space. Spaceshaper results have been

applied in different ways including some incorporation into future urban designs and plans, and adoption as a means of assessment by local authorities (CABE Space, 2007).

Finally, **experiential landscape (EL) mapping** offers a further example of measuring experience in the environment. Applied at a variety of scales, EL mapping has been developed to shed light on how people attach significance and value to places, how people orientate themselves when in an environment and how a sense of belonging is developed (Thwaites and Simkins, 2007). Its main purpose is to explore the concept of place character, partly through one's different experiences of that place, including recreational. One's spatial experience is represented by four concepts: centre (the 'here'), direction ('there'), transition ('change') and area ('overall coordination) (ibid.). Examples of its application include contribution to a rural village's design statement through workshops and interviews with residents, and participation with schoolchildren to create designs for improving school grounds (Experiential Landscape, 2010). This differs from 'rec-mapping' as it is broader in its scope and scale, focusing on a wide range of experiences.

The discussion above highlights the contribution that qualitative assessment of open space can make to the urban planning and design process, however it should be noted that such inclusion is not statutory. These methods provide varying degrees of information about users and their requirements when using spaces. However, none of these methods directly measure one's recreational experience when in a particular green space, pointing to a potential gap that needs to be addressed. This is particularly important when applying for funding, or protecting existing budgets as evidence will be required to demonstrate how spending makes a difference to residents and users of open spaces (ibid.). The next section presents rec-mapping as a method which addresses this gap.

3. 'REC-MAPPING': MEASURING RECREATIONAL EXPERIENCE

In the Nordic countries – particularly in Sweden, but also in Denmark and Finland – various research and planning efforts over the last 25 years have sought to elaborate systematic measurement and analysis of the urban green space experience. Methods developed to do this have been applied to help planners and designers understand the recreational qualities of urban green spaces based on how urban populations perceive and experience these spaces. The tradition includes methods that integrate various research supported concepts such as 'experience classes' (Caspersen and Olafsson, 2010), 'experience worlds' (Regionplane- och trafikkontoret, 2001), 'sociotopes' (Ståhle, 2006), 'social values' (Tyrväinen *et al*., 2007) and 'park characters' (Berggren-Bärring and Grahn, 1995; Nordh, 2010).

Building further on this tradition, Grahn and Stigsdotter (2010) highlight eight 'sensory perceived' dimensions – or, in short, people's own personal 'experiences' of the recreational qualities in urban green spaces and their relative importance for mental health. This research tested the hypothesis that people perceive urban green spaces in terms of different dimensions, some more important and preferred than others. Through empirical research, calling on data from a sample of over 900 randomly selected Swedish urban residents, they identified eight 'experiences' encountered in urban green spaces which are listed and

171 described in Table 1. They are: 'nature', 'rich in species', 'serene', 'space', 'refuge',
172 'prospect', 'social', and 'culture'. Researchers have sought to develop this methodology
173 through innovative applications, utilising the eight experiences as a framework for addressing
174 broader knowledge needs in a planning situation. For example, Randrup *et al*. (2008) and
175 Grahn and Stigsdotter (2010) focus on those dimensions of recreational experience
176 associated with mental health. In Denmark, the method of mapping recreational experiences
177 through on-site analysis has been used in studies of the quality and public use of green
178 spaces (Schipperijn, 2010) and sought adopted further for application in park and nature
179 management (Lindholst *et al.,* 2010, Lindholst, 2010). Findings suggest that urban green
180 space is sought out which provides recreational activities and qualities that urban residents
181 specifically require.

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Nominal name	Short description/interpretation	Important characteristics
Nature	Experience of the free growing, untouched, vital: an encounter with nature.	No visible man-made facilities or traces, visible or audible. 'natural areas'.
Richness in species	Experience of richness in plants, insects and/or animals.	Presence of different or special plants, flowers, insects and/or animals. Possibility to gather mushrooms, fruits etc.
Serene	Experience of an undisturbed peacefulness, to be on one's own, in safety and withdrawn: at one with natural surroundings.	No artificial noise (e.g. transport), few or no other humans, no litter, no paths/transport corridors.
Space	Experience of an independent, homogeneous, inter-connected and special 'universe'.	No cross-cutting paths or disturbing features. At least two types: A 'avenue of old beech trees' or 'an open horizon', e.g.at a lake/the sea.
Refuge	Experience of safe surroundings and facilities for expression, play and interactions with other people.	Demarcated and uncluttered space/place by trees, bushes, fences. Play facilities, tables/benches, meet animals: e.g. 'playground'.
Prospect	Experience of open and free surroundings for expression and activity.	Open and accessible space with grass/ sports fields. Supporting facilities such as lighting, changing rooms: 'the common'.
Social	Experience of organized and entertaining scene and getting together with other people.	Facilities, services, activities, café, restaurants, benches, tables, barbeque and entertainment: 'a social scene'.
Cultural	Experience of cultivated, man-made surroundings formed by history and/or culture.	Historical features and buildings, sculptures, statues, fountains, canals, flower stands, well-manicured bushes, formal elements: 'historical and cultural space'.

Table 1. Overview of eight dimensions of the recreational experience of urban green space (Adapted from Grahn and Stigsdotter 2010)

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184 Initially, Randrup *et al*. (2008) developed a highly formalized and expert-based procedure for
185 rec-mapping with the aim of achieving a high degree of quantification as a measurement
186 (calculated as a total aggregated score) of an urban green space's recreational value.
187 Schipperijn (2010) tested this approach against the perceived attractiveness and found no

statistical evidence that high scores correspond to attractive urban green spaces in the eyes of users. A reason for the inappropriateness of using quantitative measures to assess recreational qualities may be that just as urban green spaces can be viewed as 'restorative pauses' within the built-up environment, 'pauses' may also be needed between experiences in order to comprehend and appreciate their qualities. Although intuitively understandable, 'more' is not necessarily 'better'. Following the understanding developed by Regionplane- och trafikkontoret (2001, 2004) in their work on 'experience worlds' in the green structure in the Stockholm region, certain 'areas' – or buffer zones – are needed with no recreational experiences within a high quality recreational urban green-space. Likewise, Ståhle (2006) warns that the benefits arising from the inherent heterogeneity of urban space may recede if focus shifts from complementarity to substitutability. Each experience may therefore in itself better be viewed with no innate ranking order in their potential worth and use value. On the other hand, representation of an experienced space within planning necessarily does imply a certain level of reductionism (or quantification) (Ståhle, 2006). For example, Grahn and Stigsdotter (2010) found that in a health perspective some (combinations of) experiences are in general more beneficial than others. Following, Ståhle (2006) the challenge for city planning is then to produce a practically useful method which meaningfully represents the valued places and experiences of users in an urban spaces.

While biological and physical influences are present in one's cognition of, and preferences for, urban green spaces, personal, social, cultural, and geographical differences are also influential (Bourassa, 1990; Herzog, 1992; Home *et al*., 2010; Purcell *et al*., 1994; van den Berg and van Winsum-Westra, 2010; van den Berg *et al*., 1998). Individual as well as general public preferences for recreational experiences are therefore likely to differ across personal, social, cultural, and national boundaries. This implies that personal experience is partially influenced and learned through socialization and shared information. This highlights a need to fully understand the extent to which those experiential dimensions of relevance for a Swedish or Danish population can be applied effectively to measure the recreational experience elsewhere. This points to a need to account for the local, cultural and geographical contexts in which the urban green spaces and their users are located. With the importance of context in mind, the next section outlines the application of rec-mapping in two sites in Sheffield, UK.

4. REC-MAPPING IN SHEFFIELD: PILOTING THE METHOD

The pilot exercise was organised as a two-day workshop, where rec-mapping, its merits and theoretical background were introduced and subsequently tested in two sites with researchers and practitioners and subjected to a post-exercise evaluation. The workshop was conducted in Sheffield in the summer of 2010 with practitioners from Sheffield City Council, South Yorkshire Forest Partnership, members of a community organisation Friends of Firth Park, and researchers representing different academic disciplines from the Universities of Copenhagen and Sheffield. Two sites in Sheffield were selected as test sites. At the time of the exercise, these sites were targeted for urban re-generation investment. The two test sites are: 1) the South Street open space, part of Sheaf Valley Park, a run-down green space located in the city centre at the back of the city's train station and associated

with anti-social behaviour including drug use; and 2) Firth Park, a Green Flag awarded Victorian park located in a residential area in the north of the city, which was redeveloping a largely unused and disconnected area of the park which offers few facilities and attracts very few visitors. Figures 1 and 2 provide aerial maps of the spaces. There is a contrast between the two sites: Firth Park has a considerable number of recreational facilities while Sheaf Valley Park currently has none.

4.1. Firth Park

Firth Park is situated 3 miles north of Sheffield city centre and is approximately 15.2 ha in size (Figure 1). Firth Park is listed by Sheffield City Council as a City Park and Heritage Site, and is on the English Heritage Register of Parks and Gardens of Special Historic Interest (SCC, 2009). The features of the park vary: woodland, open amenity grassland areas, specific sports facilities (including bowls, cricket and basketball), children's playground and community buildings (Figures 2-3). The historic clock tower, former boating lake and Hinde Common Wood are situated on one side of a main road, Firth Park Road, with the rest of the park and recreational and community facilities on the other side. Firth Park is one of Sheffield's oldest and most historic parks, opened in 1875, which fell into decline in the late 1970s. The management responsibility for Firth Park lies with the Parks and Countryside Section of Sheffield City Council as trustees of the land. There is a long-established tradition in Sheffield of the local authority working in partnership with 'Friends of' parks groups. These groups are usually formed by residents with a common interest in a local green space and may be particularly interested in improving the maintenance of a space, targeting resources to make improvements to a space or organising events (Sheffield City Council, no date). The establishment of the 'Friends of Firth Park' group in 1999 was central to the reversal of Firth Park's decline (Burton, 2010). The rec-mapping exercise was conducted in all parts of the park apart from Hinde Common Wood due to time constraints.

256 Figure 1 – aerial map of Firth Park

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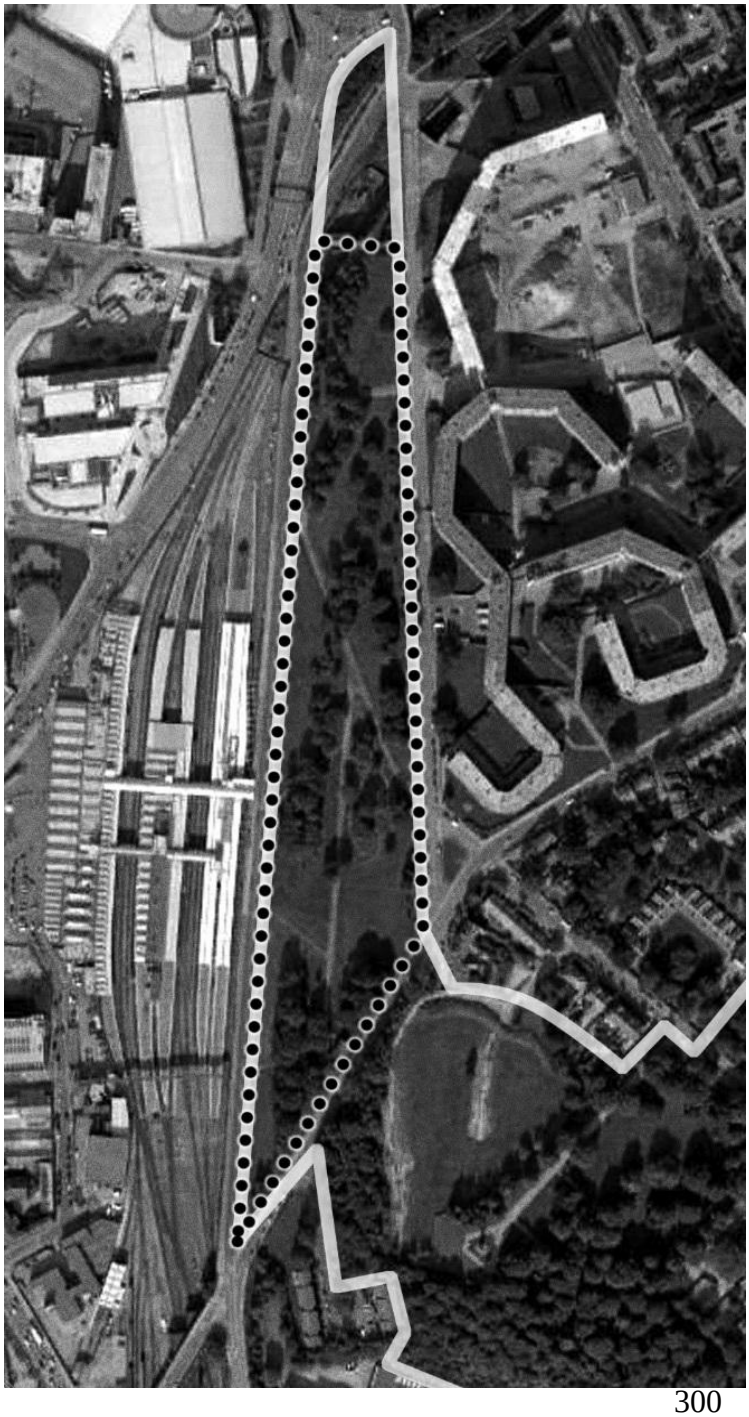
258 Solid line shows the park boundary; dotted line indicates the area under redevelopment

Sheaf Valley Park

Figure 4 – aerial map of Sheaf Valley Park



Sheaf Valley Park is the name given to a new city park underpinned by a vision of linking a series of open spaces which are undergoing a process of regeneration from the city centre to Norfolk Park, one of the city's oldest public parks, situated 1 mile south-east of the city centre (Figures 4-6). The rec-mapping exercise was conducted in one part of Sheaf Valley Park owned by Sheffield City Council and referred to as the South Street open space. This space is located on a steep incline situated between the Park Hill flats and wider residential area beyond and the train station which acts as gateway to the city centre (SCC, 2010). This space is mainly used as a through-route as, apart from the steep banks of grass, there are no benches or sitting areas in which people might linger. Anti-social behaviour has been a problem due to poor lighting, with no natural surveillance with no houses overlooking the space and clusters of trees where drug-taking and drinking has taken place in the past. The South Street open space arguably has a reputation for being something of a forgotten or 'non-space'. The aims of the regeneration project is to turn this space into a well-used, safe 'place for all' with an arboretum, enhanced habitats for biodiversity, events space and improved access between the city and surrounding neighbourhoods (MP4 Project, 2010).

4.2. The applied procedure for rec-mapping

Following the suggested step-by-step procedure forwarded by Lindholst *et al*. (2010) and Lindholst (2010), information about recreational experiences was gathered through on-site analysis with the particular context in mind. Before conducting the rec-mapping, the participants attended a training session which outlined the practicalities of carrying out such a site analysis and focused on the identification and interpretation of the eight dimensions in a particular urban green space. Through feedback from participants, it became clear that there were some difficulties in applying the terms as they are described in Table 1 because of differences in language interpretation. Some participants highlighted for example, 'prospect' as an inaccurate description of how they might interpret the term. When developing this particular dimension, Grahn and Stigsdotter make reference to the idea of hunting grounds and savannahs (2010), whereas the Sheffield participants interpreted it as a term indicating broad views across and out of the park.

The participants were divided into groups of six each with copies of a map of the park on which to mark roughly where the different experiences occur. This was subject to a process of on-going discussion among the group participants who were encouraged to take photos and notes to provide information explaining their decisions. The groups conducted the exercise in both parks. For this pilot exercise, the rec-mapping methodology was employed with close attention paid by the researchers involved to ascertain the need for any adaptation. Time was allowed at the end of the workshop to reflect on and discuss this. As highlighted above, it was apparent from the outset that there would be some need for adaptation because of the variation in context in which rec-mapping had been developed in Scandinavia in natural settings and its application here in urban environments.

The tools for the on-site analysis are aerial photos and pens to mark the presence and strength of participants' experiences. These experiences are marked according to 'zones' on the aerial photo and their strength may be indicated on a scale from 0-3 (from 'no' to a 'full' experience). Experiences (and zones) may overlap, creating multi-experiential spaces. They may also be identified at different spatial scales and associated with particular pre-defined areas, such as playgrounds or specific sports facilities, e.g. bowling green or cricket nets. Participants were asked to record the presence and strength of their experiences by a process of interpreting their perceptions of the particular space and, where necessary, with reference to local knowledge as described below. The results of the on-site analysis for Firth Park is summarised in a data table (Table 2) and graphically de-pictured in a rec-map (Figure 7). It should be notes that the graphical presentation of the rec-map based on the data table for Firth Park could be done differently. The chosen format may here be adapted to communication needs in the particular planning context.

Zone	Nature	Rich in Species	Serene	Space	Refuge	Prospect	Social	Culture	Notes
1	-	2	3	-	-	-	-	1	Bluebell garden
2	-	-	-	-	1	1	1	1	Boating lake area
3	3	2	-	2	-	-	-	-	Common wood
4	-	-	-	-	-	-	-	-	Road transition zone
5	-	-	-	2	-	3	2	-	Open park
6	-	1	-	-	-	1	-	-	Behind bowling green
7	-	-	-	-	3	3	3	1	Two bowling green(s)
8	-	1	-	-	-	-	-	-	Edge
9	-	-	-	-	3	-	3	-	Play area
10	-	-	-	-	-	-	-	2	Bedding plants
11	-	-	-	-	-	-	3	3	Main park entrance
12	-	2	1	-	-	-	-	3	Hard landscaping and plantings
13	-	-	-	-	-	-	1	-	Café
14	-	-	-	-	-	-	-	3	Park entrance (streetscape)
15	-	-	-	-	-	1	-	-	Open space
16	-	-	1	-	-	-	1	-	Teen shelter
17	-	-	-	-	-	-	3	-	Allotments
18	2	2	2	1	-	-	-	-	Entrance to Donkey Hill
19	3	-	3	2	3	-	-	-	Dense woodland
20	3	3	3	-	-	-	-	2	Donkey Hill
21	-	-	1	-	2	2	2	-	Cammell Road
22	-	-	-	2	-	-	2	-	Lonesome pine
23	1	-	1	-	-	-	-	1	Park entrance
24	-	2	-	-	-	-	-	-	Road edge
25	-	-	-	-	-	-	-	-	Car-park 'non-space'
26	-	2	-	-	-	-	-	1	A 'habitat' hotel

Table 2. Firth park, Experience data table. Legend: '-' = No experience, '1' = weak experience, '2' = good experience, '3' = full experience

Andrej Christian Lindholst
Nicola Dempsey
Mel Burton

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342 Figure 7 – rec-map of Firth Park (see also additional document for thematic maps)

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5. REFLECTIONS ON THE APPLICATION OF REC-MAPPING

Throughout the process, comments and reflections were primarily documented by hand-written notes. Photo-material, graphical presentations, and rec-maps also formed a part of the documentation. An internal report was written up including sections on rec-maps and site analysis, collection of reflections made by practitioners and researchers, and various other materials. Based on these materials, the researchers elaborated a range of immediate reflections that together with the comparison with the UK planning context, contributed to the overall assessment of merits of rec-mapping as a planning method in UK.

The rec-mapping process allows people to focus their attention on a space while spending time within it making on-site observations which they may never have been done before. It provides a 'snap-shot' of experiences in a space and can easily be conducted again at a later date if changes are made to a space, as it is not an overly time- or cost-intensive method of data collection.

The methodology is robust and research-based, with theoretical and empirical underpinnings, and provides an analytical approach to understanding people's perceptions of space using a simple rationale. In addition, it provides planning and design professionals with a tool for site management and forward planning which can highlight areas of potential development and investment. And perhaps most importantly, it provides experts and users with an opportunity to engage in dialogue about local spaces which are important to the community or may be in the future.

The 'accuracy' of rec-mapping seems to depend on several dynamic aspects that are not always present when conducting an on-site analysis. These include the ability both to filter certain temporary influences away such as weather conditions or one's individual mood on that particular day. Taking local knowledge into account is also important: this may relate to existing knowledge about particular user groups and behaviours, or about specific trees and plants, such as a bluebell glade which may not be in flower. Both the ability to create and read an rec-map meaning fully requires knowledge on how to interpret experiences in particular circumstances and understand their importance for the recreational value, according to the descriptions provided in Table 1.

There are some drawbacks to rec-mapping which became apparent throughout the pilot exercise. The methodology does not allow the participants to account for how people are actually using spaces as it is perception-based and focused on individual experiences. It is for this reason that planners and designers alone should not conduct the rec-mapping exercise as they are not necessarily local residents or users of the space: it is important that local users are involved in the process to provide an added layer of contextual information. Gauging the experiences of different user groups is not wholly possible using the rec-mapping methodology, unless 'user groups' are represented, e.g. ethnic minority groups/ teenagers, which requires a desire to be involved which cannot always be assumed.

Another drawback of the methodology is that it currently only focuses on positive experiences and not negative ones, underlining the assumption that people actively seek experiences in green spaces (Grahn and Stigsdotter, 2010). This is an oversight in an applied perspective because there may be parts of a park that people avoid: with this new

information, planners and designers could use rec-mapping as a way of identifying areas which are, for example, perceived to be poor quality or unsafe. Tyrväinen *et al*. (2007) suggested and mapped at city-scale in Helsinki, Finland three important negative experiences (’scariness’, ’unpleasantness’ and ’noise’). Such negative experiences might be adopted for further innovation of an applied method. This can then be used in planning spaces for the future or for park managers to target spaces for improvement. A further drawback was highlighted and related to the experience one has at the park entrances and in other ‘transition’ or ‘buffer zones’ as described earlier. It is to be expected that users would have a different experience in these ‘transition’ spaces but this factor needs to be incorporated into the methodology to capture the experience of passing from one kind of space to another.

On the other hand, rec-mapping allowed participants a new language for describing the recreational experience in different areas or zones in a particular park. For example, participants were able to identify multiple experiences, such as the experience of nature, serene, space and refuge in the area of dense woodland around Donkey Hill in Firth Park (area 19). This kind of qualitative information cannot be measured or captured using existing green space characterisations, which are limited to a description of the features or uses in a space. This is particularly interesting when examining spaces which have little recreational value: while objective measures may record Sheaf Valley Park as a biodiversity-rich green space with ecological benefits, the personal experiences collected via rec-mapping highlight strongly the poor experiences to be had there by users and the low value attributed to that space, indicating a need to improve it with users in mind.

It should also be noted that there were some limitations of the pilot investigation itself. The rec-mapping was not trialled with as wide a range of stakeholders as was hoped. For this reason, it is not possible to be completely sure that all experiences and recreational values are recorded. Two specific sites were examined which, while providing usefully divergent examples, are not representative of urban green spaces and more sites need to be rec-mapped in the UK to test the robustness of the methodology and confirming the validity and reliability of the terminology used. A validation procedure would also be required based on a high degree of consensus among stakeholders: this corresponds with conclusions reached by Home *et al*. (2010). A further benefit of the methodology is how it can be summarised in a range of formats including data tables, rec-maps, photos, keywords and descriptions, and integrated into a GIS.

6. CONCLUSIONS

There is currently no statutory obligation for evaluation to form a part of planning processes in the UK, despite being widely supported as providing important information not collected elsewhere (Dempsey and Burton, 2011). In general, it is advisable for planners and designers to take a pragmatic and collaborative approach to understanding how a space is used and might be in the future. The pilot shows that rec-mapping is a useful tool for effectively ‘zoning’ a space and getting an understanding of users’ potential experience(s) in different parts of that space. It provides a new language for identifying the potential for

improvement with the advantage that it is not simply immersed in discussions about characteristics and features such as inventories or maintenance standards, but about the quality and location of the recreational experiences as well. The pilot does show that rec-mapping should complement other methods of green space measurement, as it does not provide an exhaustive qualitative characterisation of spaces, to contribute to a fuller understanding of the site(s) in question. While the eight experiences 'made sense' in the pilot project, it is necessary to consider the cultural context within rec-mapping is conducted, and that some aspects of the methodology may need to be adapted (such as specific terms used and spaces explored) beforehand. Overall, rec-mapping provides a new layer of information which cannot be measured in existing qualitative open space assessments. Alongside other, more objective methods, rec-mapping is a robust method for evaluating recreational value and quality and can provide planners and designers with an improved understanding of the recreational qualities of a site, and can help identify potential areas for recreational improvements.

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8. REFERENCES

Bell S, Montarzino A and Travlou P (2007) Mapping research priorities for green and public urban space in the UK. *Urban Forestry & Urban Greening* **6**, No. 2, 103-115.

Berggren-Bärring AM and Grahn P (1995) *Grönstrukturens betydelse för användningen: en jämförande studie av hur människor i barnstugor, skolor, föreningar, vårdinstitutioner m fl organisationer utnyttjar tre städers parkutbud.* Sveriges lantbruksuniversitet, Alnarp, Landskapsplanering Rapport, 95:3.

Bourassa SC (1990) A Paradigm for Landscape Aesthetics. *Environment and Behavior* **22**, No. 6, 787-812.

Burgess P, Hall S, Mawson J and Pearce G (2001) *Devolved approaches to local governance: Policy and practice in neighbourhood management.* Joseph Rowntree Foundation, York.

Burton M (2010) *MP4 WP2.1 Peer Review of Model Agreements for Place-keeping: Friends of Firth Park and Sheffield City Council*. Working paper, South Yorkshire Forest Partnership, Sheffield. Available on request at http://www.mp4-interreg.eu.

CABE Space (2007) *Spaceshaper: a user's guide.* CABE, London, pp. 1-21.

CABE Space (2010) *Urban Green Nation: building the evidence base*. CABE, London, pp. 1-56.

Caspersen OH and Olafsson AS (2010) Recreational mapping and planning for enlargement of the green structure in greater Copenhagen. *Urban Forestry & Urban Greening* **9**, No. 2, 101-112.

Civic Trust (2008) *Park and green space self assessment guide: A guide to the self assessment of the quality of your parks and green spaces using the Green Flag Award criteria*. Civic Trust, Liverpool, pp. 1-30.

CABE (Commission for Architecture and the Built Environment) (2011) *Spaceshaper in action*. CABE, London.

Conway, H. (1991) *People's Parks: the design and development of Victorian parks in Britain*. Cambridge University Press, Cambridge.

Cowan R, Adams S and Chapman, D. (2010) *Qualityreviewer: appraising the design quality of development proposals*. Thomas Telford, London,

Dempsey N (2009) Are good-quality environments socially cohesive? Measuring quality and cohesion in urban neighbourhoods. *Town Planning Review,* **80** No. 3, 315-345.

Dempsey N and Burton M (submitted) Defining place-keeping: the long-term management of public spaces, *Landscape and Urban Planning*.

DCLG (Department for Communities and Local Government) (2002) *Planning Policy Guidance 17: planning for open space, sport and recreation.* Department for Communities and Local Government, London.

DCLG (Department for Communities and Local Government) (2006) *Strong and Prosperous Communities: the local government white paper*. Stationery Office, London, Vol 1+2.

DCLG (Department for Communities and Local Government) (2007) *How to create quality parks & open spaces.* Department for Communities and Local Government, London, pp. 1-138.

Experiential Landscape (2010) Projects, Experiential Landscape, University of Sheffield. See www.elprdu.com/projects.html. Accessed 15/03/2011.

Grahn P and Stigsdotter UK (2010) The relation between perceived sensory dimensions of urban green space and stress restoration, *Landscape and Urban Planning* **94**, No. 3-4, 264-275.

Greenhalgh L and Parsons A (2004) *Raising the Standard: the Green Flag Award Guidance Manual,* CABE, London.

GreenSpace (2006) *GreenSTAT questionnaire*. GreenSpace, Reading. See www.greenstat.org.uk. Accessed 30/03/2011.

GreenSpace (2010) *Applying GreenSTAT.* GreenSpace, Reading. See www.green-space.org.uk/greenstat/applications. Accessed 30/03/2011.

Herzog TR (1992) A cognitive analysis of preference for urban spaces, *Journal of Environmental Psychology* **12**, No. 3, 237-248.

Home R, Bauer N and Hunziker M (2010) Cultural and Biological Determinants in the Evaluation of Urban Green Spaces. *Environment and Behavior* **42**, No. 4, 494-523.

Keep Britain Tidy (2010) *The state of England's local environment: A survey by Keep Britain Tidy 2009/10*. Keep Britain Tidy, Wigan, pp. 1-108.

Lindholst AC (2010) *Rough Guide to Rec-mapping and Planning.* EU NSR Interregional IVB project MP4. University of Copenhagen, Copenhagen. Available on request at www.mp4-interreg.eu.

Lindholst AC, Nuppenau C and Hune BS (2010) Anvendelse af oplevelsesværdier i planlægningen. *Teknik & Miljø* **7/8**, pp. 32-36**.**

Newton J (2007) *Wellbeing and the Natural Environment: A brief overview of the evidence.* Defra (Department for Environment, Food and Rural Affairs, London, pp. 1-53.

MP4 Project (2010) *Projects on the Ground: Sheaf Valley Park, South Yorkshire Forest Partnership*. Sheffield. Available on request at www.mp4-interreg.eu.

Nordh H (2010) *Park characteristics: A tool for classifying and designing urban green spaces*. Saarbrücken, VDM Verlag.

Purcell AT, Lamb RJ, Mainardi-Peron E. and Falchero S (1994). Preference or preferences for landscape? *Journal of Environmental Psychology,* **14**, No. 3, 195-209.

Randrup TB, Schipperijn J, Hansen BI, Jensen FS and Stigsdotter UK (2008) *Natur og sundhed*. Skov og Landskab, Hørsholm, Park og Landskabsserien No 40. pp. 1-154.

Regionplane-och trafikkontoret (2001) *Upplevelsevärden: Sociala kvaliteter i den regionala grönstrukturen*. Regionplane- och trafikkontoret, Stockholm.

Regionplane-och trafikkontoret (2004) *Järvakilen: Upplevelsevärden i Stockholmregionens gröne kilar*. Regionplane- och trafikkontoret, Stockholm.

Schipperijn J (2010) *Use of urban green space.* Forest & Landscape, University of Copenhagen, Frederiksberg, PhD thesis, pp. 1-155.

SCC (Sheffield City Council) (2008) *Developing a Friends Of Group*. Sheffield City Council: Parks and Countryside, Sheffield, pp. 1-27. See www.sheffield.gov.uk/out--about/parks-woodlands--countryside/gettinginvolved/developing-a--friends-group. Accessed 25/11/2011.

SCC (Sheffield City Council) (2009). *Firth Heritage Park, Sheffield: Green Flag Management Plan 2008 – 2012*. Sheffield City Council, Sheffield, pp. 1-94.

SCC (Sheffield City Council) (2010). *South Street Open Space.* Sheffield City Council, Sheffield. See www.sheffield.gov.uk/planning-and-city-development/regeneration/housing-regeneration/south-sheffield-regeneration/sheaf-valley-park. Accessed 25/11/2011.

Thwaites K and Simkins I (2007) *Experiential Landscape: an approach to people, place and space*. London, Routledge.

Ståhle A (2006) Sociotope mapping – exploring public open space and its multiple use values in urban and landscape planning practice. *Nordic Journal of Architectural Research* **19,** No. 4, 59-71.

Tyrväinen L, Mäkinen K and Schipperijn J (2007) Tools for mapping social values of urban woodlands and other green areas. *Landscape and Urban Planning*, **79**, No. 1, 5-17.

van den Berg AE and van Winsum-Westra M (2010) Manicured, romantic, or wild? The relation between need for structure and preferences for garden styles. *Urban Forestry & Urban Greening* **9**, No. 3, 179-186.

van den Berg, AE Vlek CAJ and Coeterier JF (1998). Group Differences in the Aesthetic Evaluation of Nature Development Plans: A Multilevel Approach. *Journal of Environmental Psychology* **18**, No. 2, 141-157.