

Mapping as a strategic tool for evidencing social values and supporting joined-up decision making in Reading England

Article

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**Mapping as a strategic tool for evidencing social values and supporting
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Social value is high on policy agendas in the UK but there is little agreement on the definition of social value in the context of the built environment or on how the gathering of social value data might be spatialised. This paper gives an account of a project at the University of Reading, the aim of which was to develop a pragmatic methodology for collecting social value data with local communities. In response to rich information collected through workshops, a practice-based approach was taken, whereby 14 handmade community maps were drawn digitally, following a consistent set of drawing rules. The resultant multi-layered vector maps gathered and collated different interpretations of value and converted them into an accessible visual format. This supported dissemination, feedback and visual analysis with both participants and the Local Authority. In turn, the research sought to position mapping as a strategic tool for revealing common values and communicating potential in the built environment, with the aim of developing value-based knowledge particularly useful to early design, and decision-making, processes around strategic land management.

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Introduction

In the UK, government organisations are supposed to make planning and spending decisions with regard to environmental, social and economic values, the triple bottom line of sustainability, that form the foundation of the *Treasury Green Book* (2018).

However, due to a lack of consensus on ways of measuring social and environmental value, decision-making typically focuses on economic value (Serin et al, 2018) with

serious impacts on wellbeing (Wilkinson & Pickett, 2018). Indeed, a fiscal approach to value defines the UK's market-based governance mechanism (Bozeman, 2007).

Without sufficient methods to discuss and promote alternate forms of value in the built environment, the current market driven approach, which many agree is not fit for purpose (Carmona et al, 2020), will simply continue. The focus of this paper is on a novel strategy for the mapping of social value developed by an interdisciplinary research team. Working with the local residents and local government the project team developed multi-layered maps which explore social values across a residential neighbourhood in Reading. The maps reveal not only locations and combinations of different sites of perceived social value, but also expose the contested nature of value in the public sphere and some of the challenges of aligning local values with decision-making processes. The maps also have the potential to inform strategic land management for better places and more holistic forms of land valuation.

The project maps evolved in iterative steps as a result of collaborative activities, which explored how co-produced research activities could support discussions about social value and better decision-making processes. The project took influence from the Social Value Toolkit for Architecture, a bottom-up initiative by architectural practices in London, published by the Royal Institute of British Architects (RIBA) in 2020, with the aim of demonstrating the social value of design. The paper begins with a discussion of social value and the development of the Social Value Toolkit, before outlining the project's approach, including the research context of social asset mapping, as well as the map making process.

Evidence Based Design

Built environment researchers have had a long interest in trying to pin down what it is

that people want from their buildings and places, a pursuit that really took off with the growth of Evidence Based Design back in the 1960s (Samuel, 2018). An interest in public consultation grew in tandem with community activism pioneered by Jane Jacobs and captured in her famous book *The Death and Life of Great American Cities* (Jacobs, 1961).

At the same time urban commentators such as Kevin Lynch (1960) were trying to disaggregate and categorise the human experience of urban space, an early form of ‘systems’ thinking that developed in tandem with the advent of computer programming. The knowledge generated by evidence based approaches is often characterized as being overly simplistic and functionalist but an examination of its history and conversations with its advocates reveals that this was not the intention. For example Hillier and Leaman, the brains behind Space Syntax (a platform which predicts pedestrian, and other, flows) wanted architecture to ‘become a member of the community of truly modern sciences without sacrificing anything of its preoccupation with the human, the intuitive, and the free run of socio-spatial imagination’ (Hillier and Leaman, 1976, 31). Unusual in having a training in both psychology and architecture of Bryan Lawson wrote in *The Language of Space* of the futility of using measurement based approaches to record our experience of the world because we ‘do not ourselves experience the world around us as a series of discrete and independent dimensions’ (Lawson, 1999, 246), but he observed that it was however sometimes ‘useful to atomize our reaction to the world in order to investigate what is otherwise an inaccessible mire of phenomenological existence’, but this will ‘inevitably introduce distortion and bias’ (Lawson, 1999, 247).

Evidence Based Design in the early 1970s relied on collaboration with social scientists, bringing into clear relief the tense relationship between the two fields

(Broadbent, 1973; Reizenstein, 1975, 26; Lipman, 1975, 193) largely because of their radically different conceptions of research rigour and what constitutes good enough knowledge (Morris and Mogeey, 1965, xvii; Canter, 1977, 38). In the 1970s architects and planners were hungry for data on the interface between people and buildings (Gutman, 1972; Reizenstein, 1975, 28), but only it seemed if the results showed architects in a positive light (Broady, 1972, 179). It was at this time that architects were accused of ‘determinism’, for exaggerating their impact (Broady, 1968, 7–14; Lipman, 1975, chapters 2-4; Gans, 1968, 1–33; Malpass, 1975; Mercer, 1976; Halpern, 1995, 226; Richards, 2012; Lee, 1971) - a claim that caused great damage to the research culture of the profession, stunting its emergent knowledge base on the relationship between people and the environment (Darke, 1983, 7–9; Macmillan, 2006, 258). During this period British architecture dropped the thread of environment-behaviour research leaving it largely to environmental psychologists and others to unravel (Gifford, 1997).¹ However, as Halpern has observed, ‘there is no reason why links between the environment and behaviour should be seen as deterministic or exclusive of other influences’ (Halpern, 1995, 114). Environmental psychologists tend to take a deterministic view of the impact of the environment on people while at the other end of the scale is the view, sometimes described as ‘social constructionist’, that the environment has no role at all. It is perhaps more fruitful to see physical features of place and actions of users as mutually dependent (Vischer, 2008). This is core to the thinking behind the research project described in this paper.

¹ It is worth noting that there were rigorous practice-based studies completed in the United States in the 1980s and 90s which this paper does not cover.

Social Value

‘Social Value’ is a fairly recent and ill-defined term. It is often used to explore how limited resources can be put to best use, by examining the collective benefit, beyond cost savings, that allocation of public money can have (Social Enterprise UK, 2012). In the UK, the Public Services (Social Value) Act 2012 requires local governments take economic, environmental and social benefits into consideration when buying services.

[These] benefits sought should depend on what would best meet that area’s particular needs, and could be in the form of social benefits (for example reducing anti-social behaviour), economic benefits (for example increasing local employment), or environmental benefits (for example reducing local congestion).
(Cabinet Office, 2015, 13)

Further to this, investment decisions requiring government funding have to work within the guidance of the *Treasury Green Book* (HM Treasury, 2018) and updates to the *Green Book*, bringing it in line with the Social Value Act, now require recognition of economic, environmental and social values in building procurement and other projects using government money. Whilst legislation is in place, barriers to uptake of the Social Value Act include lack of awareness of its potential, a lack of agreed measurements (Cabinet Office, 2015, 7).

The need for agreed high level forms of measurement is particularly the case in the built environment sector, an issue that The UK Green Building Council (2019) and the London Sustainability Commission, amongst others, are in the process of addressing. The Royal Institute of British Architects publication of its recent *Sustainability Outcomes Guide* (2019) refers to the BREEAM ((Building Research Establishment Environmental Assessment Method) Communities tool as well as the work outlined in this paper. The construction industry generally measures social value

in terms of jobs and apprenticeships - there has been almost no examination of the social value of the design itself, the building or place as built or the social value of participatory design. This is relatively unexplored terrain and complements current studies into place value, which adds value both economically and socially (Carmona, 2018, 36) including the work of UK Commission for Architecture and the Built Environment (CABE). Although the identification of community assets has been a longstanding thread within multiple influential reports by the CABE it never really came to any conclusions about how they might be mapped (see for example their 2005 report *Physical Capital: How Great Places Boost Public Value*).

In response this, the Social Value Toolkit for Architecture (SVT) was developed as a provocation to architects to think about how they can demonstrate the social value impact of their designs on people and communities. The SVT is the result of a task and finish group conceived by the Research Practice Leads, an interdisciplinary London based group of professionals who lead on research within architectural practice. Whilst social value is high on the agenda of these practices they face considerable difficulties in responding to questions on social value in Pre Qualification Questionnaires and bid documents as the definition of social value is so obscure. Underlying the SVT is a pragmatism about the need to demonstrate value quantitatively in a culture of key performance targets and metrics (Trowers & Hamlins, 2017).

Key outcomes for the SVT were developed through an extensive review of wellbeing literature, most notably New Economics Foundation (NEF)'s Five Ways to Wellbeing (2008). There is much consensus on what makes places that are good for people but the terminology varies greatly across UK based grey literature. The outcomes were developed into questions that were then piloted across five housing projects, one school and the project described below using focus groups, surveys,

interviews, public consultations. They were then adjusted based on feedback from experience in use.

In parallel to this process consultants were commissioned to identify existing financial proxies that could be used to monetise the desired outcomes of the SVT. To do this they used Social Return on Investment, a widely accepted methodology which is growing in usage across UK local authorities (Watson et al, 2016). Through this exercise, questions in the SVT were linked to six financial proxies taken from HACT (Housing Associations' Charitable Trust)'s Social Value Bank (2019). The proxies used by the SVT are:

- 'I talk to neighbours regularly' valued at up to £4, 511
- 'I am able to take frequent mild exercise' valued at up to £3, 537
- 'I feel relief from depression/anxiety' valued at up to £36, 766
- 'I feel a sense of belonging in my neighbourhood' valued at up to £3, 753
- 'I am active in a tenants' group' valued at up to £8, 116
- 'I feel in control of my life' valued at up to £15, 894

SROI is a mixed method approach which seeks to evaluate social, economic and environmental impacts. It is used to estimate broad reaching benefit-to-cost ratios which may result from a specific intervention. HACT uses a 'wellbeing valuation' approach to SROI through which proxies are developed which, following welfare economic theory, give monetary values to the social impacts of commercial investments. This method for developing financial proxies relies on large national datasets relating to positive outcomes such as increased employment, reduced crime, and improved health. (Fujiwara, 2014). Proxies are shared in HACT's Social Value Bank and can feed into cost-benefit-analysis and SROI.

Proxies can be weighted and combined person by person, year by year to monetize the potential benefits, or savings, as a result of increased social value generated through good design. As there are no proxies relating directly to design the SVT utilises existing proxies to understand the potential impact of a development on people's lives and the degree to which these outcomes can be attributed to recent changes in their physical homes. The SVT is currently being supported by the RIBA as a tool to help architects structure Post Occupancy Evaluation into how their designs promote social value, so that they can begin to gather data that demonstrates the social value of good design.

Mapping Eco Social Assets

The Mapping Eco Social Assets (MESA) project developed in parallel with the SVT and explored the potential of mapping social value, in collaboration with Reading Borough Council. The project supported collaborative discussions about social value and used mapping methods for data collection, analysis and dissemination. It sought to explore how the proxies used in the SVT resonated with the lived experiences of residents and stakeholders of a residential neighbourhood in east Reading.

Mapping

MESA employed mapmaking practices as a way to 'both reveal and realize hidden potential' (Corner, 1999, 213). In *The Agency of Mapping: Speculation, Critique and Invention* James Corner argued that the creative potential in mapping processes could allow us to rethink our approach to planning and design. In his opinion, maps were too often thought to be benign and neutral representations of the world, whereas they actually had the capacity to be, 'strategic, constitutive and inventive' (215).

In practice, architects use maps as a matter of course and often may not realise the significance of what they are doing from a research perspective. The day to day nature of maps, such as site, location and master plans, in architecture means that there is a lot of expertise in the profession, however this knowledge remains largely tacit. Indeed, methods employed to make maps/plans are so embedded in practice that architects are often unaware of the ways in which knowledge can be developed through their mapping activities.

Today, maps are ubiquitous. There are many different approaches to mapping. These range from geographic information systems (GIS), enabled through the advent of satellites and Global Positioning Systems (GPS), to critical forms of cartography which posit that maps are active, construct knowledge, exert power and promote social change (Crampton & Krygier, 2005, 15). As Jeremy Crampton (2011) explained, critical cartography is an approach which seeks to make spatial knowledge through maps. These types of map generate knowledge in relation to time, space and relationships.

Mapping social assets

Community mapping is a type of critical cartography which reveals dimensions, such as local character and identity, things that not usually appear on maps. Community maps are often made by local groups and can, 'be seen as a response to conventional, elitist cartography, comprising an alternative, egalitarian counter-culture.' (Parker, 2006, 471)

Where community mapping can generate collective representations of a particular community and how they wished to represent themselves, asset mapping uses collaborative techniques in order to create maps which aim to reveal potential and to guide strategies for change. Asset mapping can be used by researchers, local authorities, charities and stakeholders as well as community activists in order to engage and focus

discussions around themes such as ‘health and wellbeing, space, built environment, public services, urban planning, and regional development’ (Alevizou, Alexiou and Zamenopoulos, 2016, 5) The general premise to the approach is to look at what is existing rather than what is missing.

Assets can be visible, tangible or external (e.g. spaces, services and infrastructures, including communications, media and informal information networks) or somewhat hidden, intangible or internal (e.g. psycho---social aspects such as aspiration, but also creative talents, skills, knowledge, social principles and emotional resources). (Ibid)

Through asset mapping, theme specific information and assets can be gathered, collectively discussed and ideas and strategies can be co-produced.

In response to the rich and diverse field of mapping, the project focused on developing agency through mapping methods. In order to achieve this, the project combined community and asset mapping with a deliberately strategic approach, developed through a combination of action research and architectural practice research.

Site and Context

The mapping project began by looking at the River Kennet that runs through the town of Reading. The Kennet links to the Kennet and Avon Canal to the west, which connects to the Bristol Channel, and the River Thames to the East, which connects to London. To the east of the town centre along the riverside lies a residential area, which is somewhat forgotten despite its proximity to the town. The site used to be the location of workers’ housing for the Huntley and Palmer biscuit factory (1846-1972). Today half of the site remains terraced housing, but the other side was subject to slum clearance and regeneration and is the location of a 1980s housing estate with cul-de-sacs and some post-modern flourishes.

The location plan (Figure 1) with site marked in red, shows the 80s housing estate facing the River Kennet to the west, and a large educational building flanked by public buildings and shops to the south west. The east side of the site is comprised of long streets and blocks of nineteenth century housing. The whole site contains two primary schools, one to the east and one to the west, the school to the east of the site also contains a nursery, which most of the local children attend before splitting between the primary schools. The area has a common Local Authority (LA) however, a political ward boundary runs between the older and newer architecture, meaning that the site is represented by six councillors from two different political parties.

Figure 1. Location plan with neighbourhood boundary marked in red. Initially, the case study focused on the west side of the site, however, the boundary expanded in response to participants descriptions of their neighbourhood during workshop activities.

Description of the mapping workshops methodology

Mapping was explored as a visual method to support collaborative discussions about social and environmental interactions at a neighbourhood scale. Project workshops took place at venues ranging from schools, to a Scout hall, sheltered housing and outdoor community events. Participants ranged from primary school classes, to teachers, parents and other engaged local residents. The events were facilitated by the LA. Following feedback and analysis with the LA and councillors the project maps were used to generate a report highlighting key findings and sites of particular value and potential.

Over the summer of 2019, mapping workshops were staged at seven different locations around the 40-hectare case-study site. These events saw the production of 14 community maps as well as lists of aspirational measures of improvement and headlines. This workshop data recorded input from around 200 participants and provided rich material for subsequent analysis.

Mapping workshops were designed with reference to the SVT and prompts developed which aimed to explore places of social value and promote discussions about different interpretations of value. Following ethics approval, researchers collaborated with the LA to support the recruitment of participants. The involvement of the LA was critical since they were embedded in the area and could provide long term points of contact, something which the timeframes of research funding generally cannot.

Throughout the workshops, the approach adapted in response to the activities. For example, at the first workshop there was some difficulty reading the base map and some participants did not want to write onto the map. To solve these issues subsequent workshops used clearer maps, both colour and aerial photography, and stickers with prewritten text. The workshop design was also adapted to primary school children in close collaboration with their teachers. The workshop prompts were rewritten in appropriate language and the pupils were briefed before the workshop by their teacher, so they had a chance to think about what they would like to map and also discuss it with their parents prior to the event. The workshop process was also adapted to outdoor events and discussions one on one and in small groups. Each of these iterations refined the technique but gathered equivalent data.

Following the workshops new maps were drawn of each event digitally. These were shared with participants for feedback before being combined into a composite map which represented all of the workshops.

The LA assisted with analysis of the composite map. They provided links to local knowledge, systems and priorities. One analysis session took place over the course of an afternoon. During this time, a printed copy of the composite map was closely examined. The ensuing discussions reflected upon what the map contained, how it related more broadly to the town and the activities and aspirations of the Local

Authority, as well as what was missing. The composite map also provided evidence to support the development of a new Community Infrastructure Levy (CIL) funded playpark at the heart of the neighbourhood.

Following feedback and analysis, the composite map was added to and refined before being split into maps relating themes emerging from the analysis. These systems maps relate back to the SVT proxies and highlight locations where spending or design interventions could have maximum social value impact.

Description of findings

The research project's approach to mapping took its starting point in the emerging research surrounding the Social Value Toolkit for Architects. The mapping project began by adapting and testing the SVT's survey questions to suit a workshop environment. The proxies in the SVT monetise preferred outcomes, such as 'I talk to my neighbours regularly' and 'I am able to take frequent mild exercise'. In response to these, the project sought to reveal areas where these outcomes were already found, by finding out where, for example, people spoke with neighbours and what recreational facilities they used.

Mapping workshops were designed around ten prompts which related to five themes. These themes were: connection, active lifestyles, positive emotions, taking notice and freedom and flexibility (autonomy). The prompts were as follows:

Connection

1. Is there anywhere that you find you tend to stop and speak to people regularly?
2. Can you mark onto the map any areas that you feel responsible for?

Active lifestyles

3. Where are your local amenities, such as shops and community centres?
4. Do you have any places you go for recreational activities and hobbies?

Positive Emotions

5. Is there anywhere locally that you are proud of?

6. Can you show where you feel happiest locally?

Taking Notice

7. Is there somewhere in the area that you think is beautiful?

8. Is there somewhere you can connect with nature?

Flexibility and freedom

9. What support structures are there locally? Charities, Council, Church?

10. Who would you speak to if you wanted to make changes to your environment?

Figure 2. A scanned workshop map showing the base map covered with colour themed stickers and handwritten notes.

As an introduction to each workshop, participants were advised that the aim of the project was to make a map, which would be used, not only, to discover local assets and resources, but also to assist in generating a more joined-up view of values across the case study site. Participants were then asked to engage with a large format map of their neighbourhood. They were asked if they knew what the map represented and if they could locate some local landmarks and places. Following this introduction, participants were issued with pens and stickers and asked to mark their responses to the workshop prompts onto the map. Since there were multiple people working on each map during the workshops, each theme was colour coded (blue – connection, orange – active lifestyles, yellow – positive emotions, red – taking notice, and green – flexibility and freedom). This colour coding aided subsequent analysis of workshop data. At each event the group was directed to respond to one prompt at a time and work around the table to ensure that everyone got an opportunity not only to make additions to the map, but also to hear and see how others had responded to the prompts. Towards the end of the mapping part of the workshop, group analysis of the map took place, whereby collective reflections were made upon why certain areas of the map were of interest.

Once responses to all of the prompts had been mapped, workshop activities moved onto discussions about values and aspirations. Learning from the concept of Improvement Science (Langley et al. 2009) which provides a model for measuring change through collaboratively deciding upon indicators that can be used to measure success, participants were asked to imagine the area in two years' time, having become a better place to live, and then to think about what practical steps or measures would need to be taken now to achieve that vision. They were then asked complete the sentences:

We would be a better-connected community if there were...

We would be a more active community if there were...

We would be a happier community if there were...

There would be greater wellbeing locally if there were...

And, I would like the power to...

To conclude each workshop on a reflective note, participants were asked to think of a newspaper, or website, headline about what the area would be famous for in ten years' time.

Figure 3. Photograph of workshop materials showing a map and headlines created by a local Scout group.

Throughout the mapping workshops participants often reflected upon the loss of local facilities, such as a recently closed public swimming pool and learnt from each other about cafes and events at community centres. Each of the workshop prompts elicited dynamic and thoughtful responses. For example, during the first workshop, when the group was asked: Is there somewhere in the area that you think is beautiful? The initial responses pointed to the river; a place that also made them happy. However, when they thought more about it, they realized that there were other places within the

neighbourhood that were also beautiful. These places included a well-tended garden that they enjoyed walking past and a particularly handsome tree. At this point, a member of the group said something along the lines of, 'it is all very well us sitting here and deciding where we think is beautiful, but surely we don't know everything. Other people may have other things they find beautiful that would count.' From this, he suggested having a photography competition to gather and map all these as yet unknown beautiful places. Very quickly the group agreed this was a good idea and initial plans were made.

As the first workshop progressed, one site in particular became central to discussions. Not because it was currently ideal for meeting people or recreation, but rather because it had potential. The area was a large patch of grass home to temporary site offices for a nearby construction site. Tucked away from the river in the middle of the 80s estate, the group felt it could be a valuable social asset, but not in its current state. This was when one of the local councillors announced that they too saw value in the site, so much so they had applied for funding and received money to turn the place into a public park and play area, subject to planning permission.

In response workshop questions relating to practical steps or measures that could be taken to improve the area, responses were broad ranging. They covered a desire for more local events, places to play, street furniture, healthier cleaner environment, pedestrianised streets, free recreational activities, greater accessibility, better maintenance and litter collection, fixing potholes, the preservation of key community assets, and better lighting. Since recreation and play were mentioned at all of the workshops some of the project research funding was used to purchase a table tennis table. This table tennis table is now housed in a popular community centre with free access.

Figure 4. The Project table tennis table at a community event before being donated to the neighbourhood.

Figure 5. The queue for mapping workshop activities linked to a community funday.

Representing and analysing neighbourhood values through composite mapping

Following the workshops, a phase of architectural practice-based research aided communication and analysis of the values and assets that had been collected. In their raw format the workshop produced maps did not communicate clearly. The workshop maps were each as large as a table top, 60x140cm, and contained an average of 140 data points marked with stickers. In order to make sense of these points, handwritten notes had been added to the maps throughout the workshops by both researchers and participants. Despite these notes, the maps could not be read without knowledge of the site and an awareness of the discussions that took place during each workshop.

The workshop maps were scanned using a large format scanner, imported into computer aided design (CAD) modelling software, scaled and overlaid with a vector plan of the site. For accuracy, and to avoid copyright issues, the vector plan was traced from aerial photography. It included waterways, such as rivers and canal, building footprints and outlines of the tree canopy.

Figure 6. Vector plan of the site showing waterways, building footprints and the tree canopy.

Once the workshop maps were imported and scaled, layers were set up in the drawing which corresponded to the workshop participants and theme colours. The approach to drawing took a degree of influence from the way in which information is collated in GIS, through 'layer cakes' (Steiner, 2017). However, where GIS are

comprises of well-defined boundaries (Poplin, 2017, 293), the mapping project sought to work with fuzziness and ill-defined boundaries.

The research provided the opportunity to explore how drawing skills from architectural practice could represent the imprecise and varied values explored through the workshops. Rather than producing dot maps of data points, the project produced map layers that were open to collaborative reflection and analysis. Taking influence from the earliest design stages, where sketches are often deliberately imprecise to allow room for exploration, discussion and different interpretations, map layers were drawn which followed a simple yet consistent set of rules.

With recollection of the specific areas, boundaries and values discussed, NURBS (Non-Uniform Rational B-Spline) and polyline shapes were drawn onto the map. Curves generated through NURBS were used to depict loosely defined areas as pointed onto the map, whereas the straight edged polylines were used to represent places that had strict or well-defined boundaries, such as school grounds and specific public buildings. Where participants marked home precisely on the maps, for privacy, these points were drawn with loops over the rough location, rather than revealing the precise locations.

Figure 7. Vector plan of showing the workshop responses of a local Scout group.

Figure 8. Vector plan of showing the workshop responses of a primary school class.

Working across each scanned map, shapes were drawn according to the stickers and markings. A strict layering system meant that workshop participant demographics and themes could easily be switched off and on. Where comments were written onto the maps, such as 'busy crossing' or 'we want the pool open again', these were added in

specific text layers. Across the map there were a number of sites that attracted a lot of attention and received many different coloured stickers. When drawing shapes corresponding to these areas, they were offset slightly to reveal the different layers present. This resulted in some blurred multicoloured boundaries, which highlighted the imprecision and subjectivity in the process.

Figure 9. Close-up view of blurred multi-coloured boundaries on the composite map.

When all of the workshop maps had been drawn as layers, the file was converted into vector graphics editing software. Once in the new software, each layer was assigned a colour, transparency and overlay blending. By doing this an image was generated which had the highest saturation of colour on the assets and values that were most discussed during the workshops. Where these values fell under different theme colours, they combined to make new colours. The result was a composite heatmap of values and assets across, and beyond, the case study site which combined all of the workshop data. However, where the resultant composite map was intriguing, it was also messy and confusing. As such, it was in need of feedback analysis and further refinement.

Figure 10. Composite heatmap of workshop responses which was subject to feedback and collaborative analysis.

What the maps show

Analysis of the composite map revealed key interconnections with the wider area, beyond the map's boundaries. In order to explore locations of value beyond the case study site and consider how these shaped perception of values at a neighbourhood scale, a set of expanded maps was produced. The value system map shows sites that were

mentioned in the mapping workshops as well as building upon the analysis conducted with the LA. To support deeper analysis, the map was divided into its theme layers relating to: connection, active lifestyles, positive emotions, taking notice and flexibility and freedom.

Figure 11. Value system map drawn following feedback and analysis.

Figure 12. Connection system map highlighting spaces of social connections in blue.

The connection map (Fig 12) shows social connections located at schools, religious buildings and community centres, as well as along streets and paths and at stopping points such as bus stops. It highlights the value of public spaces/buildings and streets. It responds to the SVT proxy 'I talk to neighbours regularly' and shows locations where investment or design interventions might have maximum impact improving values relating to connections.

Figure 13. Activity system map highlighting spaces of leisure and recreation in orange.

In response to the proxy 'I am able to take frequent mild exercise', values relating to recreation and leisure were again focused around schools, religious buildings and community centres, however they also reached out to shops, parks and swimming pools across the town (Fig 13). Within the case study site, opportunities for recreation and leisure were limited and, as such, home was often named as the only place for hobbies and activities.

Figure 14. Positive emotion and mindfulness system map highlighting spaces of happiness, contemplation and closeness to nature in yellow and red.

The SVT proxies of ‘I feel relief from depression/anxiety’ and ‘I feel a sense of belonging in my neighbourhood’ relate to the project themes of taking notice and positive emotions (Fig 14). They largely overlap and focus on the rivers and canal, schools, religious buildings and community centres, parks and home. They reach north under a railway line towards a riverside nature reserve and south across the junction to a cemetery and large park. This map reveals the significance of sites adjoining the case study site.

Figure 15. Flexibility and freedom system map highlighting spaces of potential in green.

With reference to the proxy ‘I feel in control of my life’ the freedom and flexibility map depicts areas where changes or improvements would have most impact (Fig 15). It focuses again on streets and junctions, highlighting the impact of traffic, noise and air pollution upon perceptions of value. It also revealed sites that could benefit from becoming public spaces or parks and ones, such as the rivers and canal, which were prone to littering, highlighted in green.

Implications of the social value maps

The project maps revealed some of the complexities and interconnectedness of social values. They also exposed some of the political challenges faced across a neighbourhood and demonstrated a role for architectural practice-based research in gathering and collating co-produced urban knowledge and translating this knowledge into accessible and useful formats.

Figure 16. Full project value system map with location of interests marked by letter.

Through further analysis of the map full value system map (Fig 16) it became clear that a busy junction to south of the site (A), which was highlighted in many colours on the map, had a complex history. Located at the edge of the neighbourhood the junction was a hive of interest and potentially a place where existing values and assets could be greatly enhanced and added to. A local pool of great value socially and recreationally had recently shut (B), and the building was subject to a campaign by locals to keep it open. However, despite the establishment of a Community Interest Company called 'Save our Swimming Pool', the future of the pool had already been decided. It was going to be converted into keyworker housing. Next door to the politically charged pool was the site of the neighbourhood's most popular community centre linked to a church (C). Across the junction, a historic structure in a cemetery, which the LA had been trying to sell with permission for conversion into bedsits, was subject to a community application for another Community Interest Company with the hopes of turning it into an Arts Hub (D). An ice cream shop to the south of the junction was highlighted through the composite map as another key local asset (E). With a lack of local facilities and activities for teens, the ice cream shop had become a very significant place. In turn, the junction itself was perceived as busy and dangerous and a hot spot for air pollution. This led to calls amongst mapping workshop participants to improve the area.

Other places of interest highlighted through combinations of colours on the map were close to the rivers and canal (F & G). These areas were valued for generating values relating to taking notice (mindfulness) and positive emotions. It is worth noting that proposals for a Mass Rapid Transport system, that would have cut through the much-valued biodiversity at the riverside, were recently shelved otherwise these assets would have been at risk. Along the riverside participants to the workshops revealed that

there was a lack of good lighting (H), which limited use of the area. This is something that could potentially be easily resolved.

Across the river, to the north, an old gas holder structure was identified by workshop participants as a local landmark where red kites could often be seen flying (I). However, this site has already been sold to developers and new housing is going to be built in place of the gas holder. Many participants to the mapmaking workshops were unaware of the proposed development, which suggests there could be scope for improved communication regarding new developments. With the loss of locally valuable assets, such as the pool and gas holder, there is a real risk that this hard to reach local community will be uninterested in future engagement with either the LA or researchers because they have become cynical about the possibility of positive change.

Following the production of the value systems maps, meetings were set up with the local councillors representing the case study site. This required two separate meetings, one per ward. These meetings revealed that the ways in which the councillors perceived the site varied somewhat to what the maps showed. Most notably the project maps represented the case study site as one neighbourhood, and not two wards. However, from the perspective of the councillors, the western part of the site linked west to the town centre and the eastern half of the site linked south east to the park and cemetery. Further to this, it was observed that a large park beyond the railway track to the north west of the site was not marked on the project maps. It was interesting to discover that a public park of perceived importance to residents in the west of the case study site was not mentioned by residents themselves.

The political view of a split neighbourhood shaped strategy and decision-making processes. In turn, the ward boundary down the middle of the case study site made a joined-up neighbourhood approach challenging. However, the project's mapping

process revealed that the site shared values and assets across its ward boundary. Those who took part in workshops had a broad consensus that their neighbourhood was bounded by the river and canal to the north west, the railway tracks to the east and the junction and busy road to the south. In the spring of 2020, the project submitted evidence to the Local Government Boundary Commission for England relating to a consultation about ward boundaries and the redrawing of the political map of Reading Borough Council. It is hoped that the project maps will provide a unique and in-depth form of evidence for this review.

Conclusion

MESA developed methods to collaboratively map and analyse social value across a neighbourhood. The project maps supported broad discussion about values and assets. These included different perspectives and interpretations. Whilst the maps did not actively seek to quantify values locally, they highlighted areas of interest and potential. These areas could benefit from future development and/or investment. The project demonstrated the agency of mapping methods which can generate co-produced urban knowledge, develop capacity and make arguments for value-responsive improvements and development. By linking community mapping to monetary proxies relating to wellbeing, the research appealed to the Local Authority who saw potential in how the maps might help them make more informed decisions that could contribute to cost reductions. Indeed, they expressed an interest in further research monetising the social value of specific site interventions, something that went beyond the remit of this research project.

The research also revealed some of the challenges of linking neighbourhood perspectives with local government's processes. Values across the public sphere are often contested, something which was apparent through the research. However, opening

up new lines of communication and developing methods for representing and sharing values, through strategic and innovative mapping practices, can provide opportunities to learn more about common values and to develop robust approaches to developing potential in the urban environment. This approach has many potential applications for example: the accurate definition of electoral boundaries based on community self-perception; ongoing participation in the co-creation of local development plans, city models that account for social value; building procurement based on social value outcomes, as well as the use of social value in planning. Most importantly social value can be used to help make an evidence based case for resisting developments that are destructive to communities and people drawing on SROI financial proxies as necessary.

The project also modelled a potential role for architecture and planning professionals in supporting consultation for local development plans and developed a set of methods that can be replicated at different scales and locations.

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