Social value, infrastructure and stakeholder engagement: a complex triangle

Journal Item

Social Value, Infrastructure and Stakeholder Engagement: A Complex Triangle

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Abstract (200 words)

Infrastructure is critical for the economic and social prosperity of society. Some large infrastructure projects are also critical for our future society due to their intragenerational nature and long lifespan. Understanding the social value of infrastructure is therefore important in order to deliver a socially successful as well as technically successful project. Stakeholder engagement, in turn, is critical in understanding and identifying social value, however, the strength of this relationship is often underestimated during project development. The impact of this underestimation can be detrimental to a project. Using the case study of the Didsbury Flood Storage Basin Improvements Scheme in Greater Manchester, this article demonstrates how the stakeholder engagement process is intrinsically linked to social value preservation, creation and enhancement on infrastructure projects. It is argued that by investing time, resources and money in the stakeholder engagement process, the social value creation and enhancement on a project can be significant. If this investment is missing on a project, the social value perceived to be received by stakeholders diminishes. Therefore, this article calls for a greater understanding of the interdependency between the stakeholder engagement process and social value, and a need for an appreciation of this relationship within the infrastructure sector.

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Introduction

The built environment influences and shapes society (Infrastructure and Projects Authority, 2016; Raiden et al, 2019). Infrastructure plays a significant role in that its purpose is to meet society's fundamental needs such as sanitation, water supplies, energy supplies, transport and flood protection to name but a few (Fitton, 2015; ICE and Useful Projects, 2020; RICS, 2020). In addition to providing communities with critical services, infrastructure also contributes to the economic and physical growth of society (Marshall, 2012). Investment in infrastructure has the potential to stimulate the UK economy (Infrastructure and Projects Authority, 2016). Infrastructure projects have recently been cited as playing an important part in the 'levelling up agenda', whereby the levels of inequality within the UK are brought more in line to try and eradicate the significant gap which exists (ICE and Useful Projects, 2020; IED, 2020, Raiden et al., 2019). It is also perceived to be a key driver of the 'Build Back Better' initiative, in response to the COVID 19 Pandemic which started in 2020 (PMO, 2020). Given the economic downturn due to the pandemic, investment in infrastructure projects has the potential to create social, economic and environmental benefits, thus helping to rebuild the economy and society following the crippling effects of the pandemic (ICE and Useful Projects, 2020).

However, the critical nature of infrastructure is often overlooked (Fitton, 2015; Star, 1999). Its place in everyday life means it is taken for granted and almost invisible to users (Star, 1999). For this reason, the social impact infrastructure has on communities and society as a whole, has often been neglected historically compared to the economic, environmental, and technological impacts (Fitton and Moncaster, 2019; Raiden et al., 2019, Simm, 2012). This perception is beginning to change, nevertheless.

Within the built environment, and specifically within the field of infrastructure, the preservation, creation, identification, articulation, and to a certain extent the quantification, of social value has been gaining prominence over a number of years (Fitton et al, 2016, Fitton and Moncaster, 2019; RICS, 2020). The Social Value Act (2012) brought to prominence the importance of understanding the wider social benefits of procurement and began a step change in how procurement contracts were determined (RIBA and University of Reading, 2020). Most recently

the UK Government has revised their procurement framework to include an emphasis on delivering value for society (Cabinet Office and Lopez, 2020). New measures launched require businesses wanting to win public sector Government contracts to demonstrate how they will deliver social value with a supplier's social value 'score' included in the assessment criteria (Cabinet Office and Lopez, 2020).

With a similar emphasis, the National Infrastructure Commission (NIC) recently published its 'Design Principles for National Infrastructure' (NIC, 2020). A key message from this publication was that infrastructure should be designed for people, with people, in a co-productive manner (NIC 2020). It should not solely be designed by architects or engineers with little understanding or regard for the context of the scheme or the stakeholders impacted (de Sousa, 2019; Fitton et al, 2016; Fitton and Moncaster, 2019). The guide urges infrastructure projects to find opportunities to go above the technical and economic boundaries and provide social value and wider benefits (NIC, 2020).

The main process which enables the identification of social value and allows projects teams to understand the wider benefits for stakeholders is the stakeholder engagement process (Fitton, 2015; Mulholland et al, 2019; SVUK, 2020). Stakeholder engagement is embedded in legislation, primarily through the UK Planning System. Under the National Planning Policy Framework (NPPF), engagement with stakeholders is seen as a method of developing successful projects. In Paragraph 66 of the NPPF there is an expectation that all plans and proposals submitted into the UK Planning System reflect the views of the stakeholders impacted (Ministry of Housing, Local Communities and Local Government, 2019). The geographically large scale of some infrastructure and longevity of other infrastructure projects, both intergenerational and intragenerational, means that stakeholder engagement should be an integral part of the conception, design, construction and delivery of infrastructure projects (Consultation Institute, 2020; Milligan et al., 2009; UK Green Building Council, 2020). However, there is evidence that there is an implementation gap between the theory behind the stakeholder engagement process and how the stakeholder engagement process is carried out in practice (Fitton and Moncaster; 2019; Kothari, 2001).

This paper argues therefore, that the current stakeholder engagement process is inadequate to fully understand and engage with stakeholders. A greater appreciation of the importance of the stakeholder engagement process is needed. This means allocating a reasonable and considered amount of project budget and resources, early within the project lifecycle. This will allow meaningful engagement with stakeholders to understand their current situation, needs, wants and values and means that social value can be incorporated, considered and preserved from the beginning of a project, created and maximised where possible, resulting in a more socially successful project.

Section 2 of this paper further examines the interdependency between stakeholder engagement and social value. This is followed by Section 3 which explains the design of the research and provides an explanation of the case study that has been used to illustrate the argument presented in this paper. Section 4 provides the results and a subsequent discussion. Section 5 offers concluding remarks and recommends the need to place greater emphasis and importance on the stakeholder engagement process as a means to creating, maximising and delivering infrastructure projects which are not only technically successful, but provide social value and wider benefits to local communities. A brief suggestion for areas of future research concludes the paper.

2. The Interdependency between Social Value and Stakeholder Engagement

Although social value has gained prominence over the years within the built environment, the concept itself is still subjective and causes confusion as to what it actually means (Raiden et al. 2019). There is no one agreed term to describe social value and as a result, varying definitions have been created depending on the context in which it is being used (Raiden et al. 2019). The term is also often used interchangeably with terms such as ‘social benefit’, ‘social impact’ and ‘social outcomes’, further adding to the confusion (Raiden et al. 2019). The lack of clarity concerning the meaning is often a barrier to its implementation (Fitton 2015; Raiden et al. 2019). This has in turn led to a lack of industry wide guidance on how social value should be articulated and delivered (Raiden et al., 2019).

In a broad sense, Social Value UK (SVUK) define social value as the assessment of … "*the relative importance that people place on the changes they experience in their lives"* (Social Value UK, 2021). From the perspective of infrastructure these impacts can be social, environmental or economic and range from increasing wellbeing, job creation, improved air quality, flood protection, resilience to threats such as climate change, promotion of social-inclusion and use of local supply chains, to name but a few (ICE and Useful Projects, 2020; RIBA, 2020, RICS, 2020).

Social value is derived from an understanding of what the stakeholders and local communities impacted by the infrastructure projects want and need (Fitton and Moncaster, 2019). The first of the five fundamental principles, according to SVUK, is to involve stakeholders (SVUK, 2020). The second is to understand the level of change or impact from, in this instance, the future or current infrastructure project (SVUK, 2020). Social value cannot be articulated, preserved or created if stakeholders are not involved, as it is dependent on their situation, and their wants, needs and desires (O'Brien and Wolf, 2010). It is therefore necessary that project teams do not try and assume they understand what stakeholders want but take the time to engage and fully understand the context (NIC, 2020). Conducting a process such as a Local Needs Analysis at the very early stages of a project will helps to develop a profile of the local communities. These profiles can help project teams understand economic, social and environmental needs and provide insight into demographic trends, inequalities and experiences (ICE and Useful Projects, 2020). The output of the Local Needs Analysis should help identify where and how social value can be created or maximised to benefit the stakeholders (ICE and Useful Projects, 2020).

Conducting a Local Needs Analysis is one method to engage with stakeholders. Much like the concept of social value, stakeholder engagement is often open to interpretation and the process is carried out in different ways with different levels of success (Cooke and Kothari, 2001; International Association for Public Participation, 2014). There is a wealth of literature examining stakeholder engagement and participation in the planning and design of infrastructure projects using case studies from all different infrastructure sectors including the

water sector (see for example Casscetta et al. 2015, Chinyio and Olomolaiye, 2010, Luyet et al. 2012, Mathur et al. 2008, Mok et al. 2015). The literature and case studies examine the theoretically complex process of engaging with stakeholders during the different stages of an infrastructure project, the potential failings of stakeholder engagement and the associated impacts, as well as evidence of best practice and the benefits for infrastructure planning and design.

Figure 1 demonstrates the different ways stakeholder engagement can be carried out, from basic information provision to a more collaborative approach in which stakeholders are able to help shape decision making (International Association for Public Participation, 2014).

Figure 1: The scale of effectiveness of stakeholder engagement. Source: International Association for Public Participation (2014)

For a process to be participatory and collaborative, stakeholder engagement should take place very early on in the conception of the project and then continually throughout all stages (Consultation Institute 2020; UK Green Building Council, 2020). The benefits of such an approach are that it develops trust with, and provides transparency for, stakeholders. They are able to help shape decision-making, so the project meets their needs and requirements, and they are left with a legacy that provides wider benefits, not just environmental or economic (Consultation Institute, 2018; Johannessen and Han, 2013). The benefit for project teams of adopting a collaborative approach to stakeholder engagement is that if stakeholders feel they are involved, are listened to and there is a relationship built on trust and transparency, they are less likely to oppose decisions (Howgate and Kenyon, 2009; Milligan et al, 2009; Whitmarsh et al., 2013). Opposition, especially on large infrastructure projects is costly in terms of budget and time as well as reputation (Ledoux et al., 2005). Also, if project teams are able to detect areas of opposition early by engaging with stakeholders, these can be mitigated quickly before they escalate, avoiding costly delays (Mehring et al., 2018). Gaining buy-in from stakeholders early can help provide a smooth transition through the project lifecycle (ICE and Useful Projects, 2020).

Although a collaborative approach to stakeholder engagement seems, in theory, the best choice, in reality, most current stakeholder engagement practices on infrastructure projects lie very much in the consultative area, with some best practice examples moving towards the involve stage (Cooke and Koathari, 2001; Fitton and Moncaster, 2019). A reason for this is the perceived resource and budget intensity of stakeholder engagement. This type of activity is often allocated less project resources and budget than the more technical aspects of projects (Correia et al., 1998). There is also the issue that project teams do not like the uncertainty of engaging with stakeholders when they do not have a fully formed design or concept (Hunt and Taylor, 2009; Whatmore and Landstrom, 2011). There is a perception that project teams do not want to promise something that will not be delivered (McEwan, 2011). A final reason why a collaborative approach to infrastructure projects is not more regularly undertaken is because of the professional perception of knowledge. Some professional teams see the public 'lay' knowledge as inferior to their 'expert' knowledge. This often results in the public only being able to influence peripheral aspects of a project (Few et al, 2007; Fitton et al, 2016; Mehring et al, 2018).

By not engaging with stakeholders early and in a meaningful way, the ability to identify, preserve, create and maximise social value on a project is therefore greatly reduced from the outset. With limited involvement of stakeholders, projects teams will only be able to deliver a small amount of social value and potentially not where stakeholders want or need it most (Begg et al, 2017; Moon et al, 2017). The following case study seeks to demonstrate how the stakeholder engagement process and social value are interdependent and how the level of social value preserved or delivered by an infrastructure project can be determined by the stakeholder engagement process.

3. Research Design and Case Study

The aim of the research was to investigate a social phenomenon, namely the relationship between social value and stakeholder engagement within the context of infrastructure projects. The research question posed *was " How does the stakeholder engagement process impact on the preservation and creation of the social value of an infrastructure project?"*

The research was therefore exploratory in nature, seeking to gather knowledge and information about the social phenomenon (Yin, 2009). The research was designed using a qualitative inductive approach, following constructivist grounded theory (Charmaz, 2006; Glaser and Strauss, 1967). Using such an approach iteratively develops theory from data, checking against further data and then refining the theory more (Charmaz, 2006; Urquhart, 2013). The theories developed were checked by collecting further data from participants thus emphasising the social construction of its nature (Charmaz, 2006; Creswell, 2009; Urquhart, 2013). The approach also recognised that the perspectives, values and knowledge of the researcher will have an inevitable influence on the data collection process (Thornberg and Charmaz, 2014).

The research was framed using a case study approach which enabled the researcher to be immersed in a real-world context, in order to study the research problem from within (Flyvberg, 2006). A case study approach facilitates the investigation of the 'how' and 'why' questions of the phenomenon (Yin, 2009). This research is part of a wider research project which used three flood alleviation schemes as case studies. A selection criterion was developed as part of the wider research project to identify the preferred characteristics of the case studies including availability of data, ability to speak to both the local community and the project teams, ability to access the flood alleviation scheme and for the case study to have only been completed within a couple of years of data collection. For the purposes of this paper one case study was used, the Didsbury Flood Storage Basin Improvements Scheme because it provided interesting results given the research question and is described in more detail in the next subsection.

The data collected was qualitative in nature. Publicly available planning documents were used and analysed first to describe the technical details of the scheme and gain an understanding of the context. However, the primary source of data was semi-structured interviews with the professional team members involved in delivering the scheme (including engineers, town planners, environmentalists, flood risk modellers and architects) and individuals from the community in Didsbury impacted by the scheme. Semi-structured interviews were used as it allowed the researcher to have a degree of structure to the discussion, but also allowed both the participant and the researcher to discuss other topics of relevance (Creswell, 2009; Silverman,

2010). Theoretical sampling techniques were employed to identify individuals who were closely embedded in the scheme from both the local community and the professional team (Emmel, 2013; Urquhart, 2013). Snowball sampling was then used to identify additional suitable participants (Bryman, 2012). In total 21 semi-structured interviews were conducted, nine with the professional team members and 12 with members of the local community.

The data collected was analysed iteratively throughout the process (Glaser and Strauss, 1967; Hunter and Kelly, 2008). Interviews were recorded and transcribed and then coded with the aid of the computer-aided qualitative data analysis software NVivo; this helped to manage the large sets of data while the researcher retained the role of analyser (King, 2008; Welsh, 2002). The coding process allowed the researcher to identify the relationships emerging from the data and develop theoretical explanations for the findings (Charmaz, 2006).

3.1 Case Study: The Didsbury Flood Storage Basin Improvements Scheme

Didsbury is situated in Greater Manchester, in the north west of England. It is a 62 ha flood storage basin, operational from 1979 and used to relieve peak flow from the River Mersey under the management of the Environment Agency. It is predominately used as a recreational area with allotments, a golf club, a rugby club and a park. The River Mersey is also a community attraction, with foot and cycle paths along the banks and is designated a Local Nature Reserve and a Site of Biological Interest (Figure 2).

Figure 2: The recreational area alongside the River Mersey in Didsbury. Source: Fitton (2014)

There are a small number of residential properties and businesses situated within or in close proximity to the basin.

The Environment Agency, as the client, commissioned a project to improve the efficiency of the basin. The basin had not been performing as required, with water unable to flow effectively to the western section and therefore exceeding its capacity in the eastern section. There was concern that the basin would not drain quickly enough if there were two flood events in quick

succession. A scheme was proposed by an engineering consultant which saw a channel constructed through the allotments, removing up to 40% of the allotments, to facilitate the movement of water from east to west. Very little stakeholder engagement was carried out during the design of the initial scheme, apart from statutory activities which were legally required. The local community and stakeholders only learned of the scheme through third parties. Once they had been made aware of the plans, they came together to oppose the initial scheme creating a powerful and effective opposition campaign. This resulted in the Environment Agency, as the client, rejecting the initial scheme and commissioning a new design by a new engineering consultant.

The implemented scheme used a number of different aspects to achieve the same level of protection as the initial scheme but leaving the allotments as they were. The Environment Agency made it clear to the new consultants that stakeholder engagement was critical in the project given the opposition already experienced. Consequently, the new consultants approached the project very differently and engaged with stakeholders from the very beginning. The improvements for the scheme included;

- installation of new monitoring and telemetry equipment;
- construction of a floodwall and a floodgate to protect the residential properties;
- installation of flood mitigation measures to protect the local amenities;
- construction of a new outfall to the eastern section of the basin; and
- creation of a maintenance strategy to ensure no obstructions impeded the flow of floodwater.

The scheme was commended by the Institution of Civil Engineers in 2012 for its community work (Fitton, 2015).

4. Results and Discussion

Analysis of the interviews conducted with both the local community participants (LCP) and the industry professionals (IP) showed how detrimental the lack of effective and collaborative engagement had been during the initial design phase of the scheme. One participant explained how he came to hear about the plans for the scheme,

"I think the thing that didn't particularly please us was we only found out by accident from the allotment people [about the initial proposal]. Nobody told us about the proposed scheme until one of my friends from the allotments said do you know about this? So, then we chased up and got involved ..." (LCP14)

This type of stakeholder engagement does not demonstrate a collaborative, participatory approach which is required to create a socially successful scheme (ICE and Useful Projects, 2020; NIC, 2020). Nor does this type of stakeholder engagement facilitate the understanding, identification, preservation and creation of social value for the scheme (Fitton, 2015; Mulholland et al, 2019; SVUK, 2020). It goes completely against a key principle of social value - involving stakeholders (SVUK, 2020).

The social value of the Didsbury Flood Basin was significant, even before the scheme was proposed. One participant explained why the area held significant social value,

"Well it was huge [the social value of the scheme], because there is a big community of allotment holders some of them are retired, they would have found it quite distressing if it [losing the allotments] would have interrupted their natural way of life …" (LCP16)

Another participant who was an allotment holder discussed why having an allotment was so important to him,

"It would be very upsetting to me if someone said you can't have an allotment because when I get up at 6:30 in the morning what do I do … all day?... this [the allotment] has been a big part of my life for the last 30 years …" (LCP14)

It is evident that the allotments were an integral part of life for some Didsbury residents (Fitton, 2015). However, by not engaging with stakeholders effectively or early enough, or even at all, professional knowledge dominated the design process (Few et al, 2007; Fitton et al, 2016; Mehring et al, 2018). Those responsible for the design of the scheme were unable to understand what the needs of the community were, what values they held, and what the Flood Basin, and its associated amenities, meant to them. This type of lay knowledge is critical in identifying the social value of a scheme and understanding how to protect that social value and where possible, maximise it (Begg et al, 2017; Moon et al, 2017). However, as one professional

explained, there is a conflict between lay knowledge and professional knowledge, with the lay knowledge often being seen as inferior to the professional expertise held by those employed to design the scheme,

"… we are professional people; this is what we do for a day job. The person on the street does not do flood risk as a day job necessarily … the public … are paying money for us to do a job therefore we should do that job and if they are paying me as an engineer to do a job then I shall do that job as an engineer." (IP9).

The inadequate engagement on the initial design had an impact on how the scheme was perceived even during the next phase. Collaborative and early engagement with stakeholders builds trust and gains buy-in from stakeholders (Howgate and Kenyon, 2009; Milligan et al, 2009; Whitmarsh et al., 2013). By developing the initial design with little or no engagement the relationship with stakeholders was damaged, as one participant explained,

"I'm afraid from a fairly early stage it was clear that there was going to be a lack of trust because we were kept in the dark and the attempt was made to just steal the allotments." (LCP8)

This resulted in the implemented design being developed very differently.

The opposition from stakeholders and the local community of Didsbury forced the Environment Agency to reject the initial design which impacted heavily on the allotments and employ another set of professionals to rethink the solution (Fitton, 2015). One participant explained how the approach to the design was very different to the first design,

"It was looking to minimise the disruption to recreational activity on the site really and the allotments … Not having a detrimental effect on the amenity value of those areas as a result of the works that we were implementing." (IP6)

Another way that the scheme was approached differently was through the engagement with stakeholders. The incorporation of lay knowledge and creating a collaborative relationship was important for this scheme's design as explained by this professional,

"We tried to go to them [the local community] with, this is the problem we are trying to solve and this is what we are looking at – is there anything you can throw in that might help us or any ways you think we should be looking at this, that we are not?" (IP6)

This type of approach is more in line with the collaborative, participatory method of stakeholder engagement which facilitates the understanding and identification of social value (Fitton and Moncaster, 2019; ICE and Useful Projects, 2020; NIC, 2020). The professionals used a mixture of both lay and expert knowledge to create not only a technically successful scheme, but a socially successful scheme that understood the social value of the Flood Basin to the stakeholders (Few et al, 2007; Fitton et al, 2016; Mehring et al, 2018). One participant explained that this was the main social value of the scheme, leaving the basin as it was,

"… it's a very well used public space… It [the social value] was the sympathetic design, it was making sure that it did blend in – minimum impact on basin users." (IP2). This sentiment was echoed by a local community stakeholder also,

"… but I had no complaints about it [the implemented scheme] because it was such a relief that they weren't going to implement the original scheme." (LCP15)

As the quote above by LCP15 alludes to, the implemented scheme was received much more favourably than the initial design. This was due mainly to the effective and collaborative engagement which was carried out,

"You couldn't fault the consultation, they were taking into account what the allotments were saying, they were listening to me when we discussed the finer details of the operation works once the wall was built and restoring the garden to the way it was and so on …" (LCP18)

By engaging continuously with stakeholders, the design team was able to develop trust, use lay knowledge to enhance the design process and ensure the needs and wants of the stakeholders were met, thus creating a scheme which had, and preserved, social value.

By not taking a collaborative and participatory approach to the initial design of the scheme, additional costs and time were incurred from the project perspective, as well as damage to the relationship with the local community and stakeholders and consequently, a loss of trust (Howgate and Kenyon, 2009; Milligan et al, 2009; Whitmarsh et al., 2013). By understanding the importance of the stakeholder engagement process and the personal values held by the stakeholders on the second attempt, the outcome was very different. Listening, collaborating and engaging with stakeholders helped facilitate social value as a core design consideration (ICE and Useful Projects, 2020; NIC, 2020; Raiden et al, 2019; RIBA and University of Reading,

2020). This ultimately resulted in a scheme that was viewed by industry and stakeholders as both technically and socially successful (Begg et al., 2017, McEwan, 2011).

5. Conclusion

Infrastructure is critical for the economic and social prosperity of society. Understanding the social value of infrastructure is important in order to deliver a socially successful as well as technically successful project. Stakeholder engagement is a critical method which helps to facilitate the understanding and the identification of social value. Through the detailed case study presented in this paper, the research has shown however, that current approaches to the stakeholder engagement process do not always facilitate the consideration of social values effectively. This case study provides a story of two halves. One is the impact of designing a scheme with only a technical perspective, with little or no consideration of the values of the community the scheme is being designed for. The second is the success of designing a scheme that has a social perspective and is developed collaboratively with those the scheme is meant for.

The research demonstrates that some industry practices of the stakeholder engagement process are still very much focused on information dissemination and are tokenistic in nature. Adopting such an approach results in important information from stakeholders being omitted from consideration in the design of schemes, although in reality this information is just as critical for the success as the technical detail. By neglecting to engage with stakeholders and collect important lay information, industry professionals risk losing the trust and buy-in from local communities and stakeholders. The research shows that stakeholders have the ability to generate such forceful opposition that can overpower the industry professionals. The outcome for industry, if a redesign is required, is lost time, and abortive costs in terms of money and resources, as well as a breakdown of relationships with the stakeholders and local communities and loss of reputation.

In contrast, the research has also provided evidence that when the importance and validity of lay information is collected and used, the outcome is more socially acceptable. By investing the

time and resources in stakeholder engagement from the beginning of a project, trust can be built, and a relationship developed. This in turn can facilitate a co-production approach whereby both the stakeholders and the industry professionals design the scheme together. This mechanism helps to ensure that the social perspective of the scheme is considered throughout, and design decisions can be taken on both a technical and social level. The outcome is twofold. Firstly, for industry professionals they are able to reduce the risk of opposition and increased costs and abortive work as they are able to identify contentious issues earlier and mitigate them. Also, the relationship developed with stakeholders means these issues are easier to deal with. Secondly, stakeholders are able to shape, influence and co-produce a scheme that they live with day in, day out. They are able to ensure that social value is weaved into the design process, so they are left with a scheme that is technically successful, but provides wider benefits to the local community, over and above the technical success.

The findings clearly demonstrate that there is still a need for change. Participatory, early and effective engagement with stakeholders at the beginning of a project, with due consideration of the lay information available, is key in facilitating social value consideration. There is evidence that some industry professionals understand the importance, but within the infrastructure sector there are still examples of technically led projects, with a tokenistic stakeholder engagement process and very little consideration of the social value of the scheme. This requires a change in attitude towards the social perspective of projects and the validity of the stakeholder engagement process.

The ultimate goal should be for the co-production of infrastructure projects which equally considers the technical and the social perspectives. Stakeholders should be fully involved early with a mix of expert and lay knowledge shaping the design process. Industry professionals need to accept this change and adapt their perceptions of the stakeholder engagement process. It should not be perceived as a tick box exercise and resource and time intensive, but something that is integral in obtaining the right information to help successfully design the project which provides social value to those for whom it is being designed.

There are limitations to the research, however. The conclusions drawn are representative of this case study and this type of infrastructure. Applying a similar research approach and research question to different case studies and on different types of infrastructure projects would be interesting. Further research is also now needed to investigate the effectiveness of a co-production approach in preserving, creating and maximising the social value of infrastructure projects. The research should look at the most effective mediums to change industry perceptions of the stakeholder engagement process and how from a standards and legislative perspective, stakeholder engagement and how the social considerations can be incorporated earlier and with more emphasis in the design process including how the client defines the project process and scope in relation to social value and how design professionals are procured based on their project priorities. In addition to taking an industry perspective on the future research, another direction the research could take would be to use a co-production approach to further the knowledge in this field between industry and academia (Moncaster et al., 2010).

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570
571 **Figure captions (images as individual files separate to your MS Word text file).**
572 Figure 1. The scale of effectiveness of stakeholder engagement. Source: International
573 Association for Public Participation (2014)
574 Figure 2. The recreational area alongside the River Mersey in Didsbury. Source: Fitton (2014)