



To green or not to green: Establishing the economic value of green infrastructure investments in The Wicker, Sheffield



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ABSTRACT

Establishing the value of urban green infrastructure resources draws on a complex evaluation of social, economic and ecological influences. As a result planners have found it difficult to develop robust economic arguments to promote investments in urban greening. The Valuing Attractive Landscapes in the Urban Economy (VALUE) project facilitated a trans-national programme of investigations to establish economic values for a range of green infrastructure investments. This paper presents the results of a large-scale willingness to pay (WTP) survey (N: 510) for investments on Blonk Street, The Wicker, Sheffield. Using 3D visualisations of three alternative urban greening scenarios the research addressed the influence of green infrastructure on aesthetic quality, functionality and amenity. The evidence suggests that participants were WTP up to £10.56 or 2% more in monthly rent or additional mortgage payments to live in locations that have a high quality green infrastructure environment. The survey also examined the relationships between a range of socio-economic factors and WTP for green infrastructure (GI). WTP more rent was associated particularly with those in younger age groups and those with lower educational attainment. The paper concludes that investment in urban GI that is visibly greener, that facilitates access to GI and other amenities, and that is perceived to promote multiple functions and benefits on a single site (i.e. multi-functionality) generate higher WTP values. The findings of the study support the wider literature evaluating the economic value of GI which argues that investment in urban greenspace can have a significant impact on local housing and commercial markets where it produces more attractive and functional landscapes.

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1. Introduction

The River Don in The Wicker (Sheffield, UK) experienced severe flooding following the single highest one-day rainfall event since 1882 in June 2007. The impacts extended to tens of millions of pounds of construction and commercial damage, disruption to the road and rail networks and the loss of two lives.¹ One cause was the engineered channelization and removal of stabilising vegetation from the river channel. However, a confluence of issues have been identified which collectively impacted the scale of the flood including changes in the management of the physical form of the

river channel to speed up the dissipation of rainfall downstream, increased stormwater run-off into the channel from impermeable street surfaces,² and the perceptions of local people of the capacity of the River Don to deal with flood events (Environment Agency, 2007). The negative coverage of the flooding influenced the decision of Sheffield City Council (SCC), and associated agencies, to modify their development strategies for the area. This included evaluating the appropriateness of the existing river management regime and remodelling the urban realm to promote investment in The Wicker (Mell et al., 2012a).

Despite the visible ecological damage caused by the 2007 floods, reflections on its impact focussed most frequently on the economic costs of the event. Discussions highlighted the effects on the physical and built environment of The Wicker, and on the economic

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¹ Approximately 1200 homes and 1000 businesses were affected by the flooding. Chatterton et al. (2010) estimated that the cost of disruption to local businesses was over £50 million.

² 70% of the water in the channel came via stormwater run-off from impermeable surfaces (Environment Agency, 2007).

Sheffield City Centre

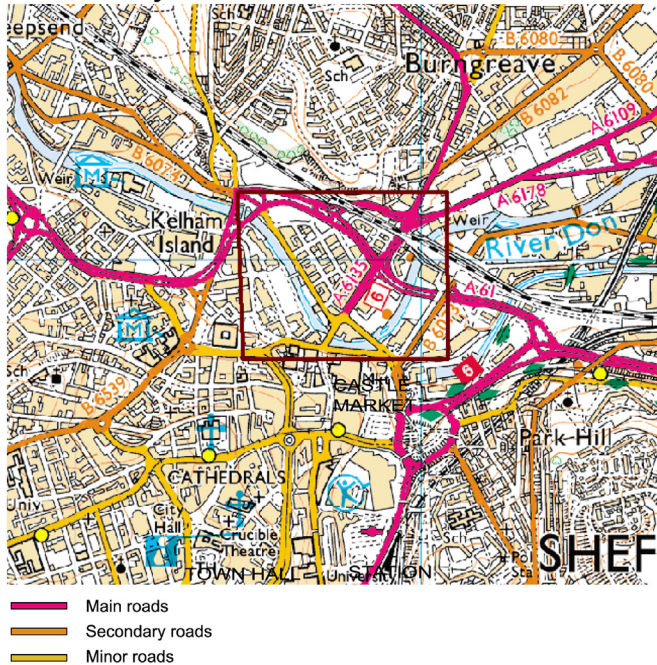
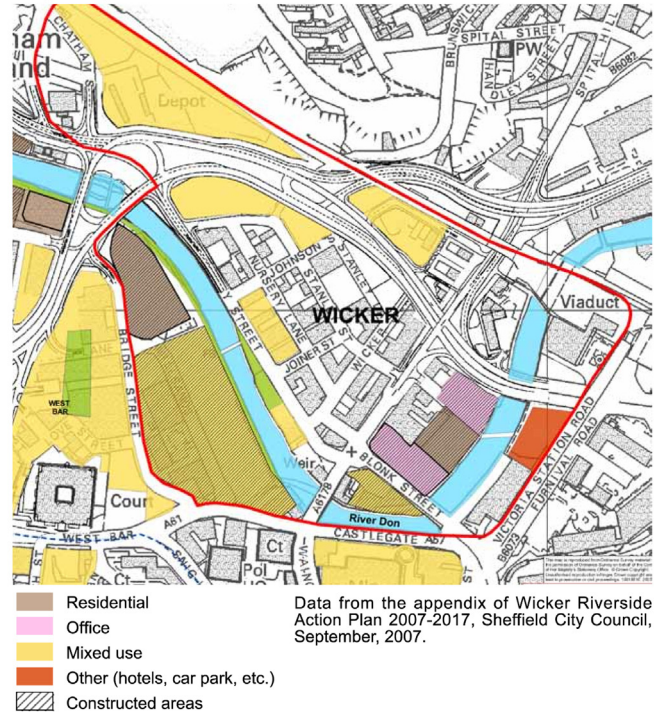


Fig. 1. Map of Sheffield and The Wicker.

Key Regeneration Activity Within Sheffield City Council



Source: URSULA (2011) Wicker Riverside: Options for Sustainable Redevelopment

development of Sheffield as a whole. It also brought to the fore the perception that environments susceptible to flooding are less desirable places to live (South Yorkshire Forest Partnership and Sheffield City Council, 2012). To address the redevelopment needs of The Wicker (Fig. 1), SCC's vision was to create a socially and environmentally sustainable commercial-residential neighbourhood in the area. To achieve such a transformation SCC proposed investing in a combination of built and green infrastructure to ensure that The Wicker is able to (a) withstand any potential damage of further flood events, (b) be promoted as a vibrant community hub and (c) act as an economically functional and attractive entrance to Sheffield city centre. One project evaluating the relationship between the development of ecological and social functionality in conjunction with an economically viable urban realm was the multi-institution INTERREG IVB project 'Valuing Attractive Landscapes in the Urban Economy' (VALUE).

This paper presents an analysis of a large-scale survey of preferences for green infrastructure (GI³) undertaken to establish the social and economic values of such investment. We focus on establishing respondents' willingness to pay (WTP) for a set of contrasting development scenarios that were presented through 3D visualisations of the River Don/Blonk Street (Figs. 2–4). Through this evaluation the paper examines the scale of the economic returns associated with specific green investment options that could potentially be generated for local authorities (LAs), developers and land/home owners. The socio-ecological influences underpinning such returns are also explored. The paper's central findings indicate that people base their WTP on an integrated assessment of the

³ Green Infrastructure (GI) is considered within this paper as the natural elements of the built environment that support a variety of social, economic and ecologically functions at a local, city and regional scale. GI is proposed as a network of green and water-based resources that promote connectivity between people and places, as well as, providing climatic and ecosystem service functions (Mell, 2010). Within the paper GI is used interchangeably with green space and urban greening; each reference is based on an understanding of the rationale for GI outlined above.



Fig. 2. Blonk Street: (Before).



Fig. 3. Blonk Street (VALUE).

social, ecological and economic benefits of GI, and that the greener and more functional an investment appears to be in terms of access and availability of amenities and services, the greater their WTP for it.

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