



The pedestrian pound

The business case for better streets and places



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This report has been commissioned by Living Streets, the national charity working to create safe, attractive and enjoyable streets around the UK. This report, and a summary report produced by Living Streets, can be downloaded from www.livingstreets.org.uk/pedestrianpound.

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Living Streets is the national charity that stands up for pedestrians. With our supporters we work to create safe, attractive and enjoyable streets, where people want to walk.



Foreword

Two years ago Living Streets commissioned the University of West England and Cavill Associates to 'Make the Case' for investment in walking. The authors brought together and evaluated the multiple economic, environmental, health and social benefits of investment in walking friendly public spaces. As we continue to grapple with the effects of the recession, the changing landscape of our economy and shrinking public funds, the case for investing in better streets and places that are great for walking has never been stronger. Our latest report, prepared by independent experts Just Economics, brings together the evidence to demonstrate how investment for walking can deliver a commercial return for business and a much needed boost for local economies too.

We all know that our high streets and town centres face challenges. Against a backdrop to boarded up shops and the well publicised failure of well known high street chains, widespread press coverage and knee-jerk government announcements have kept the issue in the public eye. The problem is that the way we shop has changed for good. The question is what are we going to do about it? High streets and town centres used to be about so much more than retail. It's time for them to be rediscovered as places where people like to get together, socialise and feel part of a community. The vibrancy and success of our high streets and town centres is most clearly demonstrated by the numbers of people walking around and spending time in the area.

The renewal of our high streets and town centres should be built on well thought out, evidence based measures. Recent comments about parking miss the wider picture. This research is a timely addition to the ongoing public debate about the future of our high streets and town centres. It reminds us that the quality of the public realm really matters and can deliver quantifiable benefits to businesses and consumers.

For almost ninety years Living Streets has campaigned for better streets for pedestrians where we live work and shop. This research highlights why our work is so important to the everyday life in our communities.



Tony Armstrong

Chief Executive, Living Streets

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Key findings

This report should be of interest to anyone concerned with the future of British high streets and town centres. It presents evidence that investment in better streets and places can deliver commercial returns to businesses and investors, as well as improve consumer's perceptions of high streets.

Between 1998–2009 the UK's population grew by 5.8 per cent and retail spend grew by £10 billion. In spite of this, over the last decade 16 per cent of high street shops across Britain became vacant. This has been driven partly by the growth of out-of town shopping since the 1980s. On average, people made 19% fewer shopping trips in 2011 than in 1995–7, as they moved to longer, less frequent car trips. A quarter of all UK journeys are made on foot, but two thirds of shopping trips are made by car, even though many of these are short and potentially walkable.

While there is a substantial amount of evidence available to show high social returns (especially for health and the environment), this is a challenging area within which to make robust claims about commercial returns. A key issue is to establish whether a public realm investment creates *additional* benefits. Even though there have been hundreds of studies exploring this relationship, hard, quantitative assessments are very rare. However, there is case study evidence that shows public realm investments deliver significant benefits to consumers. The following pages present both the qualitative and quantitative evidence.

Four performance indicators for these investments were identified from the literature: impact on existing business performance (footfall and retail); urban regeneration (new business, rental income, employment, social exclusion etc.); improved consumer and business perceptions, and business diversity. Each of these is discussed in turn, with the exception of business diversity, as insufficient data were available to merit a useful discussion of this issue.

1 The impact of public realm improvements on existing business performance:

- Case study evidence suggests that well-planned improvements to these public spaces can boost footfall and trading by up to 40%.
- Investing in better streets and spaces for walking can provide a competitive return compared to other transport projects; walking and cycling projects can increase retail sales by 30%.

- Evaluations of pedestrian improvements in Coventry and Bristol show a 25% increase in footfall on Saturdays and predict £1.4million benefits respectively.
- Improved walking routes to and from Wanstead High Street, in east London, increased footfall by 98%.
- Many car journeys are short and as the volume of goods purchased is small, these trips could be made on foot.

2 The importance of public realm improvements for urban regeneration

Four aspects of urban regeneration were reviewed. These included the impact on investment, tourism and business start-up rates; property and retail rents; employment; and social exclusion.

Investment, tourism and business start-up rates

- There are case study examples of where public investment has been associated with subsequent increases in employment. In Dublin, the redevelopment of the Temple Bar District led to a 300% increase in employment before the economic boom. Cultural quarters in Sheffield and Manchester have also seen increases in employment, albeit less dramatic ones.
- Although few studies attempt to model the impact on tourism, one such example found that the new North Terrace of Trafalgar Square had a 300 per cent increase in visitors.
- There is less research available on these areas than others such as footfall. This is partly because of the difficulty of establishing clear attributable relationships. However, investment by the private sector is itself suggestive of commercial gain.

Effect on property prices and rental yields

- There is substantial evidence that improvements to the public realm increase property prices. For example one study in Hong Kong, which controlled for confounding variables, found a 17% increase in retail rents from pedestrianisation.
- As well as reflecting direct economic value, rents reveal preferences to locate and shop in particular locations.
- Good urban design and quality green spaces have also been found to make a difference. In one study from 2007 the latter raised rents by up to 20 per cent. Another found that a 1 per cent increase in green spaces led to a 0.3 per cent to 0.5 per cent rise in average house prices.

- Walking projects have also been found to increase land values. A review of earlier literature suggests retail and commercial rates increase in the range of 10–30 per cent.
- US research on the relationship between 'walkability' and house prices has also shown a positive relationship. Easy proximity to local shops and services is linked to higher property values.

Employment benefits

- A US study compared the number of jobs created through the construction of walking, cycling and road infrastructure and found a higher employment density from pedestrian and cycling projects.
- Outside the construction sector it is more difficult to show a direct causal link to additional jobs created. However, higher employment can sometimes be inferred from higher turnover and investment.

Social exclusion

- Better streets and places may create a virtuous circle by raising self esteem for residents and promoting investor confidence in an area.
- However, the impact of public realm improvements on local people is sometimes absent from evaluations.
- A US study has shown how car dependent households on low incomes spend 50 per cent of their budget on transportation; the poor quality of the public realm in poorer neighbourhoods often acts as a disincentive to walking.
- A quarter of British households have no access to a car. Public realm improvements can ensure that those who need to are able to walk, cycle or get the bus to a range of local services, such as their local bank, doctor's surgery, library or post office.

3 Public realm improvements and consumer and business satisfaction

- There is significant evidence that perceptions of an area – to businesses and consumers – matter.
- It is often assumed that more parking is the answer to struggling high streets. However across Europe, studies have linked the quality of public spaces to people's perceptions of attractiveness of an area, contributing towards their quality of life and influencing where they shop.

- Pedestrianisation has also been blamed for falling sales, ignoring the many contributing factors. Contrary to this claim, there is consistent evidence that customers like pedestrian environments and dislike traffic.
- Retailers have been shown to over-estimate the importance of the car for customer travel. In these studies, more people actually walked, cycled or came by bus.
- Case study evidence suggests that restricting traffic does not necessarily reduce the number of customers. In fact, charging road users and ring-fencing the revenue for public realm investment could also enhance business performance in the long run.
- Other studies have found willingness to pay and positive perceptions amongst landowners, retailers and entrepreneurs.
- Householders and customers are willing to pay for better streets too: for example, revealing preferences for more attractive and sophisticated street designs.
- The way we shop has changed and so have our expectations of the high street. Shoppers now seek to 'experience' something different and we need to know more about how better streets can add to that experience.

In recent years, successive governments have placed more emphasis on walking and cycling on health, environmental and safety grounds. Active travel also complements efforts to revive high streets and create liveable communities. As well as being relatively cheap forms of transport, walking and cycling infrastructure requires less comparative government investment. In spite of this, walking has generally been treated as the 'poor relation' of infrastructure spending and is often an afterthought in urban planning.

Economic benefits from infrastructure spending are often difficult to demonstrate (for example, the current controversy regarding High Speed 2). A factor that influences the high cost benefit returns for walking investments is that the sums required are usually comparatively small and the consumer surplus – the savings generated from switching from cars or public transport – are substantial. Although this report has focused largely on private returns to businesses and investors, these should be assessed alongside the wider public or social returns. Together they make a compelling case for investing in the public realm. At a time when public resources are scarce, well-planned improvements to streets and places should be attractive to governments seeking high returns from public spending.

1 Introduction

The period 1998–2009 saw the UK's population grow by 5.8 per cent, which gave a boost to annual comparison goods spending of approximately £10 billion over the period. However, town centres have not reaped the benefits of this huge increase in retail expenditure (Encams, 2005). This report makes the case that, in the face of steep competition for diminishing public funds, the importance of better streets and public spaces needs to be better understood. Indeed, there is a general acceptance that such investments allow town centres to improve their offer (Department for Business, Innovation and Skills, 2011) helping to stimulate the local economy, improve perceptions of the area (especially for visitors) and help attract and retain workers (Ecotec, 2007).

Our high streets have been under pressure for some time now. Across Britain, there were up to 15,000 high street store closures between 2000 and 2010. Over the same period 16 per cent of high street shops became vacant, footfall fell by 10 per cent and only a small number of independent retailers opened new premises (Department for Business, Innovation and Skills and Genecon and Partners, 2011). There has also been a sharp decline in private sector investment – the number of high street shops in investment portfolios has halved since the mid-1990s (Jones, 2010). As far back as the 1980s, Dawson (1988) described how 'radical' out-of-town centre developments were shifting the balance of retail management and operation away from the traditional high street. Out-of-town developments are now mainstream, and they have been accompanied by a dramatic increase in the use of the car to go shopping. Shopping trips now make up 20 per cent of all trips, and 64 per cent of those are made by car (Department for Transport, 2011). Yet many of these trips are short and potentially walkable, as shopping makes up a much shorter proportion of the overall distance travelled (*ibid.*).

The amount being spent on the high street is in decline; it now accounts for half of all retail spending and is predicted to fall further (Portas, 2011). This latest tumble has been attributed to the recent recession and fall in consumer confidence. However, a more serious long-term rival exists in the form of online retail. In the UK, online retail's share of all retail is high by European standards (12 per cent in 2011 up from 8 per cent in 2008) (Centre for Retail Research, 2012). Its growth has been credited with precipitating the closure of big high street chains such as Comet, Blockbusters and Jessops (Felsted and Rigby, 2013). E-commerce's share of retail is also predicted to continue to rise (Centre for Retail Research, 2012) driven by new trends such as 'showrooming' where shoppers view products in shops and then buy them online. Research suggests that 24 per cent of people showroomed while Christmas shopping in 2012 and 40 per cent of them took their business elsewhere¹ What is problematic here is that online retailers are not required to make any

Between 1998-2009 the UK's population grew by 5.8% and retail spend grew by £10 billion. However, town centres have not reaped the benefits of this huge increase in retail expenditure.

In the last decade 16% of high street shops across Britain became vacant. Since the 1980s there has been a shift to more out-of-town shopping. Two thirds of shopping trips are made by car, even though many of these are short and potentially walkable.

Online retail as a share of spending is increasing, reliant on, but not benefiting, the high street. During the Christmas period of 2012, 24% of shoppers 'showroomed' and 40% took their business elsewhere. Large retailers are calling for an online retail tax to level the playing field.

1 www.foolproof.co.uk/the-true-impact-of-showrooming/

financial contributions to the maintenance of the public realm from which they benefit. This is exacerbated further by the fact that many online retail companies are not domiciled in the UK and pay a very small share of their profits in tax. The case of Amazon² was a recent high profile example but it is a wider problem, and has led to recent calls from supermarket bosses at Sainsbury's³ and Morrisons⁴ to support an online retail tax to level the playing field.

Shopping, as a share of all trips, has also been falling. On average, people made 19 per cent fewer shopping trips per year in 2011 than they did in 1995/97 (equivalent to 45 fewer trips per person per year). The trend of falling numbers of shopping trips over time is associated with a switch from more frequent, short shopping trips on foot, to longer, less frequent car trips (Department for Transport, 2011). The Retail Traffic Index (RTI), which measures the levels of shopper footfall across the country, showed that shopping visits fell in February 2013 by 3.6 per cent compared to February 2012 and by 7 per cent against January 2013. Northern England and London and the South East were worst affected where year-on-year footfall fell by 4.5 per cent and 4.4 per cent respectively (Retail Times, 2013).

Nevertheless, walking still accounts for 25 per cent of journeys by all transport modes in the UK and the number of journeys made on foot could be increased. Brog and Mense (2000) compared data for eight cities internationally and found that Bristol had a lower level of walking for shopping (20 per cent) than any other city. Bristol City Council's ten-year walking strategy demonstrates a willingness to reverse that trend by aiming to make walking in Bristol "easier, safer and more pleasant for everyone"⁵. Significant gains could be made, for example, in the North German town of Wismar walking has achieved a 40 per cent modal share (Monheim, 2003).

In the face of competition from other markets, public realm improvements have been a staple of measures to tackle high street decline and enjoy considerable support within academic and policy circles. Begg (2002) has argued that a high quality pedestrian environment and public realm is an essential component of the right business environment. In a review of traffic calming schemes in the UK using a cost benefit framework, Banister (2009) concluded that many traffic calming schemes can be justified, particularly where there are large numbers of pedestrians sharing space with vehicles as in crowded shopping areas. Similarly, Transport for London have come to the conclusion that town centre pedestrianisation and public realm investment generate value for retail schemes, and, after an adjustment period of 12 months, see an upturn in turnover and centre viability (Transport for London, 2002). After a brief discussion about the methodology and report structure, the following sections present the evidence base for a commercial return on public realm investments.

People made 19% fewer shopping trips on average in 2011 than in 1995-7, as they moved to longer, less frequent car trips.

Despite this, a quarter of all UK journeys are made on foot. Political support for walking and improving the walking environment could make a significant difference to the number of people walking.

Previous research has shown that the creation of better streets and public spaces is good for our health, and our environment. This report will also argue that it can deliver a commercial return for our high streets.

2 www.guardian.co.uk/technology/2012/apr/04/amazon-british-operation-corporation-tax

3 www.retail-week.com/city-and-finance/analysis-online-tax-debate-who-should-pay-more/5050959.article

4 www.dailymail.co.uk/news/article-2364810/Morrisons-boss-says-companies-pay-online-tax-internet-sales-damaging-high-street.html

5 www.bristol.gov.uk/page/transport-and-streets/walking

2 Methodology and report structure

A comprehensive review of the literature was carried out to locate all relevant studies. Economics⁶ and 'grey literature' databases were searched using relevant search terms tailored to each research question including variants on the search terms:

- "economic/commercial value/return" AND
- "walking investment/pedestrianisation/public realm" AND
- "business/retail/economic development/regeneration/high street".

The health of our high streets and city centres is, of course, as much about people and the management of spaces as it is about the quality of the public realm. However, these issues are largely absent from the literature. In general the data and research available focuses on the capital investment (i.e. 'bricks and mortar') elements of public realm investment. This narrows the scope of this report perhaps more than is appropriate given the holistic nature of the subject.

Four key measures of commercial value were identified from the literature. These were drawn largely from a report prepared by Ecotec for the East Midlands Development Agency (EMDA), which presented a case study for high street performance measurement and included the following key performance indicators (KPIs):

- Footfall (length of stay, number of places visited, frequency of visits)
- Consumer and business satisfaction
- Diversity of business establishments
- Economic activity (consumer spend, new investment and development activity, non-retail business turnover, business sectors represented).

Of these, only footfall, economic activity and consumer and business perceptions have been included in this report. There is little evidence on the relationship between diversity and public realm improvements. Whilst high street diversity has been in decline⁷, this is likely to be attributable to a range of exogenous factors (Portas, 2011). There is also a risk that rising rents in regenerated areas could actually damage diversity through a process of gentrification (Rousseau, 2009). This issue is discussed briefly in section 5, but is for the most part outside of the scope of this paper.

Economics databases and 'grey literature' were searched with relevant search terms.

Most of the studies available focus on the 'bricks and mortar' benefits of public realm investment.

Four key measures were identified from the literature: footfall, consumer and business satisfaction, business diversity and economic activity.

Of these, the diversity of the business offer is beyond the scope of this report.

6 ASSIA Applied Social Sciences Index and Abstracts (CSA) (ProQuest XML), Business Source Premier (EBSCO), ESDS (Economic and Social Data Service), IBSS: International Bibliography of the Social Sciences (CSA) (ProQuest XML), NBER Working Papers, JSTOR, OECD iLibrary, Oxford Scholarship Online Economics and Finance E-books Collection, Palgrave Connect ebook collections in Business and Management, ScienceDirect, SCOPUS - V.4 (Elsevier), UN Comtrade, UNCTAD TRAINS, Web of Knowledge

The evidence in this report is divided into three sections, relating to the three KPIs outlined above:

- Impact on existing business performance (footfall and retail)
- Urban regeneration (new business, investment, employment etc.)
- Improved consumer and business perceptions.

In light of the limitations discussed in the next section, this report draws on national and international literature, and case studies have been threaded through the report to help illustrate certain points. Wherever possible, examples have been chosen that have been evaluated and are considered to have a reasonable evidence base.

Case studies are used throughout for illustrative purposes.

7 The Competition Commission found that of the 565 large grocery stores that opened between 2001 and 2006, the vast majority – 99.5% – were opened by large multiple retailers. Only one in that whole time was independent and just three were co-operatives (Portas, 2011).

3 Issues with measuring the economic impact of public realm investments

There is no doubt that identifying a fully attributable, causal, link between investment in the public realm and commercial returns is a challenge. A key issue in any quantitative analysis is to establish whether the investments in question create *additional* benefit. For example, is an increase in sales attributable to the intervention in question, or is it the result of other factors, such as an improved offering by shops, reduced competition from other sources, or wider economic forces? In the social sciences, these 'deadweight' factors are accounted for by incorporating a reference group of some kind. However, for area-based interventions it can be difficult to identify good control groups. Other components of additionality include: "leakage effects", displacement, substitution and economic multiplier effects (English Partnerships, 2004). It is not necessary to explain each of these here, simply to make the point that there are many confounding variables (see Glossary for a brief description of each).

A report for the former East Midlands Development Agency (Ecotec, 2007) enlarged on some of the difficulties associated with measuring outcomes from public realm investment:

- The quality of the public realm is often influenced by interrelated processes, making it difficult to isolate the impact of different variables.
- The public realm is not clearly defined, particularly given its rising privatisation.
- The economic impacts of investment in the public realm are often long term (and beyond the timescale of the evaluation).
- In addition to the direct economic impacts, it is important to recognise the contribution made by the social and environmental impacts of the public realm.

For a variety of reasons, this means that studies tend to suffer from insufficient data regarding the direct impact that better streets and places can have on sales. In a synthesis of the literature, Whitehead *et al.* (2006) reported a lack of studies of business performance. He also noted that information needed for the analysis of cost versus benefits – about prices, rents and attributes of business properties – was difficult to obtain because of its confidential nature. His literature review indicated that several hundreds of studies have been undertaken on the link between urban quality and economic activity since the late 1970s, but that "hard quantitative assessments" are extremely rare and not easily transferable to formal economic forecasting and appraisal methods (*ibid.*).

This is a challenging area within which to measure impact. A key issue is to establish whether public realm investment creates additional benefits over and above what would have happened anyway.

Key challenges in measuring impact include the difficulty in isolating variables, a poorly defined public realm and the long-term nature of the change being measured.

Even though there have been hundreds of studies exploring this relationship, hard, quantitative assessments are very rare.

There is some evidence that small businesses choosing a new business location rank open space, parks and recreation as high priority. However, the measurement of indirect benefits to businesses, such as improved perceptions of an area, impacts on productivity from attracting better employees and enhancing the wellbeing of existing staff is not without its limitations either. These less tangible benefits are usually valued using revealed preference data from surrogate markets (e.g. travel cost, hedonic pricing) or through stated preference data from hypothetical markets constructed with the use of survey instruments (e.g. contingent valuation) (CABE Space, 2005). The former suffer from a lack of data, whereas the latter are expensive and suffer from other methodological problems. See Fujiwara *et al.* (2011) for a summary of issues with valuation techniques.

Indirect benefits are often inferred using revealed preference data or stated preference data but these methodologies also have their limitations.

As well as the direct benefits to businesses, better streets provide indirect benefits for customers, visitors and the wider economy. Litman argues that walking and walkability are undervalued in transport economics, relative to other modes (Litman, 2003). Conventional transportation planning practices treat walking as a minor transport mode and recognise only modest benefits from improved walkability and increased walking activity. This is the result of evaluation practices that tend to undercount non-motorised travel and undervalue walking benefits. He argues that this is because walking is more difficult to measure, it is low cost (and, therefore, lower status) and because it is assumed that it will take care of itself.

Transport economics often undervalues the indirect benefits of walking to pedestrians. Sometimes it is an after thought or it is assumed that it will take care of itself. As walking is low cost, this may also give it low status.

The absence of rigorous analysis is an issue that affects all forms of business support measures (Department for Business, Innovation and Skills, 2011), and according to DBIS this makes the merits of different types of urban investment difficult to compare. Projects also tend to come as a package, making it hard to distinguish between them empirically. However, the same DBIS report found case study evidence of significant benefits to consumers, such as more enjoyable visits, feelings of safety, more frequent visits, longer visits and a higher propensity to spend. They also found that public realm improvements exerted some level of influence over decisions about whether to live or work in the centre of towns and cities. The limitations outlined here underline the importance of including both qualitative and quantitative measurement in making the case for investment in the public realm.

Most of the evidence in support of public realm investment exists in case study form; this is a response to the challenges of conducting quantitative research in this area.

4 The impact of public realm improvements on existing business performance

As discussed in the introduction, the number of shopping trips to the UK's high streets has fallen in recent years. Since the recession in 2008, footfall – a common measure of business performance - has decreased by 10 per cent – with the exception of London (Department for Business, Innovation and Skills, 2011). Nevertheless, well-planned improvements to public spaces within town and city centres have been shown to boost commercial trading by up to 40 per cent (Department of Environment, 1997). For example, in the 1990s comparative analyses in Germany and the UK carried out by Hass-Klau (1993) reported commercial benefits ranging from 20 to 40 per cent. A review of studies by Newby (1992), Hass-Klau (1993) and the European Federation for Transport and Environment (EFTE, undated) suggests a range of 10 per cent to 25 per cent for retail turnover (Whitehead *et al.*, 2006). The authors calculated that retail footfall increased by about a third (32.3 per cent) and retail turnover by an average of 17 per cent as a result of improvements, such as pedestrianisation.

Investing in the public realm and walking can provide a competitive return compared to other transport related measures. Modeling by Whitehead *et al.* (2006) of urban quality improvements in Manchester City Centre found small, but significant, positive effects for businesses and workers (*ibid.*). The results also suggested that the positive impacts from environmental improvements might be of the same order of magnitude as those expected from public transport improvements. Litman estimates that walking and other non-motorised transport projects typically increase retail sales by 30 per cent (Litman, 2002; Burden and Litman, 2011).

With the exception of these studies, most of the evidence available is anecdotal or based on individual cases. This approach is perhaps most appropriate given the methodological limitations outlined in section 3. The rest of this section highlights some of the strongest case study evidence from the international literature as well as from the UK. Boxes 1 and 2 illustrate more in-depth studies. Box 3 provides an example of the type anecdotal evidence available, from a very recent public realm scheme. Box 4 illustrates the benefits that can be achieved by improvements to the public realm and engaging with communities to manage public spaces. A summary of their published benefits is listed in table 1 at the end of this section.

A study in Bangkok by Kumar and Ross (2006) found that pedestrianisation had a positive impact on businesses in the area of implementation. They reported on previous research, which found that it encouraged local people to buy goods and services in their own neighbourhoods and attracted more customers from a wider area, improving community relations. They argue that improving the public realm,

Footfall on the UK's high streets has fallen by 10% since 2008. Research suggests that well planned improvements to public spaces can boost footfall and trading by up to 40%.

Investing in better streets and spaces for walking can provide a competitive return compared to other transport projects.

Most of the remaining evidence presented in this section is in case study form.

A study in Bangkok found that pedestrianisation encouraged people to buy their goods and services locally.

often at low cost, creates a positive cycle, increasing property values and attracting wealthier customers. On the other hand, poor pedestrian, cycling and transit options can harm businesses by losing potential workers.

Improvements to the pedestrian environment are also associated with increased footfall. Turner *et al.* (2011) conducted a before and after study of new or improved facilities in eight New Zealand cities known to create difficulties for pedestrians. These included the provision of kerb extensions and refuge islands and controlled crossings. Pedestrian use increased in seven of the eight sites, ranging from 7 per cent to 90 per cent.

In 7 out of 8 cities in New Zealand, simple street improvements increased footfall by 7–90%.



Photograph courtesy of Sheffield City Council

Sheffield, Heart of the City

Box 1

Background

In the early 1990s, Sheffield faced a number of challenges, not least the decline in steel and engineering industries, and the opening of Meadowhall, a huge shopping centre on the outskirts of the city. The city had to rethink its offer in order to bring investment, employment and visitors back into the centre.

Intervention

The Heart of the City project was the first in a succession of regeneration projects (that now make up the Gold Route) designed to welcome visitors to the city. Phase One of the project was completed in 1999 with the delivery of three key public realm improvement projects: the re-construction of the Peace Gardens; the re-alignment and narrowing of Pinstone Street to create a new event and gathering space outside the Town Hall (the new Town Hall Square), and the narrowing of the carriageway in Surrey Street to give pedestrians more space.

Outcome

An evaluation of the public realm improvements to Peace Gardens reported a 35 per cent increase in footfall in the City Centre (Genecon, 2010). The authors estimated an attribution rate of 20 per cent – 44 per cent, or a net increase of visitors of 350,000–770,000, and a net increase in spending of £4.2m (based on 7 per cent attribution of additional spend of £12.20 per visitor). Reported regeneration outcomes included an increase of £1.60–£2.40 / sq. ft. rental value and the creation of 341–527 additional net jobs (*ibid.*).

Case studies from a number of English cities illustrate or predict the same benefits. For instance, a range of improvements to Coventry City Centre, such as new pedestrian areas, a new civic square, clearer signage and better placement of street furniture were credited with a 25 per cent rise in footfall in the town centre on Saturdays (NWDA/RENEW Northwest, 2007). In Bristol, the Broadmead Business Improvement District (BID⁸) was set up in 2005 to create a better shopping environment and a more seamless transition between the new and existing retail areas. An analysis of Bristol's Shopping Quarter (as it is now known) by Drivers Jonas LLP and Colin Buchanon (2008) assessed the benefits of the proposed scheme over the next ten years. This analysis predicted that the improvements would generate £1.4 million in terms of quality benefits to shoppers and passers-by.

Evaluations of pedestrian improvements in Coventry and Bristol show a 25% increase in footfall on Saturdays and predict £1.4 million benefits respectively.

Business Improvement District, Ealing, west London

Box 2

Background

The Ealing Broadway Business Improvement District (BID) is a not-for-profit company led by local businesses. It was established in 2006 in response to rival out-of-town development and its vision is to create a safe, clean, attractive and user friendly town centre. The BID invests in cultural and social events, street cleansing and measures to reduce business crime, as well as public realm improvements.

Intervention

Public realm improvements included: new street lighting, hanging baskets, de-cluttering and improved directions for visitors, which aim to enhance the overall environment. Additional investment in cycling and walking has improved accessibility for visitors and employees, and empty properties have been disguised with information on local shops and services. According to its business plan (2011–15) a further £1.9 million will be invested over five years to help increase footfall and sales (Ealing Broadway Business Improvement District, 2010).

Outcome

The 2008–9 review highlighted the positive outcomes (Ealing Broadway BID, 2009). For instance, footfall monitoring cameras installed in 2007/08 demonstrated that the town centre had performed better than the national benchmark over the year. There had been a 60 per cent reduction in late night town centre violence compared to the previous year and a 25 per cent reduction in pick-pocketing. Surveys identified that visitors described Ealing as a 'safe', 'friendly' and 'affordable' town centre. The project also claims to have achieved a significantly higher profile for Ealing Broadway as a place to shop, do business and unwind. This has resulted in more people coming to the town centre, more often and staying longer.

8 A BID is an organising and financing mechanism used by property owners and occupiers to determine the future of their retail, commercial and industrial areas. Costs are spread across all owners and occupiers, thus reducing the impact on individual retail businesses.

In London, Wanstead High Street achieved an average increase of 98 per cent in pedestrian numbers after enhancing the walking routes between its two stations, the bus terminus, school, library and high street (Tolley, 2011). Investment in better walking environments has been found to benefit businesses in other ways too. For example, the transformation of a canal towpath in London into a high quality route for walking and cycling is estimated to have produced £5,487,130 of benefit through reduced absenteeism stemming from health benefits (Davis, 2010).

Improved routes to and from Wanstead High Street increased footfall by 98%, and the transformation of a canal towpath is estimated to have saved businesses £5m in absenteeism costs.

There is evidence to show that pedestrians and cyclists spend more than people arriving by motorised transport. A number of international studies have compared the differences. In a 2009 study of the Bloor Street area in Toronto, people who biked and walked there reported they spent more money there per month than those who arrived by car (Tolley, 2011). Wooller (2010) looked the effect of pedestrianisation in the Takapuna shopping district in Auckland, New Zealand and put a figure to the increase in spending. She found that although shoppers spent similar amounts per trip, the pedestrian shopper spent approximately \$80 more per month after the improvements. This was six times the amount spent by those in cars. In 2011, a similar study in London found that whereas car drivers spent more on a single trip, walkers and bus users spent more over a week or a month (The Means, a review for London Councils, 2012). They found that walkers spent £147 more per month than those travelling by car. Compared with 2004, spending by public transport users and walkers had risen; spending by car users and cyclists has decreased (*ibid.*).

There is evidence to show that pedestrians spend more than people arriving by car. Comparisons of spending in Canada and New Zealand revealed pedestrians spend up to 6 times more. In 2011, walkers in London spent £147 more per month than people arriving by car.



Hitchin Street, Biggleswade, Bedfordshire

Box 3

Background

Biggleswade is a typical market town in Central Bedfordshire, with a population of 16,550 and growing residential population. The town centre, with its market square, mix of historical buildings and large independent sector has weathered the current financial climate well – with a vacancy rate of 7%, it is well below the 12% national average (Roger Tym and Partners, 2012). However, the Town Centre Master Plan (Central Bedfordshire Council, 2011) has identified the need to enhance and raise the quality of the public realm, to ensure that the town centre remains healthy and improves further.

Intervention

Preliminary works (costing in the region of £400,000) have taken place to improve the physical appearance and vitality of Hitchin Street, a key shopping quarter adjacent to the market square. This provided an opportunity to pilot 'shared space' principles, introducing equal priority for pedestrians, cyclists and vehicles. The new single surface has been laid with block paving and the limits of the carriageway are delineated by colour contrast tactile paving to help blind and visually impaired pedestrians. Street furniture has been kept to a minimum and is removable to allow for future use for markets, festivals and other events.

Outcome

For a short "bedding-in" period residents and traders voiced some concerns over shared space (for example, it could confuse people using the street). However, since then the scheme has been positively received and has had a welcome effect on the town's economy. Hitchin Street previously had 50 per cent of the town's vacant shops; now businesses are returning and vacancy rates have fallen, and footfall has increased. These results and the impact on retail turnover will be confirmed in 12 months' time. However, the council is very pleased with the outcome so far*.

*Personal communication, Cllr Tony Brown, Central Bedfordshire Council.

Finally, motorists are not necessarily better customers than pedestrians, cyclists or public transport users. A report by the European Commission (1999) reports the findings of a study in Munster, Germany in which approximately 75 per cent of motorists surveyed purchased two or fewer bags of goods. They could easily have carried their shopping on foot, by bicycle or on the bus (Tolley, 2011). Indeed, a number of reports make the point that most shopping trips involve distances that could be walked or cycled (Commission, 1999; Sinnett *et al.*, 2011; Tolley, 2011; Sustrans, 2006).

As well as buying less than pedestrians or cyclists, motorists often carry few bags and could therefore travel by foot or bike.



Railton Road, Herne Hill, south London

Box 4

Background

Herne Hill junction was very hazardous for pedestrians, caused long traffic tail-backs and bus delays. Lambeth Council undertook a programme of public realm improvements to address these problems. This included the part-pedestrianisation of Railton Road, closing it off to through traffic and creating a new public space. As part of its Step Out in London project, Living Streets worked with the Herne Hill Forum and others to encourage and publicise the use of the area via activities and promotions.

Intervention

Activities, including a Sunday market and a "shop local" card giving a discount for use in local shops, together with a walking pledge, were introduced over the six month period from February – October 2012. A unique feature was the designation of the Railton Road as a community run space managed by a community forum comprising businesses and local organisations.

Outcome

A follow-up survey was carried out with the public, local businesses, market stall holders, shop local card holders and people who had signed a pledge to walk more to evaluate the project. 66 per cent of the pedestrians questioned agreed or strongly agreed that they shopped or used the services more. 90 per cent of the local businesses agreed (31 per cent) or strongly agreed (59 per cent) that the changes to the street had resulted in an overall improvement. Despite the recession, 38 per cent agreed or strongly agreed that people were spending more money. With regard to the market 78 per cent of businesses agreed that it brought more people to the area. 41 per cent of the traders had employed someone to work on the stall and 78 per cent of those employed were from the local area (Social Research Associates Ltd., 2012)

Public realm investments: ex-post changes in footfall and turnover

Table 1

Country	Location	Activity	Outcome	Source
UK	Bristol	Various public realm improvements	Projected £1.4 million over ten years	Drivers Jonas LLP and Colin Buchanon, 2008
	Coventry	Pedestrianisation, a new civic square, clearer signage and better placement of street furniture	25 per cent rise in footfall on Saturdays	NWDA/RENEW Northwest, 2007
	Ealing	Improved lighting, street cleansing, de-cluttering, better signage	Improved visitor perception and reduction in crime	Ealing BID, 2009
	London (Wanstead High Street)	Intervention to increase walking for short trips	98 per cent increase in pedestrian numbers	Tolley, 2011
	London	Canal towpath	£5.4 million in reduced absenteeism	Davis, 2010
	Sheffield	Peace Gardens	35% uplift in the number of visits for shopping and a net increase in spending of £4.2m	Genecon, 2010
New Zealand	Eight locations	Kerb extensions, refuge islands and control crossings	7–90 per cent increase in footfall	Turner et al, 2011
Thailand	Bangkok	Pedestrianisation	44 per cent of retailers reported an increase in sales volume, although 33 per cent reported no change	Kumar and Ross 2006

5 The importance public realm improvements for urban regeneration

Most urban renewal projects aim at improving public space in some form, as its importance is commonly acknowledged (Bohl, 2002; Litman, 2003). However, in practice, public space is often seen as performing a secondary role within urban regeneration projects, rather than the driving force (Van Melik and Lawton, 2011).

The quality of the public realm is generally acknowledged as being important to regeneration and renewal.

There are four aspects of urban regeneration that we will review in this section:

- Investment, tourism and business start-up rates
- Retail rents
- Employment; and
- Social exclusion.

Investment, business start-up rates and tourism

Increasing business activity in deprived areas has, for many years, been an important part of UK governments' efforts to address disadvantage (Seex, 2007). Evidence in relation to public realm improvements and business start-ups is however limited. One of the reasons for this may be that studies quote total turnover figures, which include business start-up rates. There are also significant displacement issues with new business formation; it is necessary to be able to demonstrate that those businesses would not have been established elsewhere, which is challenging. If increases in turnover or footfall already reflect the creation of new businesses, then counting the number of new businesses and the increase in turnover or footfall would run the risk of double counting the same benefit.

Evidence linking public realm improvements to business start-ups is more limited.

Nonetheless, public investment is often used to improve the appearance of business areas and town centres as part of regeneration strategies on the understanding that this stimulates and supports new markets and enterprise opportunities⁹ (see box 5). Whilst it is not conclusive, there is case study evidence of redevelopments, such as the creation of 'cultural quarters', or 'waterfront developments' that coincide with large increases in new business. For example, Lerner and Poole (1999) report that in Tennessee, private investment in the redevelopment of the waterfront in the town of Chattanooga resulted in a doubling of the number of businesses in the district over an eight year period.

Investment in the public realm is often part of regeneration strategies on the understanding that this stimulates and supports new markets and enterprise opportunities.

9 See, for example, the East Midlands Competitiveness Programme (Department for Communities and Local Government, undated) or Chelmsford Borough Council's town centre public realm strategy (2011)

In Ireland, prior to its redevelopment by a state owned company, the Temple Bar area of Dublin was home to 60 businesses. A decade later this had risen to 450 businesses and a 300 per cent increase in employment. Most of this growth took place within four years of the area's transformation, before the economic boom of the late 1990s took hold (Montgomery, 2004). In the UK, similar (albeit less dramatic) improvements have been found for Manchester's Northern Quarter and the Cultural Industries Quarter in Sheffield (*ibid.*). The public realm also includes green spaces and again case study evidence suggests that the presence of good quality parks and green spaces can lead to an increase in new businesses (CABE Space, 2005).

In Dublin, the redevelopment of the Temple Bar District led to a 300% increase in employment. More modest gains have occurred in Sheffield and Manchester.



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The Grassmarket, Edinburgh*

Box 5

Background

The Grassmarket is located south of Edinburgh Castle in the historic centre of the city. By the mid 2000s negative perceptions of the area associated with night time drinking and antisocial behaviour, dominance of vehicles and the gradual decline in the public realm all needed to be addressed. Engagement between Edinburgh City Council, businesses, residents and traders identified opportunities to provide a quality setting for the Grassmarket's historic architecture, enhance its retail vitality and introduce daytime activities attractive to a wide range of users.

Intervention

Over £5 million was set aside to redesign the streetscape, improve linkages to other areas of the city and establish a pilot events programme for the year. Space was redistributed from vehicles to pedestrians to allow flexible use for events, such as, such as markets, film shows, dance events and concerts. Work was completed in 2009. Public realm improvements of £3.87 million included the relaying of 40,000m² sets, together with 5,000m² new Caithness Flagstones, new street lighting (and CCTV) and underground recycling units. This was complemented by, for example, the planting of semi-mature trees and the refurbishment of listed buildings and monuments.

Outcome

One of the key lessons learned from the project was the importance of engaging with the community. Since completion, the Grassmarket has seen a wider range of business uses. It has also seen an improvement in its road safety record. However, the public realm is underused. In its business plan (2013–2018), the new Greater Grassmarket Business Improvement District (BID) suggests adopting this space to deliver a programme of regular events and markets. This underlines the importance of active management to bring additional footfall to the area.

*A short summary of the public realm improvements can be found here:

www.scotland.gov.uk/Resource/Doc/212607/0114309.pdf

The scheme cost is given here:

www.rjmcleod.co.uk/archived_projects/streetscaping/grassmarket_edinburgh/

The Greater Grassmarket BID business plan is here: www.grassmarket.net/files/Greater%20Grassmarket%20Business%20Plan%20final%20copy%20Sep%202012%282%29.pdf

The relationship between investment in walking and the public realm, and the positive impact on tourism, is often cited. It certainly underpins efforts made by local authorities to improve streetscapes and public spaces¹⁰. While some of the effects on tourism will have been captured in section 4 (the impacts on existing business of increased turnover and footfall), few studies attempt to model the impact empirically. One such example looked at the effect of rebuilding the North Terrace of Trafalgar Square. The transformation of the quality of the pedestrian environment led to an increase in visitors of over 300 per cent – to the point where this is now the third most popular attraction in London (Tolley 2011).

Although few studies attempt to model the impact on tourism, one such example found that the new North Terrace of Trafalgar Square had increased visitors by over 300%.

Oxford Circus diagonal crossing

Box 6

Background

Oxford Circus is the intersection between two of the busiest retail streets in Europe and a major hub in London's transport network. 60 million passengers use Oxford Circus underground each year (Atkins, 2010) and there are 200,000 pedestrian movements at Oxford Circus each day (Transport for London, 2010). Prior to its transformation the footways were severely overcrowded and there were delays to bus services along this busy public transport corridor. In addition to improving the pedestrian experience, and bus journey times, the aim of this scheme was to help revitalise retail and ensure that the West End retained its position as a world class shopping destination ahead of the 2012 Olympic Games (*ibid.*).

Intervention¹

An audit by Atkins found that Oxford Circus had over 150 items of street furniture each creating 1.2m² 'dead space'. The scheme, undertaken in October 2009, removed street clutter and reduced this by half. Pavement area was increased by 63% and existing crossings were re-aligned, reducing the detour made by pedestrians to continue along Oxford Street and Regent Street. New diagonal crossings were inserted (loosely based on the Shibuya crossing in Tokyo, Japan) and crossing times were re-phased (removing staggered crossing periods) allowing all pedestrians to cross at the same time.

Outcome

The introduction of the diagonal crossing has seen an increase in walking speeds, a decrease in the time it takes to get from one side of Oxford Circus to the other and a 10 per cent reduction in personal injury accidents in the first year since completion. 30 per cent of pedestrians use the crossing at all times. Bus delays have been reduced too (Atkins, *ibid.*). The project cost £3.9 million². Using the business case developed during the scheme, anticipated pedestrian benefits were in excess of £5.1 million; when actual post scheme journey times were applied, the benefits increased 4.5 per cent to £5.4 million (Atkins, *ibid.*). It is reported that the turnover of a retailer occupying one of the four corners of the Circus increased by 25%, from £20m to £25m, in the year after completion of the scheme³.

¹ Intervention description from 'Re-imagining Oxford Circus' by Kate Alexander in Architects Journal, 9 April 2009 <http://www.architectsjournal.co.uk/re-imagining-oxford-circus/5200512.article>

² Personal communication, the Crown Estate.

³ Pers. Com. (*ibid.*).

10 See, for example, the Economic Value of Urban Design (NWDA/RENEW Northwest, 2007)

In an undated study, Synder lists economic benefits to local businesses and municipalities identified in eight different studies of walking and cycling investments in the United States. Municipalities, for instance, gained from increased sales tax revenue from visitors' spend on food, lodging, clothing, equipment, and accessories. For example, a \$4.5 million investment in streetscape and pedestrian improvements in Lodi, California, combined with economic development incentives, were credited with attracting 60 new businesses, halving the vacancy rate and increasing sales tax revenue by 30 per cent. Research by the Department for Transport has highlighted the need for a better understanding of visitors' experience of the pedestrian environment and their valuation of townscapes and heritage sites (Atkins Consultants, 2011). However, as box 6 demonstrates, the calculation of pedestrian benefits is already an established methodology.

A US study found that visitors' spend on items, such as food, lodging, clothing, equipment and accessories, increased sales and tax revenue. Visitors' experience of the pedestrian environment needs understanding better.

Private sector investment in public realm improvements, where there is every expectation of receiving a return on that investment, is itself suggestive of commercial gains. The argument is that good-quality public space can enhance values for developers, the rental potential of real estate for investors and generate higher revenues for retailers and other occupiers (Van Melik and Lawton 2011). All of the case studies relating to business start-ups above received substantial private sector development following public sector improvements in the area (Montgomery, 2004). For example, the total public funding for Temple Bar was approximately IR£40.6 million but over the period 1991–2001, the private sector is estimated to have invested over IR£100 million in the area (or a return of 1:4).

Private sector investment is itself suggestive of commercial gain. Many public realm schemes are financed by private investors or a mix of public and private funding.

Effect on property and rent

There is substantial historical evidence that public realm improvements positively affect retail property prices (Buchanan and Gay, 2009). For example, in Wellington, New Zealand, an initiative involving new street paving and landscaping saw gains in rents, capital values, pedestrian counts and the presence of cafes. An economic assessment of property values there suggests that by the late 1990s they were approximately double what they would otherwise have been (Reid, 1999). In the UK, Genecon's evaluation of regeneration in Sheffield (see section 4, box 1) reported a net increase in rental value of £1.60–£2.40 / sq. ft. and a 1–1.5 per cent yield improvement (based on 40 – 60 per cent attribution rate). Box 7 illustrates the impact on rental values and private sector investment in a small coastal town in Lancashire.

There is substantial evidence that improvements to the public realm increase property prices.

As well as generating income, rental values are a measure of the attractiveness of an area. By extension, shoppers' preferences for better streets and spaces (e.g. for pedestrianisation schemes) can be indirectly quantified by the change of retail rent (Yiu 2011). Yiu's study evaluates the impact of pedestrianisation using panel market data in Hong Kong to estimate the effect in a two-street-two-period controlled model. This addressed the need for a reference group identified in section 3. The results showed a net increase of 17 per cent in rental value of retail shops in the pedestrianised area, other things being equal.

Rents reveal preferences to locate and shop in particular locations. A controlled study in Hong Kong revealed a 17% increase in rents from pedestrianisation.

St. Anne's on the Sea, Lancashire

Box 7

Background*

St. Anne's on the Sea is located on the Lancashire Fylde Coast, four miles south of Blackpool. Once a prosperous coastal resort, decline set in the 1970s as a result of changing patterns of tourism, out of town shopping and demographic change. By the 1990s, in some streets over half the shops and buildings were vacant. The town centre was in need of significant regeneration in order to be attractive and appealing within a high quality tourism niche.

Intervention

A major consultation exercise carried out in 1999 identified a number of areas for improvement, such as better paving, street furniture and lighting, better landscaping, restoration of historic buildings and more street activity and events. In 2000 The Square was refurbished. The scheme included pavilions for seating and retail uses, landscaping, public art, open seating spaces and a performing arts arena. This work was funded from a number of sources including a significant grant of £1.75m from The Northwest Regional Development Agency.

Outcome

A report by the North West Development Agency concluded that the regeneration of St. Anne's had increased the vibrancy of the local area as a whole as a result of the greater levels of activity drawn to the town centre. This in turn stimulated further regeneration (Amion Consulting and Taylor Young, 2007). They estimated that the design of the scheme may have contributed to increasing rental values by up to 10 per cent, and vacancy rates reduced from 25 per cent in 1998 to 4 per cent in 2006. The confidence of the private sector was greatly improved and overall £4 million of regeneration works attracted over £20 million of private sector investment to the town (*ibid.*).

*Background information and the description of the regeneration works are drawn from the St. Anne's on the Sea Town Plan: Fresh Horizons, 2011, see:
www.stannesonthesea-tc.gov.uk/wp-content/uploads/2012/05/St-Annes-on-the-Sea-Town-Plan.pdf

Litman estimates that walking and cycling projects typically increase land value from 70 to 300 per cent (Litman, 2002; Burden and Litman, 2011). In a synthesis of the literature on the relationship between walking interventions and property value, Whitehead *et al.* (2006) found an increase in value of 21.7 per cent for retail rents and 24.2 per cent for commercial rents and that a reasonable range was in the order of 10 per cent to 30 per cent (based on work by Hass-Klau (1993) and Colliers Erdman Lewis (1995)). He also found a mean increase in office rents of 24 per cent from waterfront regeneration/water features installation. He notes that this is almost identical to the mid-point of the range reported in Frederick *et al.* (1996) for the seven case studies they investigated (i.e. about 3 per cent to 53 per cent) (Whitehead, *ibid.*).

Walking projects typically increase land values anywhere between 7–300%. A review of earlier literature suggests retail and commercial rates increase in the range of 10–30%.

Walkscore is a US company founded in 2007 with the aim of promoting 'walkable neighbourhoods'¹¹. Its Walkscore software has been used by academics to assess the relationship between house prices and walkability. Walkability is determined by the presence of desirable destinations, such as shops and restaurants within walking distance. Pivo and Fisher (2011) found that greater walkability promoted higher values and higher net operating incomes for office, retail and apartment properties, though it had no effect on industrial property. Their study concluded that walkable properties have the potential to generate returns as good as or better than other property investments.

American Walkscore software assesses the relationship between house prices and walkability. Easy proximity to local shops and services is linked to higher property values.

Cortright (2009) investigated the impact of walkability on housing values across 95,000 real estate transactions in fifteen cities in the United States using the Walkscore programme. He found a strong correlation between walkability and variations in home values. A one point increase in Walkscore (scored out of 100 points) was typically associated with an increase in the value of a residential property of between \$700 and \$3000. Although there may be other confounding variables, this is consistent with other research on the impact on commercial and residential property prices.

A one point increase in Walkscore typically increases US house prices by \$700-\$3000.

Good urban design and access to green spaces have also been found to positively affect rental values. A UK study by the Northwest Regional Development Agency/ Renew Northwest found that good urban design can lead to an increase of up to 20 per cent in capital value and accelerate lettings and sales rates (Amion Consulting and Taylor Young, 2007). In a follow-up study 74 per cent of estate agents said good design had a positive effect on rental and capital values, while 75 per cent thought the impact of design on occupancy and take-up rates was either important or very important (NWDA/RENEW, Northwest 2009).

A report for the North West Regional Development Agency in 2007 found that good urban design raised commercial rents by up to 20%.

In their review of the literature on the value of green space, CABE (2005) cite a report by Ernst and Young which found that rental values (residential and commercial) for properties near a well-improved park generally exceeded those in surrounding areas. In the six case studies examined the rental premium ranged from 10 per cent to 40 per cent (*ibid.*). For example, property on Bryant Park in New York was shown to have a 220 per cent increase in commercial rental values (after improvements), compared to a maximum 75 per cent increase in the surrounding area over the period studied. In London, a study by the Greater London Authority established a relationship between property value and the amount of green space in the area (a 1 per cent increase in green space in a typical ward was associated with a 0.3 to 0.5 per cent increase in average house price).

Quality green spaces increase commercial rents and property prices too. A report for the GLA in 2003 suggested that a 1% increase in green space in a typical London ward led to 0.3 – 0.5% rise in average house price.

High property prices can also have a downside, potentially restricting local access to home ownership and reducing retail diversity, as smaller businesses are priced out of the market. This should be borne in mind in designing public realm improvement projects to ensure that that high street and residential diversity is promoted. For example, in Temple Bar in Dublin the state-owned development company bought up properties prior to regeneration and the monies generated from increased rental income were reinvested in the property renewal programme and used to cross-subsidise cultural projects (Montgomery, 2004).

Nevertheless, higher property prices do have a downside: restricting access to home ownership and pricing local businesses out of the market.

11 www.walkscore.com

Employment benefits

A study in the United States looked at the employment benefits that could accrue from investing in walking and cycling infrastructure. It took into account jobs that were created in all the phases of design and construction of facilities including the manufacturing of materials and equipment. Pedestrian-only projects created about 10 jobs per \$1 million spent, which is greater than multi-use or road construction with pedestrian and cycling access. Of all of the options, road only projects created the least number of jobs (Garrett-Peltier, 2011, 7.8).

A US study compared the number of jobs created through the construction of walking, cycling and road infrastructure. Road projects created the least jobs.

About three additional jobs per \$1 million spend on pedestrian-only projects were created when spillover benefits in the supply chain were included (*ibid.*). Although employment on specific projects is short-term in nature, this finding has more relevance in terms of boosting the construction sector from a local, regional or national perspective. The report's author concluded that there should more investment in pedestrian and cycling access, not just because of the environmental, safety and health benefits, but for local employment too.

About 3 additional jobs were created per \$1 million spend on pedestrian-only projects, benefiting local employment.

Outside of construction, the evidence relating to employment is slimmer. However, there are some positive examples. In Washington DC, improvements to Barrack's Row (new patterned sidewalks, more efficient public parking, and new traffic signals) attracted 44 new businesses and 200 new jobs. Economic activity there has more than tripled since the inception of the project (Tolley, 2011). In the UK, Genecon (2010) reported the creation of 341–527 net jobs in their evaluation of the public realm improvements in Sheffield. These were based on attribution rates of 20 – 90 per cent, which varied depending on proximity to the original investment (see Box 1). It is not clear whether the lack of data here reflects the absence of a relationship or whether it is influenced by the methodological problems outlined earlier.

Outside the construction sector it is more difficult to show a direct causal link to additional jobs created. However, higher employment can be inferred from higher turnover and investment.

Social exclusion

An important objective of economic development projects is to improve the economic performance of the local area, and reduce unemployment especially in more deprived areas – see box 8 below. However, the impact of public realm investments on local people is sometimes absent from evaluations. Areas that benefit from these investments often have high concentrations of unemployed people and low business start-up rates. A risk with urban renewal policies is that they are detrimental, rather than beneficial to existing residents. This is particularly the case with increases in property values; a central component of the gentrification process. Whilst local councils or business groups may favour gentrification policies because of the increased rental income associated with the rising property values, from a social value perspective it can be a damaging dynamic that results in reduced social cohesion as local residents are displaced (Lees 2008; Stevens 2009).

The impact of public realm improvements on local people is sometimes absent from evaluations. The process of gentrification associated with rising property prices can be detrimental to existing residents.

Church Street regeneration, Ebbw Vale, Wales*

Box 8

Background

Following on from the closure of Corus in 2002, Church Street in the town of Ebbw Vale suffered from a decline in business activity and the withdrawal by public sector organisations from a number of key properties. As a result the area lacked investment and experienced a drop in business confidence. The local press highlighted its poor condition – desolate, run down, characterised by vacant and boarded up properties – and its desperate need for regeneration. Amongst the issues identified in the masterplan for this area as detrimental to the area were: high unemployment, high property vacancy rates, low property prices and the poor quality of the public realm (e.g. litter and graffiti).

Intervention

Residents and businesses were contacted personally 'on the street' to take part in public seminars and events. A comprehensive scheme for the regeneration of Church Street was developed, encompassing three main strands: the delivery of public realm improvements, reuse of vacant properties, and assisting businesses with improvements to their properties and marketing. The public realm works included 1500m² of pennant sandstone paving, 200m of new fencing, 360m of new of refurbished stone walls, new seating, litter bins, CCTV cameras, street lighting, art projects and pedestrians links from the steelworks to the town centre. Empty properties have been acquired and refurbished by the United Welsh Housing Association and given new uses as office, residential and retail space.

Outcome

The cost of the project was £2.5 million and a further £5 million was attracted through partnership funding. Close partnership working with residents, businesses and third sector organisations was essential to the project's success. Regeneration of Church Street will ensure that businesses are now able to capitalise on the re-development of the former steel works. The implementation of high quality public realm improvements has encouraged both private investors and Housing Associations to have the confidence and commitment to invest. This 'quick win' was important to encourage buy-in and to continue to involve stakeholders. The profile of the area has now been raised and there is demand for private sector investment.

*The information in this case study is drawn from the Action for Market Towns case study database. The regeneration of Church Street in Ebbw Vale was Commended in the 2012 Welsh Zone Action for Market Towns Awards (Business and Economy category). See <http://towns.org.uk/>.

Those living in deprived areas generally need better places to walk the most. In 2011, 25 per cent of households in the UK did not have access to a car, and households in the highest income quintile travelled just over three times further by car than the lowest income quintile (Department for Transport, 2011). In a study of walking in deprived areas, Mason *et al.* (2011) found that amenity use, especially of parks, play areas and general shops (mainly in the neighbourhood), was associated with more walking. Promoting more frequent walking is a realistic goal for improving physical

A quarter of British households have no access to a car. Urban design often assumes car ownership, excluding those without.

The ability to walk around the area where we live also affects consumer transport costs, which makes up a large proportion of household budgets for low income families (McCann, 2000). For example, one US study found that households in car-dependent communities devoted 50 per cent more spending on transportation (more than \$8,500 annually) than households in communities with more accessible shops and services, and more multi-modal transportation systems (less than \$5,500 annually; Litman, 2003). Nevertheless, when walking is a compulsory form of transport, it can be a 'source of both physical fatigue and psycho-social stress' (Bostock, 2001). Where walking environments are associated with boarded-up shops, litter and graffiti they are daily reminders of social exclusion (Green, 2009).

There is little evidence to link property or infrastructure-led development to economic improvements for the most deprived communities. However, CABE Space (2005) have described how important the perceptions of an area are to prevent urban decline, raise the self-esteem of residents and promote confidence in others for inward investment. Box 9 above shows how people connect with their places. Public realm improvements can contribute to urban renewal but they need to be carefully implemented and accompanied by economic development strategies to create business and employment opportunities – or they run the risk of leaving people behind (Litman, 2003).

Conversely, a US study has shown how car dependent households on low incomes spend 50% of their budget on transportation. Urban design in poor neighbourhoods is often a disincentive to walking.

Better streets and places are good for everyone: raising self esteem for residents and promoting confidence for inward investment.

6 Public realm improvements and consumer and business satisfaction

This section discusses attitudes towards public spaces and public realm improvements from the point of view of consumers and businesses. Although the direct economic value of public realm improvements can be difficult to quantify, there is a significant amount of evidence that suggests that the benefits are derived from people's perceptions of an area (NWDA/RENEW Northwest, 2007). Box 10 illustrates the importance of people's perceptions of the public realm in York. There is also some evidence that, over time, urban quality improvements alone may enhance the attractiveness of an area, and put a premium on locations within it (Whitehead *et al.*, 2006).

Across Europe, a broadly positive relationship has been observed between the quality of public spaces and people's perceptions of the attractiveness of the local area (Holcomb, 1994; Barke and Harrop, 1994; Whitehead, *et al.*, 2006) and their quality of life (Gehl, 2011). As discussed in section 4, this also affects people's propensity to shop and spend. Nevertheless, it is often assumed that our struggling high streets need more parking and should be easier to get to by car. For example, the Federation of Small Businesses has argued that businesses in towns with insufficient car parking lose customers to other destinations. They claim that access to parking has a 'significant impact' on store performance¹³. Yet in a survey of shoppers and retailers in Edinburgh, the shoppers' main concern was for a good range of shops in an attractive environment (Tolley, 2011). Parking was not identified as important by shoppers, even though it was the only issue mentioned by more than 10 per cent of retailers (*ibid.*).

Similarly, earlier this year the Royal Institute of Chartered Surveyors blamed pedestrianisation for high street decline, citing Holyhead in Wales (Deardon, 2013). This simplistic correlation ignores many other factors contributing to their decline – most notably the way we shop. People value pedestrian environments, for example, in shopping centres, suburban office campuses or pedestrian oriented resort communities. Other studies have shown that retailers like pedestrianisation once they have a good experience of its benefits (Kumar and Ross, 2006). They even suggest that pedestrianised commercial areas increase the livability of the environment. In fact, repeated studies show that shoppers are more likely to have negative opinions about traffic and transport than retailers (Hass-Klau, 1993; Kumar and Ross, 2006; Tolley, 2011).

In another study, Sustrans interviewed 840 shoppers and 126 retailers on two neighbourhood shopping streets in Bristol to find out how customers travelled, and were perceived to travel, to the shops. This replicated a 1990s survey in the city of Graz, in Austria, which found that retailers overestimated the importance of the car

There is significant evidence that perceptions of an area – to businesses and consumers – matter.

Across Europe, studies have linked the quality of public spaces to perceptions of attractiveness, quality of life – and where we shop. Even so, it is often assumed that more parking is the answer to struggling high streets.

Pedestrianisation has also been blamed for falling sales, ignoring the many contributing factors. In fact there is consistent evidence that customers like pedestrian environments and dislike traffic.

Retailers have been shown to over-estimate the importance of the car for customer travel. In those studies, more people actually walked, cycled or came by bus.

13 www.fsb.org.uk/101/assets/Car%20park%20survey.pdf

for customer travel (retailers assumed 58 per cent of their customers arrived by car, when in fact 44 per cent walked, 8 per cent cycled and 16 per cent arrived by bus). The results for Bristol told the same story; retailers overestimated the importance of the car by almost 100 per cent. They assumed that 41 per cent of their customers arrived by car; only 22 per cent had done so (Sustrans, 2006).

Reinvigorate York*

Box 10

Background

The York Visitor Survey 2011–12 found that, overwhelmingly, the top activity of the 7 million visitors to the city each year is to “stroll around and enjoy the ambience of York”, together with “eating and drinking out”. Less than 2 million of the 7 million visitors reported actually going into the major attractions. This illustrates the vital importance of the quality of public spaces. The City of York Council has made the case that improving the public realm in the city centre is vital to attract “entrepreneurs, investors, students and people looking for jobs”.

Intervention

In September 2012, the Cabinet approved a £3.3 million investment across six city centre locations in order to ‘Reinvigorate York’. The key objectives of this programme are to reinvigorate the city centre economy, increase footfall, improve quality of life for residents, increase the sense of York as a special place and to maintain its position as a top tourist attraction. An initial £200,000 has been allocated to a package of measures including improvements to paving, lighting, seating, bins and de-cluttering public spaces. Improving the environment for pedestrians, cyclists and public transport is a theme throughout.

Outcome

The economic outcomes of each project will be assessed using the Transport for London (TfL) Urban Design Toolkit, to monitor the economic benefits. However, this case study demonstrates both the importance of people’s perceptions of quality of the public realm and the City of York Council’s confidence of the economic benefits of more attractive streets through their willingness to pay for public realm improvements. The decision to invest in the city’s public spaces anticipates the value of the enhancing the city’s image as an international destination and widening its offer: as a place to live and work, as a means of attracting higher value employment and providing a catalyst for private sector investment.

*The information here is drawn from the 4 September 2012 Cabinet report

http://www.york.gov.uk/info/200174/planning_and_building_control/686/reinvigorate_york

Despite the view that town centres should be easier to get to by car, there is also evidence that shows that traffic calming measures do not adversely affect small businesses (Drennen, 2003). Contrary to expectations at the time, a combined traffic restraint and pedestrianisation scheme in Oxford in 1999 did not lead to a reduction in visitor numbers in spite of a 17 per cent reduction in car trips to the centre (Parkhurst, 2003).

Restricting traffic does not necessarily reduce the number of customers.

It is not only the business sector that can be skeptical about measures that restrict vehicular traffic. For example, a survey of local authority and academic attitudes towards road user charging reported that about 83 per cent of respondents were either 'very concerned' or 'fairly concerned' with the economic impact on the urban area (Ison, 2000). However, research by Whitehead, which has modeled the impact of road user charging on urban areas, has found that where revenue is ring-fenced for public realm investment it may enhance business performance in city centres in the long run (Whitehead, 2002).

Charging road users and ring-fencing the revenue for public realm investment could also enhance business performance in the long run.

Background

Leicester has previously been described as having a traditional city centre, lacking public open spaces and suffering from dereliction and underinvestment in many areas¹. However, in the past decade significant efforts have been made to improve and enhance the public realm. In 2005, a public realm strategy was initiated in response to the redevelopment and expansion the Shires Shopping Centre (re-launched as the Highcross) in the centre of Leicester². This three year programme of investment – the Streets and Spaces initiative – led to £19 million of improvements across the centre, almost completing the 'retail circuit' including Gallowtree Gate, High Street, Hotel Street and Market Street.

Intervention

The purpose of the Streets and Spaces initiative was to regenerate and transform the appearance of the city centre to help it to benefit from the development of Highcross and the new visitors it would bring to the city. Measures included changing bus routes, pedestrianisation, de-cluttering, new street paving and street furniture, tree planting and changes to street lighting. The project opened streets up for pedestrians and was completed in time for the opening of Highcross in 2008.

Outcome

A survey of business carried out during the project's implementation found that "91 per cent felt that the space surrounding their business location had recently improved, and 64 per cent agreed that these improvements have been good for business"³. 73 per cent stated that the improvements had helped to attract visitors. It was also noted that the flagship John Lewis store, the retail anchor of the new Highcross development, would not have been secured without the Streets and Spaces initiative. In 2011, Sir Peter Soulsby was elected as Leicester's first City Mayor and he has embarked on a new programme – Connecting Leicester – a series of projects designed to reverse the impact of the car and encourage visitors to get to know the rest of the city⁴. Its emphasis is spreading the success from the retail heart of the city by reconnecting it, for example, to the medieval quarter and the Golden Mile). It is also taking advantage of the opportunities arising from the discovery of Richard III's body.

¹ Ecotec (2007) Economic Impact of the Public Realm: A Final Report to the East Midlands Development Agency

² Leicester Public Realm Strategy (2005)

www.leicester.gov.uk/your-council-services/ep/economic-regeneration/regenerationnews/strategiesforchange/prs/

³ Ecotec (*ibid.*)

⁴ Leicester City Council Scrutiny Review, review of 'Connecting Leicester', November 2012

However, it is a measure of the importance placed on public realm that some retailers have expressed a willingness to pay (WTP) for it (Sinnott *et al.*, 2011). In 2003, the Central London Partnership (CLP) and Transport for London (TfL) commissioned a study to examine the economic benefits of walking and public realm improvements. The study included a series of interviews with people from a range of business sectors (landowners, developers, businesses). 85 per cent of respondents identified the quality of the streetscape as important to the ability to

Good quality public realm is considered by entrepreneurs to be an effective part of managing high streets. Landowners and retailers are even willing to pay to improve the streetscape in order to attract tenants and customers.

attract customers or tenants. All the landowners interviewed had made significant investments in improving the quality of their street environment. It was further argued that a failure to improve the quality of the public realm may lead to businesses reconsidering their investment (Llewelyn Davies, 2003). Box 11 above shows how street improvements in Leicester were integral to attracting John Lewis to the new Highcross development. A study by Whitehead of entrepreneurs' attitudes found that they considered good quality public realm to be an effective part of town and city management (Whitehead *et al.*, 2006).

Various techniques have been developed in order to measure pedestrians' preferences for more appealing public spaces and better walking environments. Kelly *et al.* (2011) used three approaches to measure the relative value of different street improvements (e.g. high quality materials or safety attributes) and compared the findings. Their methods were:

- A computer based tool developed using stated preference surveys
- An on-street survey designed to investigate values and attitudes towards different attributes of the pedestrian environment along a route; and
- An 'on the move survey' where pedestrian volunteers were interviewed while walking along the route in order to get an actual account of their experiences as they walk.

While each approach provided a different perspective on walkability, the general attributes of a good pedestrian environment were found to include: pavement cleanliness, safe crossing places, good connectivity and a sense of security (*ibid.*).

It is not only retailers who express a willingness to pay for better streets and places. For example, Willis *et al.* (2005) found in their survey that the mean WTP for improved street lighting was £16 per household per year, although in some instances this was less than the cost of implementing the scheme. An earlier study by Garrod *et al.* (2002) revealed that people had a positive WTP for a reduction in the negative impacts of road traffic and for more attractive, sophisticated traffic calming measures – rather than basic designs such as road humps, speed cushions and chicanes. This approach enables urban designers and planners to assess people's preferences through the relative values they give to public realm improvements. For example, as part of the design of the Castlegate Square area in Aberdeen, Davis and Laing (2002) found that the public placed a negative value of £5.60 on replacing the current railings in the square with new railings and a positive value of £6.00 on replacing the railings with bollards (i.e. a difference of £11.60).

The state of our streets really matters to people and this can be used to estimate the value of urban realm improvements. For example, Transport for London (TfL) have developed a 'Valuing the Urban Realm' toolkit based on the Pedestrian Environment Review System (PERS) – see box 12. Research using the PERS

Various techniques have been employed to measure the relative value of street improvements. In each case the main attributes of a good pedestrian environment include: cleanliness, safe crossings, connectivity and a sense of security.

Householders and customers are willing to pay for better streets too, revealing preferences for more attractive and sophisticated street designs.

Londoners were willing to pay an extra £14.78 to £17.35 per year on their council tax for improvements in the walking environment.

evaluation tool has found that Londoners are, on average, willing to pay an extra £14.78 to £17.35 per year on their council tax for improvements in the walking environment (Accent and Colin Buchanon, 2006). Similarly, Stated Preference experiments by Sheldon *et al.* (2007), also in London, produced WTP estimates for high street improvements amounting to £45 per person per annum across all the high streets visited. These findings prompted the Department for Transport to commission research into the use of Stated Preference techniques to value public realm improvements more generally (Atkins Consultants, 2011).

Applying Transport for London's (TfL) Urban Realm Toolkit to Croydon High Street Box 12

Background

Croydon's town centre has persistently struggled since the early 1990s with higher vacancy rates (up to 32 per cent office vacancies) and lower footfall trends than national averages. In 2012, Croydon Council launched a strategy to address these long standing issues to "attract future private sector residential, retail and commercial investment" (GLA 2012). This would involve investment in the public realm and public transport, in order to help change people's perception of the area by creating more attractive, functional and safe public places.

Intervention

The public realm improvements include a wide range of measures, including: de-cluttered streets, extended and/or replaced footways, new planting, new street furniture, rationalised parking and servicing, pedestrian crossings and road junction improvements. This will be complemented by improvements to buildings and facades and direct measures to support retailers. The project has two quantifiable objectives. The first is to achieve a 5 per cent increase in footfall – based on comparative results for Harrow Town Centre public realm improvements. This would result in an additional yearly footfall count of approximately 400,000. The second objective is to increase the amount spent on the high street. Currently the average spend is £29 per person; if this remains constant, the increase in footfall would deliver £4.7m of additional retail expenditure per year within the intervention area (although this could be displaced from elsewhere).

Outcome

The outcomes of the project will be measured using existing data capture methods (e.g. vacancy rates) and through user and business surveys. However, the project has also been reviewed using TfL's toolkit 'Valuing the Urban Realm 2012'. The toolkit provides monetary values for proposed improvements to public space utilising the Pedestrian Environment Review System (PERS). This generated a value for an increase in public wellbeing arising from streetscape improvements of £11.4 million. This results in a benefit/cost ratio of 1.36:1. The private property value uplift from the proposed urban realm improvements or shop rental value increases are estimated at £89.2m (*ibid.*).

The authors concluded that there was evidence of significant, positive WTP for townscape improvement packages in towns and cities outside of London too. They gathered new survey data from four non-London sites and found a WTP of £20 to £45 per annum per person using the street, depending on the elements in the townscape package. The research provides values for different improvement packages (see Table 2).

Outside London data has identified a WTP of £20 to £45 p.a. per person for different townscape improvement packages.

Willingness-to-pay for attributes of different improvement packages

Table 2

Attribute	Willingness-to-pay, £ per annum		
	Central estimate	Judgemental 95% confidence interval on WTP	
		Lower Bound	Upper Bound
Priority: Shared Space	20 to 25	2	50
Priority: Full Pedestrianisation		10	30
Priority: Limited Vehicle Access		15	35
Surface (material high quality)	10	2	17
Activity (high, where complementary to uses on street)	10	3	6

Source: Atkins Consultants 2011

As discussed in the introduction our high streets have been under pressure for some time now. The way we shop has changed and so too have our expectations of the high street. A report by the Department for Business, Innovation and Skills (BIS, 2011) describes how consumers now seek more 'experience' and a greater choice. It highlights the need for high streets to respond to these changing markets; the most successful examples are those with something different to offer, that are places to visit for leisure, culture and specialist shopping rather than for routine purchases (*ibid.*). BIS rightly identify a gap in understanding in terms of how consumers balance notions of value and price. More evidence is needed on the contribution that key elements, such as the quality of the public realm, retail diversity and service, can make to increase what the high street has to offer.

The way we shop has changed and so have our expectations of the high street. Shoppers now seek to 'experience' something different. More needs to be known about how better streets can add to that experience.

7 Conclusions

This report has made the case that investment in better streets and places can deliver a range of commercial returns. Establishing direct causal links between investment in the public realm and outcomes for business is challenging, because research in this area is underdeveloped. However, the evidence that does exist suggests a positive impact on retail footfall, turnover, property values and rental yields, particularly for well-designed projects. There is also evidence that well-planned and implemented public realm investments can support regeneration efforts. However, it has been more difficult to link these to an increase in business start-up or survival rates, net employment and tourism. It is also important to acknowledge that data does not exist on potential negative effects of gentrification on communities in deprived areas.

Members of the public appear willing to pay for pedestrianisation and better townscapes. In contrast, business organisations and some businesses may be out of step with the views of their customers – valuing accessibility by car more than the quality of the public realm. Of course, this is not universally true. Many businesses do appreciate, invest in and benefit from pedestrian friendly environments.

Most of the evidence presented in this report is in case study form, reflecting the type of research that is generally carried out in this field. It is difficult to generalise from specific examples. For instance, there is a risk that there is a positive bias towards schemes that work well, whereas less successful schemes are not unpublicised. The few systematic reviews that have been carried out support the assertion that improvements to the public realm contribute to commercial success. And the weight of qualitative and quantitative evidence suggests that businesses and their customers benefit from better streets. However as might be expected, this is an area that needs more research – particularly on the relationship between regeneration and local communities.

This report, and a summary report produced by Living Streets, can be downloaded from www.livingstreets.org.uk/pedestrianpound.

Although this is a challenging area to measure, overall the evidence suggests that investment in better streets and places supports the delivery of a range of commercial returns.

People are even willing to pay for better streets, but some business bodies believe that parking matters more.

More baseline data needs to be gathered when undertaking public realm investments to aid calculations of additionality and to enable the generalisability of the results.

Concluding thoughts

- 1 High street decline appears to be a continuing trend and the share of retail going to online and out-of-town stores is set to rise. More radical policies are required to reverse these trends, as the high street will not be simply able to compete on price. Investments in walking in public realm make economic sense and are likely to pay for themselves in the long-run. However, other measures such as an internet sales tax, congestion charging and planning restrictions on out-of-town stores¹⁴ should also be considered. There is some evidence to suggest that these are likely to work best when the funds are hypothecated and reinvested in the high street.
- 2 Consumers have a willingness to pay for local environmental improvements, so ways should be explored to take advantage of that to help raise revenue for these investments.
- 3 Public realm interventions should be carefully designed to ensure that local people – as well as the high street - benefit from them (or are at least not negatively impacted upon).
- 4 Business owners often over-value the importance of parking and car access to their sales. Business organisations in particular need to become more familiar with the evidence in this area, so as to promote the economic benefits of public spaces to their members, and the importance that customers place on them.
- 5 High property prices can also have a downside, potentially restricting local access to home ownership and reducing retail diversity, as smaller businesses are priced out of the market. This should be borne in mind in designing public realm improvement projects to ensure that that high street and residential diversity is promoted.
- 6 Better evaluation should be built into all project design to address the information deficits outlined earlier.

14 Both England's National Planning Policy Framework and Scotland's Planning Policy (The Scottish Government, 2013) include a "Town Centre First" presumption for retail development, but it remains to be seen if this is being implemented effectively.

Further research

- 1 The field would benefit from better evaluations of the public realm interventions. This should include baseline assessments of economic indicators as well as methods for calculating additionality.
- 2 This should also include an assessment of potential negative impacts on communities from processes such as gentrification. Evaluation of regeneration spending is particularly in need of more rigour. As it is largely delivered through public funding streams and spent on behalf of the most deprived communities greater transparency and accountability is required.
- 3 More research is required into the components of public realm improvements that are likely to yield positive impacts to a wide range of stakeholders. Whilst we know that good design matters, and is likely to pay for itself in the long-run, we know less about how (for example) investments can be harnessed to create employment for local people.
- 4 There is some suggestion from case study evidence that more interventionist approaches to urban regeneration are more effective than market-led approaches. This hypothesis needs further testing, as the finding could be important for the design of future projects.
- 5 The value of the high street to communities is often mentioned but has never been fully explored. The social value of the high street is an under-developed area of research, which would help make the case for better funding and more radical policy measures to support its survival.

Glossary of terms

Additionality is the extent to which something happens as a result of an intervention that would not have occurred in the absence of the intervention.

Contingent valuation is a survey-based economic technique for the valuation of non-market resources, such as environmental preservation or the impact of contamination. It assesses people's willingness to pay for a good or service, or their willingness to accept compensation for its loss. It is sometimes known as the stated preference model in contrast to a price-based revealed preference model.

Counterfactual is a scenario that expresses what has not happened or is not the case but could, would, or might happen under differing conditions. For example, an analysis of what outcomes would have taken place in the absence of a policy or intervention.

Deadweight is the estimate of what level of target outputs/outcomes would be produced if the intervention did not go ahead. It is the 'do nothing' or do minimum option and the outputs/outcomes produced under this option are referred to as deadweight. In some cases, deadweight might be estimated by assuming that a proportion of the total gross additional local effects would go ahead anyway under the reference case.

Displacement refers to the number or proportion of intervention outputs (occurring under the reference case and the intervention options) accounted for by reduced outputs elsewhere in the target area should also be deducted.

Economic multiplier: This refers to further economic activity (jobs, expenditure or income) associated with additional local income, local supplier purchases and longer-term development effects then need to be added.

Hedonic pricing: The most common example of the hedonic pricing method is in the housing market: the price of a property is determined by the characteristics of the house (size, appearance, features, condition) as well as the characteristics of the surrounding neighbourhood (accessibility to schools and shopping, level of water and air pollution, value of other homes, etc.) The hedonic pricing model is used to estimate the extent to which each factor affects the price.

Leakage effects refer to the number or proportion of outputs (occurring under the reference case and the intervention options) that benefit those outside of the intervention's target area or group should be deducted from the gross direct effects.

Substitution: This effect arises where a firm substitutes one activity for a similar one (such as recruiting a jobless person while another employee loses a job) to take advantage of public sector assistance.

Appendix: Comments on analysis and data quality

In response to the brief given by Living Streets, Just Economics identified four discrete research questions. These informed the search terms used in database searches:

- 1 Do investments in walking and the public realm contribute towards existing business performance, income, footfall and spending, survival rates etc.?
- 2 Do investments in walking and the public realm improve the attractiveness of an area as measured by customer perceptions, stated preference etc.?
- 3 Can investments in walking and the public realm improve the commercial viability of an area, as measured by inward investment, business start-up rate, increase in the value of retail property units etc.?
- 4 What UK examples might serve as useful case studies to explore the commercial benefits of walking?

Few of the papers that were accessed could be considered cost benefit analyses. The majority summarised case studies or provided descriptive material on the economic benefits of walking. Due to the limited amount of literature in the area, we included everything that was available. This comes with the caveat that there is variability in the quality of the data on which they are based. For example, it is not always clear whether counterfactuals have been taken into account (see section 3). An effort has been made to draw attention to this where relevant.

Urban centres are often the recipients of different kinds of public and private investment. Comparing the impacts of these can be challenging for the reasons outlined in section 2, but also because the scale of the investment can vary from small, localised high street improvements to large-scale regeneration projects which attract large employers (not just retail) and cultural investment. In this report we consider all types of investment, and attempt where possible to differentiate between them.

However, it is not always possible to identify where, on the spectrum of small to large projects, the investment is situated. Projects at different ends of the scale are not directly comparable and require different levels of rigour in their evaluation. Whilst we discuss high street improvements and urban regeneration projects alongside each other, we also recognise that they are very different in nature. Where possible, we have focused solely on the public realm components of regeneration projects.

The quality of evaluation applied to urban regeneration also tends to be mixed. This makes synthesizing findings from such projects particularly challenging. Although there has been a much greater emphasis in recent decades on evaluation (Ho, 1999), this is still an area that suffers from methodological weaknesses. A proper discussion of the issue is outside the scope of this paper.

One issue that is worth mentioning is the extent to which regeneration outcomes are over-claimed. Evidence suggests that successful regeneration is extremely difficult to do well. It is notoriously badly evaluated but what evidence exists, suggests that while programmes may be designed to slow the decline of deprived areas, few have been shown to close the gap with wealthier areas (North *et al.*, 2003; Griggs *et al.*, 2008; Potts, 2008; Robertson, McIntosh and Smyth, 2010).

The most successful examples are well-planned, holistic and focused on outcomes for the most deprived (Turok, 1992). Whilst property-based initiatives have been shown to have positive regeneration impacts an 'unrestrained, market-led' approach has also been found to be detrimental (*ibid.*). They are probably best described as a 'necessary but not sufficient' component of an urban regeneration strategy (Imrie and Thomas, 1993; Loftman and Nevin, 1995). For example, the evidence relating to one-off 'prestige projects' or public art installations and regeneration lacks a robust evidence-base (Loftman and Nevin, 1995; Hall and Robertson 2001; Evans, 2005).

References

- Accent, and Colin Buchanon. 2006. "Valuing Urban Realm – Business Cases for Public Spaces". Transport for London.
- Amion Consulting, and Taylor Young. 2007. "The Economic Value of Urban Design." www.placesmatter.co.uk.
- Atkins. (2010). "Oxford Circus Validation of Business Case Forecasts For Transport for London, 27 May 2010".
- Atkins Consultants. 2011. "DfT Pedestrianisation and Townscape Research." www.gov.uk/government/uploads/system/uploads/attachment_data/file/89395/pedestrianisation-townscape-research-report.pdf
- Banister, D. 2009. "Traffic Calming in the United Kingdom: The Implications for the Local Economy." *Pubblicazioni Ce. SET (22)*. <http://fupress.net/index.php/ceset/article/viewFile/7251/6752>
- Barke, Michael, and Ken Harrop. 1994. "Selling the Industrial Town: Identity, Image and Illusion." *Place Promotion: The Use of Publicity and Marketing to Sell Towns and Regions*: 93–114.
- Begg, Iain. 2002. "Urban Competitiveness: Policies for Dynamic Cities". The Policy Press. <http://books.google.co.uk/books?hl=en&lr=&id=QLG0LKHk6CcC&oi=fnd&pg=PR5&dq=Urban+Competitiveness:+Policies+for+Dynamic+Cities,&ots=uuyr9h3dZx&sig=PVT08x-FUOEGo6A1g0IlZpPthK8>.
- Bidwell, Susan. 2012. "Review of Studies That Have Quantified the Economic Benefits of Interventions to Increase Walking and Cycling for Transport." <http://cph.co.nz/Files/QuantEconBenefitPhysicalActive.pdf>.
- Bohl, C. C. 2002. "Place Making: Developing Town Centers, Main Streets and Urban Villages, Urban Land Institute, 2002. Wwww. Uli. Org. Accessed Jan. 12, 2003."
- Bostock, Lisa. 2001. "Pathways of Disadvantage? Walking as a Mode of Transport Among Low-income Mothers." *Health & Social Care in the Community* 9 (1): 11–18. doi:10.1046/j.1365-2524.2001.00275.x.

- Brog, W., and Nicola Mense. 2000. "Eight Cities Walking: Comparative Data on Walking as a Transport Mode from Cities in Europe, Australia and the US, Portland." <http://www.walk21.com/papers/Brog.pdf>.
- Buchanan, P., and N. Gay. 2009. "Making a Case for Investment in the Public Realm." *Proceedings of the ICE - Urban Design and Planning* 162 (1) (January 3): 29–34. doi:10.1680/udap.2009.162.1.29.
- Burden, Dan, and Todd Litman. 2011. "America Needs Complete Streets." *ITE Journal* 81 (4): 36–43.
- CABE Space. 2005. "Does Money Grow on Trees?". Cabe Space.
- Cavill, Nick, Sonja Kahlmeier, Harry Rutter, Francesca Racioppi, and Pekka Oja. 2008. "Economic Analyses of Transport Infrastructure and Policies Including Health Effects Related to Cycling and Walking: A Systematic Review." *Transport Policy* 15 (5) (September): 291–304. doi:10.1016/j.tranpol.2008.11.001.
- Central Bedfordshire Council. 2011. "Biggleswade Town Centre Strategy and Masterplan". www.centralbedfordshire.gov.uk/local-business/business-information-and-advice/developments/biggleswade-town-centre-masterplan.aspx
- Centre for Retail Research. 2012. "Online Retailing: Britain and Europe 2012." www.retailresearch.org/onlineretaling.php.
- Chelmsford Borough Council. 2011. "Chelmsford Town Centre: Public Realm Strategy." www.chelmsford.gov.uk/sites/chelmsford.gov.uk/files/files/documents/files/TC%20PRS.pdf.
- Colliers Erdman Lewis. 1995. "How to Get Pedestrian Rental Growth". London, CEL.
- Commission, European. 1999. "Cycling: The Way Ahead for Towns and Cities." *Office for Official Publication of the European Communities, Luxembourg*.
- Cortright, Joe. 2009. "Walking the Walk: How Walkability Raises Home Values in US Cities." www.citeulike.org/group/11305/article/5541951.
- Davies, A., and R. Laing. 2002. "Streetscapes: Their Contribution to Wealth Creation and Quality of Life". Final research report to Scottish Enterprise.

- Davis, Adrian. 2010. "Value for Money: An Economic Assessment of Investment in Walking and Cycling." *United Kingdom: Department of Health, Government Office for the South West*.
http://healthandtransportgroup.co.uk/health_transport/ValueforMoneyAnEconomicAssessmentofInvestmentinW.pdf
- Dawson, John A. 1988. "Futures for the High Street." *The Geographical Journal* 154 (1) (March 1): 1–12. doi:10.2307/633470.
- Deardon. 2013. "Town Centres 'Should Be Accessible'." *BBC*, February 12, sec. North West Wales.
www.bbc.co.uk/news/uk-wales-north-west-wales-21418768
- Department for Business, Innovation and Skills, and Genecon and Partners. 2011. "Understanding High Street Performance."
www.bis.gov.uk/assets/BISCore/business-sectors/docs/u/11-1402-understanding-high-street-performance.pdf
- Department for Business, Innovation and Skills. 2011. "Understanding High Street Performance". HM Government.
- Department for Communities and Local Government. undated. "East Midlands Competitiveness Programme 2007–13."
www.gov.uk/government/uploads/system/uploads/attachment_data/file/132071/North_Derbyshire_and_North_Nottinghamshire_information.pdf
- Department for Transport. 2004. "Walking and Cycling: An Action Plan." London: DfT.
———. 2011. "Statistical Release - National Travel Survey 2011". London: HM Government.
- Department of Environment. 1997. "Managing Urban Spaces in Town Centres: Good Practice Guide". Stationery Office Books.
- Drennen, Emily. 2003. "Economic Effects of Traffic Calming on Urban Small Businesses." *Masters Project, Department of Public Administration, San Francisco State University*.
www.emilydrennen.org/TrafficCalming_full.pdf
- Drivers Jonas LLP and Colin Buchanan. 2008. "Bristol Broadmead public realm study: baseline study July 2008".
www.bristolshoppingquarter.co.uk/dbimings/Public%20Realm%20study%20August%202008%281%29.pdf

- Ealing Broadway Business Improvement District. 2006. "Ealing Broadway BID business plan 2006–2011".
http://ealingshoplocal.co.uk/files-area/Ealing_BID_Business_Plan.pdf
- . 2009. "The Ealing Broadway Business Improvement District Review 2008/9".
<http://ealingshoplocal.co.uk/files-area/BID%20Annual%20Review%2008-09.pdf>
- . 2010. "Take Five: Your Ealing Broadway BID's Five Year Prospectus."
http://ealingshoplocal.co.uk/docs/Ealing_BID_5yr_Prospectus.pdf
- ecogen. 2009. "Evaluation of the Market Towns Initiative."
http://webarchive.nationalarchives.gov.uk/+http://www.advantagewm.co.uk/Images/MTI%20Evaluation%20Final%20Report%20Sept%2009_tcm9-25275.pdf
- Ecotec. 2007. "Economic Impact of the Public Realm: A Final Report to the East Midlands Development Agency". Birmingham.
- Encams. 2005. "The Link Between Local Environmental Quality and Economic Improvement."
- English Partnerships. 2004. "Additionality Guide: A Standard Approach to Assessing the Additional Impact of Projects." *English Partnerships*.
- Evans, Graeme. 2005. "Measure for Measure: Evaluating the Evidence of Culture's Contribution to Regeneration." *Urban Studies* 42 (5–6): 959–983.
- Felsted, Andrea, and Elizabeth Rigby. 2013. "High Street Reels from HMV Crash." *Financial Times*, January 15.
<http://www.ft.com/cms/s/0/fffa9c9c-5f3d-11e2-be51-00144feab49a.html#axzz2M15gigse>.
- Frederick, Rod, Robert Goo, Mary Beth Corrigan, Susan Bartow, and Michele Billingsley. 1996. "Economic Benefits of Urban Runoff Controls." *Urban Sources Section, Assessment and Watershed Protection Division, US Environmental Protection Agency, Washington, DC*.
- Fujiwara, Daniel, Ross Campbell, Great Britain, and Great Britain. 2011. "Valuation Techniques for Social Cost-Benefit Analysis: Stated Preference, Revealed Preference and Subjective Well-being Approaches: a Discussion of the Current Issues". HM Treasury.
- Garrett-Peltier, Heidi. 2011. "Pedestrian and Bicycle Infrastructure: A National Study of Employment Impacts." *Amherst, MA: Political Economy Research Institute*.
http://your.kingcounty.gov/ftp/parks/REGIONALTRAILS/RESEARCH%20STUDIES/PERI_PedBikeEmployment%20Study_June2011.pdf

- Gehl, Jan. 2011. "Life Between Buildings: Using Public Space". Island Press.
<http://books.google.co.uk/books?hl=en&lr=&id=X707aiCq6T8C&oi=fnd&pg=PA3&dq=life+between+buildings&ots=xhYMr5PRxF&sig=31k-vgJ9zO91b4TMMvFboMq2NRw>.
- Genecon. 2010. "Research & Evaluation of Public Realm Schemes."
www.integreatplus.com/sites/default/files/genecon_public_realm_evaluation_sheffield.pdf
- GLA. 2012. "Croydon's Town Centre High Street Improvement Project."
www.london.gov.uk/sites/default/files/08%28b%29%20High%20Streets%20-%20Stage%20%20form.pdf.
- Green, Judith. 2009. "'Walk This Way': Public Health and the Social Organization of Walking." *Social Theory & Health* 7 (1) (February): 20–38.
 doi:10.1057/sth.2008.19.
- Griggs, J., A. Whitworth, R. Walker, D. McLennan, and M. Noble. 2008. "Person or Place-based Policies to Tackle Disadvantage? Not Knowing What Works." *York: Joseph Rowntree Foundation*.
- Hall, Tim, and Iain Robertson. 2001. "Public Art and Urban Regeneration: Advocacy, Claims and Critical Debates."
www.tandfonline.com/doi/full/10.1080/01426390120024457
- Hass-Klau, Carmen. 1993. "A Review of the Evidence from Germany and the UK."
Transport Policy 1 (1): 21–31.
- Ho, Suet Ying. 1999. "Evaluating Urban Regeneration Programmes in Britain Exploring the Potential of the Realist Approach." *Evaluation* 5 (4) (October 1): 422–438. doi:10.1177/135638999400830084.
- Holcomb, Briavel. 1994. "City Make-overs: Marketing the Post-industrial City." *Place Promotion: The Use of Publicity and Marketing to Sell Towns and Regions*: 115–131.
- Imrie, R, and H Thomas. 1993. "The Limits of Property-led Regeneration." *Environment and Planning C: Government and Policy* 11 (1): 87–102.
- Ison, S. 2000. "Local Authority and Academic Attitudes to Urban Road Pricing: a UK Perspective." *Transport Policy* 7 (4): 269–277.
- Jones, Colin. 2010. "The Rise and Fall of the High Street Shop as an Investment Class." *Journal of Property Investment & Finance* 28 (4) (July 13): 275–284. doi:10.1108/14635781011058884.

- Kelly, C.E., M.R. Tight, F.C. Hodgson, and M.W. Page. 2011. "A Comparison of Three Methods for Assessing the Walkability of the Pedestrian Environment." *Journal of Transport Geography* 19 (6) (November): 1500–1508. doi:10.1016/j.jtrangeo.2010.08.001.
- Kumar, Santosh, and William Ross. 2006. "Effects of Pedestrianisation on the Commercial and Retail Areas: Study in Khao San Road, Bangkok." *Splintered Urbanism*. <http://ecoplan.org/library/wt13-1.pdf#page=37>.
- Labadi, S. 2008. "Evaluating the Socio-economic impacts of Selected Regenerated Heritage Sites in Europe". European Cultural Foundation.
- Lees, Loretta. 2008. "Gentrification and Social Mixing: Towards an Inclusive Urban Renaissance?" *Urban Studies* 45 (12) (November 1): 2449–2470. doi:10.1177/0042098008097099.
- Lerner, Steve, and William Poole. 1999. "The Economic Benefits of Parks and Open Space: How Land Conservation Helps Communities Grow Smart and Protect the Bottom Line." <http://trid.trb.org/view.aspx?id=679877>.
- Litman. 2002. "Transportation Cost and Benefit Analysis." *Techniques, Estimates and Implications*, Victoria Transport Policy Institute (www.vtpi.org/tca). <http://www.vtpi.org/tca/tca01.pdf>.
- Litman, Todd Alexander. 2003. "Economic Value of Walkability." *Transportation Research Record: Journal of the Transportation Research Board* 1828 (-1): 3–11.
- Llewelyn Davies. 2003. "Economic Benefits of Good Walking Environments". TfL and Central London Partnership.
- Loftman, Patrick, and Brendan Nevin. 1995. "Prestige Projects and Urban Regeneration in the 1980s and 1990s: a Review of Benefits and Limitations." *Planning Practice and Research* 10 (3–4): 299–316.
- Mason, Phil, Ade Kearns, and Lyndal Bond. 2011. "Neighbourhood Walking and Regeneration in Deprived Communities." *Health & Place* 17 (3) (May): 727–737. doi:10.1016/j.healthplace.2011.01.010.
- McCann, B. 2000. "Driven to Spend". Centre for Neighbourhood Technology.
- The Means. 2012. "The relevance of parking in the success of urban centres", a review for London Councils prepared by Sophie Tyler, Giles Semper, Peter Guest and Ben Fieldhouse

- Monheim, Heiner. 2003. *Better Mobility with Fewer Cars: a New Transport Policy for Europe*. Department of Geography, University of Reading. <http://www.cgi.rdg.ac.uk:8081/web/FILES/geog/GP165.pdf>.
- Montgomery, John. 2004. "Cultural Quarters as Mechanisms for Urban Regeneration. Part 2: a Review of Four Cultural Quarters in the UK, Ireland and Australia." *Planning Practice and Research* 19 (1): 3–31. doi:10.1080/0269745042000246559.
- Newby, Les, Sean Spencer-Wort, and Peter Wiggins. 1992. "Paved with Gold?: A Study of the Economic Impact of Pedestrianisation and Its Relevance to Leicester". *Environ.*
- North, D. J., D. Smallbone, F. Lyon, and G. Potts. 2003. "Business-led Regeneration of Deprived Areas: a Review of the Evidence base.[Research Report 5]."
- NWDA/RENEW Northwest. 2007. "Economic Value of Urban Design Final Report." www.placesmatter.co.uk/webfm_send/23
- . 2009. "Places Matter: The Economic Value of Good Design."
- Parkhurst, Graham. 2003. "Regulating Cars and Buses in Cities: The Case of Pedestrianisation in Oxford." *Economic Affairs* 23 (2): 16–21. doi:10.1111/1468-0270.00410.
- Pivo, Gary, and Jeffrey D. Fisher. 2011. "The Walkability Premium in Commercial Real Estate Investments." *Real Estate Economics* 39 (2): 185–219.
- Portas, M. 2011. "The Portas Review: An Independent Review into the Future of Our High Streets." *Department for Business, Innovation and Skills, London* www.bis.gov.uk/assets/biscore/business-sectors/docs/p/11-1434-portas-review-future-of-high-streets
- Potts, D. 2008. "Assessing the Impact of Regeneration Spending: Lessons from the UK and the Wider World." In *Regeneration and Wellbeing Conference, April, Bradford Centre for International Development, University of Bradford: Bradford*.
- Retail Times. 2013. "Non-food Footfall Records Further Decline in February, Retail Traffic Index Shows." <http://retailtimes.co.uk/non-food-footfall-records-further-decline-in-february-retail-traffic-index-shows/>
- Robertson, Douglas, Ian McIntosh, and James Smyth. 2010. "Neighbourhood Identity: The Path Dependency of Class and Place." *Housing, Theory and Society* 27 (3): 258–273. doi:10.1080/14036090903326429.

- Roger Tym and Partners (2012). "Central Bedfordshire Council Retail Study, draft final report".
[http://www.centralbedfordshire.gov.uk/Images/Central%20Beds%20Final%20Report%202012%20\(2\)_tcm6-39253.pdf](http://www.centralbedfordshire.gov.uk/Images/Central%20Beds%20Final%20Report%202012%20(2)_tcm6-39253.pdf)
- Rousseau, Max. 2009. "Re-imagining the City Centre for the Middle Classes: Regeneration, Gentrification and Symbolic Policies in 'Loser Cities'." *International Journal of Urban and Regional Research* 33 (3): 770–788. doi:10.1111/j.1468-2427.2009.00889.x.
- The Scottish Government. 2013. "National Review of Town Centres Advisory Group Report: Community and Enterprise in Scotland's Town Centres".
www.scotland.gov.uk/Topics/Built-Environment/regeneration/town-centres/review
- Seex, Patricia. 2007. "Business Investment in Deprived Areas: Creating the Conditions." *Journal of Urban Regeneration and Renewal* 1 (2): 119–128.
- Sheldon, R, C Heywood, P Buchanan, D Ubaka,, and C Harrell. 2007. "Valuing Urban Realm – Business Cases for Open Spaces". Paper Presented at the European Transport Conference.
- Sinnett, Danielle, Katie Williams, Kiron Chatterjee, and Nick Cavill. 2011. "Making the Case for Investment in the Walking Environment: A Review of the Evidence."
http://eprints.uwe.ac.uk/15502/1/Making_the_Case_Full_Report.pdf.
- Stevens, Quentin. 2009. "'Broken' Public Spaces in Theory and in Practice." *Town Planning Review* 80 (4) (July 1): 371–392. doi:10.3828/tpr.2009.3.
- Sustrans. 2006. "Shoppers and How They Travel."
www.sustrans.org.uk/assets/files/liveable%20neighbourhoods/Shoppers%20info%20sheet%20-%20LN02.pdf.
- Tolley, R. 2011. "Good for Busine\$\$: The Benefits of Making Streets More Walking and Cycling Friendly, Discussion Paper."
- Transport for London. 2002. "The Benefits of Town Centre Pedestrian and Public Realm Schemes."
- Transport for London. (2010). Draft: "Oxford Circus Diagonal Crossing Monitoring Report". Unpublished.
- Turner, Shane, R. Singh, P. Quinn, and T. Allatt. 2011. *Benefits of New and Improved Pedestrian Facilities: Before and After Studies*. 436.
<http://trid.trb.org/view.aspx?id=1122909>.

- Turok, I. 1992. "Property-led Urban Regeneration: Panacea or Placebo?" *Environment and Planning A* 24 (3): 361–379.
- Van Melik, Rianne, and Philip Lawton. 2011. "The Role of Public Space in Urban Renewal Strategies in Rotterdam and Dublin." *Planning Practice and Research* 26 (5): 513–530. doi:10.1080/02697459.2011.626681.
- Whitehead, Tim. 2002. "Road User Charging and Business Performance: Identifying the Processes of Economic Change." *Transport Policy* 9 (3) (July): 221–240. doi:10.1016/S0967-070X(02)00021-5.
- Whitehead, Tim, David Simmonds, and John Preston. 2006. "The Effect of Urban Quality Improvements on Economic Activity." *Journal of Environmental Management* 80 (1) (July): 1–12. doi:10.1016/j.jenvman.2005.01.029.
- Willis, Kenneth G., Niel A. Powe, and Guy D. Garrod. 2005. "Estimating the Value of Improved Street Lighting: a Factor Analytical Discrete Choice Approach." *Urban Studies* 42 (12): 2289–2303.
- Wooller, Leslie Ann. 2010. "What Are the Economic and Travel Implications of Pedestrianising a Roadway in Takapuna's Shopping Precinct". AUT University. <http://aut.researchgateway.ac.nz/handle/10292/999>.
- Yiu, Chung Yim. 2011. "The Impact of a Pedestrianisation Scheme on Retail Rent—an Empirical Study in Hong Kong." *Journal of Place Management and Development* 4 (3): 1–1.

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Living Streets is the national charity that stands up for pedestrians. With our supporters we work to create safe, attractive and enjoyable streets, where people want to walk.

