



BROOMHILL TRAVEL CORRIDOR

PLANNING STRATEGY

A strategic analysis and vision with emphasis on the mitigation of air pollution and the enhancement of sustainable transport provision

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3rd June 2014

CONTENTS

1. INTRODUCTION	1
Purpose of the document.....	1.1
Site location.....	1.2
2. SITE CONTEXT AND SUSTAINABILITY APPRAISAL	2
Historical context.....	2.1
Transportation analysis.....	2.2
Air pollution issues.....	2.3
The built environment, land-use and housing density.....	2.4
People and social equity.....	2.5
Urban environmental performance.....	2.6
3. CRITICAL POLICY REVIEW	3
National Planning Policy Framework.....	3.1
Sheffield City Region Travel Plan.....	3.2
Sheffield Green and Open Space Strategy.....	3.3
4. VISION AND STRATEGY	4
Vision.....	4.1
Strategic themes and outcomes.....	4.2
20 year strategic plan.....	4.3
5. COMMUNITY PARTICIPATION	5
6. APPENDICES	6
Glossary.....	6.1
Bibliography.....	6.2
Figures.....	6.3

Cover page, figure 1: Google Earth, 2008

1.1 PURPOSE OF THE DOCUMENT

The purpose of this document is to form a landscape planning strategy for the future of the transport corridor between Ranmoor, in the suburbs of Sheffield and the University of Sheffield campus. The primary concern of the strategy is to mitigate against air pollution, which currently exceeds EU limits, through reducing traffic congestion and enhancing the walkability of the route.

The contents of this document will demonstrate:

1. a broad understanding of the context and needs of the site underpinned by historical knowledge
2. a measure of existing sustainable practice on which to build
3. strategies formed within a framework of relevant policy
4. opportunities for simplified traffic movement and improved pedestrian experience
5. aspirations for an attractive, green open streetscape

A 20 year strategic plan will convey how this vision can be implemented and its outcomes achieved.

1.2 SITE LOCATION

This strategy relates to the travel corridor in the western suburbs of Sheffield in the north of England.

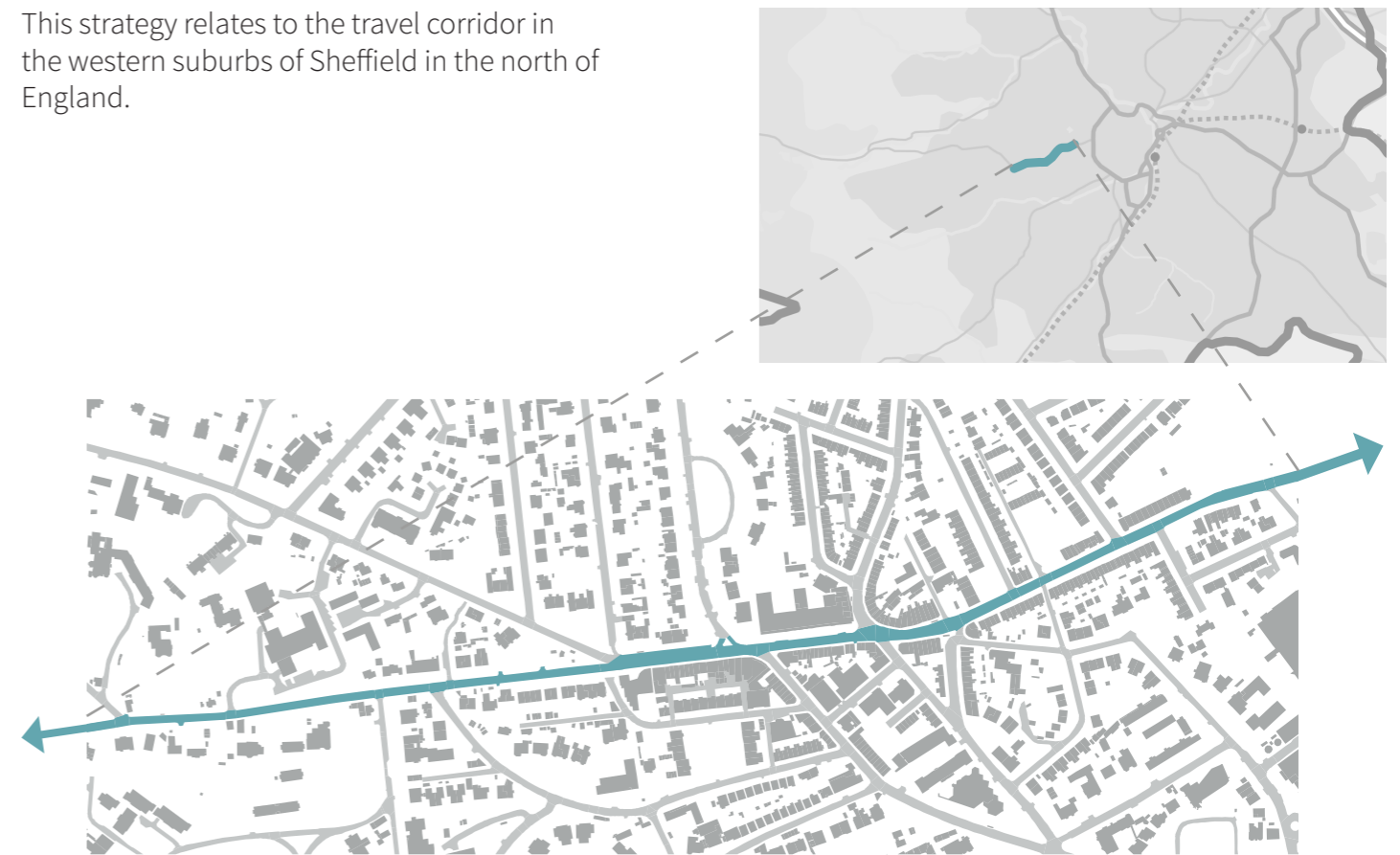


Figure 2: Mapping data from Ordnance Survey, 2012

2.1 HISTORICAL CONTEXT

In keeping with many other settlements, Broomhill grew from the development of a turnpike road to Glossop in 1821 making Manchester more accessible for trade (Buckley, 1948). To this day Broomhill remains an arterial route connecting Glossop and the suburbs of Sheffield to the heart of the city. As Sheffield's industry developed wealthy owners built mansions above the valleys, terraced houses followed and it became an affluent area amidst tree lined avenues. According to poet Sir John Betjeman it was 'the prettiest suburb in England' (Howse, 2012).

“the prettiest suburb in England”

The local community of Broomhill have been actively involved in protecting and enhancing their neighbourhood since the early 1970's through the form of an action group.

The first campaign of the group successfully prevented the demolition of several historic buildings to make way for new roads and led to the designation of Sheffield's first conservation area (Broomhill Action Neighbourhood Group, 2005). The status was given, as many of the buildings and spaces in Broomhill exhibit special architectural features. The act ensures that new developments or alterations to the townscape will require additional planning appraisals to safeguard its appearance (HMSO, 1990). Whilst this legislation protects Broomhill from undesirable development it may impede well considered changes to the urban form to mitigate against current and future challenges, such as pollution or the effects of climate change.



Figure 3: In 1904 a tramway was constructed to connect the suburbs to the centre of the city. It was later removed due to the rise of the motor vehicle (Picture Sheffield, 2008)

The study area includes shops and public houses which have been present in some form since the early 1830's. In the 1960's the purpose built Broomhill District Centre was built, containing shops and a rooftop car park. Houses line the travel corridor, many with sizeable gardens containing mature trees. More recently the area has become an enclave for students studying at the University of Sheffield. Many of the large Victorian houses along the Fulwood Road have been converted into student accommodation whilst the university has built student villages to house nearly 5000 students, significantly changing the demographic of the area. Other large houses, over the years, have been developed as independent schools and for use by the NHS and university.



Figure 5: Historic maps confirm that the area has been densely populated since before 1890, with limited publicly accessible green space and the majority of land was privately owned (Landmark Information Group, 1890)

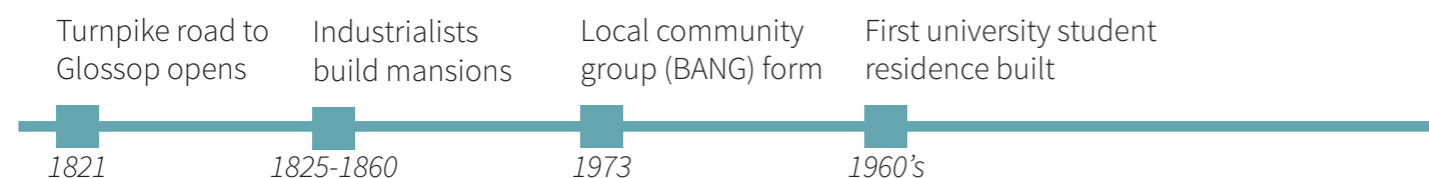


Figure 4: The travel corridor developed as trade links grew between Sheffield and other major industrial cities

2.2 TRANSPORT ANALYSIS

Transport is the lifeblood of human settlements. For decades in order to promote continued economic growth, there has been a strong tendency to invest in transport infrastructure, particularly for vehicles. The study area has been affected by this behaviour on a range of scales. At a regional level, the Fulwood Road and Whitham Road are part of the A57 stretching as far as Worksop in the east and Liverpool in the west, whilst locally connecting the western suburbs of Sheffield to the city centre.



Figure 6. Pedestrians, sharing the car oriented corridor on 2m footways alongside the road are present in proportionally even greater numbers (Marsh, 2014)

According to the 2012 University of Sheffield travel survey report, 92% of students living in university owned accommodation walk to campus along the corridor, which equates to an approximate footfall of over 4000 per day during the week from students alone.

The 8m wide route is unarguably dominated by vehicular traffic; at peak times it is operating at 88% of its theoretical capacity (Edwards, 2007). Several junctions and pedestrian crossings cause many stops and starts producing an erratic traffic flow, congestion and pollution caused by idling.

“unarguably dominated by vehicular traffic; at peak times it is operating at 88% capacity”

Whilst it may be expected in an area of high usage, there have been 27 personal injury accidents along the route within the past 5 years including 6 serious injuries (Edwards, 2007). The majority of these incidents were between pedestrians crossing roads and cars; these statistics highlight the need for greater interventions - a number of puffin pedestrian crossings have been installed in recent years.



Figure 7. Reported accidents from 1 October 2006 to 1 October 2011 (data from Edwards, p.20, 2007)

The public transport provision, provided by buses, is accessible and affordable. Two bus operators run services along the route, stops are located at intervals and during working hours over 18 buses pass through the corridor. The routes are currently radial services to the city centre, there are no orbital routes thereby increasing dependence on a car for some journeys.



Figure 8. Real-time displays at key locations (such as the Broomhill District Centre) and smartphone apps reinforce the convenience of public transport.

There are no marked cycle paths and whilst the roads are of a reasonable standard the number of cyclists is low. Opportunities to park and lock bikes along the route are present yet there is no secure solution where bikes are protected from theft and rain.

“the coalition government has specific targets to increase the number of short journeys, under 5 miles or less, made by walking, cycling or public transport”

Department for Transport, 2011

At peak commuting times, traffic levels are increased by a number of independent schools along the Fulwood Road. The large catchment of these schools means many children arrive by car, some are dropped off on the road causing greater queues.

Sheffield City Council run a green parking scheme that rewards electric and hybrid car users with free parking throughout the city, however this specifically excludes Broomhill. Broomhill has been trialling a scheme which offers promotions to those who travel to the shops by car and have used pay and display parking. Whilst it appears the aim of the scheme is to increase footfall to Broomhill businesses it does appear to favour those with cars which opposes the NPPF guidance of walking to local facilities.

The majority of trips along the corridor appear to be one person per car. Local institutions such as the university and hospitals have organised car sharing websites in order to increase car occupancy. The University of Sheffield Travel Plan (2012) suggests that take up of this scheme is limited and more needs to be done to increase awareness of the benefits of car sharing.

Upon analysis of the route and its users it becomes apparent that the travel corridor prioritises vehicular traffic and is not attempting to change the status quo. This opposes the guidance set out in the National Planning Policy Framework (NPPF) stating that transport systems ‘need to be balanced in favour of sustainable modes of transport’ (p.9, 2012). It is alarming to observe little action from Sheffield City Council on encouraging reduced reliance on cars for short journeys considering how close to capacity the road is and the high levels of pollution present.

2.3 AIR POLLUTION ISSUES

Air quality, both nationally and locally is improving, however in busy urban locations there are hotspots where pollution remains static or is even getting worse. The study area, including Broomhill, currently breaches National and European thresholds for air quality and fines will be imposed if targets are not reached by 2015. An air quality action plan produced by Sheffield City Council (2012) to monitor pollution suggests that nitrogen dioxide levels along the A57 travel corridor are so high, that without major intervention, the EU objectives are unlikely to be achieved until 2020.

“nitrogen dioxide levels are so high, that without major intervention, the EU objectives are unlikely to be achieved until 2020”

The cost of air pollution to the city, according to evidence given to the Environment Select Committee (HMSO, 2010), is £160 million a year due to lost working days. According to the Committee on the Medical Effects of Air Pollution (2010) 15-30% of new asthma cases amongst children can be attributed to living near to main roads. Accompanying the direct effects, the pollution has a wider impact on climate change as it combines with other atmospheric gases to form ozone.

“The cost benefit is clear; what we need now is the political will to make this a priority and to commit the resources to address it now so that we can reap the benefits of improved health”

Environment Select Committee, 2010

Both Sheffield City Council and government agencies are working to understand the issues and research potential solutions. DEFRA have funded feasibility studies to assess the possibility of introducing a low emission zone (LEZ) as part of a suite of measures to improve air quality and public health in Sheffield. Whilst LEZ's have the potential to improve air quality, a combination of implementation costs and the economic impact for local businesses means more research is necessary.

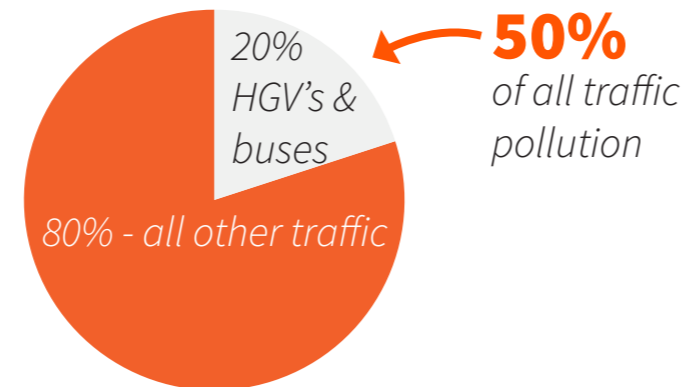


Figure 9. Large vehicles produce the greatest proportion of nitrogen oxide (Broomhill Forum, 2012)

Bus operator, Stagecoach, has introduced over 40 diesel-electric hybrid buses on the 120 and 52 routes however the primary bus operator within the study area, First Bus Group still uses standard buses (Broomhill Forum, 2012).

2.4 THE BUILT ENVIRONMENT, LAND-USE AND HOUSING DENSITY

The surrounding built environment responds to the linear form of the travel corridor. The low rise buildings are oriented both towards the road and along perpendicular side streets. In order to develop a relevant, sustainable vision it is important to understand the nature of the built environment.



Figure 10. The Broomhill District Shopping Centre is clustered in the heart of the community, less than ten minutes from the perimeter of the study area.

Land surrounding the shops and along the corridor is primarily residential; the neighbourhood comprises Victorian and Edwardian buildings originally constructed as family houses, yet many have been converted into student accommodation. Housing density varies and there is a mix of both detached and terraced developments. Sheffield City Council (2007b) support the NPPF that there should be a wide range of housing available yet believe that the character of the area should be the main factor guiding density of new developments. Lack of available land means that this principle has not been tested. The topography of the land is relatively flat compared to neighbouring areas allowing easy movement on foot and by bicycle.

The area can be described as a leafy suburb, however it is less green on the Fulwood Road, especially near to the central shopping area. There are many employment opportunities for those in the education and medical professions. The University of Sheffield, many independent schools as well as state schools and several hospitals are located within the boundaries of the study area. There is a comparative lack of less skilled jobs available compared to other areas of the city, however commuting is easily possible.

There are numerous independent and state schools, both primary and secondary in the area accompanied by the University of Sheffield. There are several hospitals with internationally recognised specialisms. Sport Sheffield, the university sports complex is accessible to the public, although membership fees apply. It is possible to walk into the Peaks or the city centre within 40-60 minutes, providing a multitude of recreational/leisure pursuits. Broomhill has a number of shops which stock many essential products and large superstores are easily accessible via cars and public transport.

2.5 PEOPLE AND SOCIAL EQUITY

The demographic of the Broomhill Ward, in which the travel corridor is sited, changes considerably depending on the time of year. During term time over 43% of the population are full time students and the proportion of those under 15 and over 65 is extremely low. During summer months the area exhibits an affluent, middle-aged demographic that is not very ethnically diverse. Housing is typically expensive, with the exception of student accommodation.

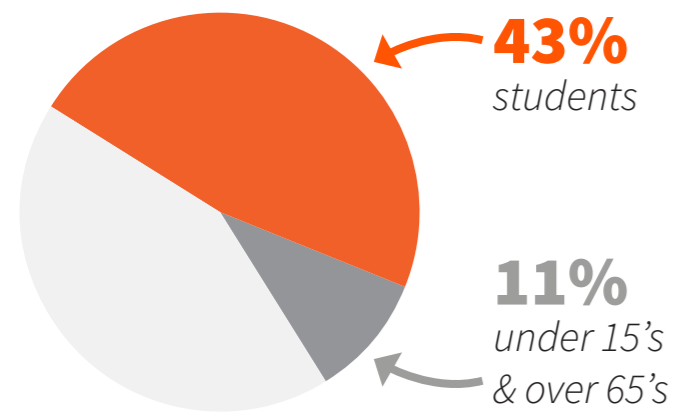


Figure 11. Data suggests that the student population in Broomhill is significant (ONS, 2011)

It has not been possible to locate any initiatives with the aim of promoting social equity within the Broomhill community however, as mentioned in 1.1 there are a number of community groups working together for the enhancement of the area. The University of Sheffield hosts a number of community outreach events each year with the aim of widening participation at undergraduate level especially amongst local people.

The site is an attractive location, drawing a wealthy graduate demographic. It holds conservation area status; the designation is derived from several features including 19th century listed buildings, prevalent use of local stone, widespread mature tree coverage and remnants of historic floorscape.



Figure 12. Local details help to give Broomhill a distinctive identity, including cast iron sewer gas lamps, stone detailing and boundary walls.

2.6 URBAN ENVIRONMENTAL PERFORMANCE

The network of green spaces, commonly referred to as multi functional urban green infrastructure, surrounding the travel corridor is poor. Due to the dense urban fabric of the area, whilst many of the houses adjacent to the route have sizeable gardens with mature trees, there are no civic spaces and only a limited number of street trees and grass verges in the public realm. There are several large parks within walking distance, such as Weston Park to the east of Broomhill and the Botanical Gardens to the south. There is massive potential to develop the greenspace network, natural elements must be woven through the neighbourhood around the travel corridor to deliver maximum benefits, including improvements to resilience to extreme weather events, public health and mental well-being and ecosystems services (CIWEM, 2010).

“natural elements must be woven through the neighbourhood around the travel corridor to deliver maximum benefits”



Figure 13. The only public green space alongside the travel corridor is heavily restricted in its uses

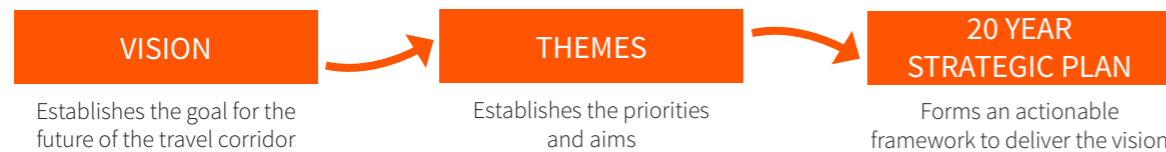
Historically water management has not been an issue in this part of Sheffield as there is no nearby watercourse. Yet the near absence of permeable surfaces in combination with steep topography of side roads along the route means that during future storm events existing drainage system may reach capacity.



Figure 14. The future of the green network around the corridor is bleak, whilst it appears to be very green, there are few public open spaces and many of the mature trees are reaching the end of their lives with nothing to replace them (Google, 2008)

4 VISION AND STRATEGY

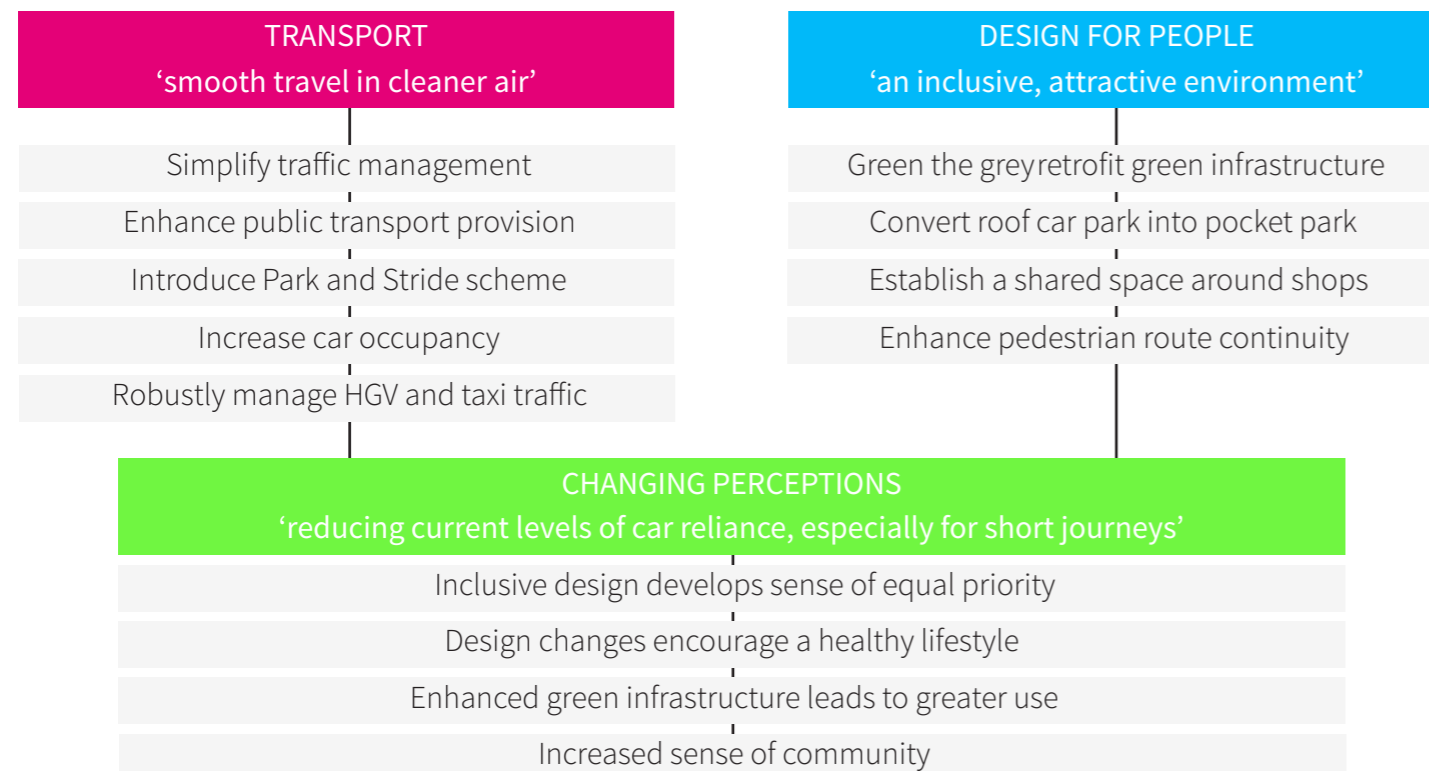
The vision and strategies provide a framework to revitalise the travel corridor to face the challenges of the 21st century. To deliver the vision, key themes have been established, with specific priorities and a 20 year plan ensures that the delivery is realistic and achievable. The vision has been strengthened through direct partnership with the local community and stakeholders to ensure that the improvements will be relevant and long-lasting.



4.1 VISION

The travel corridor has a rich history yet currently faces several challenges. The vision is for an exceptional green and active route where traffic, people and local businesses are able to thrive with a strong sense of community and well-being.

4.2 STRATEGIC THEMES



4.2.1 TRANSPORT

A. SIMPLIFY TRAFFIC MANAGEMENT

The centre of Broomhill is a major crossroads in the city's suburbs and traffic management has been a significant issue for many years. Past initiatives have aimed to reduce the problem through a series of traffic signals however these measures have increased queue times and resulted in a significant rise in emissions.

A minimalist approach needs to be adopted to produce a slow moving but continuous traffic flow.



Figure 15. Existing traffic signals are problematic for both drivers & pedestrians (Broomhill Forum, 2012)

SHARED SPACE IN HEART OF BROOMHILL

This design approach seeks to change the way that the street operates by reducing the dominance of vehicular traffic

- Less formal indication of how drivers are expected to behave means progress is dependant on interpreting the behaviour of pedestrians, cyclists and other motorists
- It produces lower speeds but a constant flow

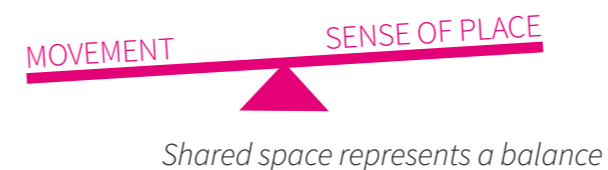


Figure 17. An example of how a courtesy crossing could be implemented at Moor Oaks Road, a busy side street along the travel corridor (Allianz, 2011)

CASE STUDY - POYNTON, CHESHIRE



Figure 16. The historic town faced similar traffic problems to Broomhill until it removed signal controlled junctions and implemented a shared space scheme. Free flowing traffic now interacts socially with pedestrians in an attractive, open streetscape and trading activity in local shops has doubled (Grimsby Telegraph, 2013)

COURTESY CROSSINGS AT JUNCTIONS

To ensure continuity in pedestrian movement at junctions the road surface will resemble the material and level of the footway

- It indicates to drivers that pedestrians have priority and they must remain vigilant
- The crossings work by pedestrians and motorists making eye contact with each other and drivers giving way to people wanting to cross

B. ENHANCE PUBLIC TRANSPORT PROVISION

Buses will remain the primary form of public transport within the travel corridor.

QUICKER BOARDING AND LESS IDLING

It is recommended that bus operators consider a joint venture to introduce an electronic ticketing solution

- A contactless smartcard would reduce boarding times, lessening congestion and pollution
- The convenience of the system has potential to encourage greater adoption of public transport
- The solution could allow for more innovative ticket offers that reward frequent users

CONTINUED INVESTMENT IN HYBRID BUSES

In the effort to reduce nitrogen dioxide levels, bus operators should continue to replace their fleets with hybrid buses

“ it is estimated that every £1 spent on soft measures could bring £10 of benefits in reduced congestion

Anable et al, 2004

C. INTRODUCE PARK AND STRIDE SCHEMES

During rush hour, additional congestion is caused by parents dropping children at school. Due to the large catchment area of independent schools, often walking or public transport is not a viable option. The schemes encourage parents to find a suitable parking spot away from the school gate and walk the rest of the way.



Figure 18. The initiative adds physical activity to the school journey and reduces congestion in the travel corridor around the school

D. INCREASE CAR OCCUPANCY

The majority of vehicles using the travel corridor appear to be one person per car. To reduce the volume of traffic and cut pollution, car sharing schemes will be prominently advertised.

The University of Sheffield and NHS Hospitals have schemes operating, yet take up is currently low. It is recommended that Sheffield City Council consider existing online platforms to facilitate the schemes and connect individuals.

E. ROBUSTLY MANAGE HGV AND TAXI TRAFFIC

HGV's and some taxis produce the highest proportion of pollution amongst all vehicle classes. To reduce the amount of high emission vehicles in the travel corridor, existing feasibility studies for a low emission zone should be accelerated.

At a national level, the reclassification of the A57 to a B road should be considered. This will reduce the number of HGV's being guided through the corridor via satellite navigation.

4.2.2 DESIGN FOR PEOPLE

A. GREEN THE GREY - RETROFIT GREEN INFRASTRUCTURE

The green space network along the travel corridor is currently very poor. The strategy aims to harness nature to provide a multitude of benefits, to both the local community and the environment.

PROPOSED GREEN NETWORK



Figure 19. A combination of pocket parks, green walls and street trees will complement the vegetation within gardens along the route (Ordnance Survey, 2012)

CASE STUDY - AUGUSTENBORG, MALMÖ, SWEDEN

Many locations around the world have already developed sustainable neighbourhoods that promote walking, cycling and public transport. Augustenborg in Sweden focuses on safety and comfort to encourage the community to adopt sustainable transport.

- Residents take a leading role in the design and implementation of the project
- Investment in the public realm, has resulted in only 20% of residents owning a car
- Measures have been used to reduce through-traffic, such as a transit system which connects the Augustenborg to surrounding neighbourhoods.



Figure 20. Walking routes are green and attractive (ICLEI Europe, 2006)



Figure 21. A new pocket park will be accessible to all whilst a shared space scheme will enhance the public realm

4.2.2 DESIGN FOR PEOPLE (continued)

B. CONVERT ROOF CAR PARK INTO POCKET PARK

The dense urban form of the travel corridor does not offer potential for new green spaces, therefore more innovative solutions must be considered. The Broomhill District Centre has a roof top car park which could be converted into a pocket park, right at the centre of the community.

- The new elevated space would improve air quality, where it is poorest, whilst providing a fantastic local resource, a social space at the heart of the community
- The significant reduction in parking provision will encourage the community to walk to local facilities along enhanced, safe pedestrian routes.
- The roof is already reinforced to sustain the weight of vehicles and has stair and lift access from street level
- Sheffield City Council promotes the use of green roofs and see their potential for recreation as well as their intrinsic environmental value.

C. ESTABLISH A SHARED SPACE SCHEME AT THE CENTRE OF THE NEIGHBOURHOOD

D. ENHANCE PEDESTRIAN CONTINUITY

A shared space scheme would build upon the local sense of identity and define the district centre as a forward thinking, attractive, walkable neighbourhood.

- The area would not be free from traffic, it cannot be if it is to function, but the design would adapt the experience for road users
- The materials used to adapt the streets need not be costly but would reflect and be sensitive to the historic character of the area
- The open, inclusive form would allow the space to be used flexibly for a wide range of activities, including occasional street markets
- The placement of street furniture, tonal contrasts in surfacing and trees would act as structural elements ensuring that the space operates smoothly and all users have sufficient space

4.2.3 CHANGING PERCEPTIONS

The outcomes of the strategic themes: ‘transport’ and ‘designing for people’ will combine to change perceptions, reducing current levels of car reliance, especially in relation to short journeys.

“The environmental effects of transport are of greater public concern than traffic congestion”

Several reports and surveys have noted a high level of public concern about the effects of car travel on the environment and found popular support for a reduction in car use. A sizeable proportion of the public agree that many short journeys, under two miles, could be made just as easily by an alternative mode of transport, especially if the environment is appealing and well designed (NatCen, 2013).

A. INCLUSIVE DESIGN DEVELOPS SENSE OF EQUAL PRIORITY

The alterations to the streetscape will be deliberately designed to be inclusive and aim to help drivers and pedestrians to become more aware of each other. All users of the space will feel equal, regardless of their mode of transport.

B. DESIGN CHANGES ENCOURAGE A HEALTHY LIFESTYLE

The adaptations will make active methods of transport, such as walking and cycling, a more attractive, viable option.

- Safer streets, with slower traffic, will encourage many user groups to consider walking, for example more parents may allow their children to walk to school.
- The inclusive design, with wide flat surfaces, will allow currently marginalised members of the community, such as wheelchair users or the elderly, to enjoy their neighbourhood, combatting possible isolation.
- The new pocket park will include a small trim trail providing a free exercising opportunity in the heart of the community.
- In combination with other measures, numerous trees will be planted along the route, improving air quality.

C. ENHANCED GREEN INFRASTRUCTURE LEADS TO GREATER USE

A pocket park, green walls and numerous trees will be installed to improve air quality, provide visual amenity and a sense of relaxation in the midst of the busy urban environment.

D. INCREASED SENSE OF COMMUNITY

The remodelling of the travel corridor will develop social awareness within the community and will encourage greater social interaction.

Local identity and a sense of attachment to the area will be achieved through the removal of generic street clutter, including the signs, road markings and signals, combined with the inclusion of sensitively chosen materials that reflect local character.

A larger and enhanced public realm will encourage incidental meetings and build neighbourliness.

4.3 20 YEAR STRATEGIC PLAN

The delivery of the vision will be phased in over a 20 year period, as some priorities will require substantial funding and long planning processes. The strategic plan ensures that focus is maintained throughout. Priorities have been separated into several actionable objectives, each to be achieved within a specific timeframe.

TRANSPORT

Priority	Action	Target Complete	Lead Partners
Simplify traffic management	Introduce courtesy crossings at key junctions along the pedestrian route	2017	SCC, Amey, Planning, English Heritage, Community Assemblies
	Reduce number of traffic signals and signage	2017	
	Implement a 'shared space' scheme in Broomhill	2020+	
Enhance public transport provision	Improve energy efficiency standards for buses and taxis	2015+	SYPTE, Stagecoach, First Bus Group, SCC
	Work with bus operators to introduce electronic ticketing	2017	
	Enhance consistency to prevent 'bunching' of buses along 120 route	2015	
Introduce Park and Stride schemes	Identify suitable parking locations approx. 10 minutes from schools	2014	Local schools, SCC Road Safety Team, SCC Parking Department
	Arrange schemes for free parking at school drop off and pick up times	2015	
	Promote scheme to children and parents - involve pupils in process	2015	
Increase car occupancy	Adopt online car sharing platform to connect drivers	2015	SCC, University of Sheffield, NHS, Sheffield Chambers of Commerce
	Assess feasibility of rewarding car sharers	2015	
	Prominently advertise the platform in city centre and organisations	2016	
Robustly manage HGV and taxi traffic	Liaise with haulage companies to agree suitable alternative routes	2015	Department for Transport, SCC, Haulage companies in South Yorkshire
	Reclassify sections of the A57 as a B road	2018	
	Implement a low emission zone along the travel corridor	2018	

DESIGN FOR PEOPLE

Priority	Action	Target Complete	Lead Partners
Green the grey - retrofit green infrastructure	Identify potential sites along the corridor to enhance green provision	2014	Sheffield Local Biodiversity Action Plan, South Yorkshire Forest Partnership, Broomhill Forum, SCC, Planning, Amey
	Install additional trees, green walls and pocket parks	2016+	
	Promote the role of green infrastructure	2016	
Convert roof car park into pocket park	Discuss opportunity and economic benefits with landowner	2014	Land Securities, Sheffield Green Roof Centre, Chamber of Commerce, South Yorkshire Forest Partnership, SCC, Planning
	Arrange a public engagement event to identify local needs and desires	2015	
	Undertake design exercise to remodel the roof space	2018+	
Improve public realm and pedestrian connectivity	Undertake consultation process to understand current issues	2014	SCC, Amey, Planning, English Heritage, Community Assemblies, Department for Transport
	Remove unnecessary street clutter	2015	
	Enhance public realm along route, using local materials	2016+	

CHANGING PERCEPTIONS

Priority	Action	Target Complete	Lead Partners
Inclusive design develops a sense of equal priority	Liaise with disability and minority groups during public realm design	2014	Local schools, SCC Road Safety Team, Disability and Minority Groups
	Organise fun events with the aim of increasing community awareness	2015	
	Offer road safety training to schools and workplaces	2015	
Design changes encourage a healthy life	Define standards for the quality and management of spaces along route	2015	NHS Sheffield, SCC, Amey
	Work with NHS Sheffield to promote active forms of transport	2015	
Enhanced green infrastructure leads to greater use and increased sense of community	Liaise with SYFP and community groups to hold events in new spaces	2015+	South Yorkshire Forest Partnership (SYFP), SCC, Broomhill Forum

5. COMMUNITY PARTICIPATION

The travel corridor is used by thousands of people each day, therefore it is vital that the community are involved from the early stages of the remodelling and at regular intervals through the design process. The design will be strengthened through involving as many stakeholders as possible; local knowledge and a wide range of viewpoints will ensure that improvements are sustainable in the long term.

PROPOSED PARTICIPATION PROCESS

The process will be hosted as a joint collaboration with the Broomhill Forum, a group which is already known and trusted by the local community.

Whilst the budget attached to the consultation is not limitless, due to the scale of the project and the impact it will have on the community, substantial resources are available to support the process.

To facilitate the widest possible participation a number of mechanisms will be utilised.

The widest possible variety of stakeholders will be included in the consultation: those representing particular interest bodies such as the Environment Agency, English Heritage, DEFRA and local community stakeholders such as the Broomhill Forum, Chamber of Commerce, local businesses, minority groups, children/youth groups and the general public.

STAGE ONE

- Social media and posters within the neighbourhood will be used to initially engage the local community in the re-visioning process.
- To build momentum behind the consultation, an initial web-based engagement process will enable the community to see the proposed vision and share their views. Information and a comments box will also be available in the local library, along with computer access.



Figure 22. The consultation process targets all age groups (WNE, 2012)

STAGE TWO

- A community activity will be held outdoors at the shopping centre on a Saturday afternoon, when no other major external events are scheduled (such as football). If possible, the event should be held as part of a wider celebration of the neighbourhood, such as the Broomhill Festival which is held annually in the summer.
- A series of models and simple jargon free graphics will explain the basis of the proposed vision, which will be explored further in small groups.
- To make the process fun, accessible and engaging, participants will be issued with post-it notes and split into groups which include a facilitator, who will help to explore issues including which elements of the vision they like and dislike and how they would adapt them. This will also provide an opportunity to ask questions and comment in a smaller group environment.
- Responses will then be put on a large map of the travel corridor and participants will reconvene to discuss the findings and develop a better understanding of each others needs and opinions as well as feeling listened to.
- Food and drink will be served throughout the event to encourage participation and put people at ease.
- Events for children will run concurrently both to hear their opinions and allow their parents to fully engage with the process.
- A separate event will be held for local businesses and other stakeholder groups, such as utility companies.

STAGE THREE

- Responses from the community will be analysed and incorporated into the vision in a transparent manner.
- A series of follow up activities will be organised to refine the vision further and all information will be regularly shared on the online platform and at the local library.

6. APPENDIX

6.1 GLOSSARY

Density. *n.* The number of people inhabiting an urban area. Usually measured in population/hectare.

Ecosystem services. *n.* Services provided by the natural environment that benefit people.

Green infrastructure. *n.* The network of green spaces and water spaces required to support biodiversity, mitigate and adapt to climate change, and create beneficial human habitat within urban development.

Human scale. *n.* The use of elements and massing within a site that relate well to humans and the way they use the space.

Legibility. *n.* The ability of a place to be understood or navigated, often called 'reading the landscape'.

Neighbourhood. *n.* An area within a town or city that often has a distinctive physical and social character.

Permeability. *n.* The degree to which an area has routes through it.

Public realm. *n.* Any landscape area that is free for the use of all people at all times.

Sense of place. *n.* The quality which makes a street somewhere to visit and spend time in, rather than to pass through

Shared space. *n.* The theory and practice of removing the traditional separations, such as kerbs, barriers, and painted lines between motor vehicles and pedestrians to encourage mutual responsibility for enhanced safety.

Topography. *n.* The rise and fall of the land and the natural and artificial features created by soil, rocks and buildings.

Visual amenity. *n.* Attractive qualities which are seen.

6.2 BIBLIOGRAPHY

Anable, I., Kirkbride, A., Sloman, L., Newson, C., Goodwin, P. (2004) *Smarter Choices - Changing the way we travel. Case Study Reports.* Available from: <http://www.dft.gov.uk/pgr/sustainable/smarterchoices/casestudy/5765> [Accessed 23rd May 2014].

Barton, H., Davis, G. and Guise, R. (1995) *Sustainable Settlements: A Guide For Planners, Designers and Developers.* Bristol, University of West England and The Local Government Management Board.

Broomhill Action Neighbourhood Group (2005) *About BANG.* [online] Available from: http://www.broomhillonline.org.uk/start_here/what%20we%20do.html [Accessed 23rd May 2014].

Broomhill Forum (2012) *Broomhill Air Quality Symposium Report.* [online]. Available from: <http://www.broomhillonline.org.uk/Bangdocs/Air%20Quality%20Symposium%20Report.pdf> [Accessed 27th May 2014].

Buckley, S. (1948) *Thomas Telford : canals, roads, bridges.* London, Harrap.

CIWEM (2010) *Multi-Functional Urban Green Infrastructure - A briefing report* [online]. Available from: <http://www.ciwem.org/FileGet.ashx?id=1875&library=Public%20Access> [Accessed 31 May 2014].

Committee on the medical effects of air pollution (2010). *The Mortality Effects of Long-Term Exposure to Particulate Air Pollution in the United Kingdom.* [online]. Available from: <http://www.comeap.org.uk/images/stories/Documents/Reports/comeap%20the%20mortality%20effects%20of%20long-term%20exposure%20to%20particulate%20air%20pollution%20in%20the%20uk%202010.pdf> [Accessed 27th May 2014].

Communities and Local Government (2012) *National Planning Policy Framework.* [online]. Accessed from: <https://www.gov.uk/government/publications/national-planning-policy-framework--2> [Accessed 23rd May 2014].

Department for Transport (2011) *Shared Space* [online]. Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/3873/ltn-1-11.pdf [Accessed 1st June 2014].

Edwards, R. (2007) *Transport Assessment.* [online]. Available from: http://publicaccess.sheffield.gov.uk/online-applications/files/D2549DAC7DB95B24767C78ECC478A2BC/pdf/07_01380_FUL-TRANSPORT_ASSESSMENT__PART_1_-186000.pdf [Accessed 27th May 2014].

HMSO (1990) *Planning (Listed Buildings and Conservation Areas) Act 1990.* [online]. Available from: http://www.legislation.gov.uk/ukpga/1990/9/pdfs/ukpga_19900009_en.pdf [Accessed 23rd May 2014].

HMSO (2010) *Environment Select Committee 2010* [online]. Available from: <http://www.parliament.uk/business/committees/committees-a-z/commons-select/environmental-audit-committee/inquiries/parliament-2010/air-quality-a-follow-up-report/> [Accessed 27th May 2014].

Howse, C. (2012) *Lovely Bits of Old England: John Betjeman at The Telegraph.* London, Aurum Press Ltd.

Leslie, E., Saelens, B., Frank, L., Owena, N., Baumand, A., Coffee, N., Hugoe, G. (2005) *Residents' perceptions of walkability attributes in objectively different neighbourhoods: a pilot study.* Health & Place, 11, pp. 227 -326. doi: 10.1016/j.healthplace.2004.05.005 [Accessed 1st June 2014].

6. APPENDIX

6.2 BIBLIOGRAPHY (continued)

Living streets (2009) *Park and Stride Pack*. [online]. Available from: <http://www.livingstreets.org.uk/sites/default/files/content/library/WalktoSchoolresources/Park%20and%20Stride%20Pack.pdf> [Accessed 31st May 2014].

Sheffield City Council (2007a) *Broomhill Conservation Area Appraisal*. [online]. Available from: <https://www.sheffield.gov.uk/planning-and-city-development/urban-design--conservation/conservation/conservationareas/broomhill.html> [Accessed 23rd May 2014].

Sheffield City Council (2007b) *PH10 Density of New Housing Developments* [online]. Available from: http://sheffield-consult.limehouse.co.uk/portal/sdfcp/cppo/city_policies_-_preferred_options?pointId=section_243010282625&do=view [Accessed 28th June 2014].

Sheffield City Council (2007c) *PUD8 Green Roofs*. [online]. Available from: http://sheffield-consult.limehouse.co.uk/portal/sdfcp/cppo/city_policies_-_preferred_options?pointId=section_2430112118890 [Accessed 1st June 2014].

Sheffield City Council (2010) *Green and Open Space Strategy 2010-2030*. [online]. Available from: <https://www.sheffield.gov.uk/dms/scc/management/corporate-communications/documents/leisure-culture/parks-gardens/strategy/Green-and-Open-Space-Strategy-2010---2030--pdf--4-05mb-.pdf> [Accessed 23rd May 2014].

Sheffield City Council (2011a) *Corporate Plan 2011-14 - Standing up for Sheffield*. [online]. Available from: <https://www.sheffield.gov.uk/your-city-council/policy--performance/what-we-want-to-achieve/corporate-plan.html> [Accessed 23rd May 2014].

Sheffield City Council (2011b) *Tapton - Section 106 Agreement*. [online]. Available from: http://publicaccess.sheffield.gov.uk/online-applications/files/DC74F2EC10182EFF6C6560F4716B6B12/pdf/07_01380_FUL-SECTION_106_AGREEMENT-514068.pdf [Accessed 27th May 2014].

Sheffield City Council (2012) *Air Quality Action Plan*. [online]. Available from: <https://www.sheffield.gov.uk/dms/scc/management/corporate-communications/documents/environment/pollution/air/Air-Quality-Action-Plan-2015-Cabinet-Report-08-June-2012/Air%20Quality%20Action%20Plan%202015.pdf> [Accessed 27th May 2014].

Sheffield City Council (2013) *Broomhill Ward Plan 2013-14*. [online]. Available from: <http://centralsheffield.wordpress.com/category/ward-plans/> [Accessed 23rd May 2014].

Sheffield First Partnership (2013) *State of Sheffield 2013*. [online]. Available from: <https://www.sheffieldfirst.com/dms/sf/management/corporate-communications/documents/SFP/Key-Documents/State-of-Sheffield-2013/State%20of%20Sheffield%202013.pdf> [Accessed 27th May 2014].

Sheffield City Region (2011) *Sheffield City Region Transport Strategy 2011-2026*. [online]. Available from: <http://www.syltp.org.uk/documents/SCRTransportStrategy.pdf> [Accessed 1st June 2014].

The University of Sheffield (2012) *Travel Survey Report* [online]. Available from: http://www.sheffield.ac.uk/polopoly_fs/1.257386!/file/Travel_Survey_Report_2013.pdf [Accessed 27th May 2014].

NatCen (2013) *National Travel Survey - Public attitudes to car use* [online]. Available from: http://ir2.flife.de/data/natcen-social-research/igb_html/pdf/chapters/BSA28_7Transport.pdf [Accessed 1st June 2014].

6.3 FIGURES

All photographs, diagrams and maps are produced by the author unless otherwise stated.

Figure 1: Google Earth (2008) [online image]. Available from: <http://www.google.co.uk/maps> [Accessed 22 May 2014].

Figure 2: Ordnance Survey (2012) [mapping data]. Available from: <http://edina.ac.uk/digimap> [Accessed 22 May 2014].

Figure 3: Picture Sheffield (2008) [online image]. Available from: <http://www.picturesheffield.com/187&action=zoom&id=18739> [Accessed 23rd May 2014].

Figure 5: Landmark Information Group from EDINA Historic Digimap Service (1890). [online map]. Available from: <http://edina.ac.uk/digimap> [Accessed 1 June 2014].

Figure 6: Marsh, P (2014) BBEST, slide 11 [presentation]. University of Sheffield, Sheffield.

Figure 7: Edwards, R. (2007) *Transport Assessment*. [online image]. Available from: http://publicaccess.sheffield.gov.uk/online-applications/files/D2549DAC7DB95B24767C78ECC478A2BC/pdf/07_01380_FUL-TRANSPORT_ASSESSMENT__PART_1_-186000.pdf [Accessed 27th May 2014].

Figure 9: Broomhill Forum (2012) *Broomhill Air Quality Symposium Report, page 6* [data]. Available from: <http://www.broomhillonline.org.uk/Bangdocs/Air%20Quality%20Symposium%20Report.pdf> [Accessed 27th May 2014].

Figure 11: ONS - Office for National Statistics (2011) 2011 Census Aggregate Data (England and Wales) [computer file]. Available from: <http://infuse.mimas.ac.uk> [Accessed 27th May 2014].

Figure 14: Google Earth (2008) [online image]. Available from: <http://www.google.co.uk/maps> [Accessed 22 May 2014].

Figure 15: Broomhill Forum (2012) *Broomhill Air Quality Symposium Report, page 4* [online image]. Available from: <http://www.broomhillonline.org.uk/Bangdocs/Air%20Quality%20Symposium%20Report.pdf> [Accessed 27th May 2014].

Figure 16: Grimsby Telegraph (2013) [online image]. Available from: <http://www.thisisgrimsby.co.uk/images/localworld/ugc-images/275785/Article/images/19947459/5394341-large.jpg> [Accessed 31st May 2014].

Figure 17: Allianz (2011) [online image]. Available from: http://assets.knowledge.allianz.com/img/chester_courtesy_crossing_ah_51301.jpg [Accessed 31st May 2014].

Figure 18: Macclefield Express (2013) [online image]. Available from: <http://www.macclefield-express.co.uk/news/local-news/traders-share-success-poynton-shared-2526261> [Accessed 30th May 2014].

Figure 19: Ordnance Survey (2012) [mapping data]. Available from: <http://edina.ac.uk/digimap> [Accessed 22nd May 2014].

Figure 20: ICLEI Europe (2006) [online image]. Available from: <http://www.iclei-europe.org/uploads/pics/Augustenborg.jpg> [Accessed 2nd June 2014].

Figure 22: WNE (2012) [online image]. Available from: <http://www1.wne.edu/images/Fair3.jpg> [Accessed 2nd June 2014].