RESEARCH PROJECT:

How can Shared Surface Streets be designed to improve safety for the visually impaired?

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Abstract

Since the 1963 Buchanan Report, street design has been segregated and movement-orientated (Parkin & Smithies, 2012). Only since the Netherlands introduced the ‘woonerf’ has there been recognition for greater equity, safety and inclusivity in our streets (Karndacharuk, et al., 2016). The shared surface streets concept developed from this vision, applying a level surface design to promote social interaction and mobility, and reduced vehicle speeds. Despite these aspirations, concerns raised by representative organisations, emphasise that level surfaces, a fundamental feature, pose safety risks for visually impaired people.

Currently, there is a range of evidence into how visually impaired individuals navigate streets and the efficacy of demarcation tools. However, these fail to link policies, which are themselves antiquated, or propose design outcomes.

This research aims to find a solution to the safety concerns of shared surface streets by binding the existing research, policies and guidance.

A case study review will focus on UK high-traffic shared surface schemes, specifically Holbein Place, New Road, and Leonard Circus, to identify effective design measures. Interviews will also shed light on the perspectives of visually impaired users in shared surface streets and how they feel they be made safe. Together this will answer the question: How can Shared Surface Streets be designed to improve safety for the visually impaired?

The outcome of this research is a framework of design recommendations, to create streets that are safe for the visually impaired. The result should help to alleviate the existing concerns, increasing safety and inclusivity.

Presentation Video:

https://www.youtube.com/watch?v=1VfmnVFA-zc

Acknowledgements

Firstly, I would like to thank Ben Spencer for his supervision, support and advice throughout this research and I am grateful for the time and knowledge he has contributed to this project. The outcome of my research would not have been possible without the valuable information provided by all those who gave their time to participate in the interviews, and I would like to thank them for this, as well as the RNIB for advertising my call for participants on their Connected Voices Network.

This study marks the completion of my undergraduate studies and so I would like to thank the academic staff, notably, Dr Emma Wragg, Dr Laura Novo de Azevedo, Isabel Irigoyen Zozaya, Dr Sue Brownill, Dr Jon Cooper, Karl Kropf and Dr Regina Mapua Lim for their teaching and guidance within academia and extracurricular studies.

I would also like to thank Nicholas Falconer, Ethan Atterbury, Huw Birchall, and Matthew Galvin for their support, guidance, and inspiration during the BA Urban Design, Planning and Development course.

Finally, I would like to add that I hope the outcome of this research can lead to further testing and exploration of this issue, as everyone in society should have inclusive, safe and enjoyable access to our built environment.

Contents

Glossary

Banded Cane Red and White Banded Canes show the person has sight loss and low hearing. Refer to Figure A.

Figure A: Red and White Banded Cane. Source: (RNIB, 2021).

Blind: An individual with no vision.

Blister paving: Slabs of raised nodules used to warn visually impaired individuals of a crossing point. Typically red blister paving is used at controlled crossings and yellow blister paving at uncontrolled crossings. Refer to Figure B.

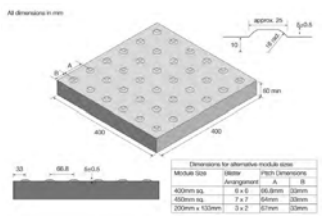

Figure B: Blister Paving. Source: (DfT, 2021).

CIHT: The Chartered Institution of Highways and Transportation.

Controlled crossing A form of crossing where pedestrians are given priority, and vehicles are forced to stop at a red traffic signal. A green man and auditory cues alert tell the pedestrian they can cross.

Corduroy Hazard Warning Surface: Raised strips that convey the message 'hazard, proceed with caution' (DFT, 2021). Typically used at steps and level crossings. Refer to Figure C.

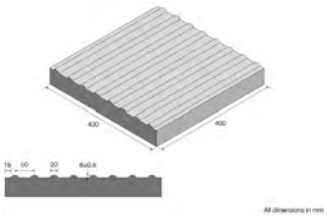

Figure C: Corduroy Hazard Warning Surface. Source: (DfT, 2021).

CWSM: Contrasting Walking Surface Materials.

Delineate: To mark or indicate.

Demarcate: To separate, distinguish or set the boundaries of.

GDBA: Guide Dogs for the Blind Association.

Guide Cane: Held diagonally across the body to detect obstacles such as steps. Refer to Figure D.

Figure D: Guide Cane. Source: (RNIB, 2021).

Guide Dog: An assistance dog trained to lead visually impaired people around obstacles.

Ladder & Tramline: Alternate raised strips to warn of shared cycle track and footway surfaces. Refer to Figure E.

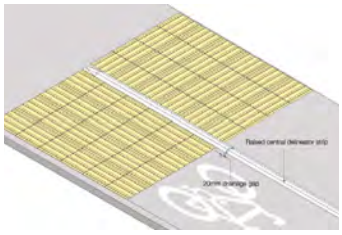

Figure E: Ladder & Tramline Surface. Source: (DfT, 2021).

Long Cane A cane rolled or tapped side to side to avoid obstacles. Refer to Figure F.

Figure F: Long Cane. Source: (RNIB, 2021).

LTN: Low-Traffic Neighbourhood.

LTN 1/11: Low Transport 1/11 Shared Space (Withdrawn).

Partially sighted: The partial loss of vision. An individual may experience sight loss in just one eye, or may be able to detect colour contrasts and/or shapes, for example.

Puffin crossing: A controlled crossing, which uses sensors to detect when pedestrians have safely crossed the road.

RNIB: Royal National Institute of Blind People.

Safe Zone: A space free from street furniture and vehicles to provide clear, navigable, routes for the visually impaired, within shared surface streets.

Shared Space: A street that encourages the mixing of space users, by removing surface markings, street signs and traffic lights. This street may include a pedestrian kerb.

Shared Surface Street: A shared space without a kerb to minimise segregation.

Shoreline: A technique used to walk parallel to the building or kerb edge.

Symbol Cane: A cane to let people know a person has low but useful vision. Refer to Figure G.

Figure G: Symbol Cane. Source: (RNIB, 2021).

Tactile paving: Surface indicators use to communicate a warning or to help an individual locate themselves.

Transition Zone/ Comfort Space:	An area of a shared space that houses street furniture to keep it out of the safe zone.
TWSI:	Tactile Walking Surface Indicators.
UCL PAMELA:	University College London Pedestrian Accessibility Movement Environment Laboratory. A part of the UCL Department of Civil, Environmental and Geomatic Engineering.
ULEZ:	Ultra Low Emission Zone
Uncontrolled/ Courtesy Crossing:	A crossing where the pedestrian decides when it is safe to cross and/or vehicles give way to the pedestrian. Includes zebra crossings.
Weak public:	A theory created by Haberman (2008, cited in Imrie, 2012) that describes a group of people that express an opinion but lack the powers for it to be heard.

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1. Introduction

1.1 Background to the Research

1.1.1 Introduction

Highway-engineered design has shaped our built environment since the Buchanan Report, which advocated the segregation of pedestrians and cars (Parkin & Smithies, 2012, p. 135). Since, there has been a growing demand for equitable, safe and inclusive environments (Department for Transport, 2007).

Shared surface streets is a concept that has sprung out of this vision, creating an attractive environment, that encourages 'social interaction', 'low vehicle speeds', and improves pedestrian mobility (Royal Borough of Kensington and Chelsea, 2007).

The Manual for Streets gives the following description:

> *'In traditional street layouts, footways and carriageways are separated by a kerb. In a street with a shared surface, this demarcation is absent and pedestrians and vehicles share the same surface'* (Department for Transport, 2007, p. 81).

The removal of these markers can pose safety risks for the visually impaired, as it takes away key navigation tools, making them less accessible (Department for Transport, 2007, p. 81).

A person with a visual impairment includes those with no vision or a 'reduced visual capability' (Parkin & Smithies, 2012, p. 136). They typically navigate familiar streets using a cane or a **guide dog**, and audio and visual cues (colour contrasts) (ibid, 2012, p. 136). A study by Caroll and Bentzen (1999, cited in Matthews, et al., 2014) found that 25% of **long cane** users 'had been involved in an incident where their cane had been run over' and under 10% had been struck by a vehicle. These statistics convey the importance of creating an equitable and safe built environment.

The 'Staging Mobilities' framework describes mobilities as 'meticulously designed and planned 'from above'', but simultaneously 'acted out, performed and lived 'from below'' (Jensen, 2013). It is relevant to think of this staging regarding how space is designed and how people interact with it.

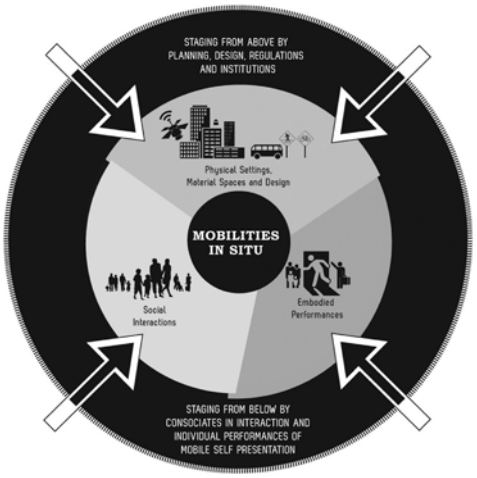


Figure 1: Staging Mobilities Framework (Jensen, 2013).

1.1.2 Research Gap

There is extensive research into the issues with **shared surface streets**, but little research into solving them (Chils, et al., 2010). Government guidance fails to generate universal requirements for **shared surface streets**, causing local authorities to adopt different design approaches, some ensuring inclusivity, and others treating it as an afterthought (DfT, 2020) (Lauria, 2017, p. 4). Consequently, organisations, such as the **Guide Dogs** for the **Blind** Association (**GDBA**) object to **shared surface streets** because of the dangers posed (**GDBA**, 2022).

In response, this research report seeks to answer the question:

How can Shared Surface Streets be designed to improve safety for the visually impaired?

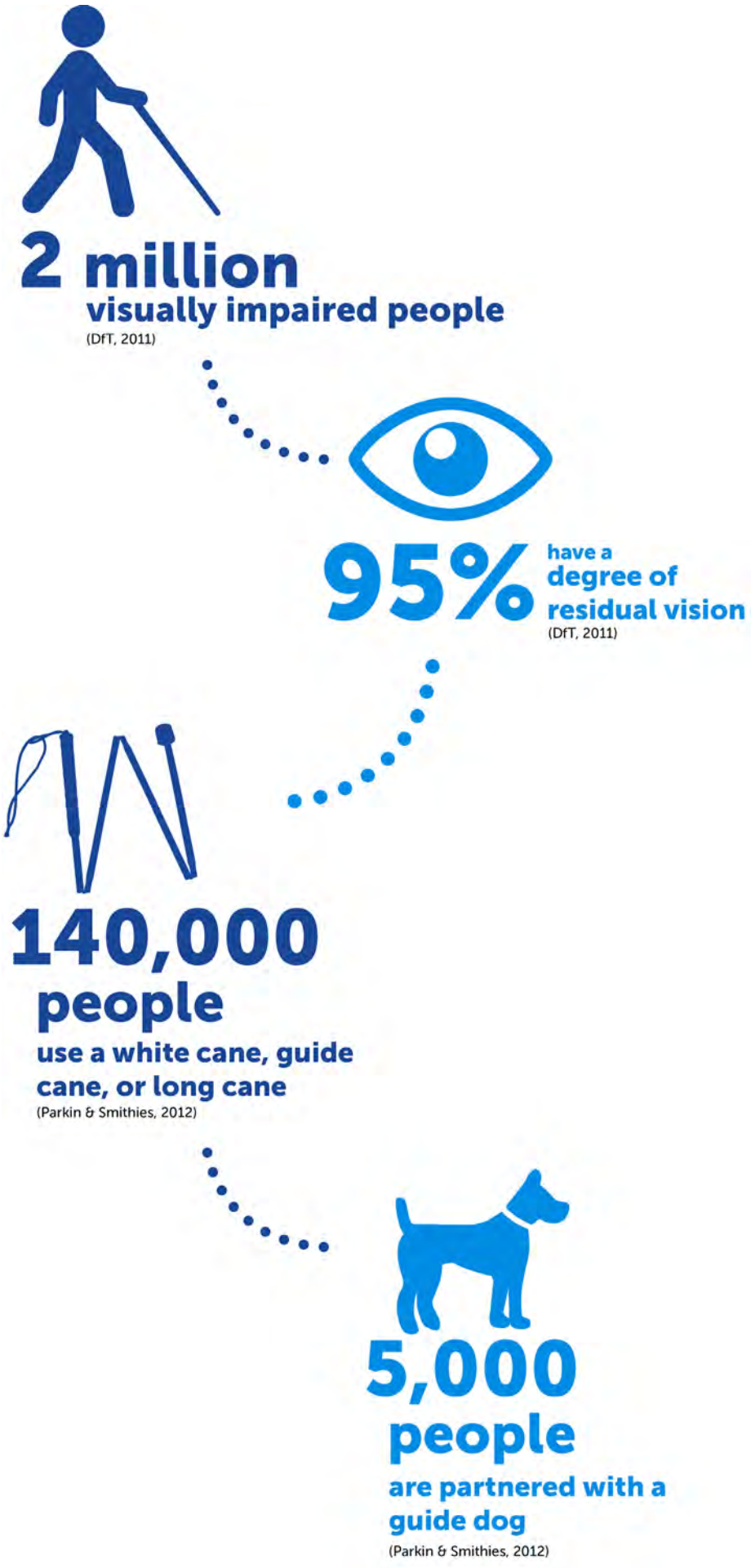


Figure 2: Factual infographic.

1.2 Aim and Objectives

1.2.1 Aim

To form a set of design recommendations that will improve the safety of **shared surface streets** for the visually impaired, with a focus on high-traffic areas.

1.2.2 Objectives

Objective		Methodology	Expected Outcome
OBJ1	Review existing guidance regarding shared surface streets.	Analyse existing guidance to gain an understanding of the policy environment.	Understanding policies and guidance will inform OBJ5.
OBJ2	To develop an Analytical Framework to set a foundation for the case study analysis.	Use the findings from the literature review and policy review to form an analytical framework.	The framework will structure the research, establishing consistency throughout the study.
OBJ3	Use the Analytical Framework to analyse case studies of shared surface streets in high-traffic areas.	Identify and analyse three high-traffic shared surface case studies, of mixed success, that have created safe pedestrian environments for the visually impaired.	Case Study Analysis will identify successful and unsuccessful design features to inform OBJ5.
OBJ4	Undertake primary research to uncover unique experiences of high-traffic and shared surface streets for the visually impaired.	Conduct semi-structured interviews with two visually impaired individuals, and two organisations to understand how they feel shared surface streets could be better designed.	The outcome will highlight the best design features to create safe shared surface environments.
OBJ5	Form a set of design principles using the identified findings.	Use the research to create a set of design recommendations for improving safety.	The recommendations should increase the safety and usability of shared surface streets in high traffic areas.

Table 1: Research Objectives.

1.3 Approach

1.3.1 Scope of Research

This research project aspires to create a set of design recommendations that can be implemented by local authorities to increase the safety of shared surface environments for the visually impaired. The scope is focused on high-traffic areas, as increased movements can increase risks.

The study also focuses on **Shared Surface Streets**, not to be confused with **Shared Streets**, which may retain navigation features, such as kerbs.

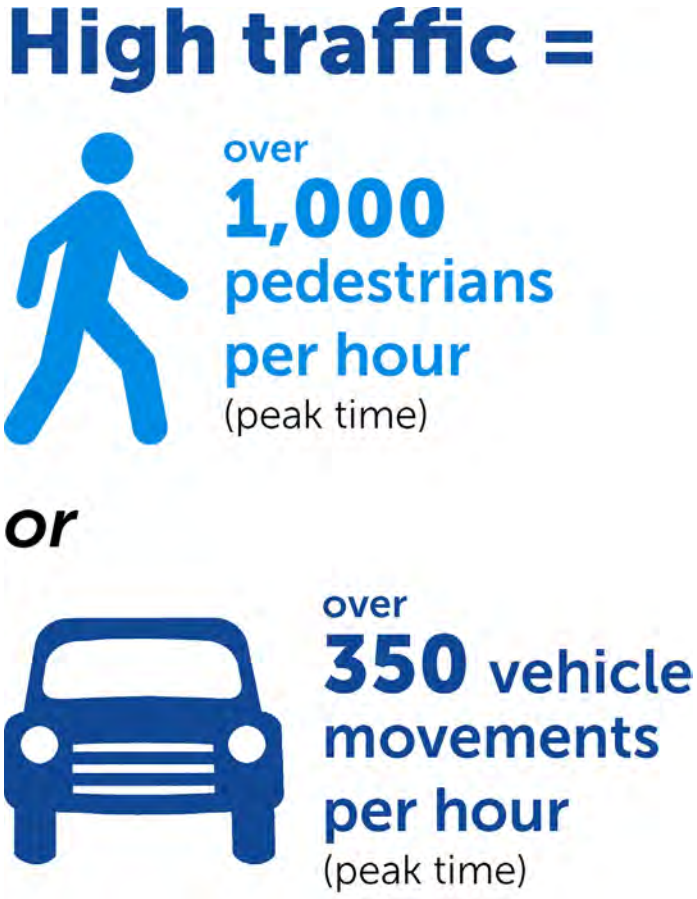


Figure 3: Definition of a high-traffic area.

1.3.2 Structure of the Report

Chapter 2 will explore existing literature, giving background to any existing research. This is followed by a Policy Review in Chapter 3 that will analyse existing policies and design guidance. Combined, these chapters will inform the analytical framework. Subsequently, a case study analysis will identify successful design elements. Success is measured by the implementation of tools to increase safety for the visually impaired. Chapter 6 will examine the semi-structured interviews, to inform the design recommendations. Chapter 7 draws on the previous research to form a set of design recommendations.

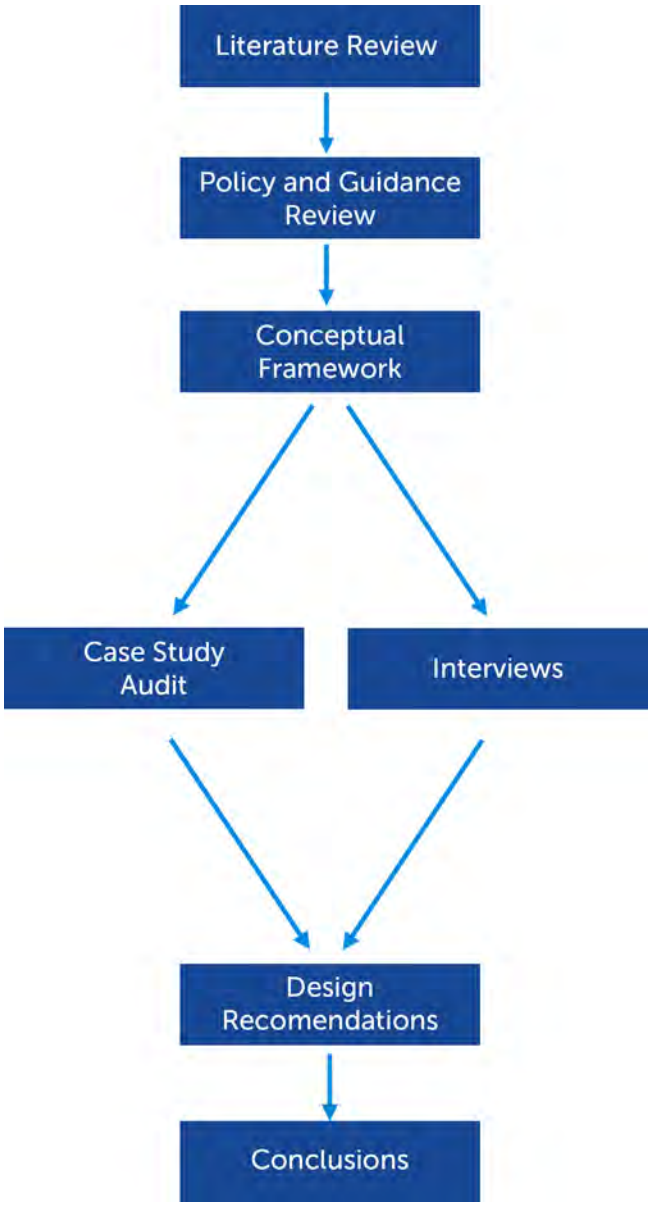


Figure 4: Research Structure

2. Literature Review

2.1 Literature Review

2.1.1 Introduction

This chapter explores the literature relating to **Shared Surface Streets** examining the benefits, and delving into the challenges that these streets create for visually impaired individuals.

2.1.2 Benefits of Shared Surface Streets

Traditional highway-engineered design creates problems for many in society such as those with mobility issues, cyclists and children, as it promotes use segregation (Karndacharuk, et al., 2014). In Europe, the perceived function of our streets is shifting away from mobility, to a focus on place, which seeks to make the street a destination but acknowledges the mobility and access needs of all members of the community (ibid, et al., 2014, p. 206). Most typically, this concept takes the form of calmed streets, such as **LTN**s (Karndacharuk, et al., 2016).

Figure 5: The place function of a shared surface street shown to link to the mobility and access needs (Karndacharuk, et al., 2014).

The Manual for Streets notes **Shared Surface Streets** aim to:

- 'encourage low vehicle speeds'
- 'make it easier for people to move around' and
- 'promote social interaction' (Royal Borough of Kensington and Chelsea, 2007).

The manual notes that the key to achieving this is the 'absence of a formal carriageway' that causes drivers to be more cautious (Department for Transport, 2007, p. 81). Hamilton-Baillie (2008) puts this down to the removal of standardised features, such as street clutter and physical barriers, which influence 'the psychology … and interrelationships' of space users.

By putting people first, **shared surface streets** add vitality to urban centres, generating economic benefits. A review of **shared surface streets** by the **CIHT** (2018, p. 9) found that economic benefits were a driver for the implementation of schemes, alongside improvements to the 'quality of place and the ease of movement'.

2.1.3 Challenges Shared Surface Streets Pose

Hamilton-Baillie (2008, cited in Imrie, 2012) notes that the central principle of **shared spaces** is inclusive design, as it seeks to aid 'interactions between the widest cross-section of people'. Though, Imrie (2012) notes that shared streets display 'a broader societal marginalisation of disabled people', particularly to the visually impaired, who are disengaged from decision-making. Imrie (2012) links this to the '**weak publics**' theory, where visually-impaired people can express opinions but lack powers. Haberman (2008, cited in Imrie, 2012) believes that **weak publics** can highlight issues and act as a 'warning system with sensors'. Imrie (2012) goes on to highlight 'political disablement' that can 'problematise' opinions, as experienced by the **GDBA** when outlining their argument against **shared surface streets**. They were described as focusing on a single interest that was deemed irrational and unreasonable (ibid, 2012).

Both the **GDBA** and **RNIB** are opposed to shared surface schemes as the removal of demarcations is a form of 'disabling design' (**GDBA**, 2017) (Jayakody, et al., 2018). Imrie (2012) adds that for those with a visual

impairment, **shared surface streets** cannot be understood for their benefits, but symbolise dangerous places that are 'insensitive to the manifold vulnerabilities of pedestrians forced into space sharing'. A report by the **GDBA** reinforces this, highlighting that **shared surface streets** require users to 'negotiate priority and movement through 'eye contact'', which is not practicable for visually impaired people (**GDBA**, 2017, p. 8).

The literature illustrates that reduced confidence associated with **shared surface streets** is a result of increased danger. Research by the **UCL PAMELA** lab fortified these concerns stating that 'the safety, confidence and independence of **blind** and **partially sighted** people are undermined by shared surfaces' (**GDBA**, 2008). Thomas (2008, cited in Norgate, 2012) corroborates this, stating that New Road, Brighton, reduced the navigability and therefore independence of visually impaired users.

Among the identified challenges, research by Parkin & Smithies (2012) monitored visually impaired individuals navigating **shared surface streets** and identified the following issues:

- 'absence of kerb line causes problems as **guide dogs** are taught to walk in a line parallel to the kerb'
- 'sharing with motor vehicles is frightening'
- 'direction of traffic is difficult to detect'
- 'too many obstacles', such as 'shop 'overspills' and street furniture are … less predictable' and are 'not being aligned consistently'.

(ibid, 2012, p. 141; 144)

The design of **shared surface streets** creates 'unobstructed … cyclist movement', in addition to free pedestrian movement (Al-Mashaykhi, et al., 2020). This is 'problematic' as cyclists produce minimal auditory cues, and frequently use the pedestrian **safe zones** (Parkin & Smithies, 2012, p. 144). Furthermore, Norgate (2012, p. 236) highlights that the rise of electric cars will create new risks for those reliant on 'soundscapes … to aid their alignment'.

2.1.4 Current Strategies for navigating Shared Surface Streets

Responding to the need to increase the safety and navigability of **shared surface streets**, Ramboll Nyvig, working with the **GDBA**, back the '**safe space**' concept – a space free from vehicles, without hindering the shared area (Thomas, 2008). Norgate (2012, p. 233) supports this, noting that **safe spaces** provide 'continuous and unambiguous' routes, aligned with the proposals in the Manual for Streets (2007).

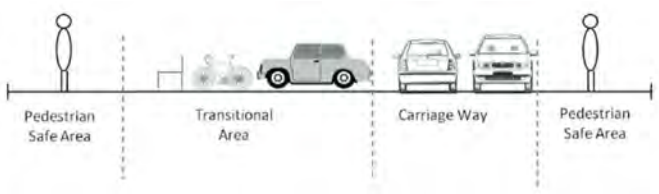


Figure 6: Cross-Section of Exhibition Road, London, showing the pedestrian safe space (Jayakody, et al., 2018).

The study by **UCL PAMELA** lab tested a range of ways designers can **demarcate safe spaces** for those with visual impairments, and the impacts they could pose for mobility-impaired individuals. The following **TWSI**'s were tested:

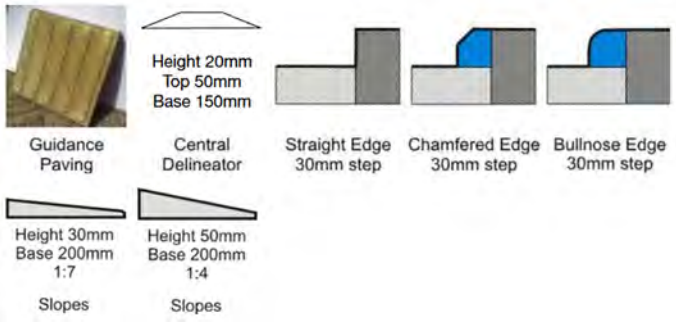


Figure 7: TWSI's Tested in the UCL PAMELA study (GDBA, 2008).

The report highlights the importance of the kerb for navigation, noting that **guide dogs** and people are trained to follow the straight edge (**GDBA**, 2008, p. 9). When considering all options, it is safe to conclude the 30 mm and 50 mm slopes were most effective for visually impaired people navigating **safe spaces**, when combined with the recommendations to add colour contrast and/or **tactile paving** along the slope edge (ibid, 2008, p. 56). 90% of users found the 50 mm slope easy to detect and had less risk of falling into the carriageway than a

traditional kerb (ibid, 2008).

It must be noted that these findings were achieved in an enclosed environment where factors such as cognitive loading are difficult to translate (**GDBA**, 2008, pp. 59 - 60).

Parkin & Smithies (2012) considers street furniture unpredictable obstacles. An audit of Exhibition Road, London, displayed the use of a '**Transition Zone**' for car parking and street furniture (**CIHT**, 2018, p. 13). Jayakody (et al., 2018) theorised this as a '**comfort zone**' to house street furniture away from the **safe space**.

Parkin & Smithies (2012, p. 147) discussed the outcome of their research, highlighting that visually impaired people navigate familiar streets, and make use of the space around them, such as 'channel drains, block paving …' and other features '… as demarcation aids'. The study emphasised the importance of using a mixture of surface materials to highlight the spatial zones and form a 'physical geography' (ibid, 2012, p. 148).

A significant issue that impedes the safety of **shared surface streets** is the lack of **controlled, formal, crossings**, which provide 'audible and tactile symbols … to enable safe crossings' (Norgate, 2012, p. 235). As indicated, shared surface schemes are reliant on eye contact for space negotiation, and Norgate (2012) furthers this, highlighting that visually impaired people rely on unpredictable sounds to cross, making it safer to use **controlled crossings**, and should be positioned at the beginning, end, and key points along a street' (Norgate, 2012, p. 235).

2.2 Conclusion

This chapter has given insight into the challenges **shared surface streets** pose for the visually impaired and the existing proposals to tackle them. It must be noted that the literature review highlights the research gap, as many sources are over 5 years old and could be considered out of date. Yet, this is because much of this research took place around the time Exhibition Road, London, was redesigned (2010-2012), which caused much controversy about its navigability and safety for the visually impaired.

The literature review has identified and highlighted the importance of the following themes:

Figure 8: Icons conveying the themes identified within the literature review.

3. Policy Review

3.1 National Policy and Guidance

3.1 National Policy and Guidance

Paragraph 93 (a) of the NPPF states:

> 'plan positively for the provision and use of **shared spaces** … to enhance the sustainability of communities'.
> (MHCLG, 2021)

Despite recent changes to **shared surface street** guidance, the NPPF still seeks to promote **shared spaces**.

The Manual for Streets (2007) gives further guidance for residential and lightly-trafficked streets. It emphasises the need for 'an alternative means for visually-impaired people to navigate', but fails to corroborate a proposal (Department for Transport, 2007, p. 81). Instead, it illustrates that street design must adhere to the Disability Discrimination Act (now The Equality Act 2010), where decisions should 'promote equality of opportunity' (Hamshar, 2009). The **LTN 1/11** reinforced this, referencing The Equality Act which requires local authorities to account for how people will be affected by proposals (DfT, 2011, p. 8).

The **LTN 1/11** set out a range of recommendations for the design of 'level surface' streets in 2011.

- Decluttered environments where 'single-purpose items' are minimised and justified.
- Change surface material so visually impaired people can recognise the 'transition to **shared space**'
- Inclusion of '**courtesy crossings**'
- '**Tactile Paving**' in streets using a level surface to indicate the 'notional carriageway' and footway.
- The inclusion of '**comfort space**' in busier streets, is designed with the needs of the visually impaired in mind.
  (DfT, 2011)

This guidance seeks to create level spaces that are accessible for all, due to the greater flexibility, uses, and mobility it can bring (DfT, 2011). However, in light of concerns about the safety of **shared spaces**, 'The Inclusive Transport Strategy' (2018) has rescinded the **LTN 1/11** and has 'asked local authorities to pause the introduction of new **shared space** schemes that feature a level surface' (Malthouse, 2018). The report references the importance of 'formal crossings', such as pelican crossings, for the visually impaired, and concluded that **shared surface streets** are 'dangerous and difficult to navigate' (DfT, 2018, p. 50). A report by the Women and Equalities Select Committee, which explored 'Disability and the Built Environment' made a similar recommendation (ibid, 2018, p. 50). This pause is limited to high-traffic schemes.

A research report by the **CIHT** audited a range of **shared spaces**, including Exhibition Road, London, finding the initial design unsuitable for the visually impaired, but the addition of a **comfort space** with **delineated tactile paving** to aid navigation was more accessible (**CIHT**, 2018, p. 49). However, the new layout has led to low levels of courteous driving (ibid, 2018, p. 43). Though, this may be due to the addition of bollards, signage and road markings that define the carriageway (ibid, 2018, p. 41).

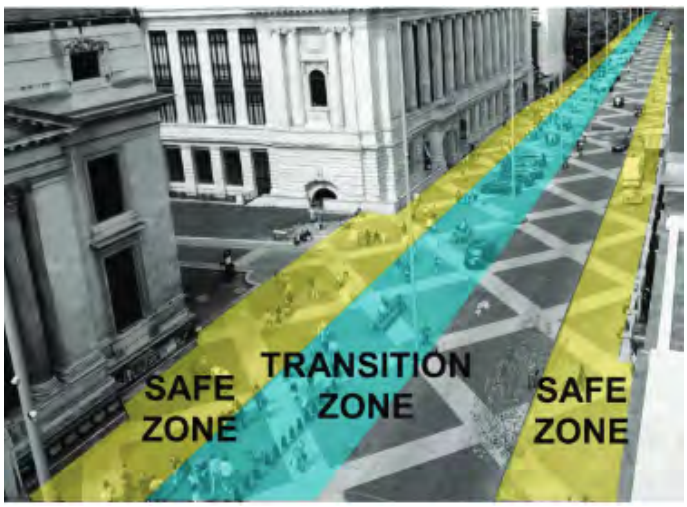


Figure 9: Street profile of Exhibition Road, showing the comfort/safe space (CIHT, 2018).

The report found schemes that lack **delineation** between the footway and carriageway are problematic for visually impaired users (**CIHT**, 2018, p. 54). **Delineation** can vary from **tactile paving** to colour contrasts. Updated guidance on the use of **tactile paving** in 2021

reinforced the principles set out in 1998 (DfT, 2021). It references **shared surface streets**, recommending the use of **corduroy surfaces** to **demarcate** a footway and **shared space** (ibid, 2021, p. 51). **Corduroy paving** coveys the message ‘hazard, proceed with caution’, and should not be used to identify obstacles, but hazards such as steps, trams, or **shared spaces** (ibid, 2021, pp. 44 - 46).

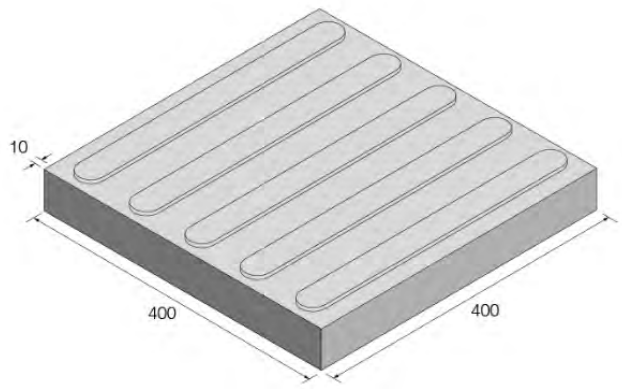


Figure 10: Guidance paving plan (Dft, 2021).

It also notes the benefits of guidance paths to aid visually impaired people through a space. The guidance suggests these paths are most beneficial where:

- ‘traditional cues, such as a property or kerb edge, are absent’;
- obstacles, such as street furniture, could present danger; and
- there is a need to find a destination. (DfT, 2021, pp. 71 - 72)

4. Analytical Framework

4.1 Analytical Framework

The literature review and policy analysis has identified the following themes that provide a framework to structure the research.

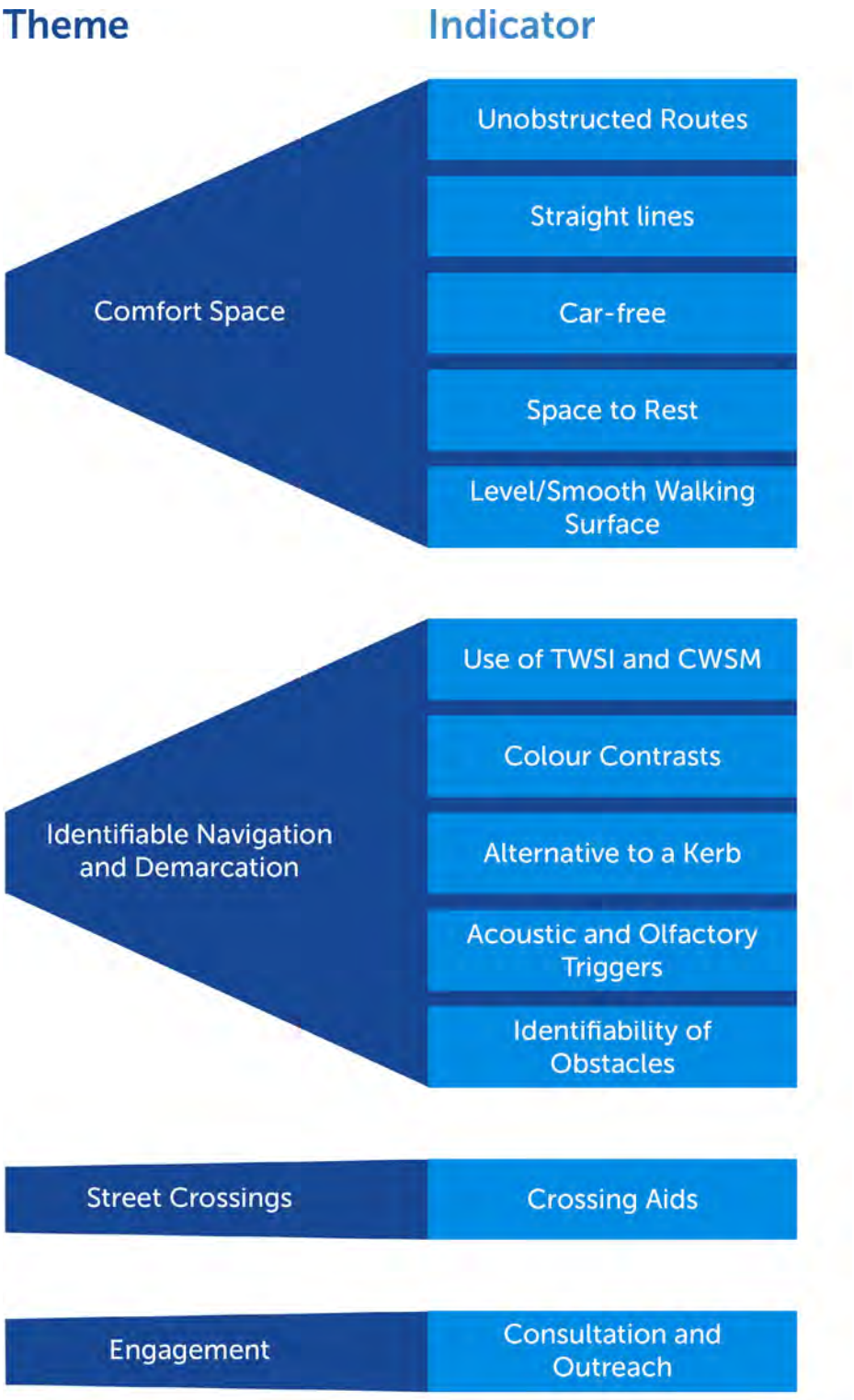


Figure 11: The analytical framework.

5. Methodology

5.1 Methodological Approach

5.1.1 Introduction

5.1.2 Case Study Review

5.1.3 Interviews

5.1.4 Ethics

5.2 Interview Questions

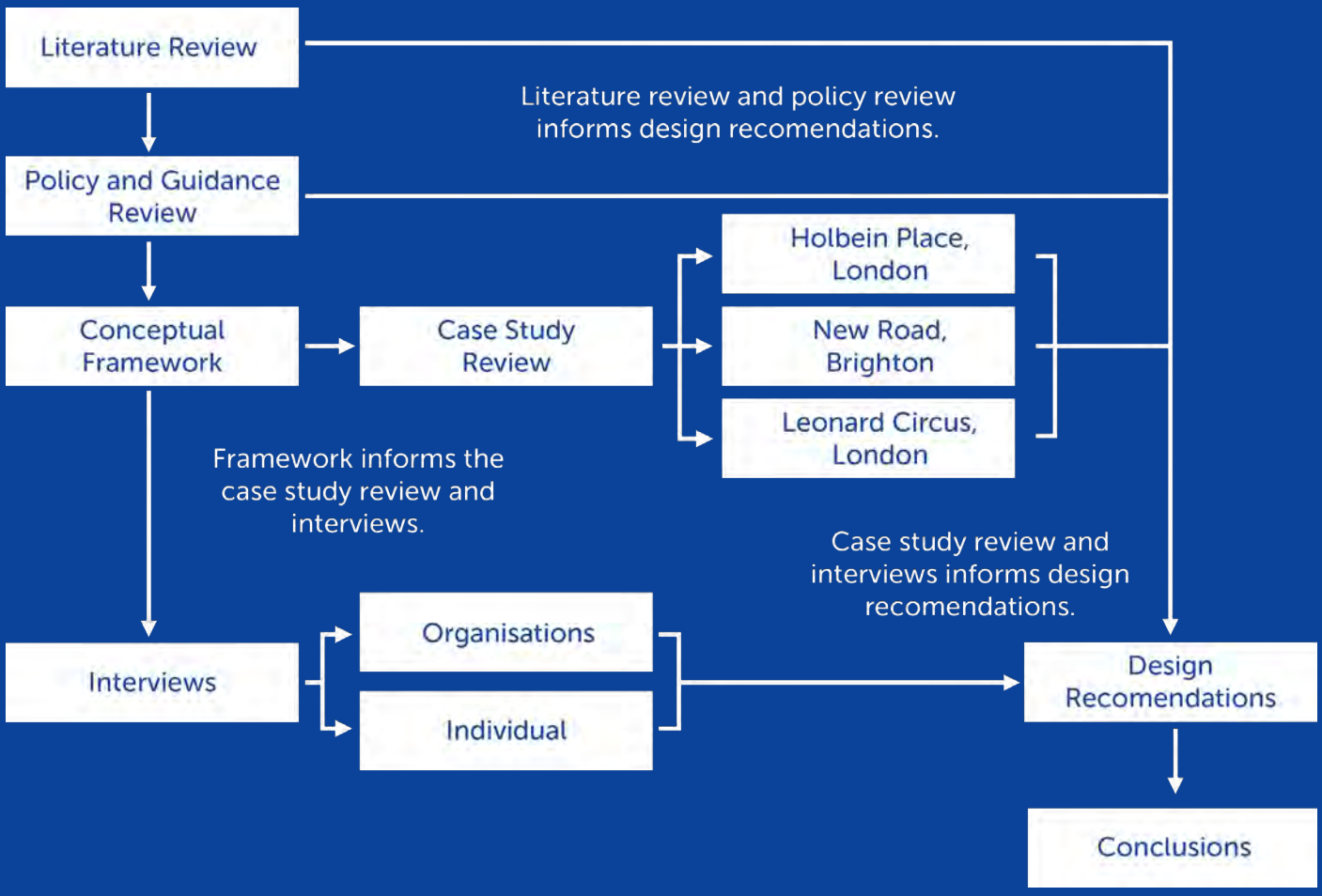


Figure 12: Flow chart of the research process.

5.1 Methodological Approach

5.1.1 Introduction

Chapter 5 sets out the proposed research methods to achieve the aim and objectives. Secondary research is collected through case studies. Primary data is collected through interviews with organisations and individuals.

5.1.2 Case Study Review

A case study review is a form of qualitative primary and secondary research that seeks to identify the successful and unsuccessful design features used in a scheme and is structured based on the analytical frameworks themes.

The three case studies are UK-based to ensure consistency with tactile paving and street design. Based on the findings of the literature review, the research noted that visually impaired people often stick to practised routes (Parkin & Smithies, 2012). The selected case studies are, therefore, high-traffic and socially valuable places (as set-out in Figure 3). The case studies selected are:

Case Study	Rationale
Holbein Place, London	• Valuable as it is entry to Sloane Square Station. • 3,500 pedestrians per hour (peak time) (CIHT, 2018, p. 54).
New Road, Brighton	• Valuable as it is the cultural quarter. • Footfall increased by 62% (Fraser, 2011).
Leonard Circus, London	• Valuable as it acts as a town square. • 1,400 pedestrians per hour (peak time) (CIHT, 2018, p. 63).

Table 2: Case Studies to be reviewed.

5.1.3 Interviews

Semi-structured interviews will be conducted with two organisations for the visually impaired and two visually impaired individuals to understand how they experience **shared surface streets** and what they feel would be the best ways to improve their safety. These interviews contribute to the research by offering different perspectives to the literature, organisations having access to research resources, and visually impaired people being able to offer first-hand experiences.

The interview questions (listed on page 27) are framed around the analytical framework.

5.1.4 Ethics

Ethical Approval has been attained due to the nature of the research. The ethical approach was mindful when raising controversial topics. Other considerations are the involvement of a gatekeeper to publish an advert in a private network, attaining informed consent if documents are not accessible, and data security. All participants will be voluntary. The research conforms to the Brookes Code of Practice and evidence of ethical approval is on page 73 (Oxford Brookes University, 2021).

5.2 Interview Questions

5.2.1 Individual Interview Questions

No	Question	Rationale
1	Would you consider yourself blind or partially sighted?	To map answers and experiences to the level of sight.
2	How often would you say you walk along high-traffic streets? High traffic can include levels of car and/or pedestrian movements that you feel to be high.	Understand whether high traffic areas are typically avoided.
3	How does the high levels of traffic along these streets make you feel?	This leads into the next question.
4	What are the challenges you face travelling along these streets?	To understand first-hand experiences.
5	In what ways do you think the street design could be changed to tackle these challenges (and negative feelings)?	To uncover a different perspective and design solutions.
6	Have you heard of Shared Surface Streets before?	This leads into the following questions.
7	How often do you find yourself travelling through a shared surface street?	To understand whether shared surface streets are typically avoided.
8	How do you feel moving through shared surface streets?	Shared surface streets should be more enjoyable. Do visually impaired people think the same?
9	What features in the shared surface street do you pay particular attention to? (If not been in shared surface, answer about streets in general)	To highlight any personal aids visually impaired people use, not mentioned in the literature or policy.
10	What tools in the shared surface street do you use to aid navigation? (If not been in shared surface, answer about streets in general)	Follows the previous question.
11	Would you consider the shared surface street you have visited high traffic?	To relate experiences to high movement.
12	What are the challenges you face moving through shared surface streets?	To understand first-hand experiences.
13	In what ways do you feel this could be tackled?	To uncover a different perspective and design solutions.
14	Is there anything else you would like to add that you feel would benefit my research?	To see whether the interviewee has any additional beneficial insight.

Table 3: Interview questions for individual visually impaired people.

5.2.2 Organisation Interview Questions

No	Question	Rationale
1	Where does your organisation currently stand on whether shared surface streets are safe for the visually impaired? Why?	To understand the organisation's viewpoint and any research they have explaining this.
2	Is there guidance for the visually impaired on how to navigate shared surface streets? Is this possible?	To uncover ways visually impaired people are taught to navigate shared surface streets.
3	What challenges do you understand visually impaired people face in shared surface streets?	To gain insight into the organisation's research, and how it will influence the design recommendations.
4	How do Guide Dogs typically navigate streets?	This is not as well covered in the literature.
5	How do Guide Dogs respond to Shared Surface Streets? i.e. What challenges do they face?	Understanding how guide dogs respond can influence the final recommendations.
6	What design measures do you think could be used to support individuals and Guide Dogs navigating shared surface streets?	To gain valuable insight from experienced organisations.
7	Is there anything else you would like to add that you feel would benefit my research?	To see whether the interviewee has any additional beneficial insight.

Table 4: Interview questions for a representative organisation.

6. Case Study Audit

6.1 Introduction

This chapter will review three case studies, using the analytical framework in Chapter 5. The case studies will identify successful and unsuccessful measures to increase safety for the visually impaired in **shared surface streets**.

Figure 13: Map showing location of selected case studies in England.

Figure 14: Map highlighting the location of selected case studies in London.

Figure 15: Map displaying the location of New Street in Brighton.

6.2 Holbein Place, London

6.2.1 Introduction

The **shared surface street** developed at Holbein Place, Kensington and Chelsea, is key to opening up access to the bustling Sloane Square Station. An complete overhaul of Sloane Square was proposed in 2004, but was shelved owing to public consultations. Instead, the construction of a smaller shared surface scheme began in 2008 (**CIHT**, 2018). The development is approximately 20m wide and 20-30m in length.

The aims of the shared surface development were:

- 'To reduce pedestrian waiting times' – prior the traffic signals displayed the green-man signal for 'six minutes per hour' (**CIHT**, 2018).
- To create a 'safe, enjoyable, lively public space' (Stanton Williams, 2022).
- 'To improve traffic flow' (**CIHT**, 2018).

The key concern related to the **shared surface street** at Holbein Place was the removal of formal **controlled crossings**. MyLondon (2008) reported that residents considered the removal of traffic lights an 'accident waiting to happen' and campaigners felt a shared surface scheme was 'inappropriate' for the high-traffic area.

Figure 17: Holbein Place is a short, but highly-trafficked stretch of street.

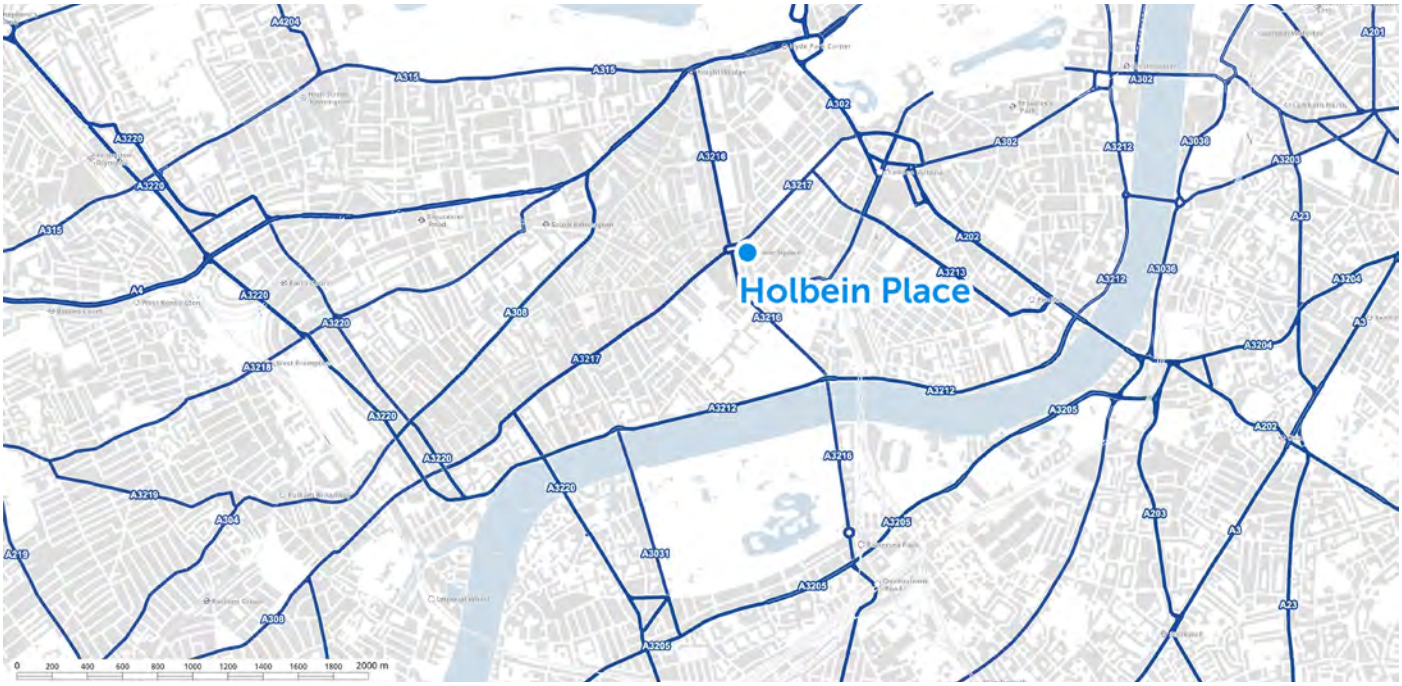


Figure 16: Holbein Place is located near significant destinations.

6.2.2 Images Before and After

Figure 18: Before development. View South-West (CIHT, 2018).

Figure 21: After development. View South-East.

Figure 19: Before development. View North (CIHT, 2018).

Figure 22: After development. View North-West.

Figure 20: Before development. View North-East (CIHT, 2018).

Figure 23: After development. View South.

6.2.3 Comfort Space

Holbein Place is a compact space with straight, North-South, movement lines. The space successfully prohibits car parking, not through yellow lines, but through the movement of people and placement of street furniture. The surface uses a 'tough', slip-resistant, material that is semi-tactile (CED Stone, 2015).

Despite being a busy environment, there is no seating. The space felt cluttered and confusing, with street furniture and trees positioned in an obstructuory manner. The clutter is worsened by a toilet cubicle and kiosks.

Figure 24: Grey, semi-tactile, slip resistant surface (CED Stone, 2015).

Figure 25: Obstructive bins.

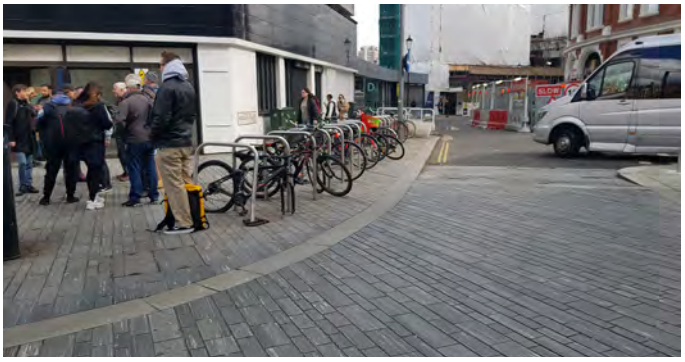


Figure 26: Cycle parking blocking movement flows.

6.2.4 Identifiable Navigation and Demarcation

Stone block paving strips are used to identify entry into the shared surface environment, but it fails to highlight the potential hazard. The scheme has followed government guidance and placed **tactile blister paving** at an informal crossing point, located outside Sloane Square Station. After a safety audit was completed in 2008, it was found that the lack of **delineation** between carriageway and footway is a safety risk for visually impaired users (**CIHT**, 2018). Holbein Place now has smooth strips, along the carriageway edges.

However, the scheme lacks colour contrasts throughout the design and fails to **demarcate** street furniture, potentially increasing hazards.

As a rather busy environment, and its locality to a busy roundabout, it is difficult to focus on vehicle noise at the designated **courtesy crossing**, posing a danger.

Figure 27: Blister paving and lane delineation.

Figure 28: Variety of pavers (CED Stone, 2015).

6.2.5 Street Crossings

Holbein Place provides **tactile blister paving** at a **courtesy crossing**, made from a strong metal, increasing its longevity. However, it is not identifiable with colour contrasts. A study by **CIHT** (2018) found that just 20% of vehicles moving through Holbein Place gave way to pedestrians. During a site visit, it was also apparent that due to the high-speed nature of the Sloane Square junction, vehicles often approach the **shared surface street** at a high-speed.

Figure 29: Busy Sloane Square Junction.

6.2.6 Public Engagement

No data is available.

6.2.7 Conclusions

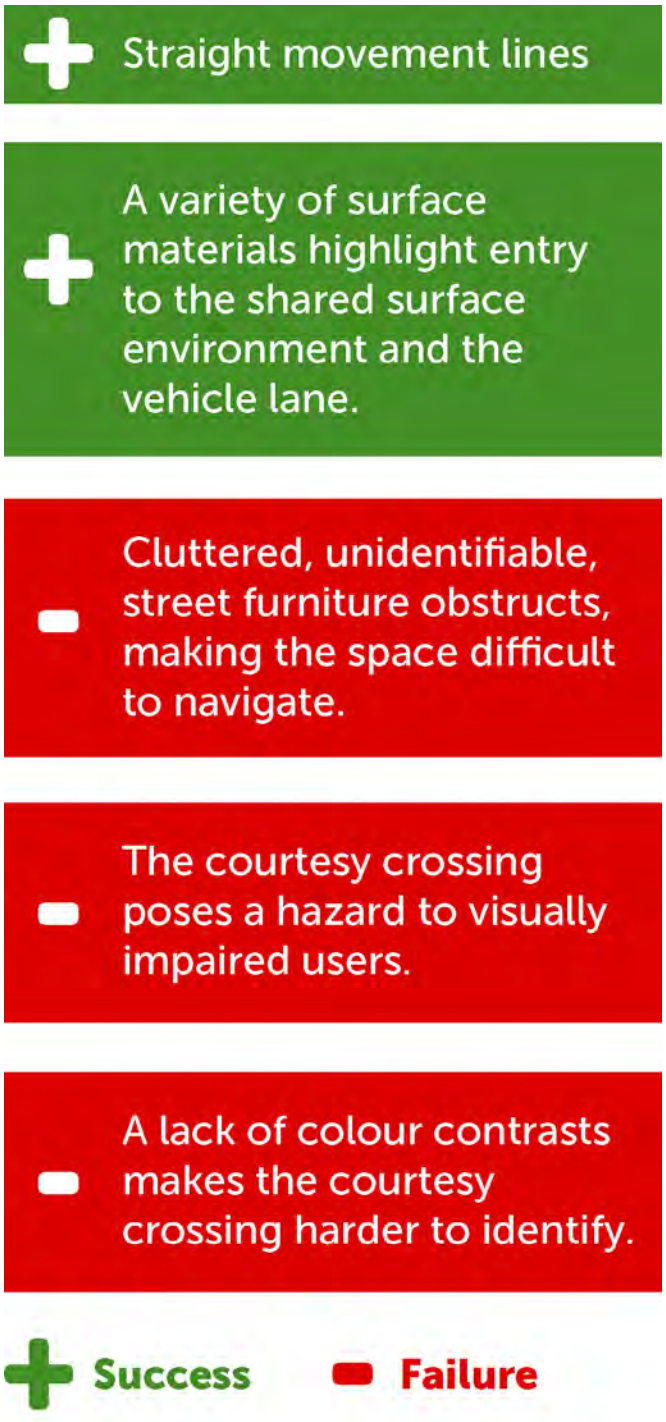


Figure 30: Holbein Place review conclusions.

6.3 New Road, Brighton

6.3.1 Introduction

New Road sits in the centre of 'Brighton's Cultural Mile', with access to theatres, galleries, and dining along it (Gehl, 2022). A **shared surface street** was proposed, and opened in 2007, with the following aims:

- To reintroduce public life into the street;
- To reduce vehicular movement; and
- To increase pedestrian footfall.

(Gehl, 2022) (Civic Engineers, 2022)

The site is relatively flat, stretching 170m in length and running 10-20m wide.

Overall, the street received a 'positive response', but those with a visual impairment felt otherwise, with research by the **GDBA** (2007, cited in Grey & Siddall, 2012, p. 54 - 55) highlighting the streets difficulty to navigate due to the 'lack of kerbs and other navigational cues' that created a sense of vulnerability that will encourage users to avoid the street.

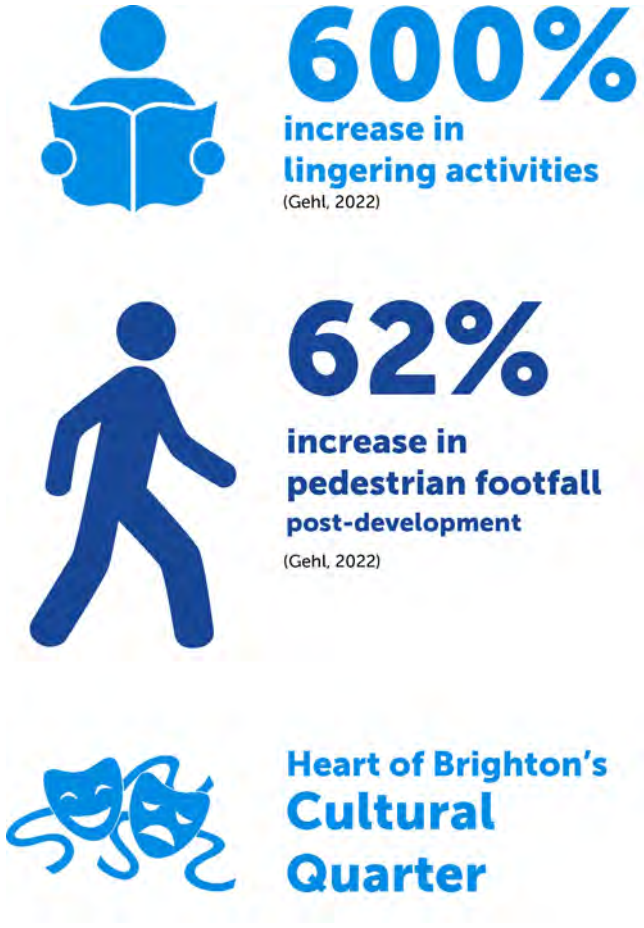


Figure 32: Pedestrian footfall has increased post-development.

Figure 31: New Road is located at the heart of Brighton's cultural quarter.

6.3.2 Images Before and After

Figure 33: Before development. View North-East (Stokes, 2011).

Figure 36: After development. View North (Civic Engineers, 2022).

Figure 34: Before development. View South-East (Land8 Media, n.d.).

Figure 37: After development. View South-East (Google, 2022).

Figure 35: Before development. View South-East (Hamilton-Baillie, 2014).

Figure 38: After development. View South-East (Hamilton-Baillie, 2014).

6.3.3 Comfort Space

New Road does well to blend the safe space and **comfort space**, placing benches along the boundary edge of the safe space, whilst also providing areas for cycle parking and other street features that does not obstruct movement flows.

However, the safe space is interrupted by an overspill dining space at the Northern end, which may cause a visually impaired user to move into the shared environment. The safe space is also only available on the Eastern edge, with the Western edges being cluttered by an array of loose bins, retail overspills, and bollards. Car parking, also scattered along the Western edge, is found to be irregular.

6.3.4 Identifiable Navigation and Demarcation

The safe space is well **demarcated**. A black drain runs along the entire street length and is bounded by guidance paths on either side. Whilst not each significantly different, a mix of grey paving styles has been used along the cross-section of the street.

When entering the space, the Northern entrance uses a **corduroy hazard warning surface** to alert visually impaired users of the potential hazard. However, this is a feature that is missing in the southern entrance.

Figure 39: Seating lines the edge of the street (Mould, 2007).

Figure 41: Drain and tactile guidance paving (Google, 2022).

Figure 40: Cluttered Western edge (Google, 2022).

Figure 42: Comfort space and guidance path interrupted by dining overspill (Google, 2022).

6.3.5 Street Crossings

Only the Southern entrance adopted yellow **blister paving** to identify an **uncontrolled crossing** along the shared surface environment. The street itself has no crossing points. This means that visually impaired users will be reliant on acoustic triggers to know when to cross. The northern entrance, lacks **blister paving**.

Figure 43: Yellow blister paving warns of an uncontrolled crossing (Google, 2022).

6.3.6 Public Engagement

Gehl, the designer of New Road, undertook a 'Public Space/Public Life survey' to understand how the street was used (Gehl, 2022). Gehl talks of an extensive consultation process with residents and stakeholders that was met with opposition. Gehl used their research of sites worldwide to inform the design of New Road, and undertook frequent public consultations to achieve the best outcome (Gehl, 2022). There is no mention of the involvement of visually impaired people or interest groups in the process.

6.3.7 Conclusions

+ A guidance strip through the site uses a black drain and guidance tactile paving.

+ The comfort space has, unobstructive, accessible benches.

+ A corduroy hazard warning surface is used to warn of the shared surface street.

+ A thorough public consultation process informed a design that is reinforced by research.

− The comfort space is not on both sides of the street, and is interrupted by overspills.

− Drivers park their cars where they please.

− The southern entrance lacks a corduroy hazard warning surface.

− No crossing aids within the street.

Figure 44: New Road review conclusions.

6.4 Leonard Circus, London

6.4.1 Introduction

Located in the London Borough of Hackney, Leonard Circus is a shared surface environment that seeks to bring 'together pedestrians, cyclists, and vehicles in a harmonious environment' (VolkerHighways, 2014). The need for redevelopment was driven by the **ULEZ** which encourages active travel (GreenBlue Urban, 2022). The site is a crossroads between Paul Street and Leonard Street, with dining, galleries, and studios within its vicinity. The development, completed in 2014, cost £500,000 (Ethical Stone, 2022).

The key aim of the development was to create unity between all users of the space, inspired by the work of Hans Monderman (VolkerHighways, 2014).

Figure 46: Leonard Circus acts as a new hub.

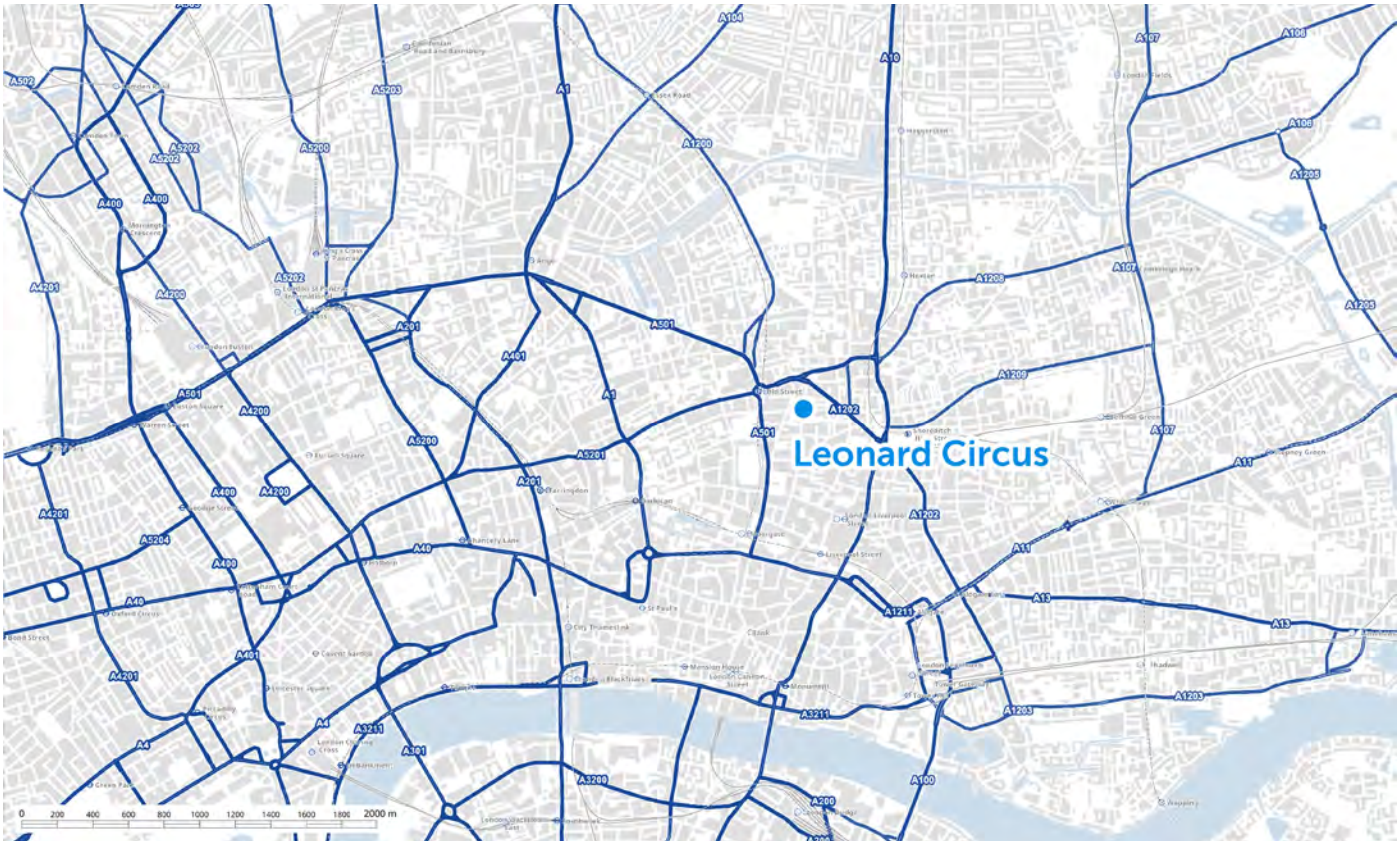


Figure 45: Leonard Circus is located in the heart of London, in the Borough of Islington.

6.4.2 Images Before and After

Figure 47: Before development. View North (CIHT, 2018).

Figure 48: Before development. View East (CIHT, 2018).

Figure 49: Before development. View North-West (CIHT, 2018).

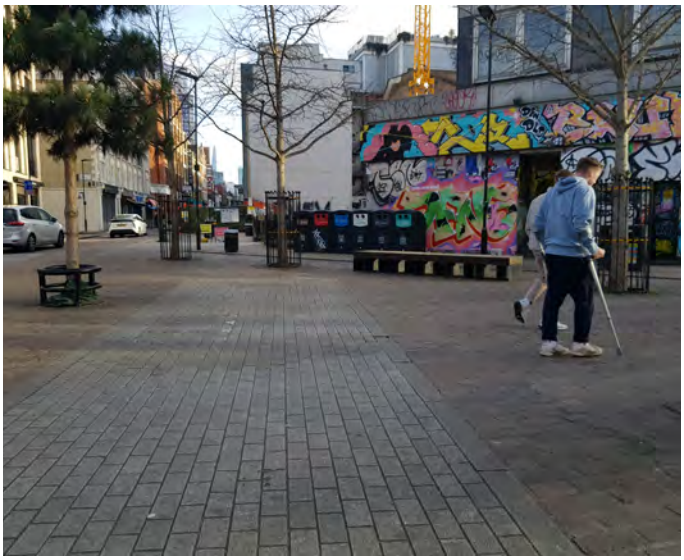


Figure 50: After development. View South.

Figure 51: After development. View East.

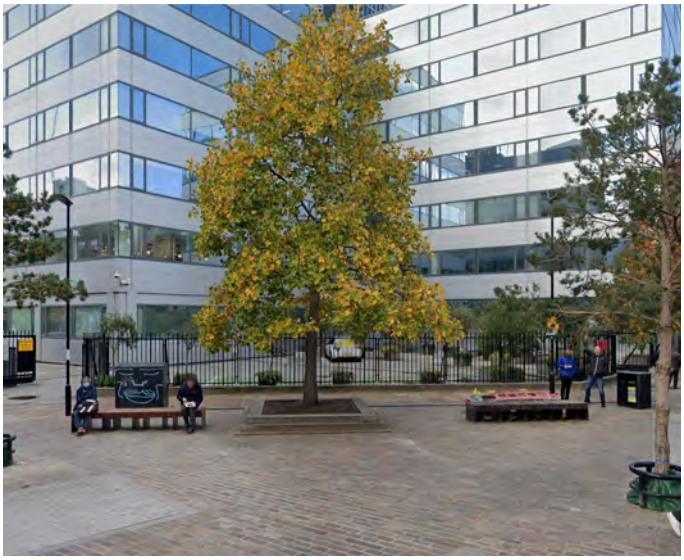


Figure 52: After development. View North-West (Google, 2022).

6.4.3 Comfort Space

Leonard Circus is an open, shared surface space with a footway along its boundaries. In this scheme, the footway acts as a safe space. During the site visit, the footway was cluttered with street bins, lights, and a café overspill. A report by the **CIHT** (2018) found that the footway is also often used for food stalls and events, forcing pedestrians into the shared surface environment. The circus is one level surface but uses a mix of surface materials as a part of the design, which may confuse visually impaired users navigating the space. Benches are available in the shared environment, away from the footway, but are not **demarcated**.

The circus is designed in a way that prevents vehicle parking, due to constant movements and the placement of street trees, benches, and bins. However, this placement is not predictable, so could pose an obstruction for a visually impaired user.

Figure 53: Footway is cluttered with bins and poles (Google, 2022).

Figure 54: Mix of surface materials (Ethical Stone, 2022).

6.4.4 Identifiable Navigation and Demarcation

The design has allowed for a shared surface environment with a retained footway, which uses a 25 mm kerb and black drains along the edges, providing tactile feedback and colour contrast. York stone pavers along the footway provide an additional colour contrast to the main circus (GreenBlue Urban, 2022). **Courtesy crossings** are **demarcated** with yellow **blister paving**.

Reflective yellow strips on the tree guards are a small detail that can aid identification through colour contrasts.

Figure 55: 25mm kerb and a black drain identify the edge of the comfort space.

Figure 56: Reflective strips on the tree guards.

6.4.5 Street Crossings

Uncontrolled courtesy crossings are positioned at the four entrances to the site. Whilst the crossings are **demarcated**, there are no aids to assist visually impaired users to cross them.

Figure 57: Blister paving at an uncontrolled courtesy crossing.

Figure 58: Raised carriageway into the shared surface space uses a different paver.

6.4.6 Public Engagement

The **CIHT** (2018) reports that during the consultation period, concerns were raised by the 'Disability Back Up group' which led to design changes, such as the 25mm kerb, to increase the safety for all users with a disability.

6.4.7 Conclusions

+ A 25mm kerb and black drain demarcate the shared surface space.

+ The placement of street furniture and trees prevents parking.

+ Demarcated crossing points.

+ Reflective strips on tree guards

+ Involvement of disability groups in the public consultation process.

− Too much surface material variety could confuse those using visual cues.

− The irregular placement of street trees and furniture is obstructive.

− Street furniture is not demarcated.

− The footway is not clear of obstructions.

Figure 59: Leonard Circus review conclusions.

7. Interview Findings

7.1 Introduction

Chapter 7 discusses the interview findings, which portray lived experiences of how visually impaired individuals navigate high-traffic and **shared surface streets**, the challenges they face, and the features they find useful.

The interviews highlight the extent to which each disability is unique. One participant was blind, whereas five were **partially sighted**, varying from peripheral vision to recognising shapes. Some participants find certain colours more identifiable, one participant noted lighter colours as more prominent, with another describing the opposite.

The initial methodology proposed two interviews with visually impaired individuals and two interviews with organisations. After contacting a variety of organisations, none were willing to take part for a variety of reasons. Instead, six interviews with individuals were conducted. These individuals got in touch via an advertisement on the **RNIB** Connected Voices Network.

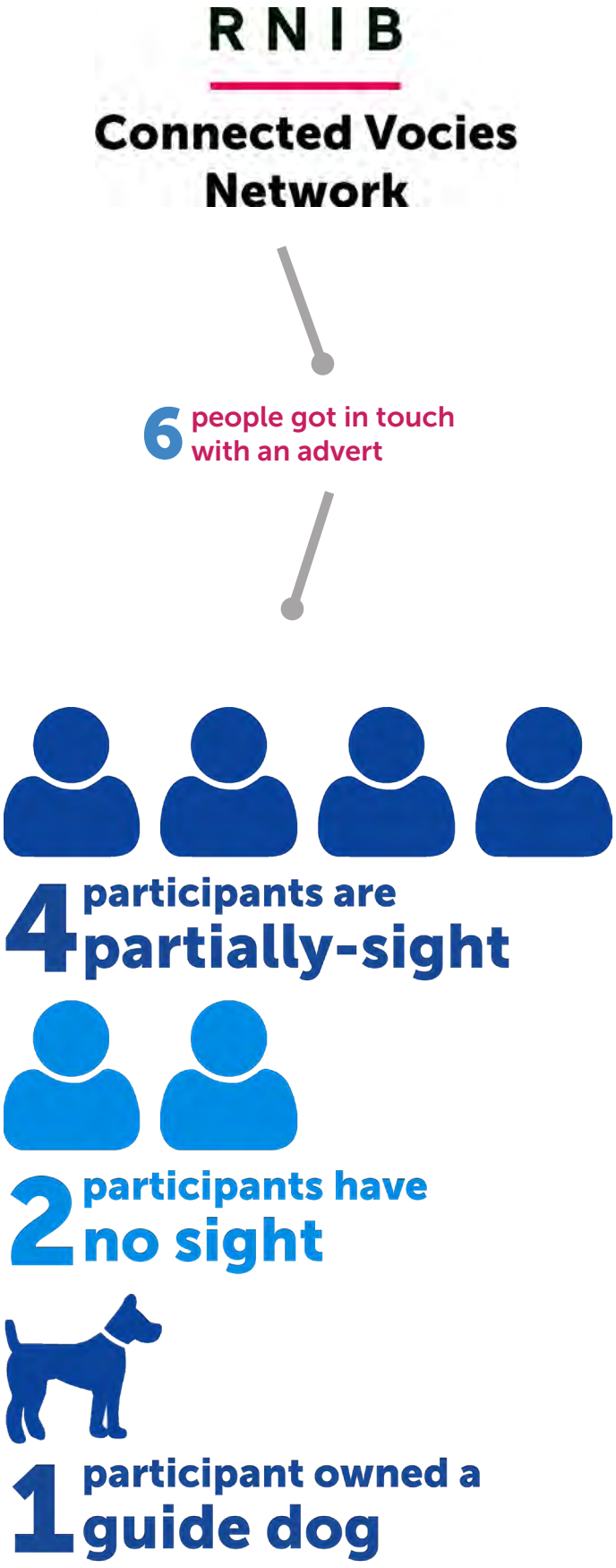


Figure 60: Different levels of sight among participants.

7.2 Discussion

7.2.2 Comfort Space

Research has shown that businesses often overspill into comfort and safe spaces for dining and A-Boards. Whilst this is advantageous for business, it is an obstruction for visually impaired users. Interviewees talked of frequently bumping into A-Boards, which can be difficult to distinguish because of their dark colours, as well as other furniture including bins, benches, bollards, and particularly street signage. A common feature of **Shared Surface Streets** is the removal of road signs to achieve traffic calming (Hamilton-Baillie, 2008, p. 167).

The participants noted that high numbers of pedestrian and vehicle movements create anxiety, raise nerves, and makes them feel unsafe, forcing them to act cautiously. 20mph vehicle speeds were highlighted as being too fast for **shared surface streets**, and a speed of 10mph would be more appropriate. Interviewees illustrated that electric vehicles are of great concern, describing various occasions where they could not be identified as they failed to produce noise, despite legislation in

Figure 62: Recommended vehicle speeds by interviewees.

2019 requiring that new vehicles generate noise when driving below 12mph (DfT, 2019). The emergence of e-scooters has added to the sense of danger, with users weaving along pavements, and parking bays using limited walking space that block navigable **shorelines** for the visually impaired. Interviewees recognised that stronger education could resolve this.

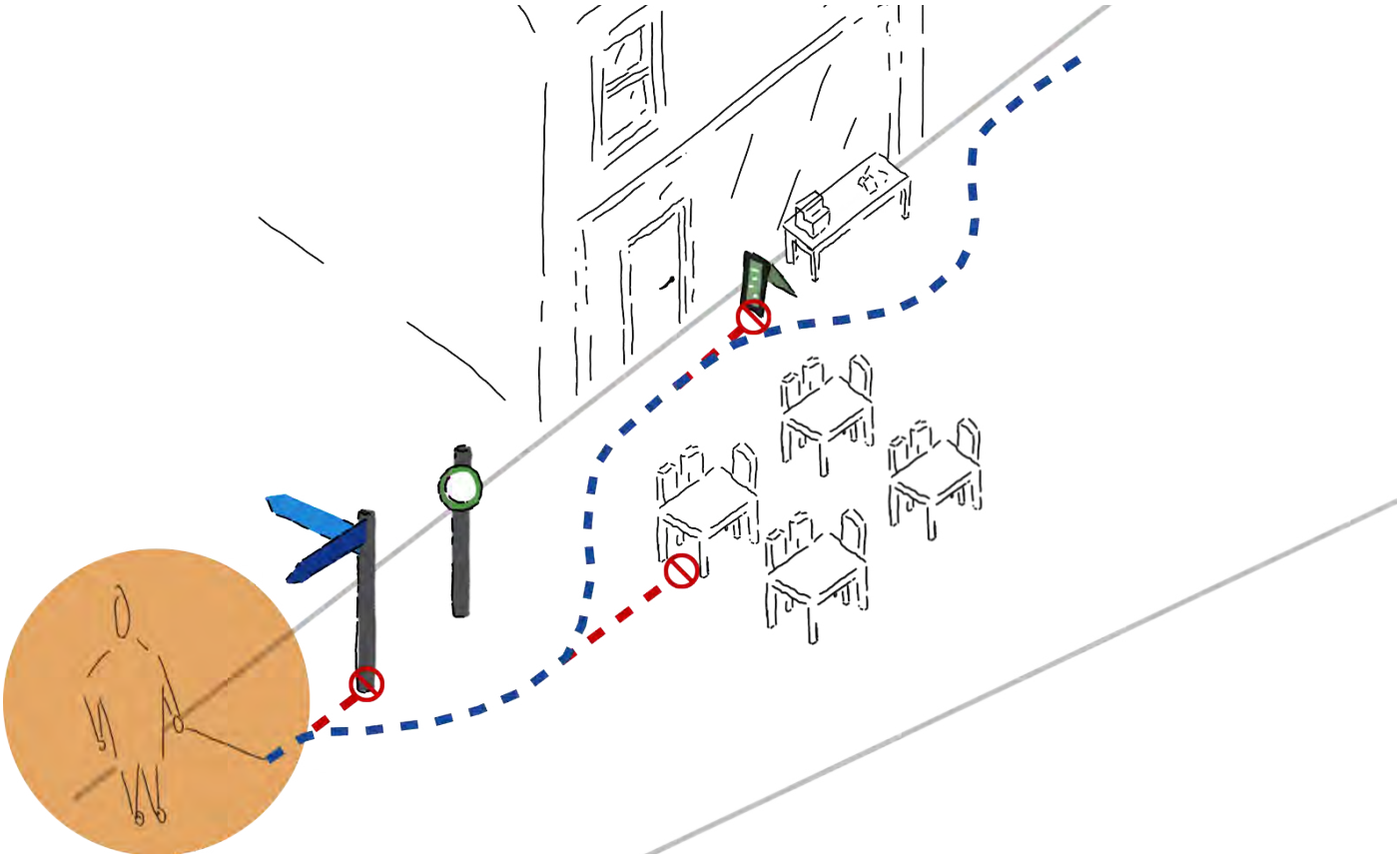


Figure 61: Walking routes are frequently obstructed by street furniture.

Figure 63: E-scooter parking takes up pavement space, and can often be neglected. Source: (Schwarzbeck, 2019).

Figure 64: UK Guidance Paving. Source: (Marshalls, 2022).

Vehicles are often found to park irregularly within **shared surface streets**. One participant expressed how parked cars can be used as a protection tool when crossing the street. Contrarily, other participants described them as an obstruction and canes can get stuck under them. Rather than removing vehicle parking, interviewees recognised the need for greater controls, whether that be through street design and/or physical restrictions.

A contentious issue was the lack of kerbs, with all interviewees recognising the need for a kerb to distinguish the pavement and **shared spaces**, though one participant highlighted that if a kerb is too high it could cause a fall. Any design of **shared surface streets** needs to consider the impacts of the removal of the kerb and provide a suitable alternative.

7.2.3 Identifiable Navigation and Demarcation

Shorelining was described as a key way that visually impaired individuals navigate streets, following either the building line or kerb, which are both often obstructed by street furniture. One participant explains they navigate by 'bouncing off of things', whilst others rely on landmarks and memorable features to locate themselves (Anon, 2022). Where possible, high-traffic and **shared surface streets** are typically avoided, as they walk more comfortable, practised, routes.

With the removal of kerbs, visually impaired users need a safe way to navigate. The participants proposed the creation of a defined, pedestrian-only, area, similar to the concept of Safe Spaces discussed in Chapter 2. The idea of guidance strips received a mixed response, some felt it is a useful tool, whereas others highlighted that it is not 100% effective and identifiable.

Tactile paving has been illustrated as a useful tool for navigation and demarcation. However, the interviews presented an alternative perspective, with a few participants considering the UK **tactile paving** system as too confusing, with too many varieties of surfacing, making it difficult to decipher what is being communicated. It was expressed that the quality and type of **tactile surfacing** is dependent on the location and the user, because of factors such as maintenance and individual training. Nonetheless, the interviews acknowledged that **tactile paving** can be a useful helpful for locating oneself along a familiar route, rather than serving as a warning, for example. In this regard, the interviews raised awareness that many **shared surface streets** lack a warning to visually impaired individuals of a potentially dangerous environment.

Figure 65: Various types of tactile paving in the UK. Source: (Paving Expert, 2022).

7.2.4 Street Crossings

It was discussed that straight lines are easiest to navigate, but curves in the street form are only a challenge when attempting to cross the street. In quiet environments, **uncontrolled crossings** can be comfortably used, but in high-traffic spaces, where there is sensory saturation, **controlled crossings**, such as **Puffin Crossings**, are necessary. This is especially important when considering that electric vehicles are difficult to identify.

Guide Dogs do not understand **shared surface streets** as they are taught to guide their partner along a straight line, and when needing to cross, to sit at the edge of the kerb and wait for instruction. One participant described that removing the kerb can confuse **guide dogs**, as the road space cannot be identified.

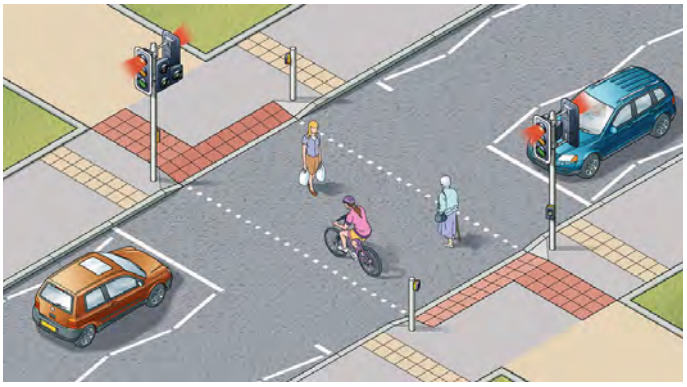


Figure 66: The toucan crossing is a controlled crossing point - the type the participants were most comfortable using. Source: (TheoryTest.org.uk, 2022).

7.2.5 Public Engagement

Many elements of public engagement were raised during the interviews, supplementing the indicators in the analytical framework.

Participants highlighted that whilst it is relatively easy to contact developers, taking part in public consultations can be difficult for a range of reasons. Traditionally, the public is made aware of a planning application by street signpost notices, but since the COVID-19 pandemic, consultations have become more digital and in no way more accessible for those with a visual impairment. Websites are often not formatted for screen readers and planning applications are supported by an array of maps and plans, which cannot be read or understood.

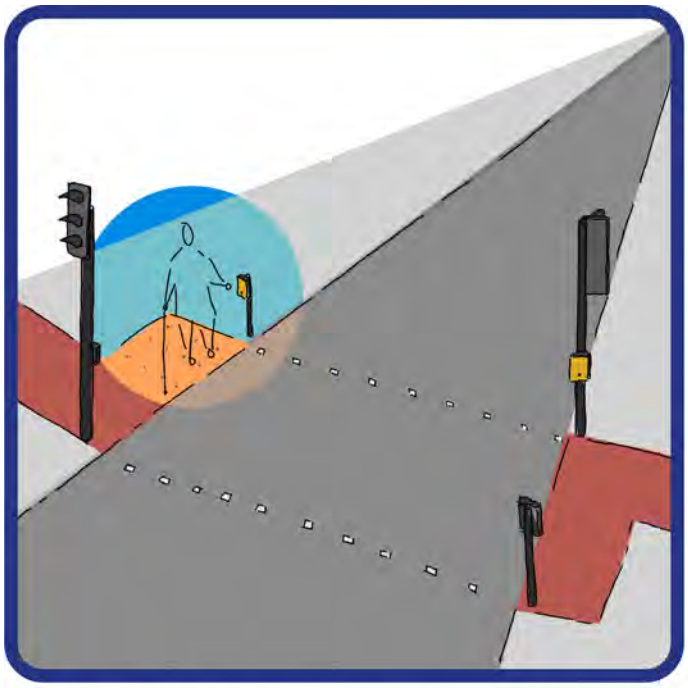
When individuals have contacted their local authority, it is felt that their voice has not been heard, either because the processes are tedious, or because those with a disability are an afterthought in the planning process. Haberman (2008, cited in Imrie, 2012) theorised this as '**weak publics**' and believes that this group can provide valuable information in planning processes. Yet one participant spoke of feeling 'alien' in their built environment, and there is a systemic 'denial of streets to people' (Anon, 2022). This is considered to be a result of many factors, including a perceived lack of education and understanding of disabilities. Relating to **shared surface streets**, participants noted that the public do not understand how to use **shared spaces**.

The recent changes to the Highway Code in 2022, introduced a new transport hierarchy, where 'drivers and riders should give way to pedestrians' (HM Government, 2022). This is a step change in the right direction, but the participants acknowledged that there must be significant cultural and educational development to improve their sense of safety.

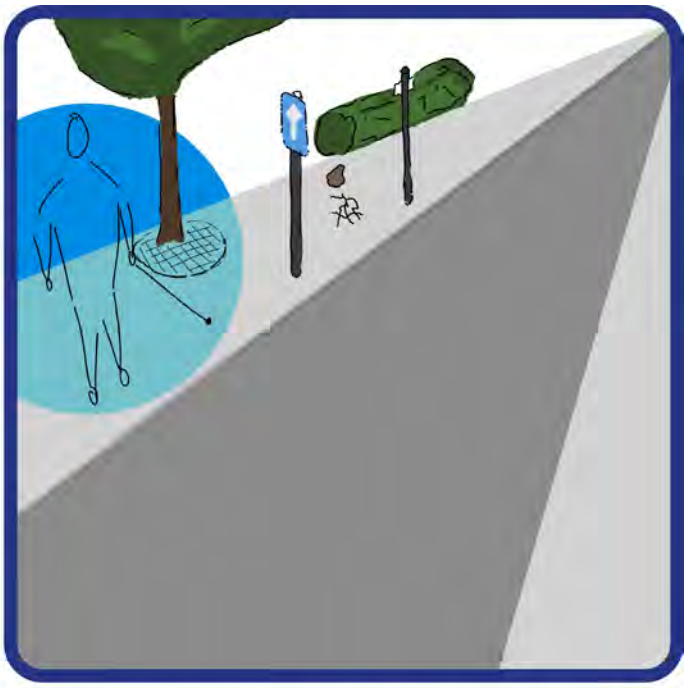
7.3 Conclusions

When proposing a shared surface environment it is important to consider that some people have more than one disability, so any proposals should not impede those with other disabilities.

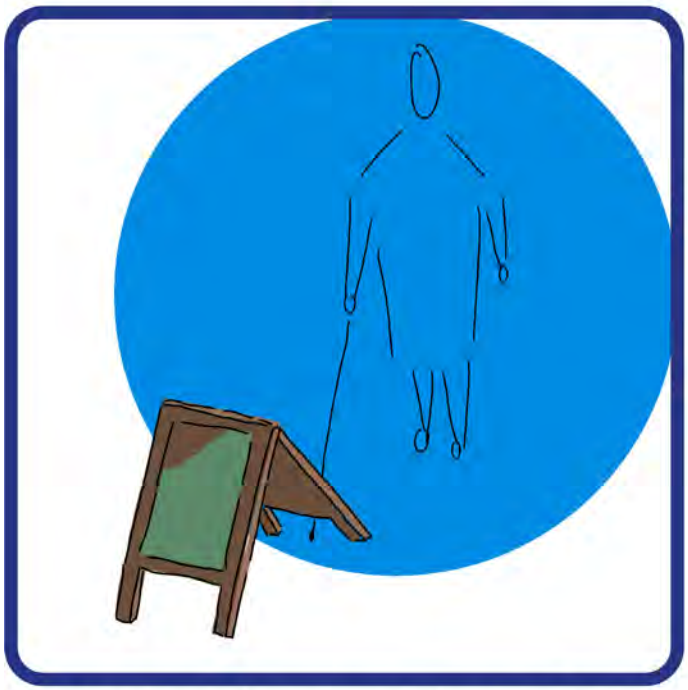
The interviews have developed a greater understanding of the experience of moving through all street types with a visual impairment. Regarding high-traffic, shared surface streets, they raised the following key points:



Controlled crossings are safer.



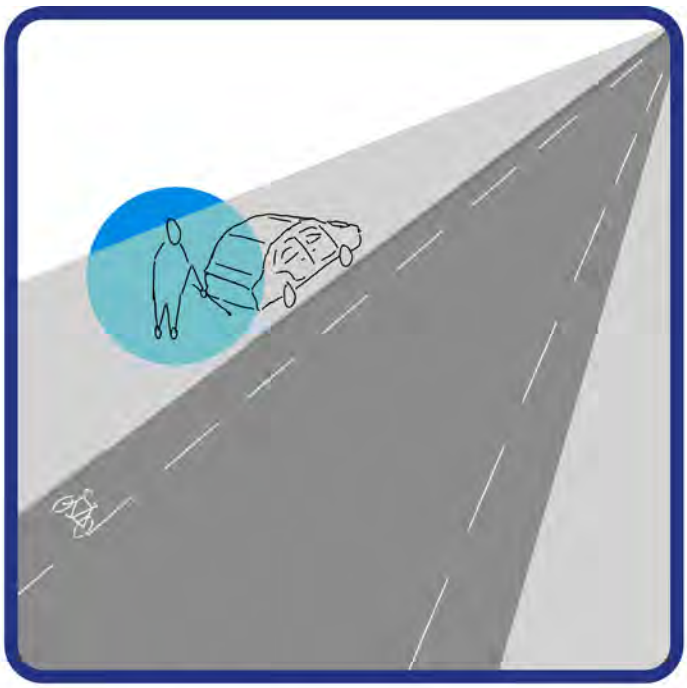
Footpaths and shorelines are often obstructed.



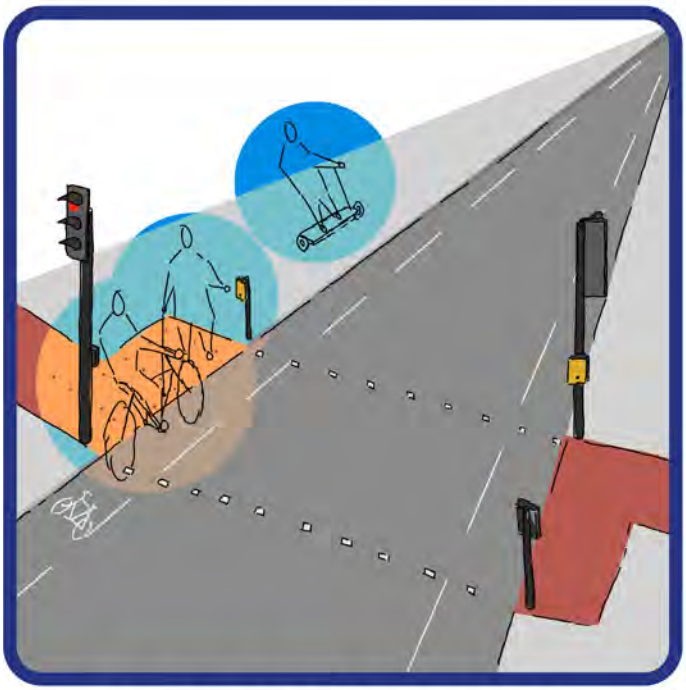
Pavement overspills, such as A-boards, affect navigation and confidence.

Vehicle Speeds create anxiety.

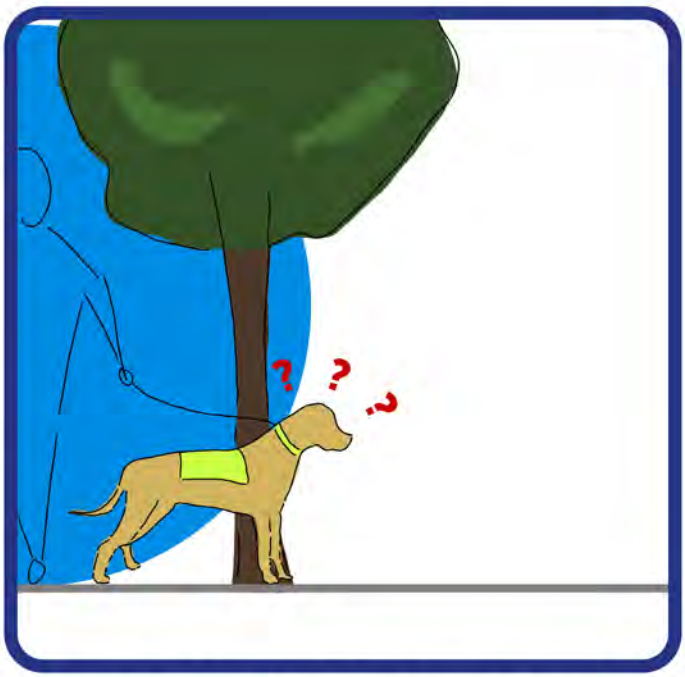
Silent electric vehicles and e-scooters cannot be identified.



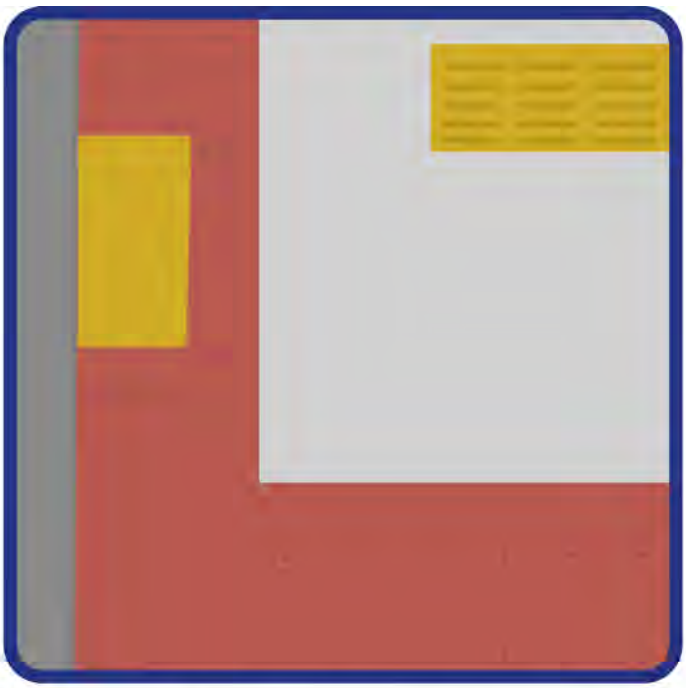
Parking controls are not enforced.



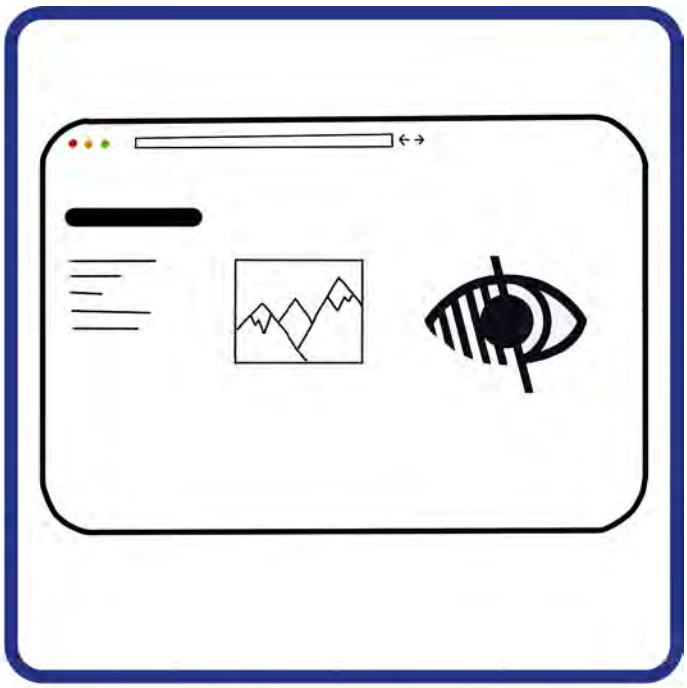
Cyclist and e-scooter user behaviours are often inappropriate.



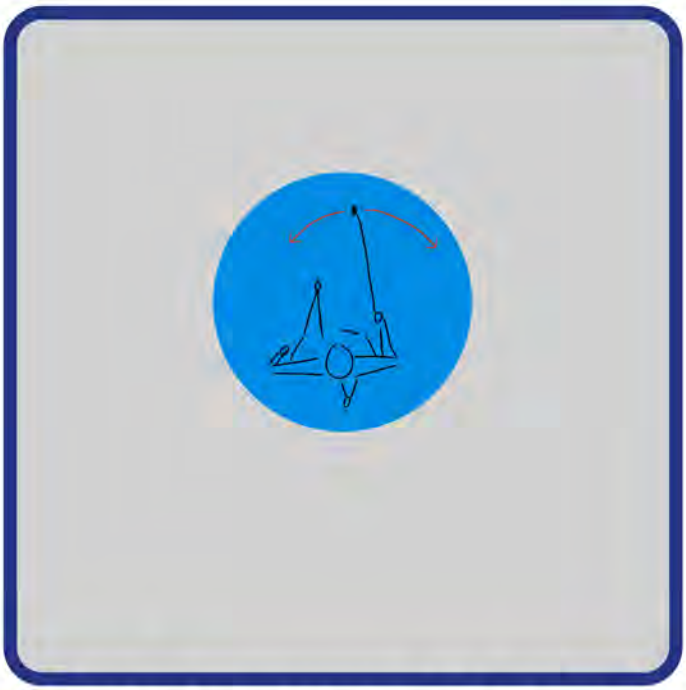
Lack of kerbs confuse guide dogs and hinder safety of an individual.



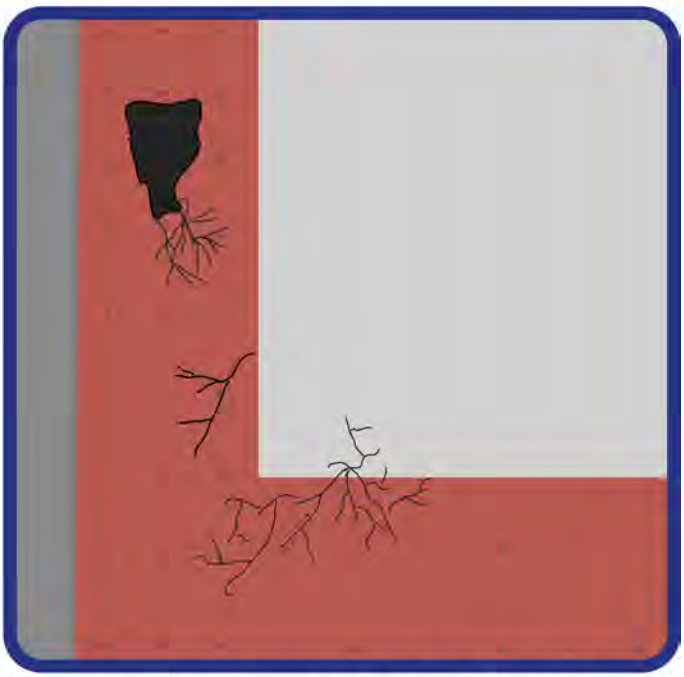
Cluttered tactile paving reduces its effectiveness.



E-consultations are not screen readable, with accessible websites, maps and plans.



Lack of warning of shared surface spaces.



Tactile paving and street surfaces are not well-maintained.

Figure 67: Icons showing interview conclusions.

8. Design Recommendations

8.1 Introduction

This study has looked at the challenges regarding safety and navigation of **shared surface streets**, reviewing existing literature and policy, reviewing case studies, and interviewing individuals. This chapter combines all the knowledge gathered and produces a set of design recommendations that relate to the analytical framework.

8.2 Comfort Space

Challenge: Shorelines are often obstructed.

Recommendation 1 : Minimise Street Signage.

Rationale: To create an unobstructed walking route.

Recommendation 2: Create designated pedestrian footpaths on both sides of the street, free of street furniture.

Rationale: To create a safe buffer space to navigate.

Challenge: Business overspills.

Recommendation 3: Create a designated area for overspills, such as A-Boards and outdoor dining.

Rationale: To ensure the footpaths are free of clutter, and the street space is well-managed.

Challenge: Poor cyclist behaviour.

Recommendation 4: Cycle symbol marking in the **shared space** entrance and a Pedestrian symbol marking on the footpath entrance.

Rationale: To remind cyclists that they can move through the **shared space**, but not the footpath.

Challenge: Irregular vehicle parking.

Recommendation 5: Limit vehicle parking unless essential. Where needed, it must be marked with white lines, be located away from designated street crossings, and feature a **corduroy tactile** strip along the footpath edge.

Rationale: To make movement easy and unobstructed. Where parking is needed, it must be identifiable.

Challenge: Poor maintenance.

Recommendation 6: Walking surfaces must be well-maintained. Repairs should be done with the same surface material, i.e. broken paving slabs should not be filled in with tarmac.

Rationale: To create a consistent, uniform walking profile, so that the white cane can more easily identify **tactile paving** and other features.

8.3 Identifiable Navigation and Demarcation

Challenge: UK **Tactile** System is inconsistent.

Recommendation 7 : Use of national **tactile markings** is essential.

Rationale: This is part of a wider problem of inconsistency in the use of **tactile markings** between places in the UK. This needs to be resolved at a national policy level.

Challenge: Cluttered and poorly maintained **tactile markings** reduce its effectiveness.

Recommendation 8: Tactile markings need to be clearly and correctly laid by developers and maintenance teams.

Rationale: There is a lack of understanding by developers and maintenance teams who place **tactile markers.**

Challenge: Lack of warning of **shared spaces**.

Recommendation 9: Shared surface streets should use the '**ladder & tramline**' **tactile paving** along the entrance (DfT, 2021).

Rationale: This acts as a warning and identifiable tool to highlight where the footpath and **shared spaces** are.

Recommendation 10: The footpath should provide a colour contrast to the **shared space**.

Rationale: This provides an additional visual cue for the **partially-sighted**.

Challenge: Fast-moving vehicles create anxiety.

Recommendation 11 : Speeds should be limited to 10mph.

Rationale: Helps to create a calmer and more manageable environment. Lower speeds encourage cyclists to use the **shared space**.

Challenge: **Guide dogs** rely on kerbs.

Recommendation 12: Use of a 50x200mm slope to act as a kerb. A black drain should run along the lower edge.

Rationale: Combining the slope and drain should provide an identifiable, yet safe, edge of the footpath, whilst not harming the **shared space** effect.

The effectiveness of this slope for **guide dogs** is yet to be tested.

Challenge: Guidance paths are not 100% effective.

Recommendation 13: National 'Guidance Path' Surfacing should be used:

- Where there are significant destinations, such as supermarkets, bus stops, or rail stations.

Rationale: In short sections of **shared surface streets**, a guidance strip would not be necessary but could be a useful tool when an individual needs to navigate to a destination and/or avoid obstacles.

8.4 Street Crossings

Challenge: Uncontrolled **crossings** are unsafe in high-traffic environments.

Recommendation 14 : The use of **controlled crossings** depends on the street length.

- If considered short: 1 crossing should be located in the centre or outside a significant feature, such as a bus stop or supermarket.
- If considered long: Crossings should exist at 1 or both ends of the street, and at least once in the street centre or outside a significant feature.

Rationale: The use and location of **controlled crossings** are important to allow safe access to the street and buildings. In short street lengths, more than one **controlled crossing** would reduce the benefits of shared environments.

Recommendation 15: **Controlled Crossing** signals should be uniquely designed with a silver pole, red and green signals, and traditional button panel.

Rationale: Typical design of traffic signals would harm the benefit of **shared space**, and would be a move towards traditional car-orientated street design.

Challenge: Electric vehicles and scooters cannot be identified.

Recommendation 16: Electric vehicles must produce an engine sound within a **shared space**. Vehicles without this should not be permitted.

Rationale: Sounds and lights are important for the identification of electric vehicles.

Recommendation 17: E-scooters must be restricted to the shared space, away from the footpath, with lights switched on.

Rationale: E-scooter technology allows the mapping of streets to ban them from footpaths.

8.5 Public Engagement

Challenge: E-Consultations are not accessible.

Recommendation 18: All high-traffic **shared space** consultations must have webpages, maps and diagrams that are screen readable.

Rationale: This ensures those most affected by the proposal can respond to it and improve it.

Challenge: Users unaware of how to use **shared spaces**.

Recommendation 19: **Shared surface streets** should be included in The Highway Code.

Rationale: This ensures that **shared surface streets** are formally taught and understood.

Recommendation 20: 3month temporary signage should instruct all users how to approach the space.

Rationale: This educates the public about **shared spaces** when it is first implemented.

Challenge: Councils lack the resources and will to respond to visually impaired needs.

Recommendation 21: Education among council staff is needed.

Rationale: Whilst education is beneficial, systemic change is needed at a national level to provide councils with the appropriate funding to create safe environments.

8.6 Recommendations in Action

8.6.1 2D Plan

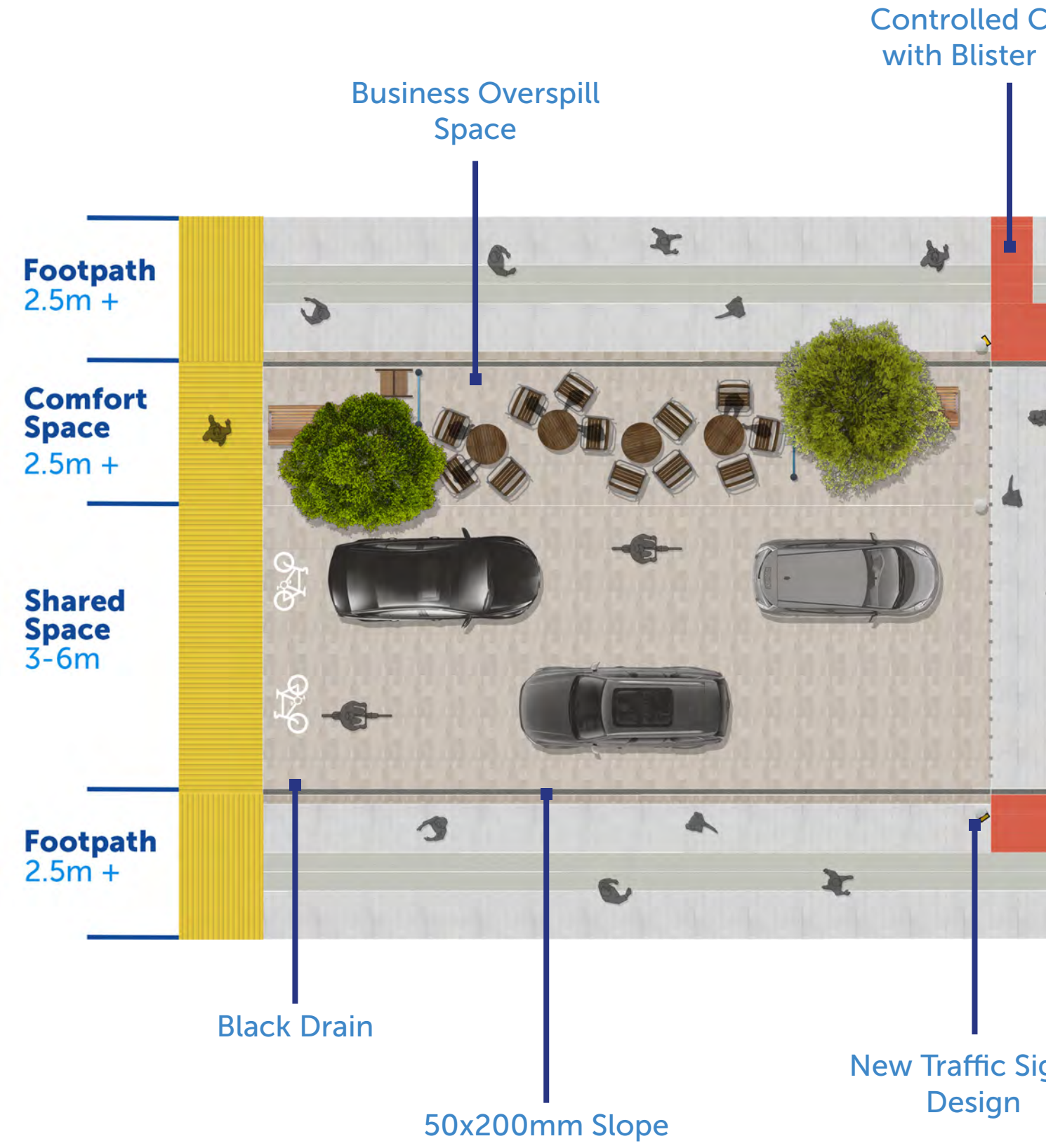
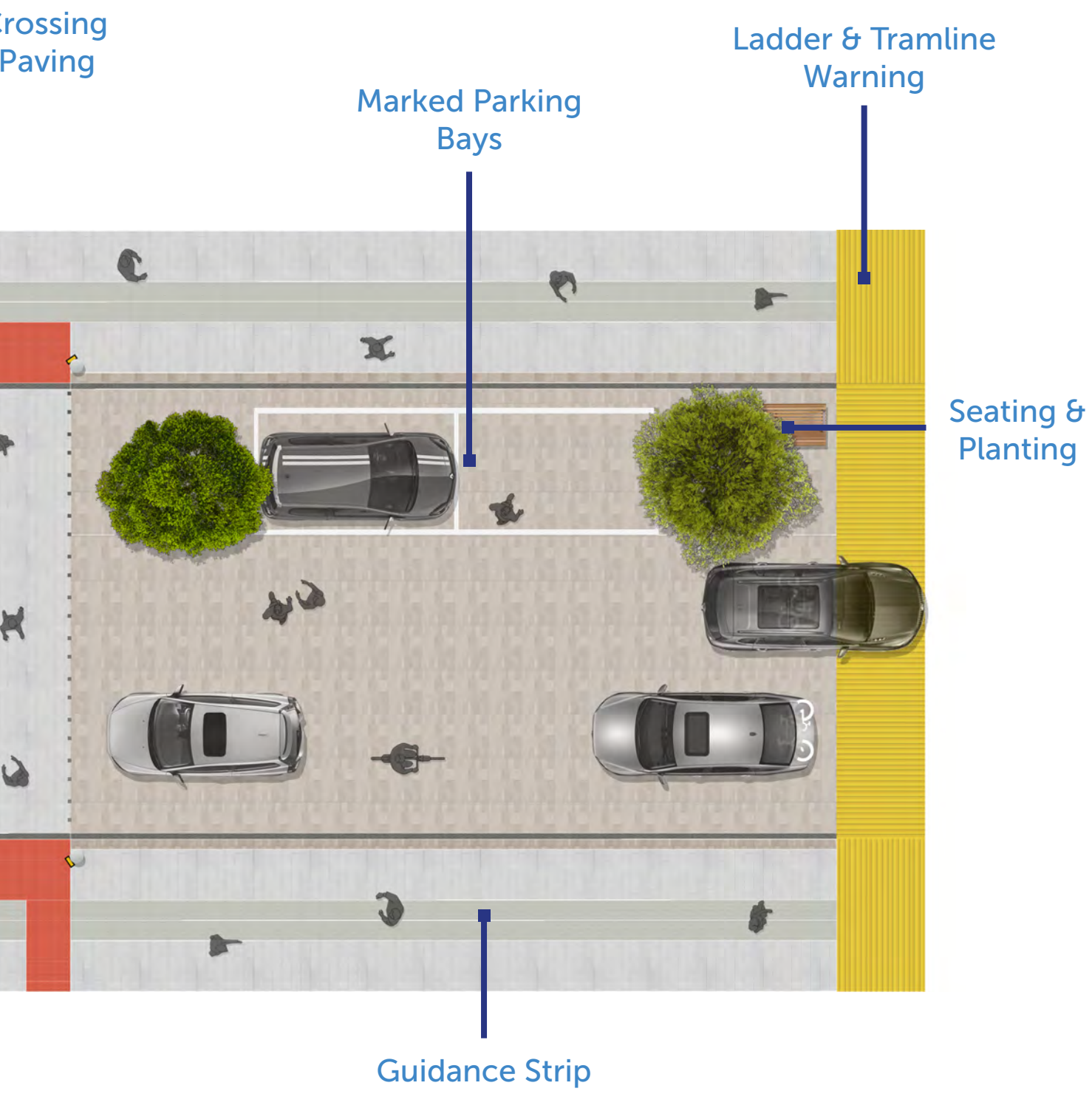


Figure 68: 2D Visual Recommendations.


rossing
Paving
Marked Parking
Bays
Ladder & Tramline
Warning
Seating &
Planting
Guidance Strip
gnal

8.6.2 2D Plan - Wider Street

Figure 69: Visual representation of a wider street.

Wider streets can adopt an additional comfort space.

8.6.3 Cross Section

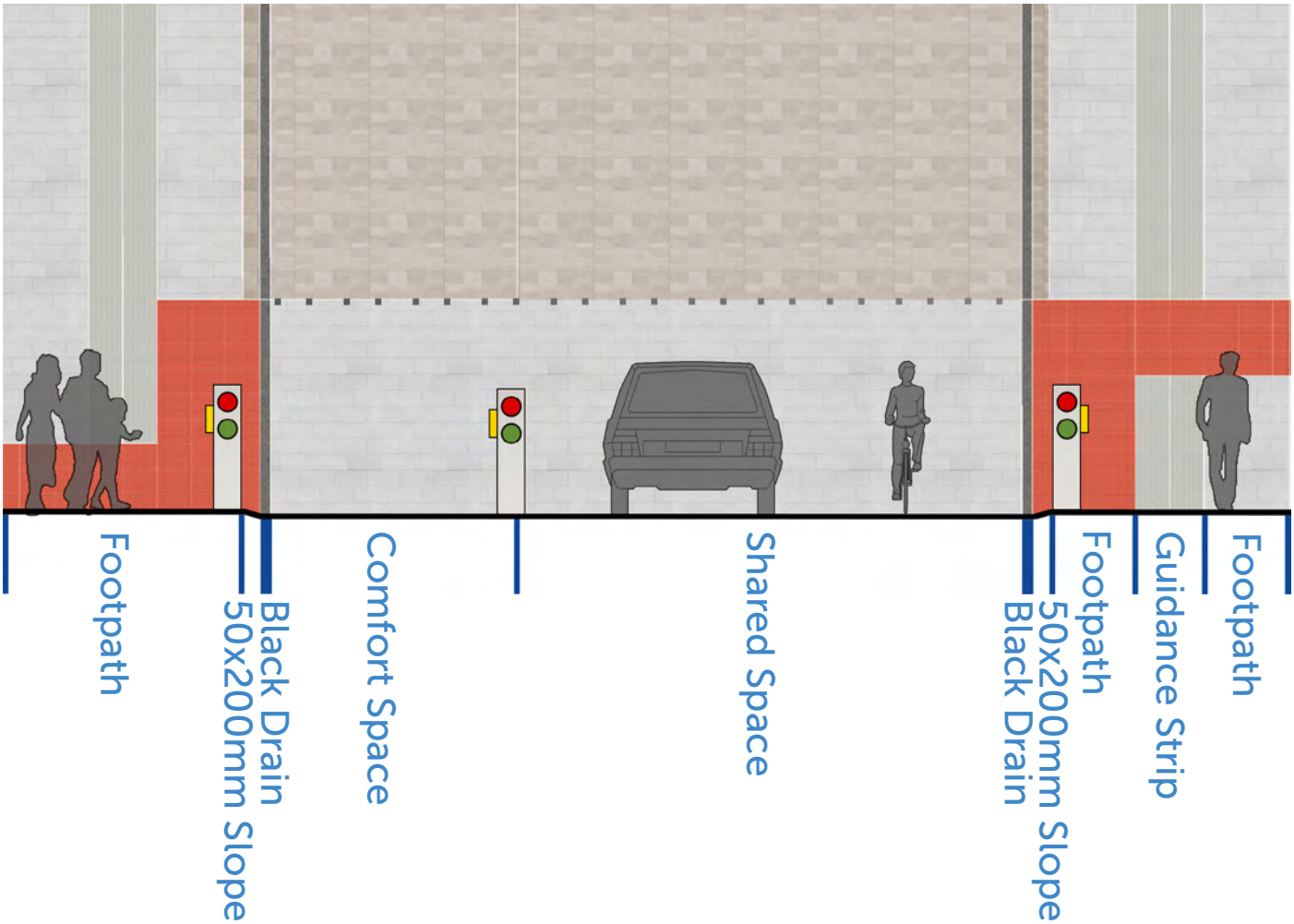


Figure 70: Cross-section of the controlled crossing.

8.6.4 Traffic Signals

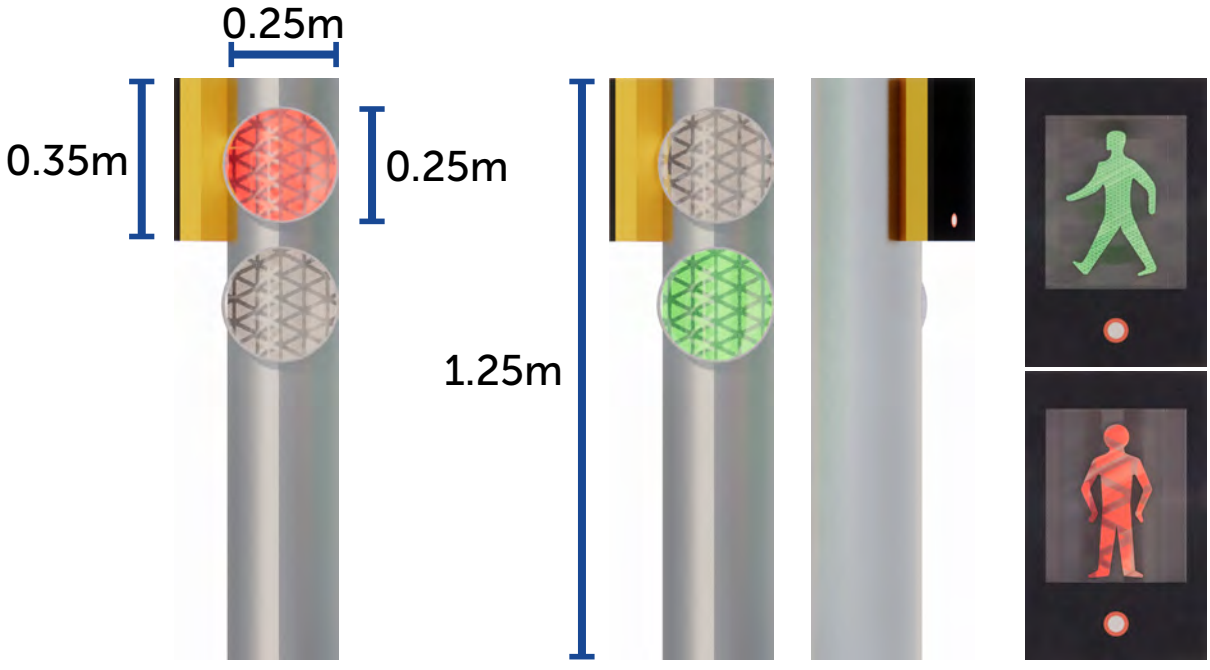


Figure 71: Proposed Shared Street Traffic Signal.

8.6.5 3D Visuals

Figure 72: Proposed alternative to a kerb: A concrete slope with an adjacent black drain.

Figure 73: Ladder & Tramline Paving and cycle markings act as warnings of the shared space.

Figure 74: The comfort space can contain enclosed overspill spaces, planting and street furniture.

Figure 75: 3D Visual.

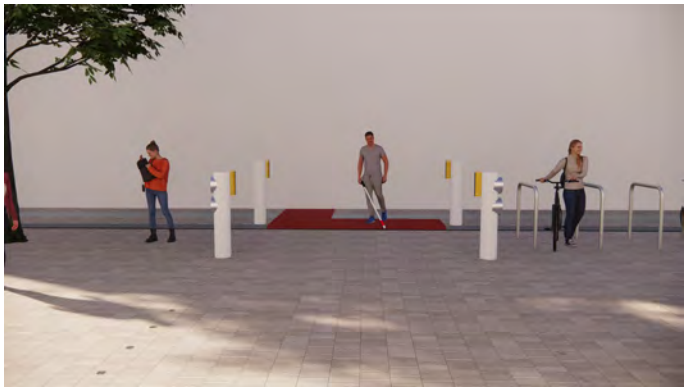


Figure 76: The controlled crossing is similar to navigate to traditional crossings.

9. Conclusions and Reflections

9.1 Conclusion

9.1.1 Key Findings

To navigate streets safely, routes need to remain unobstructed as individuals navigate using **shorelines**. A **comfort space** acts as an area for furniture to ensure that the footpath remains clear.

Even in **Shared Surface Streets**, the kerb should remain an essential guiding tool. Removing a kerb not only makes the street unsafe but also confuses **guide dogs**.

A well-maintained walking surface is vital for safety, as it allows for easier readability of **tactile surfaces**. Poor maintenance and over cluttering **tactile paving** can confuse the user. **Tactile paving** should be used as identifiable markers for points along a route, such as an entry in **shared surface streets**.

In high-traffic areas, the research shows that visually impaired people avoid **uncontrolled crossings** due to a sense of danger. **Shared surface streets** need to use **controlled crossings** to allow visually impaired individuals to cross and navigate safely, however, a new traffic signal design is needed to not risk creating a car-dominance. Electric vehicles, e-bikes and e-scooters, further justify this. Visually impaired people will rely on auditory queues to identify these vehicles, and so they should be detectable by auditory and visual cues.

The ability of visually impaired individuals to contribute to public consultations is vital to better design proposals. Digital consultations are not accessible, with maps and diagrams that are not screen readable. This makes it difficult for individuals to respond to shared surface proposals.

9.1.2 Aims and Objectives

Aim: To form a set of design recommendations that will improve the safety of **shared surface streets** for the visually impaired, with a focus on high-traffic areas.

OBJ1: Research existing guidance for the design of shared surface streets.

This review found no overarching design guidance, and identified flaws where recommendations have been withdrawn all proposed developments are paused.

OBJ2: To develop an Analytical Framework to set a foundation for the case study analysis.

The analytical framework set out consistency in the research, with a focus on the themes and indicators.

OBJ3: Use the Analytical Framework to analyse case studies of shared surface streets in high-traffic areas.

The framework structured the audit of three case studies that discovered issues with cluttered spaces, lack of colour contrasts, and lack of safe crossings.

OBJ4: Undertake primary research to uncover unique experiences of high-traffic and shared surface streets for the visually impaired.

The seven interviews brought new issues to the research, conveying the importance of colour contrasts, unobstructed routes, proper maintenance and accessible engagement. The interviews highlighted discrepancies in the UK tactile paving system and the need to educate governments and the wider public about issues relating to how those with visual impairments navigate places, and how to interact with them.

OBJ5: Form a set of design principles using the identified findings.

The findings of the research led to the formation of 21 recommendations to solve the challenges identified in the research.

9.2 Reflections

9.2.1 Limitations

The scope of this research has been limited by the word count, which means that some information has been removed to meet coursework requirements. This may have impacted the effectiveness of the research outcomes.

There was a lack of information related to the selected case studies, particularly surrounding their public consultations. Two site visits were conducted to get an understanding of the sites and their features, though it was not possible to visit New Road, Brighton, due to time limitations. As a result, the information conveyed is reliant on a range of secondary sources.

As noted in the methodology, the research proposed interviewing two organisations and two visually impaired individuals. After contacting three organisations, none were able to participate, for reasons such as application processes. However, six individuals, including one who had a guide dog, got in touch through the RNIB Connected Voices Network, contributing valuable information to the research. This could have been a bigger study, that took a co-creation approach from the outset.

9.2.2 Research Contribution

There is a growing demand for pedestrian-friendly streets, evidenced in the recent changes to the 2022 Highway Code. **Shared surface streets** provide this with the benefits of an attractive and socially cohesive environment. Additionally, our public spaces must be designed inclusively. Existing research shows **shared surface streets** are unsafe for those with a visual impairment, and governments have failed to effectively respond to this. This research proposes twenty-one recommendations to create a safe, navigable environment, without harming the usability and benefits of the street.

9.2.3 Further Research

Acknowledging the limitations of this research, and the unique and varying disabilities, opinions, and factors that interplay, an inquiry by design approach needs to be adopted to test the success of the recommendations put forward in this paper, and make adjustments.

To inform this, the research needs to jointly collaborate with a range of relevant organisations, and interview a larger sample of visually impaired individuals, for a more accurate outcome.

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Unless otherwise stated, all graphics throughout this report are my own.

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Appendices

Ethics Forms
Interview Transcript

11.1 Ethics

11.1.1 E1 Form

OXFORD BROOKES UNIVERSITY

TDE Form E1

Faculty of Technology, Design and Environment - Ethics Review Form E1

- This form should be completed jointly by the **Supervisor and Student** who is undertaking a research/major project which involves human participants.
- It is the **Supervisor** who is responsible for exercising appropriate professional judgement in this review.
- Before completing this form, please refer to the University **Code of Practice for the Ethical Standards for Research involving Human Participants**, available at http://www.brookes.ac.uk/Research/Research-ethics/ and to any guidelines provided by relevant academic or professional associations.
- Note that the ethics review process needs to fully completed and signed **before fieldwork commences**.

(i) **Project Title:** How Can Shared Surface Streets be designed to improve safety for the visually impaired?

(ii) **Name of Supervisor and School in which located:** Ben Spencer – School of the Built Environment

(iii) **Name of Student and Student Number:** Joe Bonomo - 19016542

(iv) **Brief description of project outlining where human participants will be involved (30-50 words):**

To conduct interviews with 2 organisations to learn about their research and how visually impaired people and guide dogs respond to shared surface streets. Also to interview 2 visually impaired individuals, found through social media or a gatekeeper, to learn about their experiences and ideas to improve safety.

		Yes	No
1.	Does the study involve participants who are unable to give informed consent (e.g. children, people with learning disabilities)?	☐	☑
2.	If the study will involve participants who are unable to give informed consent (e.g. children under the age of 18, people with learning disabilities), will you be unable to obtain permission from their parents or guardians (as appropriate)?	☐	☑

3.	Will the study require the cooperation of a gatekeeper for initial access to groups or individuals to be recruited (e.g. students, members of a self-help group, employees of a company)?	☑	☐
4.	Are there any problems with the participants' right to remain anonymous, or to have the information they give not identifiable as theirs?	☐	☑
5.	Will it be necessary for the participants to take part in the study without their knowledge/consent at the time? (e.g. covert observation of people in non-public places?)	☐	☑
6.	Will the study involve discussion of or responses to questions the participants might find sensitive? (e.g. own traumatic experiences)	☐	☑
7.	Are drugs, placebos or other substances (e.g. food substances, vitamins) to be administered to the study participants?	☐	☑
8.	Will blood or tissue samples be obtained from participants?	☐	☑
9.	Is pain or more than mild discomfort likely to result from the study?	☐	☑
10.	Could the study induce psychological stress or anxiety?	☐	☑
11.	Will the study involve prolonged or repetitive testing of participants?	☐	☑
12.	Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?	☐	☑
13.	Will deception of participants be necessary during the study?	☐	☑
14.	Will the study involve NHS patients, staff, carers or premises?	☐	☑

Signed:		**Supervisor**
Signed:		**Student**
Date:	18th March 2022	

What to do now:

1. If you have answered **'no'** to all the above questions:

   (a) The student must **send** the completed and fully signed E1 form to their **Dissertation Module Leader.**
   (b) The student must keep a copy of the E1 form which must be bound into their dissertation as an appendix.
   (c) The supervisor must keep a copy of the E1 form as they are responsible for monitoring compliance during the fieldwork.

2. If you have answered **'yes'** to **any** of the above questions:

   (a) The supervisor and student must complete the TDE E2 form available at http://www.brookes.ac.uk/Research/Research-ethics/Ethics-review-forms/
   (b) Note that the information in the E2 must be in **sufficient detail** for the ethical implications to be clearly identified.

(c) The signed E2 and signed E1 Form must be emailed to Bridget Durning (bdurning@brookes.ac.uk) who is the Faculty Research Ethics Officer (FREO) for review. Please allow **at least two weeks** for this review process.
(d) If/when approved the FREO will issue an E3 Ethics Approval Notice.
(e) The student must send the E1, E2 and E3 Notice **to the Dissertation Module Leader**.
(f) The student must also keep copies which must be bound into their dissertation as an appendix.
(g) The supervisor must keep a copy of documentation to monitor compliance during field work.

3. If you answered 'yes' to any of questions 1-13 and 'yes' to question 14, an application must be submitted to the appropriate NHS research ethics committee. This is an onerous and time consuming process so the supervisor should liaise early with the FREO if the student is considering this.

11.1.2 E2 Form

OXFORD BROOKES UNIVERSITY

TDE Form E2

Faculty of Technology, Design and Environment

Ethics Review Form E2

This form is only for graduate (MSc) and undergraduate students on taught programmes. Before completing this form, Form E1 should have been completed to establish whether a Form E2 is required.

The E2 Form should be completed by the Principal Investigator / Student undertaking the research. Reference should be made to the University **Code of Practice for the Ethical Standards for Research involving Human Participants**, available at http://www.brookes.ac.uk/Research/Research-ethics/, and to any guidelines provided by relevant academic or professional associations.

Please complete the form and email it and the E1 form to the TDE Faculty Ethics Officer (Bridget Durning – bdurning@brookes.ac.uk). Please ensure this is done well in advance of fieldwork as ethics approval is needed before data collection can commence.

---

1. Name of Principal Investigator / Supervisor: Ben Spencer

2. Name of Student: Joe Bonomo - 19016542

3. Department/School: Department of Technology, Design and the Built Environment – School of the Built Environment

4. Dissertation Module Number: PLAN6012

5. Project Title: How can Shared Surface Streets be designed to improve safety for the visually impaired?

6. Project Type:

MPhil	☐
Master's	☐
Diploma	☐
Undergraduate	☑
Other (please specify)	

7. Project funded by (if applicable): N/A

18th March 2022

8. Summary of proposed research:

Street design has typically been highway engineered since the 1963 Buchanan Report. As a result, segregation of users has ensured smooth movement through our built environments. However, in recent times, growing recognition for greater equity, safety and inclusivity in our streets has created the shared surface street concept. This form of street design can generate many benefits, such as reduced vehicle speeds and social interaction, but growing research and concerns by organisations such as the RNIB, have shown that these streets are not safe to navigate for visually impaired individuals, due to the removal of the kerb, and often cluttered building edge. This research looks to explore how shared surface streets can be designed to improve safety, and therefore, navigability, for the visually impaired.

Aim: To form a set of design recommendations that will improve the safety of shared surface streets for the visually impaired, with a focus on high-traffic areas.

Objectives:
OBJ1: Research existing guidance for the design of shared surface streets.
OBJ2: To develop a Conceptual Framework to set a base for the case study analysis.
OBJ3: Use the conceptual framework to analyse case studies in high traffic areas.
OBJ4: Undertake primary research to understand the issues of shared surface streets for the visually impaired and how to improve safety.
OBJ5: To form a set of design principles using the identified findings.

Methods and Data Collection
Interviews
Semi-structured telephone interviews will also take place with two individuals to get a first-hand understanding of how visually impaired individuals feel in high traffic environments, what tools they use to navigate shared surface streets and to identify the challenges they have experienced in these streets. I am hopeful the interviewee's experience will be able to form design ideas to tackle the challenges faced.

Semi-structured interviews will take place over zoom or telephone (depending on the interviewee's preference) with two organisations that support those with visual impairments. These interviews will look to find out how guide dogs respond to shared surface streets, what support is provided to visually impaired individuals to understand shared surface streets, and how these organisations feel these streets be made safe, based on their knowledge and experience.

Interview Questions have been attached at the end of the document.

9. Participants involved in the research:

I hope to find two organisations that represent or support blind people or guide dogs that would be willing to have an interview. These organisations would be anonymous in the final research report. The gatekeeper is the organisation that I will be contacting. This organisation will hopefully put me in touch with one of their colleagues who would be willing to partake in a short interview.

When finding visually impaired people to interview, I hope to find two on social media. Many people are using TikTok as a way to teach people about life with a visual impairment, so I will message two people on this app, to see if they would be willing to participate. If this is not possible, then I would have to use a gatekeeper organisation, possibly one that I had interviewed, to find two people for me to interview. The interviewees would be UK based adults, who have experience moving around in the built environment, and a strong awareness of their surroundings. The following is an example message that will be sent to potential interviewees on the TikTok app:

"Hello. I am a student, studying Urban Design at Oxford Brookes University, currently undertaking research into how Shared Surface Streets can be designed to improve safety for those with a visual impairment. I hope to put together a set of design recommendations to tackle this and was wondering if you would be willing to partake in a short telephone interview, around 30mins long, to help me to understand what it is like moving through high-traffic and shared surface streets, and how they can be improved. All the information you provide will be anonymous, and if you decide to take part I will email you an information sheet and consent form. I hope you will be able to take part. Thank You, Joe Bonomo"

10. Estimate of the risks and benefits of the proposed research:

The interviews have a mild potential risk raising issues that could be controversial or the interviewees may be passionate about. If this were to occur during the interview, I will take a sympathetic approach, giving the

interviewee any time they need to calm down, and allowing them to end the interview if they wish. Telephone interviews mean that the interviewee is in their own, comfortable, environment. The questions/discussion should not induce any fears or psychological stress. Mild potential risk raising issues controversial, passionate about. Acknowledge the possibility. React sympathetic manner. Time to calm down. End the interview.

No potential risks to the researcher. No risk assessment is necessary.

The research will be beneficial as it will form, hopefully successful, design recommendations that improve the safety of shared surface streets for the visually impaired. Currently, guidance on these streets has been redacted, and the government has told local councils to pause any planned shared surface development schemes. The outcome of this research hopes to help alleviate the concerns raised by organisations such as Guide Dogs UK and the RNIB regarding the safety of shared surface environments.

11. Plan for obtaining informed consent:

A written consent form will be provided digitally, to make it easier for those with visual impairments to use. The consent form and participant information sheet will be produced to be legible by screen-reading technology. If the user struggles to fill in the form, then verbal consent can be provided and recorded.

Participant Information Sheets and Consent Form has been attached to the end of this document.

12. Steps to be taken to ensure confidentiality of data:

The data will not be shared with third parties and any audio recordings will be stored for review and transcription to support the research discussion and conclusions. The information and interview transcripts will be stored on a password-protected laptop that is kept in a locked house. The analysis will take a thematic approach, so there will not be a need to use third-party data analysis software.

The results will be presented in the research report.

---

13. Signed: Bon Spencer Principal Investigator / Supervisor

Signed: ..... Student

Date: .....

18th March 2022

Interview Questions:

Interview Questions for Individuals

1. Would you consider yourself blind or partially sighted?
   - Open
2. How often would you say you walk along high-traffic streets? High traffic can include levels of car and/or pedestrian movements that you feel to be high.
   - Never
   - Less than once per week
   - 1-2 times per week
   - 3-4 times per week
   - 5-6 times per week
   - 7 or more times per week
3. How does the high levels of traffic along these streets make you feel?
   - Open
4. What are the challenges you face travelling along these streets?
   - Open
5. In what ways do you think the street design could be changed to tackle these challenges (and negative feelings)?
   - Open
6. Have you heard of Shared Surface Streets before?
   - Yes
   - No
7. How often do you find yourself travelling through a shared surface street?
   - Never
   - Less than once per week
   - 1-2 times per week
   - 3-4 times per week
   - 5-6 times per week
   - 7 or more times per week
8. How do you feel moving through shared surface streets?
   - Open
9. What features in the shared surface street do you pay particular attention to? (If not been in shared surface, answer about streets in general)
   - Open
10. What tools in the shared surface street do you use to aid navigation? (If not been in shared surface, answer about streets in general)
    - Open
11. Would you consider the shared surface street you have visited high traffic?
    - Yes – Pedestrian and/or Car?
    - No
12. What are the challenges you face moving through shared surface streets?
    - Open (drive conversation with navigation, crossings, the possibility of public engagement)
13. In what ways do you feel this could be tackled?
    - Open (drive conversation with comfort space, demarcation, crossings, public engagement)
14. Is there anything else you would like to add that you feel would benefit my research?

Organisation Interview Questions

Guide Dogs UK

1. Based on your Streets Ahead Campaign, I understand that Guide Dogs UK are against Shared Surface Streets. Is this still the organisation's position? Are there any new initiatives or research that have changed your opinion on this?
   - Open (drive the conversation with what research they have conducted that changed their perception or government policy)
2. How do Guide Dogs typically navigate streets?
   - Open
3. How do Guide Dogs respond to Shared Surface Streets? i.e. What challenges do they face?
   - Open
4. What design measures do you think could be used to support Guide Dogs navigating shared surface streets?
   - Open (drive conversation with talk about PAMELA research)
5. Is there anything else you would like to add that you feel would benefit my research?

18th March 2022

RNIB

1. Where does your organisation currently stand on whether shared surface streets are safe for the visually impaired? Why?
   - Open (drive the conversation with what research they have conducted that changed their perception or government policy)
2. Is there guidance for the visually impaired on how to navigate shared surface streets? Is this possible?
   - Open
3. What challenges do you understand visually impaired people face in shared surface streets?
   - Open (drive conversation with navigation, crossings, the possibility of public engagement)
4. What design measures do you think could tackle this?
   - Open (drive conversation with comfort space, demarcation, crossings, public engagement)
5. Is there anything else you would like to add that you feel would benefit my research?

Written Consent Form

OXFORD BROOKES UNIVERSITY

CONSENT FORM

The research title is How can Shared Surface Streets be designed to improve safety for the visually impaired?

The Researcher is Joe Bonomo, a student, studying Urban Design, Planning and Development at Oxford Brookes University. The supervisor is Ben Spencer.

Please tick the box below the statement

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.

☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.

☐

3. I agree to take part in the above study

☐

4. I agree to the interviewee being audio recorded.

☐

5. I agree to the use of anonymised quotes in publications.

☐

Please write your name here:

Please write the date here:

Please write your name in block capitals here:

Name of Researcher: Joe Bonomo
Date: 11th March 2022
Signature:

Participant Information Sheet
Individual Interviewees

OXFORD BROOKES UNIVERSITY

Participant Information Sheet

The Study Title is: How can Shared Surface Streets be designed to improve safety for the visually impaired?

I am a student, studying Urban Design, at Oxford Brookes University, conducting a research study as a part of my final semester. You are being invited to take part in a short 30 minute interview to help me gain an insight into your experiences along high-traffic and shared surface streets, and how they can be designed to be safer. Before you decide whether to take part, it is important to know the purpose of the research and what it will involve. Please read the following.

The purpose of the study is to create design recommendations that will improve the safety of high traffic shared surface streets. Currently, existing research has shown that shared surface streets can pose dangers to visually impaired individuals, and so, this research hopes to identify the challenges faced when navigating shared surface environments, and how these challenges can be solved.

As a part of the research, two organisations that support those with visual impairments, and two visually impaired individuals will be interviewed.

Taking part in this research is voluntary. If you do decide to take part, you will be given a digital copy of this information sheet, and will be asked to give consent. If you decide to take part, you are free to skip any questions and withdraw from the interview at any time without reason.

If you decide to take part in the research, you will be asked to take part in a short, 30 minute, telephone interview of fourteen questions. The interview is to be recorded with the participant's permission. You may request the interview not be recorded if you prefer.

By taking part in the research, you will be giving up a short amount of your time, but the information you provide will be extremely valuable to forming conclusions about the safety, the experiences, and the navigability of shared surface streets, and to help form design recommendations to improve the safety of these streets.

All information collected will remain confidential, and the results will be presented anonymously. The information will be secured on a password protected device for the greatest security. The data will not be shared with third parties. In line with Oxford Brookes University guidance, the data will be kept until I graduate, which is the 31st of May 2022.

If you would like to take part in the research, then please opt-in by filling out the consent form and contacting Joe Bonomo with this email address 19016542@brookes.ac.uk. The deadline for consenting to participate is the xx/xx/xxxx.

As a result of the research, a final report will be produced as a part of my final semester studying Urban Design: Planning and Development at Oxford Brookes University. A copy of the final research report can be emailed to you, if you wish.

I, Joe Bonomo, am conducting this research as a student at the School of Technology, Design and the Built Environment, at Oxford Brookes University.

This research has been approved by the University Research Ethics Committee at Oxford Brookes University.

If you would like to get in touch with me for further information then please contact me, Joe Bonomo, using this email address 19016542@brookes.ac.uk. Or you could contact my research supervisor, Ben Spencer, using his email address p0077057@brookes.ac.uk. If you have any concerns regarding the study and the way it is being conducted, then please contact my supervisor, or contact the Chair of the University Research Ethics Committee using the email address ethics@brookes.ac.uk.

Thank you for taking the time to read this information sheet, and I hope you will be able to take part in the study.

Participant Information Sheet Version 1.0
18th of March 2022

Organisation Interviewees

OXFORD BROOKES UNIVERSITY

Participant Information Sheet

The Study Title is: How can Shared Surface Streets be designed to improve safety for the visually impaired?

I am a student, studying Urban Design, at Oxford Brookes University, conducting a research study as a part of my final semester. You are being invited to take part in a short 30 minute interview to help me gain an insight into high-traffic and shared surface streets, and how they can be designed to be safer. Before you decide whether to take part, it is important to know the purpose of the research and what it will involve. Please read the following.

The purpose of the study is to create design recommendations that will improve the safety of high traffic shared surface streets. Currently, existing research has shown that shared surface streets can pose dangers to visually impaired individuals, and so, this research hopes to identify the challenges faced when navigating shared surface environments, and how these challenges can be solved.

As a part of the research, two organisations that support those with visual impairments, and two visually impaired individuals will be interviewed.

Taking part in this research is voluntary. If you do decide to take part, you will be given a digital copy of this information sheet, and will be asked to give consent. If you decide to take part, you are free to skip any questions and withdraw from the interview at any time without reason.

If you decide to take part in the research, you will be asked to take part in a short, 10-15 minute, zoom interview of five questions. The interview is to be recorded with the participant's permission. You may request the interview not be recorded if you prefer.

By taking part in the research, you will be giving up a short amount of your time, but the information you provide will be extremely valuable to forming conclusions about the safety, the experiences, and the navigability of shared surface streets, and to help form design recommendations to improve the safety of these streets.

All information collected will remain confidential, and the results will be presented anonymously. The information will be secured on a password protected device for the greatest security. The data will not be shared with third parties. In line with Oxford Brookes University guidance, the data will be kept until I graduate, which is the 31st of May 2022.

If you would like to take part in the research, then please opt-in by filling out the consent form and contacting Joe Bonomo with this email address 19016542@brookes.ac.uk. The deadline for consenting to participate is the xx/xx/xxxx.

As a result of the research, a final report will be produced as a part of my final semester studying Urban Design, Planning and Development at Oxford Brookes University. A copy of the final research report can be emailed to you, if you wish.

I, Joe Bonomo, am conducting this research as a student at the School of Technology, Design and the Built Environment, at Oxford Brookes University.

This research has been approved by the University Research Ethics Committee at Oxford Brookes University.

If you would like to get in touch with me for further information then please contact me, Joe Bonomo, using this email address 19016542@brookes.ac.uk. Or you could contact my research supervisor, Ben Spencer, using his email address p0077057@brookes.ac.uk. If you have any concerns regarding the study and the way it is being conducted, then please contact my supervisor, or contact the Chair of the University Research Ethics Committee using the email address ethics@brookes.ac.uk.

Thank you for taking the time to read this information sheet, and I hope you will be able to take part in the study.

Participant Information Sheet Version 1.0
18th of March 2022

18th March 2022

11.1.3 E3 Approval

OXFORD BROOKES UNIVERSITY

Faculty Ethics form E3

Faculty of Technology, Design and Environment

Decision on application for research ethics approval

The Faculty Research Ethics Officer has considered the application for research ethics approval for the following research:

Project title:	How can Shared Surface Streets be designed to improve safety for the visually impaired?
Name & Department of Principal Investigator:	Joe Bonomo - 19016542
Name of supervisor (if student):	Ben Spencer (School of Built Environment)

Please check the appropriate box:

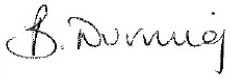
1. The Faculty Research Ethics Officer gives ethics approval for the research project. ***Please note that research protocol laid down in the application and hereby approved must not be changed without the approval of the Faculty Research Ethics Officer.*** [X]

2. The Faculty Research Ethics Officer gives ethical approval for the research project subject to the following: [ ]

3. The Faculty Research Ethics Officer cannot give ethics approval for the research project. The reasons for this and the action required are as follows: [ ]

4. The research will also require approval from:

   [ ] Another external Research Ethics Committee

Signed: 

Date: 20th March 2022

11.2 Interview

Six individuals were interviewed. Below is a transcript of one of the interviews, automatically transcribed, so is not fully correct.

Speaker 2
So and I moved area so I moved from Edinburgh to a small rural town.
Speaker 2
Yeah, just uhm, just over from the borders, yeah?
Speaker 2
In in, still in Scotland, you know?
Speaker 2
So it's a different traffic arrangement.
Speaker 2
You could say.
So first question is how would you describe your level of like visual impairment?
Speaker 2
Uhm well.
Speaker 2
I I can I can see colours then I can see dark and shade and uhm I can make out quite a bit but my world is blurred.
Speaker 1
Right?
Speaker 2
So I I I can't see detail well.
Speaker 1
Yeah, so are there any like certain colours that stand out?
Speaker 2
And lime.
Speaker 2
Green's problems.
Speaker 2
And dark things merge, you know?
Speaker 1
Oh, OK.
Speaker 2
There's a real problem on roads, so I don't see cars on Rd.
Speaker 1
Oh, OK.
Speaker 2
If they're not.
Speaker 2
Lit up, it's it can be difficult to see them and to judge how.
Speaker 2
Far away they are.
Speaker 1
So is it more helpful if the road surface was a lighter colour?
Speaker 1
Or does that not make much of a difference?
Speaker 2
I think it would make.
Speaker 2
More sense with cars.
Speaker 2
Headlights and cyclists and the.
Speaker 2
Uh, any other vehicle on the road, actually?
Speaker 2
Yeah I have. I have a degree of hearing loss so I I have. I wear two hearing aids as well so I I find it difficult to work out the direction that sounds are coming from as quickly as I used to when my ears worked.
Speaker 1
So seeing the lights is even more important.
Speaker 2
Yes, that's right.
Speaker 1
Yeah yeah, OK. The next question was how often would you say you walk along high traffic areas? It could be high traffic in terms of the number of cars or pedestrians.
Speaker 2
Yes, daily there's a trunk road. Yeah, just outside my housing new housing estate there is a trunk Rd.
Speaker 1
Oh, OK.
Speaker 1
And and how, how? How does those streets make you feel when?
Speaker 1
You're moving along them.
Speaker 2
unsafe.
Speaker 2
And I'm having to be very alert.
Speaker 1
And, uh, what sort of challenges would you then face like moving along these streets?
Speaker 2
A lack of pavements.
Speaker 1

Right see.
Speaker 2
So this is this is a term that has existed for quite some time and we still have quite a bit mediaeval St plan. And so pavements are relatively recent invention.
Speaker 2
And so so the roads are narrow.
Speaker 2
And in order to get two way traffic, we have to share the pedestrian has to share the space with traffic going both ways.
Speaker 2
And sometimes there's marked out notional areas where.
Speaker 2
Pedestrians can walk and sometimes there isn't.
Speaker 1
Right?
Speaker 1
OK.
Speaker 2
And it's not signalled in any other way.
Speaker 2
You know it.
Speaker 2
Doesn't say you will find pedestrians.
Speaker 2
But you know no pavements. But there will be pedestrian. But whatever you know, there's no heads up. Yeah, keep an eye out.
Speaker 1
Yeah, there's there's no light.
Speaker 2
So and and also the.
Speaker 2
Streets are winding.
Speaker 1
OK.
Speaker 2
So the sightlines are are really quite bad.
Speaker 1
Right
Speaker 2
And there are there are only two light controlled crossings across the trunk Rd and the trunk Rd is our High Street.
Speaker 1
Oh, OK.
Speaker 2
So it goes straight through the town.
Speaker 1
Yeah, so obviously using that street is very important because you need to get to the shops.
Or there are venelles. Do you know what I mean by venelles?
Speaker 1
No, no I don't.
Speaker 2
It is really mediaeval. She likes from the High Street up to there's a fast back Rd and the North Back Road, right?
Speaker 2
And to get to them.
Speaker 2
Past houses that were built behind the House of the High Street.
Speaker 1
Right
Speaker 2
And there are lanes.
Speaker 2
Or or or what we call them as fennels or wines is another word we use.
Speaker 2
And they go and they don't have any. Don't tend to have any traffic on it. It might have a householder or shopkeepers than but they don't have through traffic. But they do have quite a lot of pedestrian things. And then you go.
Speaker 2
Come on Tyler. Well, I'll call it what it is here so it's back on North Back Rd. Both those roads are just roads.
Speaker 2
In most of it, and so there's very little pavement and the pavement you encounter may not be anything like normal light, so it may actually only be, UM.
Speaker 1
Ok.
Speaker 2
The the width of a body.
Speaker 1
Right? Oh, that's not it, yeah.
Speaker 2
You see what I mean? So it's it's only if you had a child you couldn't have both of you hung papers.
Speaker 1
Yeah, doesn't doesn't sound very sad.
Speaker 2
Side by side.
Speaker 2

It doesn't, it isn't.
Speaker 2
The most head.
Speaker 2
Scratching is going on as to what to do about it. The population of the.
Speaker 2
Town has gone up.
Speaker 1
Well, it's it's difficult when you when you've got mediaeval St pattern, you obviously don't want to knock down the history, but you need to be able to accommodate.
Speaker 1
Safe movement and.
Speaker 2
The answer is.
Speaker 2
Small, I don't know that you can.
Speaker 2
Actually do that.
Speaker 2
It's it's small enough.
Speaker 2
I think to make it largely pedestrianised, about 10 mile an hour traffic, but except possibly on the.
Right
Speaker 2
High Street and.
Speaker 2
We have some areas that part of the High Street.
Speaker 2
Is 20 miles an hour?
Speaker 1
Right, yeah would you? Would you say that that's too fast? Like what would be if.
Speaker 2
The only part of it.
Speaker 1
It if we.
Speaker 1
Were in a subsurface space.
Speaker 2
Yeah, I would say that certainly it's too fast.
Speaker 2
Uhm, for a lot of the daytime.
Speaker 2
Because there are shops either side, it's a busy it. It's quite old fashioned and it's market. I'll tell you where.
Speaker 2
It is, it's bigger.
Speaker 2
And there's quite a lot of small shops and a lot of people come in from out with bigger to shop here, and a lot of people use their cars to get.
Speaker 2
To the centre of bigger from because it's still because it's so difficult to walk because we have a lack of pavements.
Speaker 2
And the pavements run out. You know that just at the point where you want to be safest, you find that there isn't a pavement on that side.
Speaker 1
Right
Speaker 2
There's just a wall of 10 feet and the other side.
Speaker 1
Yeah, definitely.
Speaker 2
There is a.
Speaker 2
Pavement, but it's only shoulders breast wide, and there's a hedge which at certain times of year.
Speaker 2
Overhangs and this is on a one of the main walking.
Speaker 2
Areas you know.
Speaker 2
If it was easier to walk on.
Speaker 1
Yeah, yeah.
Speaker 2
Plain string root.
Speaker 1
Uhm, so you've obviously heard, heard of shed surface streets I was mentioning.
Speaker 2
Yeah, I live in an estate that has them.
Speaker 1
Oh, OK, well what's that like? 'cause obviously that's residential.
Speaker 2
It's not.
Speaker 2
I've had a couple of scares.
Speaker 1
Oh, right, is it more parked cars or cars moving through fast like?
Speaker 2
Cars moving too fast. Electric cars are a real

problem.
Speaker 1
Right?
Speaker 2
I've had them come up behind me.
Speaker 2
And not hear them. And it's not because I've got.
Speaker 2
Thought that my hearing aids haven't picked them up and actually not making a noise. And when you're walking in shared space.
Speaker 2
Uhm, I'm never really sure where I should be walking. To be perfectly honest.
Speaker 1
There's no guidance.
Speaker 2
There's no guidance, and the first I knew the car was there was it passed me only under about 6 inches away.
Speaker 2
There's no, you know they didn't use.
Speaker 2
Their horn or there was nothing they did.
Speaker 1
No, no indication.
Speaker 2
Absolutely nothing. Yes, and they knew they've done wrong.
Speaker 2
'cause I went and knocked their front door to actually say, you know, I'm sorry, but could I just point out that I was totally unaware that you were there?
Speaker 2
And could I suggest that?
Speaker 2
If you can make your electric vehicle have a sound, then that I would suggest.
Speaker 2
That when you're driving here.
Speaker 2
You need to have that sound on.
Speaker 1
Yeah, well, I know some electric cars have. They've got speakers on the front so they can make an engine.
Speaker 2
You can switch it.
Speaker 2
I'm coming, I'm talking to you on my hearing aid.
Speaker 2
Yeah, so yes and you you can turn it off and some cars I believe.
Speaker 2
Uhm, can only you can only turn it on.
Speaker 2
At certain speeds, which is ridiculous.
Speaker 1
Right, yeah, yeah.
Speaker 2
I think because we expect cars to have noise.
Speaker 1
So do you sort of run in shared surface space? Do you rely on hearing those cars to sort of know if there's?
Speaker 2
And I know.
Speaker 2
I avoid walking on shared space where possible.
Speaker 1
Right, OK?
Speaker 2
I'd prefer to be on.
Speaker 2
The pavement because.
Speaker 2
I've had enough enough times that people that people have driven cars with no regards to the fact that there are possibly pedestrians and this shared space is not straight, so there are corners.
Speaker 2
So pedestrians can be they can come across them.
Speaker 2
Fairly suddenly, if you feel dummy.
Speaker 1
Yeah, are there any of it?
Speaker 2
Yeah, and this doesn't seem to be an expectation in the driver's head, but we might even be there.
Speaker 1
Yeah, do you? Do you use like a long cane to navigate or is there?
Speaker 2
I do.
Speaker 1
Right, so you'd you'd think the driver would notice that.
Speaker 2
Uh, I notice your the situation I find is really

dangerous. They're coming towards me.
They're likely to see the cane and.
Speaker 2
Drivers generally are pretty good with canes. They sometimes gesture for you to cross in front of them, but that's not actually what you're trained to do. If you're a white cane user.
Speaker 1
Oh, you trained to wait?
Speaker 2
Yes, and the reason is because you cannot see the driver in the car if you've got. If you've got a site problem, you can't actually necessarily, you cannot engage.
Speaker 1
Yeah, yeah.
Speaker 2
In any way.
Speaker 2
With the driver, so one you may not know he's waving you across, or if he's trashing the lights, you know why.
Speaker 2
And also it's not just the car that you're necessarily looking out for, it's also people turning from another Rd junction or coming down the other carriage way so you know and I the the Main Street, the High Street, which is also the trunk.
Speaker 2
There's the two light crossings as I said, and.
Speaker 2
They're not far apart.
Speaker 2
Uhm, and then there's an.
Speaker 2
Island up near this state and those are the three places only which I have been.
Speaker 2
Told us safe for me to cross that a Rd.
Speaker 1
Right, yeah, it's not really accessible.
Speaker 2
Which means I have to go on quite considerable detours or at the bottom ends of the town. I actually had to make up my mind halfway down the time which side I'm going to visit, and if I want to visit both sides in the same outing. I have to come back to the middlecross.
Speaker 2
To the crossing in the middle of.
Speaker 2
Town to.
Speaker 2
Get to the other side, and that's because it's a wiggly road and because people do not.
Speaker 2
Not because you would normally have to have the car stop for you, but because.
You can't see.
Speaker 2
The driver, because of my sight.
Speaker 2
It's not a safe search scenario.
Speaker 2
In which to do things.
Speaker 1
Yeah, yeah.
Speaker 1
Uhm, yeah, it sounds like it.
Speaker 2
It's hell.
Speaker 1
And So what? What other features in shared surface streets do you pay attention to? Or are there none like like you said there was?
Speaker 2
Be careful.
Speaker 2
Well, I know that sometimes sometimes here we get a different type of tarmacadam.
Speaker 2
Or a white line?
Speaker 1
Right
Speaker 2
So there's a bit of this is in the streets that are just streets that weren't laid out originally as shared space.
Speaker 1
Right
Speaker 2
The shared space is just monobloc from side to side with no elimination at all, but in in the road area where there is no pavement.
Speaker 1
Just not nothing.
Speaker 2
But you in Canyon County, it's not always there.
Speaker 2
Is up on routes to school. For example, there is a tarmac that's a different colour and a white line.
Speaker 1
Right
Speaker 2

But there are no warnings that you know pedestrians will be walking on this carriage way and there are continual issues with.
Speaker 2
Uhm, cars driving too fast.
Speaker 1
What sort of warnings would you look out for? Is it dumb? Is it I forgot what it's called? Is it a certain type of tactile paving on the ground?
Speaker 2
I feel that I've come to mistrust them actually, because they they're not laid very well and I do have some site, but I can show you in my own town, tactile paving, but it's it's supposed to be aligned.
Speaker 1
Right
Speaker 2
So that you know which way to go, which you step off it, and I've known it and sometimes it it. It does have the wall.
Speaker 2
As a guide at the end so you can then encounter the wall and then turn yourself along it. That's fine, but actually I've known it come up to one of these light control boxes.
Speaker 2
And partially across the the the wobbly bit. And then there's a bit of the bubbly bit that.
Speaker 2
Goes around it and I.
Speaker 2
Have seen other people with less height than me.
Speaker 2
Obviously don't know the time.
Speaker 2
Very confused by this encounter and disorientated by it.
Speaker 1
Right
Speaker 2
We also have bobbly crossings. We have a.
Speaker 2
There's a service road and there's a an island on which there's a bus stop this bus stop, and then there's a light controlled crossing over the A 702.
Speaker 2
And that has bubbly pavement.
Speaker 2
But once you get onto the island.
Speaker 2
Then, uhm, you still have to get across.
Speaker 2
The service Rd.
Speaker 1
Right, yeah, yeah.
Speaker 2
And it's also one of the main parking areas in the town. And recently in an attempt to make it clearer what was going on, they painted. Keep clear on the cobbles at just after the Boboli area stopped.
Speaker 1
Right
Speaker 2
This has had the unfortunate result of people actually parking parallel to the clear, so there's 90 degrees how it's written, so you get. You can get four to five cars parked there. It's a.
Speaker 2
Bus turning area.
Speaker 2
We're a rural area, so there's a lot of movies and high cars and people park on the other side of the service Rd as well so that the bus has difficulty turning.
Speaker 2
Uhm any any car driver has difficulty seeing children and if they see me they can't see my white stick and there's no indication that that road the service Rd is also part of the crossing.
Speaker 1
Right
Speaker 2
And this is quite recently done. It's been complained about by me and other.
Speaker 2
People, and there's an attempt to get it sorted out, but it's been like that for nearly a year now.
Speaker 1
Right, what do you do? You find them.
Speaker 2
Oh no, it's at least six months, maybe six months.
Speaker 1
Right, do you find it quite difficult? So say there's a new development or some new housing. Do you find it quite difficult to get in touch with the Council? Like what's the sort of consultation process like?
Speaker 2
The difficulty here is it takes a long time for homes to be there for the carriage way to be adopted.

Speaker 2
So we moved in five years ago and this bit of the estate. They're saying we're going to get adopted.
Speaker 2
Before the summer ends, but that's up over seven years since the first people moved in.
Speaker 1
Right
Speaker 1
Right
Speaker 1
Yeah, it's quite slow.
Speaker 2
It is slow and as regards consultation, we have enormous problems because.
Speaker 2
They will not put in lighted crossings, and South Lanarkshire itself, which is the local council. They seem to believe that if they say we can't have several crossings, then we're not having them, you know?
Speaker 2
Uhm, it's something that needs to be challenged at some level, but.
Speaker 2
There are very, very few.
Speaker 2
Uhm, zebra crossings in South Lanarkshire and they don't.
Speaker 2
If people ask.
Speaker 2
For them, because they're considerably cheaper to install than traffic light, yes.
Speaker 2
Uhm, we get refused and there's an issue at the moment. At the far end of the town because we have been asking for a lighted crossing 'cause main route to school to both the primary and secondary school year and or would be if there was a proper crossing.
Speaker 1
Right
Speaker 2
For people at that end of the town of which is quite a few, and we have, our population is also more elderly than in a normal town in Scotland.
Speaker 1
Right, OK. And those those zebra crossings. Would you find them like? What are they like to cross?
Speaker 2
I don't know because I lost my yeah my sight.
Speaker 1
Is it just that?
Speaker 2
No, uhm, it's after. I last used the zebra crossing.
Speaker 1
Right, Ok.
Speaker 2
But I do feel that with the respect that there is for.
Speaker 2
A white cane.
Speaker 2
And for several crossings generally.
Speaker 2
I I would feel.
Speaker 2
Uhm, it wouldn't be as good necessarily as a lighted crossing, but it would be.
Speaker 2
It would be.
Speaker 2
A lot better than what I'm otherwise presented with.
Speaker 1
Yeah, it's an improvement.
Speaker 2
It is a notable improvement.
Speaker 2
Good, and it's also more flexible because it works.
Speaker 1
Yeah, yeah.
Speaker 2
When you turn up.
Speaker 2
You can use it you.
Speaker 2
Just you know what I mean, it's the.
Speaker 2
Traffic of aiming. You can use it. You don't have to wait for the language to change, so sequence to enable you to cross.
Speaker 1
Yeah, yeah.
Speaker 1
So with all the the problems you've raised regarding sort of shared surface streets specifically, whether it's the residential one or the busy streets.
Speaker 1
And what do you have? Any sort of ideas of

ways that this?
Speaker 1
Could be improved.
Speaker 1
Based on your own experience.
Speaker 2
I think I think.
Speaker 2
I'm coming to a.
Speaker 2
Point of view, and this was because I.
Speaker 2
Visited dump Reese.
Speaker 2
Where there's shared space which is in the city centre, and I recently thought it was entirely pedestrianised and I found it quite hard to navigate and then I realised that there were actually cars.
Speaker 1
Right.
Speaker 1
On it, yeah.
Speaker 2
It's actually it caused me to completely come.
Speaker 2
To a halt.
Speaker 1
All right.
Speaker 2
And and and not know what way to turn and.
Speaker 2
And I was already having.
Speaker 2
Difficulty because they had different coloured paving.
Speaker 2
And I never.
Speaker 2
Did work out whether that was because they were seats.
Speaker 2
You know areas where you could perch, or whether whether they were showing you that there were steps, or that there was a slope.
Speaker 1
Right?
Speaker 2
It just I couldn't work it out because there's no standardised approach in Britain.
Speaker 1
Right, OK?
Speaker 2
It's extremely difficult to work.
Speaker 2
Out when you go to somewhere new.
Speaker 2
Uhm, what you should do. And indeed I talked to my trainer about.
Speaker 2
This and she said.
Speaker 2
Uhm, that it's usually best to go with somebody the first couple of times you go to a new place.
Speaker 1
Right, Ok.
Speaker 2
But actually, if we were better at laying out spaces.
Speaker 2
That wouldn't be necessary.
Speaker 1
Yeah, well of course.
Speaker 1
Right. No, that that's really interesting actually. 'cause obviously like when I've been doing my research, I'm reading up about the tactile paving and everything, but I haven't been able to have this sort of perspective.
Speaker 2
Well, could I say to you that the people who install it don't understand what it's for and they don't understand how it operates?
Speaker 2
And you can find that come it, it's ripped up or it's torn out and not replaced. You can find that it's not a straightforward crossing so I can take you to places in this town where it's actually a diagonal crossing that you're being asked to make. But if you if you have.
Speaker 1
Right.
Speaker 2
Very local sites. How would you know that?
Speaker 1
Would you say that dumb?
Speaker 1
They should.
Speaker 2
And I use parked cars. Could I just say that I use parked cars as a protection? I haven't talked about?
Speaker 2
There's a junction here which if I go down one side of the High Street to get to shop switch.
Speaker 2

At the far end.
Speaker 2
And there is a busy bee Rd which comes on to the High Street onto the a street road. And when my trainer took me to it, she said well there's only one place where you can cross here and it's the best of all bad choices.
Speaker 1
Right, that doesn't sound good.
Speaker 2
No, it wasn't good. Uh, me and uh, I I cross across from I I she said if there's a park can't use it.
Speaker 1
Why OK?
Speaker 2
Users defence, you know, and obviously you have to cheque, but nobody in it and that it's not about to move off or reverse but and and then.
Speaker 1
That's interesting 'cause from from what I've read, parked cars were sort of shown as an obstruction rather than a protection.
Speaker 2
Well, I I was instructed that they can be used as a protection if you're careful to make sure it's not going to move.
Speaker 1
Yeah, now skip that.
Speaker 2
Yeah, 'cause it narrows the road.
Speaker 2
It means the length of time and and obviously I was instructed to make myself visible.
Speaker 2
You know not they don't.
Speaker 2
Look behind the car, it's pop out, you know, but but stand just just handle it because you can then take a step back if people appear so this street.
Speaker 2
You run out of pavement on one side and then at the other the other end. There are no uhm.
Speaker 2
The this the the actual a Rd.
Speaker 2
And when we.
Speaker 2
When you cross the street into Curve St again so it curves in the streets, not straight.
Speaker 2
Uhm, just try it sometime, walk around and and when you come across curve streets realised that if there is a curve one side of the road will be easier to cross than the other.
Speaker 1
Right.
Speaker 2
So, uhm.
Speaker 2
Because you can't see around the bend.
Speaker 2
If you're on the inside of the bend, you.
Speaker 2
Can't see around it.
Speaker 1
Yeah, so do you think thrusting should only be on straight stretches then?
But if you're.
Speaker 2
On the outside.
Speaker 2
I don't know about that. I think they should myself. I think there should be far more controlled crossings and I know that costly.
Speaker 1
Yeah well yeah.
Speaker 2
But it has a benefit for everybody, not just for the visually impaired. It's for all people who have mobility problems and for children and for groups of people.
Speaker 1
Yeah, do you think those groups of people are often like an afterthought?
Speaker 1
Or in the design of this or streets.
Speaker 2
Yeah, we we are.
Speaker 2
Not thought of first, and I think we should I. I mean, I feel this about many aspects of disabled world 'cause as well as by sight and hearing problems. I'm also dyslexic and I'm diabetic.
Speaker 1
Right.
Speaker 2
So I have and I'm. I'm celiac as well, so I put a lot of challenges.
Speaker 2
And and I.
Speaker 2
Do think that one of the problems are in Britain is that we don't think of all the people who might use the space.

Speaker 2
We think of norms first and then the non norms have to fit into the norm shape and that doesn't work.
Speaker 2
Very well at all.
And we should.
Speaker 2
Have by now have learned that yeah.
Speaker 2
But if you take account of.
Speaker 2
The non norms.
Speaker 2
Not in every.
Speaker 2
Case, but in many cases it also makes the norms light easier too. So why not just do it? Firstly? Sorry I'm campaigning here but now.
Speaker 1
No, it's alright. It's no, it's interesting.
Speaker 1
No, it's very useful. Uh, right, that are all my questions that I've got written down. Do you? Do you have anything else that you think would like benefit my research or anything you want to add?
Speaker 2
Well, I would think pointing out that the importance.
Speaker 2
Of being able to move about spaces safely.
Speaker 2
On foot.
Speaker 2
It's really important because this because for particularly for those who prefer.

Or have to use?
Speaker 2
Public transport because they cannot drive I cannot drive.
Speaker 1
Yeah, yeah.
Speaker 2
And so the first thing I have to do is walk out of my house and walk along a street or or on a pavement in order to get to a bus stop.
Speaker 2
In order to get to a railway station.
Speaker 2
Uh, in order to if I was in.
Speaker 2
Seaside get to a ferry perhaps?
Speaker 2
And it's it's denial of.
Speaker 2
The streets to people. That's really quite appalling.
Speaker 2
You know the difficulty that it causes. I know many couples where one of the couple only goes out and the other one takes them out.
Speaker 1
No, that that's yeah, that's good.
Speaker 2
And that's all linked into things like embarrassment about using canes or what have you and adopting them far too late.
Speaker 1
Why do you think there's an embarrassment about it? Like, is that quite widespread, being embarrassed to use a cane?
Speaker 2
It seems to be people tend to think it makes them more vulnerable. They seem to.
Speaker 2
Be worried that.
Speaker 2
They might get attacked that their life site might be taken advantage of.
Speaker 1
Right
Speaker 2
Whereas the actual lived experience.
Speaker 2
That I've had is that it actually makes life a heck of a lot easier. It's easier to access help and it it explains things like why you take so long to cross the road.
Speaker 2
Yeah, people don't get impatient with.

Well, they do.
Speaker 2
Occasionally, but you know, and people ask if they can help you.
Speaker 2
And you seem.
Speaker 2
To kinda help you know.
Speaker 1
Well, yeah.
Speaker 2
Yes, and you do get crossed over because they insistently take you, but those are not. There's a

huge fear of of admitting that your site is bad as they do.
Speaker 1
Right
Speaker 2
And I I find that people get quite confused by the fact that I can see.
Speaker 2
But I was the reason I took. I started using my cane was because I was I was stumbling and I was in danger of having a nasty fall.
Speaker 1
Right?
Speaker 2
And uhm, and also I.
Speaker 2
Couldn't see cars on the road.
Speaker 2
So I realised that I really needed something to tell people that I I wasn't wasn't wasn't just an ordinary pedestrian. I was a very special person or a VIP.
Speaker 2
Visually impaired person.
Speaker 1
It's a good way of saying it.
Speaker 1
Right
Speaker 2
No, but but the huge.
Speaker 2
Yeah I could. I could, we could discuss the fact that disability.
Speaker 2
It's treated, but it's psychologically quite a hard thing to come to terms with, and The thing is to reverse it into seeing it as the society is not enabling you to do things and there's not enough accommodation rather than you've failed in some way in becoming disabled.
Speaker 1
Speaker 2
I mean I would like things.
Speaker 2
To be clearer as to where it's safe to walk.
Speaker 1
Yeah, yeah, of course.
Speaker 2
And and my.
Speaker 2
Major I took up White came just started lockdown so I haven't that and because of being diabetic I've been pretty careful.
Speaker 1
All right
Speaker 2
Over the period.
Speaker 2
And so I haven't really been out with my area very often.
Speaker 2
But when I do go out with my area, I'm aware of the fact that it is one thing to move around your own town because another thing to move around an area you don't know.