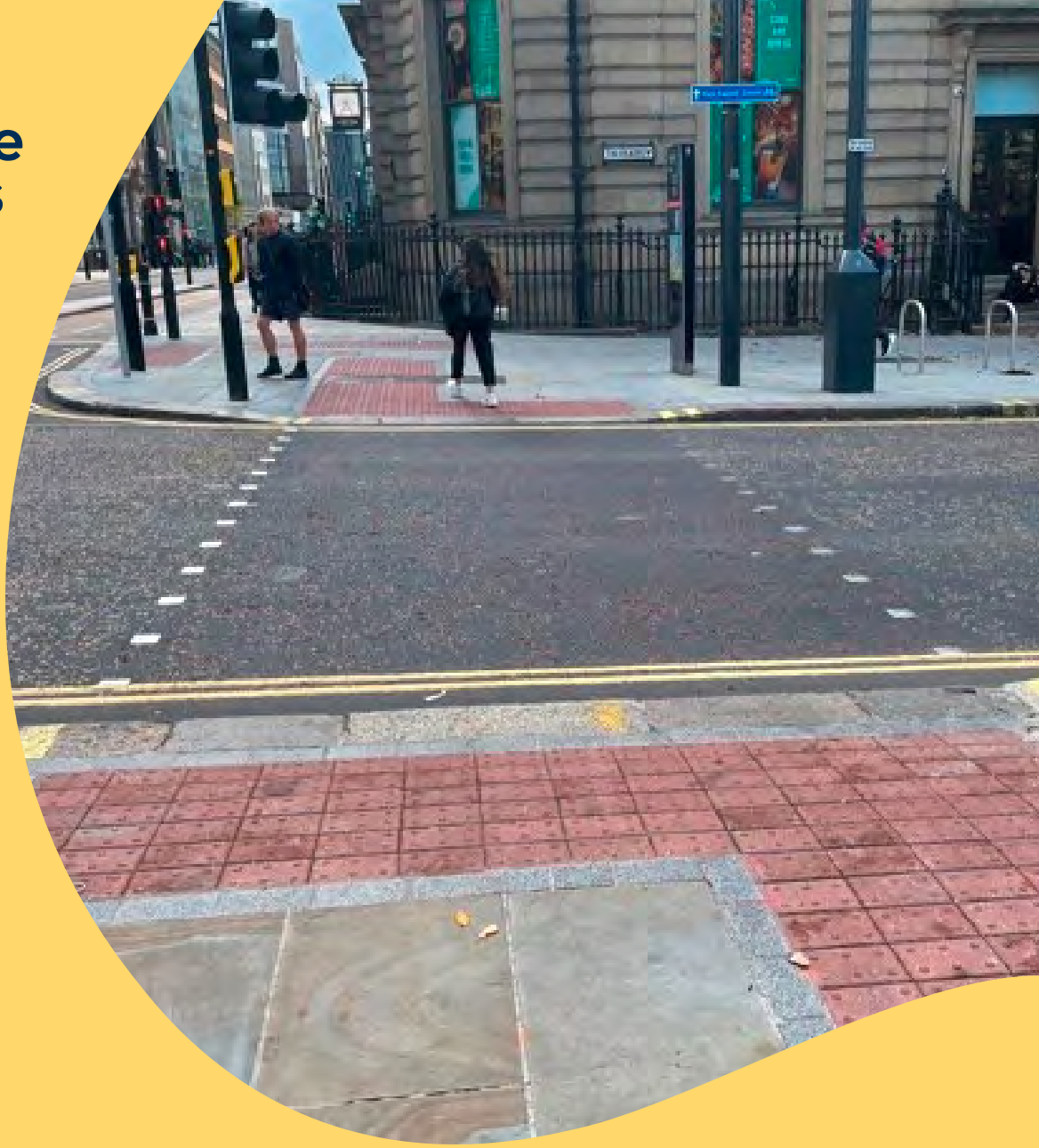
Guide Dogs



The importance of signalised crossings for people with sight loss – recommendations for best practice

Together, we can make a better world for everyone

Contents

Introduction

What is this guidance for?

At Guide Dogs, we commissioned some vital research into the experiences that people with sight loss have when crossing the road – this guidance is the result.

We listened to concerns expressed by people who are blind or partially sighted about the removal of controlled crossings on the street, particularly as part of regeneration schemes adopting the 'shared space' concept.

But before we get into our findings, here's what others have said:

The governments' 'Manual for Streets 2' states that:

Replacing controlled crossings i.e. zebras and signalised with informal crossings can reduce delays in traffic.[1]

The Traffic Advisory Leaflet 'Pedestrian Facilities at Signal-controlled Junctions' (TAL 5/05 Part 1) argues that:

Of all the options, (the full pedestrian stage of a controlled crossing at all arms of a junction) has the worst effect on junction capacity.[2]

1 Page 5, paragraph 9.3.6.
2 Page 3

Obviously, a major concern is traffic flow. But what about pedestrians of all kinds?

Where crossings are provided, TAL 5/05 also flags up the importance of making them inclusive:

The initial justification for signal control may still be a vehicular one but all road users must be taken fully into account when the design is taken forward. There has been over the years a greater emphasis on encouraging walking and cycling. The provision of better crossing facilities is an essential part of this.[3]

The Traffic Signs Manual (2019) mentions the objectives of crossings:

The three main objectives of any crossing should be safety, convenience and accessibility. A crossing that does not improve on all three to some degree is unlikely to be satisfactory, and consideration of these criteria will form an important part of the assessment process.[4]

The manual also mentions that low demand could be due to difficulties of using a crossing:

The low numbers may be due to latent demand as people experience difficulty crossing.[5]

3 Page2
4 Page 100 paragraph 13.1.4
5 Page 102 paragraph 13.3.2

Does this advice seem confusing? It does to us.

The above highlights the impact of pedestrian controlled crossings on traffic flow, but also acknowledges the importance of providing better crossings if people are encouraged to travel on foot.

Whatever the reasons, there seems to be a shift in recent years towards the installation of more informal crossings and the replacement or removal of signalised crossings. Most pedestrian controlled crossings that are removed are replaced with informal crossings which are **much more difficult for people with sight loss to locate and use.**

While the exact scale of the problem isn't clear, this practice – coupled with the findings of two separate pieces of Guide Dogs commissioned research – reinforces our concerns around local authorities' failure to consistently provide inclusive environments for all road users.

Inclusive environments are essential if people with sight loss are to be able to get around safely, independently and with confidence.

That's why we have produced this guidance, complete with recommendations for all those across the UK with an interest in the built environment to consider the needs of people with sight loss when planning or regenerating our towns and cities.

Find our recommendations on page 22.
Read on to learn more about our research.

What we know about the importance of pedestrian crossings

The first piece of research that Guide Dogs commissioned was our investigative study, which highlighted how important road crossings are for pedestrians with sight loss.

It drew clear conclusions about the reliance people with sight loss place on different types of crossings, and how pedestrian crossings help them to navigate the world outside.

Other, separate, and highly qualitative research also found that crossings are a vital part of orientation and mobility for pedestrians with sight loss. When asked, many said they would travel a further distance to be able to use a controlled crossing because they felt safer. For some, crossing without a signalised controlled crossing was simply not an option.

Manual for Streets (2007) had already recognised this, stating:

Signalised crossings are preferred by blind or partially sighted people[6].

Manual for Streets 2 (2010) reinforced this:

Older people and people with a visual impairment may express a preference for signalised crossings as they provide greater certainty when crossing[7].

This reiterates how vital these types of crossings are for vulnerable road users of all kinds – not only people with sight loss.

Signalised crossings **should be integral to the design of an inclusive environment that all road users can use safely.**

6 64 paragraph 6.3.9
7 Page 59, paragraph 9.3.12

Evidence for the importance of controlled crossings

Our study revealed a lack of existing research into the importance of road crossings for people with sight loss.

It also showed that while many do not understand the differences between different types of pedestrian controlled crossings (Toucan, Pelican, Puffin), pedestrians with sight loss rely on them enormously, particularly in high traffic areas.

In shared surface areas, we learned that removing controlled crossings and dropped kerbs caused difficulties. Further qualitative research showed that pedestrian controlled crossings gave people more confidence when crossing roads.

Research also showed that 'shared space' initiatives were disliked by pedestrians with sight loss. Some of these schemes' most enthusiastic advocates originally explained that shared spaces should be negotiated through eye contact between motorists and pedestrians. However, research found no significant evidence of this phenomenon.

An investigation commissioned by the Department for Transport acknowledged that whilst some drivers and pedestrians may infer things about one another's intentions,

> **"There is no convincing data that eye contact is used predominantly as a means of communication between drivers and pedestrians.**[8]

Of course, even if pedestrians and motorists are not found to habitually look into each other's eyes, sighted pedestrians will still use their sight to judge whether or not it is safe to cross. They will observe the speed of a vehicle, and other visual clues such as hand gestures given by the driver, or the car's lights being flashed.

It shouldn't need to be said that such visual clues are useless to a person with sight loss.

8 Page 64, paragraph 6.3.9

Key Policy and Legislation.
Article 9 of the United Nations Convention on the Rights of Persons with Disabilities requires state parties to take measures:

To enable persons with disabilities to live independently and participate fully in all aspects of life...

The Convention goes on to spell out that:

These measures, which shall include the identification and elimination of obstacles and barriers to accessibility, shall apply to, inter alia: buildings, roads, transportation and other indoor and outdoor facilities, including schools, housing, medical facilities and workplaces.

The Convention also sets out a disabled individual's right to freedom of movement, independent mobility and access to the public realm. People with sight loss should be able to orientate themselves in and navigate such places safely and independently, including being able to find and use pedestrian crossings.

The Equality Act (2010) and the Disability Discrimination Act (1995) in N Ireland also protect the rights of disabled people. This legislation places a duty on public authorities to have due regard to the need to take steps to take account of people's disabilities even where that involves treating a disabled person more favourably than others. In addition, Part 2 of the Traffic Management Act (2004) imposes a duty on councils to secure expeditious movement on their road networks.

All the above encourage or require the provision of inclusive and accessible features for all users in the street environment. Councils can satisfy this duty by providing a pedestrian crossing where all road users are able to cross safely and independently.

What people with sight loss say about: Zebra crossings

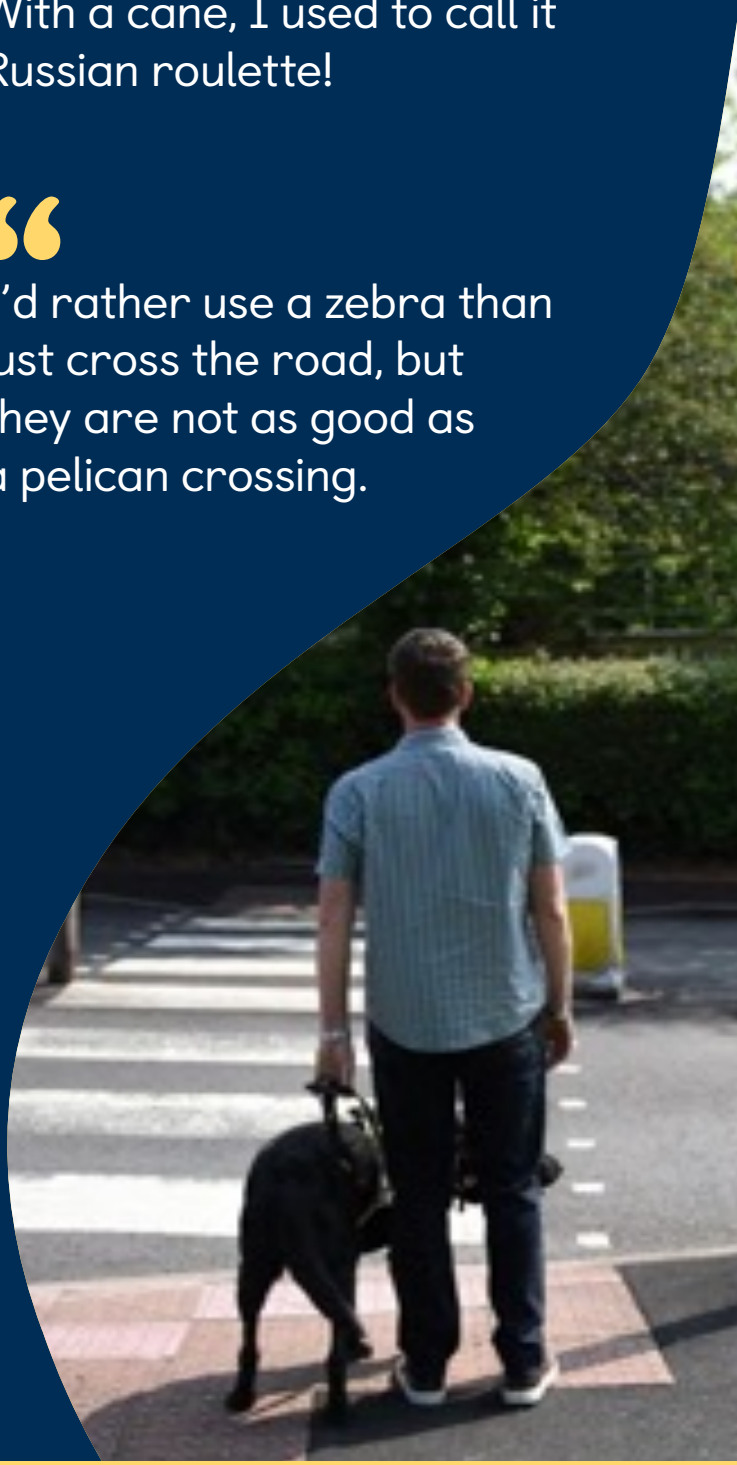
"You've got no guarantee that anybody is going to stop. You have to work so much harder at zebra crossings, concentrating on listening to what's going on.

"(How I feel?). Terrified! With a cane, I used to call it Russian roulette!

"I'd rather use a zebra than just cross the road, but they are not as good as a pelican crossing.

Controlled crossings

"(Make all zebras into pelicans...) I don't think (people) are aware they have to stop at a zebra. I really don't think that drivers think that they are breaking the law if they don't stop at a zebra, whereas they know they have to stop at a red light.



The two types of crossing: formal and informal

Formal crossings are:

Highly structured and provide a clear position where pedestrians should be safe to cross[9].

They also act as a facility provided to help people cross a carriageway but where they have priority over motorised traffic. Formal crossings can be sub-divided into controlled and uncontrolled crossings.

9 Page 59, paragraph 9.3.12

Formal crossings

Pelican or Puffin crossings

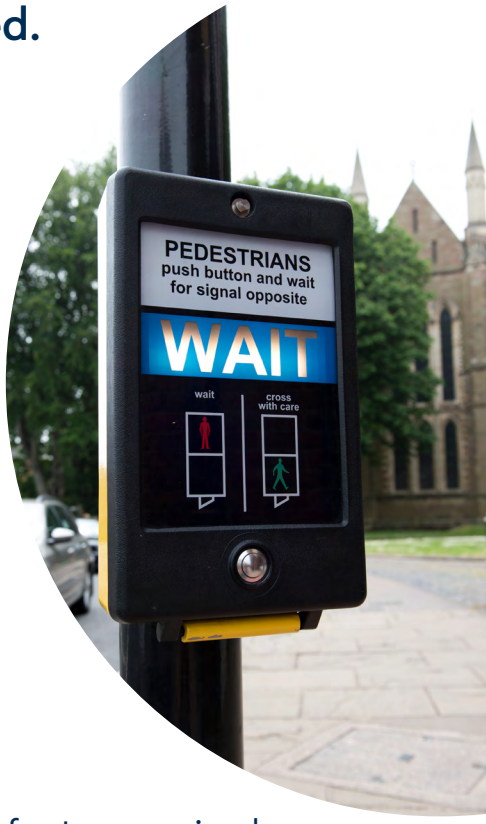
These types of crossings have distinct times during which pedestrians can safely cross the road. The crossing phase is usually started by the pedestrian pressing a button. This changes the traffic light for vehicles to red.

There are three different signals to inform a pedestrian when it is safe for them to cross:

A visual signal – the most common one being a 'green man' displayed.

An audible signal – given by a bleeping sound.

A tactile signal – consisting of a rotating cone on the underside of the control box, which spins when it is safe to cross.



In addition, tactile paving (also known as blister paving which features raised dots across the surface) is laid in an 'L' shaped pattern to assist with locating the crossing point. The blister paving stem (which should extend across the full width of the pavement) can be felt by a person with sight loss as they approach the crossing, enabling them to turn and follow the stem to the control box, and push the button to begin the crossing phase.

Pedestrians with sight loss prefer this type of crossing to all the others because they can control a red traffic light which requires vehicles to stop, enabling them to cross. Safe in the knowledge that the traffic has stopped, pedestrians can concentrate on getting to the other side of the road (although they will still need to be aware that a driver may not have noticed the red light).

Puffin crossings are slightly different. They are equipped with sensors that detect if pedestrians are still crossing the road and adjust the length of the crossing phase accordingly.

Uncontrolled formal crossings

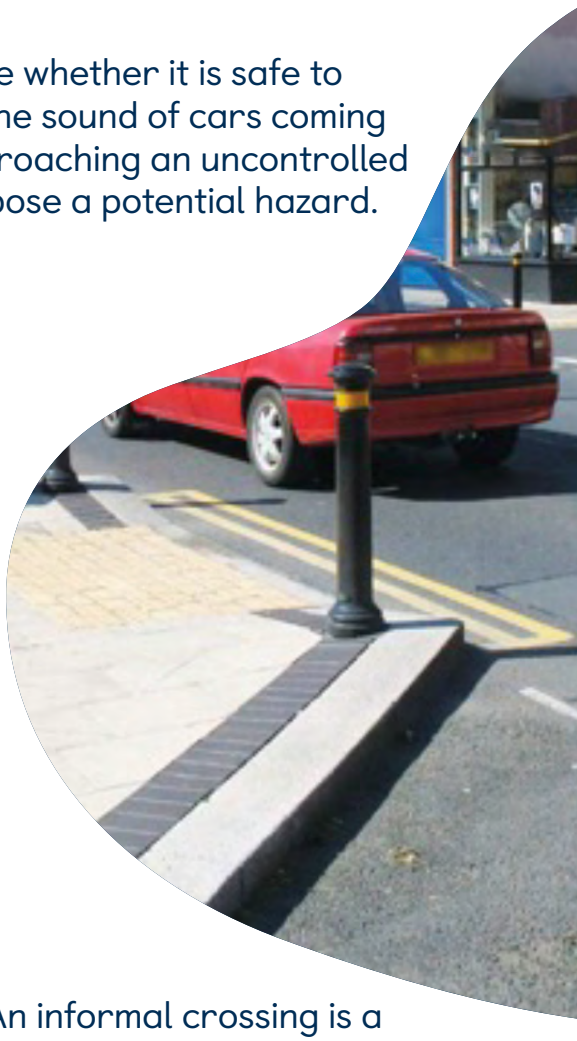
Zebra crossings

Zebra crossings look similar to other controlled crossings (for instance, tactile paving and zig-zag markings which stop cars from parking) but they do not have a control box. The crossing will have white and black stripes on the road, to indicate where to cross over to the opposite side.

This type of crossing is not so popular amongst people with sight loss, because:

The pedestrian would have to either pick up on visual clues given by the driver or the car itself to be sure that the vehicle has stopped.

Or the pedestrian must listen to the traffic to determine whether it is safe to cross. It can be difficult in noisy surroundings to hear the sound of cars coming from either direction. Cyclists and electric vehicles approaching an uncontrolled crossing can be almost impossible to detect and could pose a potential hazard.



Transport Scotland opposes the deployment of this type of crossing. In 'Good Practice for Roads' they state:

> **Transport Scotland can no longer support the use of zebra crossings because they are unsuitable for visually impaired pedestrians.**[10]

Informal crossings

Informal crossings are not controlled by pedestrians. An informal crossing is a facility provided to encourage people to cross a carriageway at a spot considered by planners to be suitable. However, pedestrians have no legal priority over motorised traffic. This type of crossing does not have any control boxes and the tactile paving does not have a stem. They are used in the same way as zebra crossings and are the least favoured by people with sight loss.

10 MVA consultancy (2009) Page 36

How do people with sight loss use crossings?

The importance of orientation and mobility training

People with sight loss use information obtained through three senses – **hearing, feeling, and for those with residual sight, seeing** - to determine where they are. Feeling safe empowers them to venture out and about.

People with sight loss have to build up a mental image of an area to understand the environment where they are, as well as the position of and relationships between objects around them.

People with sight loss can be trained in orientation and mobility to make the best use of their available senses. While predominantly taught to walk in a straight line, they can be taught to follow the natural bends and curves of a footway. In order to safely cross a road, the safest technique is to walk directly from kerb to kerb.

Understanding how people with sight loss travel

People with sight loss are taught to locate blister paving which extends across the pavement, then to turn left or right to follow the stem to the crossing point, where the control box should be located.

As such, when crossings are installed, the opposite sides should be in a straight line, representing the shortest route between the two sides of the road. Normally, the crossing should be at 90 degrees to each pavement, to allow easy location of the opposite kerb. Diagonal lines of travel should not be used to cross a carriageway, as this results in a longer journey across the road and could easily disorientate a person with sight loss.

After a sighted person has located the control box and pressed the button, those who are totally blind and cannot see the 'green man' or hear the audible bleeping sound can use the rotating cone on the underside of the control box – as recommended in 'The Design of Pedestrian Crossings' (LTN2/95) and Transport Scotland's 'Roads for All: Good Practice Guide for Roads'.

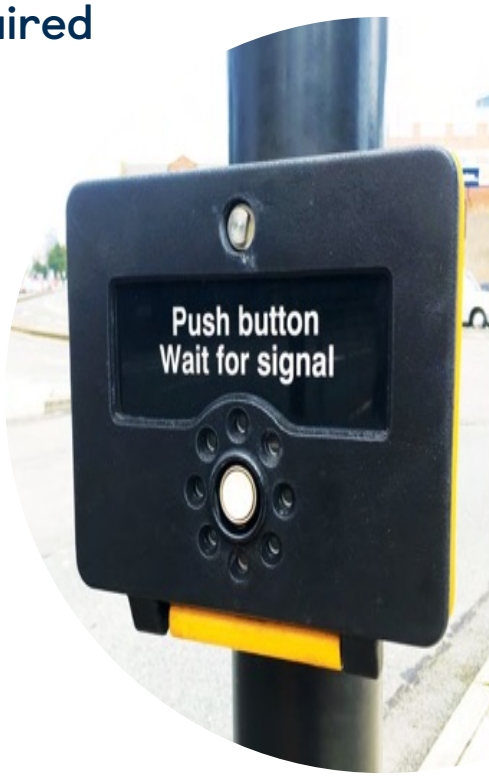
Once the rotating cone starts to spin, the person with sight loss knows it is safe to cross. At the same time, the green man and/or other visual signal will be displayed and an audible bleep will sound. If a crossing is close to other crossings, then the audible signal can be absent to prevent confusion about which road or section of a crossing is safe to cross.[11]

Those who have received mobility training will have learned to perform a straight line crossing, aiming for the blister paving on the opposite side. This informs them that they have either completed one section of the crossing or are safely on the pavement on the other side. People with sight loss are taught to never cross the road if the crossing phase has started before or as they reach the crossing. They wait for the next crossing phase so they have enough time to orientate themselves and get across safely.

11 LTN 2/95 Page 4 paragraph 2.7.6

How crossings help people move around the street environment

Controlled crossings are found to be the most reliable and least stressful crossings, especially for those with less confidence and those who have acquired sight loss in later life. They make up the vast majority of people registered as severely sight impaired (blind) or sight impaired (partially sighted) in the UK today.



The Design Manual for Roads and Bridges (TD50/40), of Transport Scotland's 'Roads for All: Good Practice for Roads' (2013) states:

Tactile paving, tactile rotating cones, audible signals and dropped kerbs are all mobility aids designed to assist disabled people at the crossing.[12] (paraphrased).

For some people with sight loss, this is the only type of crossing they would use. For others, controlled crossings also serve as a useful navigational landmark, even if they do not actually use the crossing.

For those with formal orientation and mobility training, learning about different traffic sequences at junctions is achieved through the knowledge of the crossing phase. This is particularly important for children and young people with sight loss, who first need to understand how roads work in general, before learning when it is safe to cross. This shows how valuable controlled crossings are in relation to orientation and navigation within the street environment.

12 Transport Scotland (2013) Page 12

Current designs and how they impact on people who have sight loss

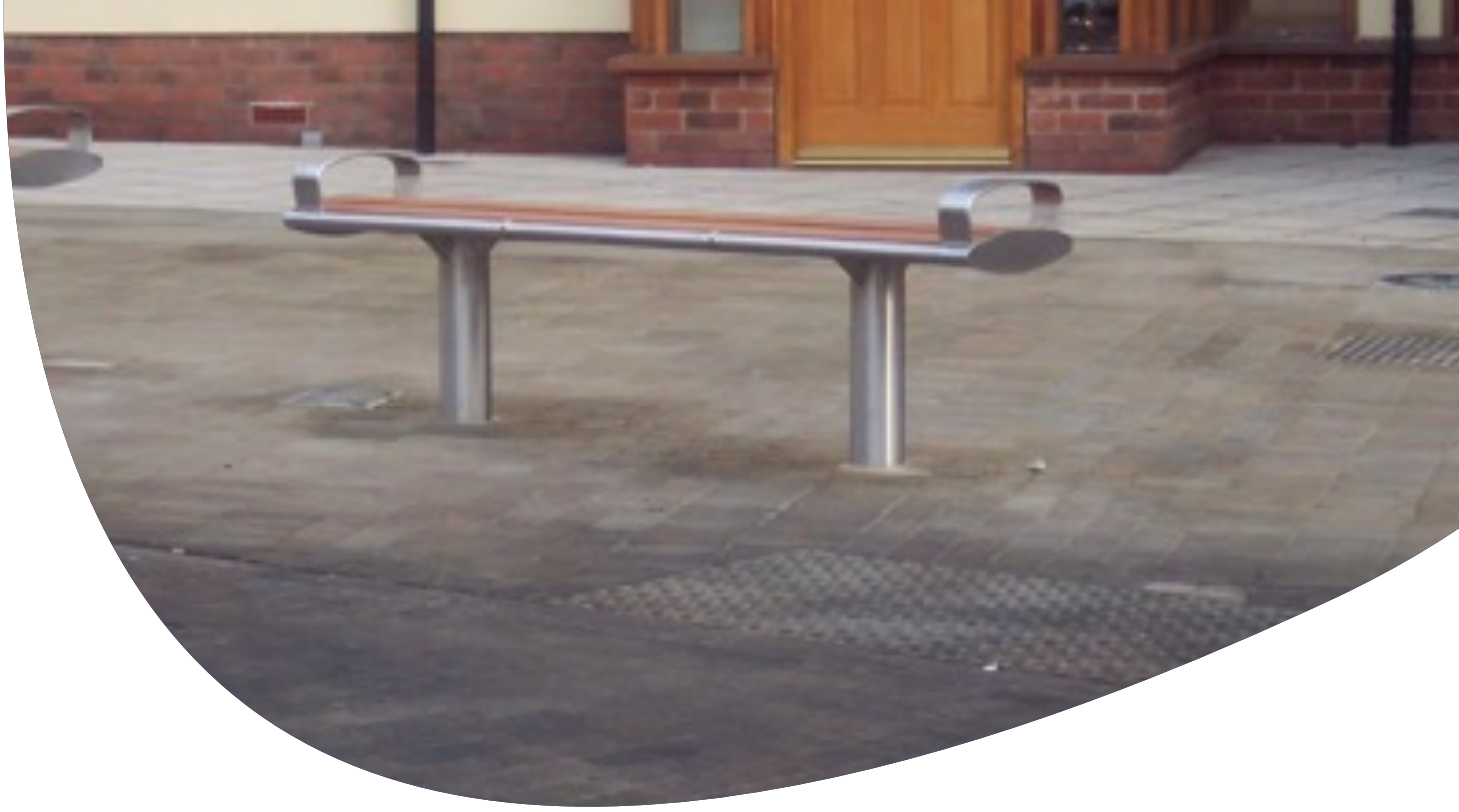
Pedestrian controlled crossings are seen by some designers as barriers to the smooth movement of vehicles, particularly in more modern street layouts. Our research suggests that concerns over creating a backlog of traffic seem more important than the safety of vulnerable pedestrians.

This is where you can help.

It's estimated that around a third of people with sight loss have an additional disability, including a hearing impairment. They depend on tactile feedback from rotating cones that only pedestrian controlled crossings offer.

People with learning difficulties, young children and the older population also look to the reassurance of a controlled crossing, as they can find vehicles very intimidating.

There is a widespread perception that councils have been removing or downgrading controlled crossings in high street and residential areas in recent years, installing uncontrolled or informal crossings in their place.



Many regeneration schemes have increased the width of pavements or removed them altogether to accommodate street cafes, seating areas and more social space. This makes it even more difficult for people with sight loss to locate crossings. Uncontrolled crossings which do not feature a stem can be virtually impossible for someone with sight loss to find, especially when physical barriers prevent them from walking closer to the kerb to try and feel tactile paving underfoot.

Some shared space schemes feature street furniture, which in many cases makes it even more difficult for people with sight loss to maintain a straight line of travel. This can sometimes be much worse on one side of the road than the other. While people with sight loss would always prefer an obstacle-free pedestrian route, including easily identifiable controlled crossing points away from street clutter would empower them to locate and cross over to the other side, where the pavement is less cluttered or easier to navigate.

So, what can we do to make things better for everybody?

The importance of signalised controlled crossings for people with sight loss

Our recommendations

Major high streets should have at least one controlled crossing to give vulnerable pedestrians somewhere to cross safely and confidently.

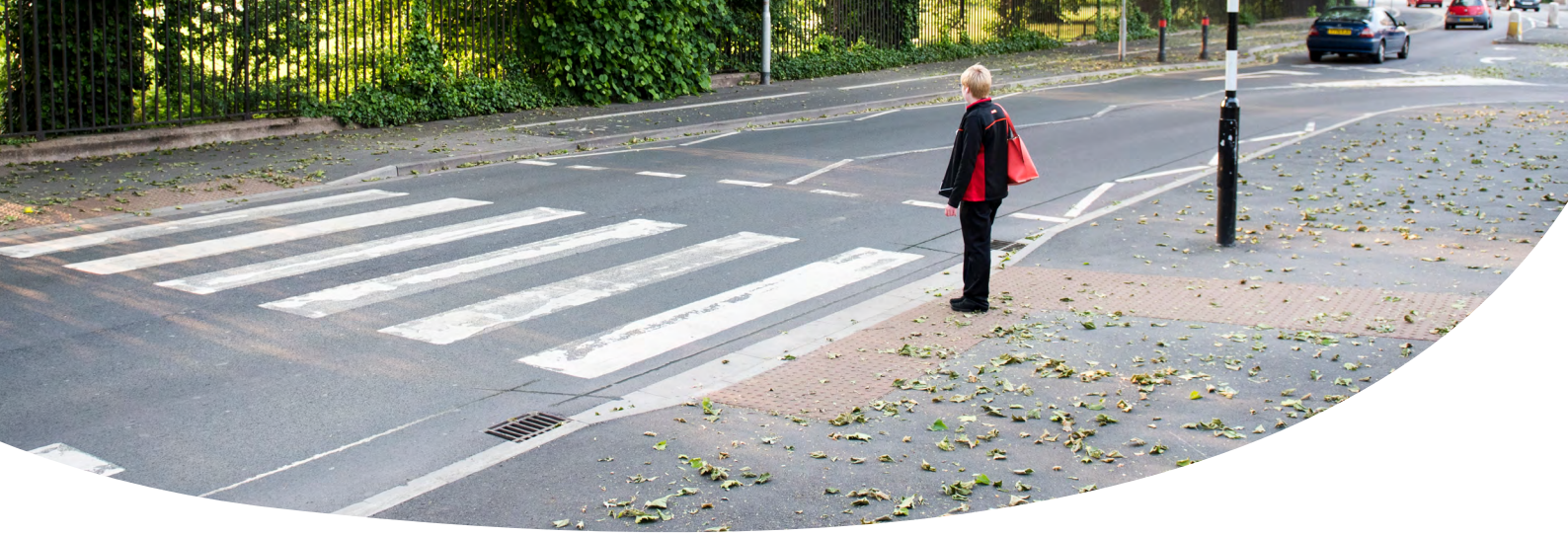
Not all road users have the capability or confidence to cross at uncontrolled crossings or using shared surface schemes. We must offer people a choice.

This promotes an inclusive environment in the spirit of the United Nations Convention on the Rights of Persons with Disabilities, as well as complying with domestic equality legislation.

All crossings should comply with official guidance, including the provision of appropriate tactile paving.

All pedestrian crossings should be inclusive and incorporate accessibility features with visual, tactile and audible signals. In addition, the recommended tactile paving must be installed as recommended in 'Guidance on the use of tactile paving surfaces' so that all vulnerable road users, especially people with sight loss, can cross safely and independently.

The audible signal may be excluded only if there are several crossings nearby, to prevent confusion and potential danger as recommended in the Department for Transport Guidance LTN2/95 and Transport Scotland's 'Roads for All: Good Practice Guidance for Roads'.



Where possible, crossings should be away from junctions, especially in shared space schemes.

Crossings should be installed away from busy junctions as recommended in 'Roads for All: Good Practice Guidance for Roads'.

Finding a crossing away from a junction will reduce the disorientation and additional stress that people with sight loss may feel due to large volumes of traffic. In addition, the increase of near-silent electric and hybrid vehicles on our roads makes it much more difficult to hear such vehicles at complex junctions, increasing the risk of accidents.

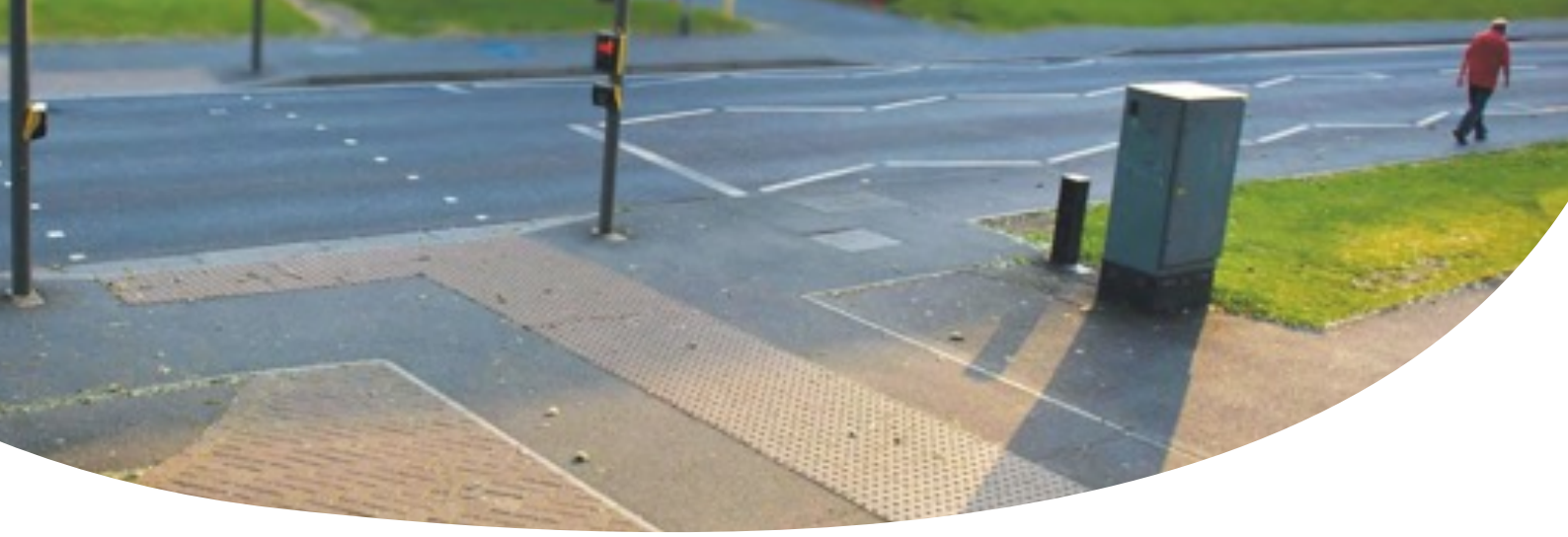
A well-chosen location for a crossing can minimise environmental noise and help people with sight loss concentrate while deciding when to cross. This is especially important for Zebra crossings, where a person with sight loss has to listen to determine if it is safe to cross.

Both sides of all crossings should be aligned to promote straight-line crossing, which will normally be the shortest distance.

People with sight loss are trained to walk and cross in a straight line. If the opposite side of the crossing is not in the straight line of travel, a person with sight loss may not be able to find it, or know if they have crossed safely. Worse still, they may unintentionally move into the road, exposing themselves to potential danger.

The Chartered Institution of Highways & Transportation document 'Designing for Walking' states that, "Tactile areas should always have a 'twin' opposite and have blisters aligned properly when used to denote crossing points to allow users to find the opposite footway and avoid becoming stranded in an area with traffic."[13]

13 LTN 2/95 Page 4



Guidance paving should be provided in open spaces to help pedestrians find crossings more easily.

A controlled crossing should have an 'L' shaped stem of blister paving completely traversing the footway (as shown in the photograph below) to enable people with sight loss to tell when they are adjacent to the crossing point.

Where a pavement is very wide and exceeds six metres - which is the maximum length of the stem stipulated in the Department for Transport's Guidance on the use of tactile paving surfaces - or where the crossing is situated in a wide open space, we recommend that guidance paving should be installed to help people with sight loss find the crossing.

Similarly, where an informal crossing is provided in a wide open space, guidance paving should also be used to lead a pedestrian with sight loss to the blister paving. Guidance published by the Chartered Institution of Highways & Transportation recommends that "Tactile paving can also be used to inform people with sight loss that they are following a 'safe' or 'guided' route within a shared surface or pedestrianised area."[14]

Tactile paving should have good colour and tonal contrast with its surroundings, to help those with some vision find it.

All tactile paving provided at crossings must have very good colour contrast against the surrounding area to help people with residual vision identify them. This also helps those who have loss of feeling underfoot. The contrast should be clear, regardless of the weather conditions, such as rain.

14 Transport Scotland (2013) Page 16

An additional control box should be provided at busy crossings.

If a crossing has a very high number of pedestrians using it or is located near a popular attraction, two control boxes should be provided.

A control box should be on either side of the crossing, equipped with audible, visual and tactile signals to help people with sight loss reach the rotating cone, and help people with some remaining vision see the green man.

Where possible, additional technological components should be considered alongside existing features at pedestrian crossings.

There are a number of technological solutions to help people with sight loss identify and locate crossings. Some enable a pedestrian with a smart phone or other smart device to locate a crossing and begin a crossing phase, and inform them when it is safe to cross.

These technological solutions are particularly useful if the pedestrian is unable to get to or use the controls. They also mean that people with sight loss can line up at the centre of the tactile paving in preparation for the crossing phase. The ideal point to stand to cross safely is often out-or-reach of the rotating cone.

Please note that these technological solutions should be additional extras. They must not replace existing auditory, visual or tactile signals, as not everyone has access to smart devices.

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Our recommendations

- Major high streets should have at least one controlled crossing to give vulnerable pedestrians somewhere to cross safely and confidently.
- All crossings should comply with official guidance, including the provision of appropriate tactile paving.
- Where possible, crossings should be away from junctions, especially in shared space schemes.
- Both sides of all crossings should be aligned to promote straight-line crossing, which will normally be the shortest distance.
- Guidance paving should be provided in open spaces to help pedestrians find crossings more easily.
- Tactile paving should have good colour and tonal contrast with its surroundings, to help those with some vision to find it.
- An additional control box should be provided at busy crossings.
- Where possible, additional technological components should be considered alongside existing features at pedestrian crossings.

Guide Dogs

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people with sight loss
live the life they choose.

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