A bumpy ride – a summary of hazards encountered by wheelchair users during a journey to Hitchin town centre.

Background and context

Perhaps 6 years ago, a group including Ellie Clarke, Keith Hoskins, David Howlett and myself conducted an informal survey of pavement conditions, signage and street furniture in Hitchin town centre. We identified serious hazards, some of which had existed for some time even then. I am fairly sure that the results were written up, but am uncertain what remedial action was taken, if any. Other than the hope of making improvements, we did not identify hazards with any particular user group in mind. I am writing this report in the hope that, because the issues identified have a significant impact on a specific group of Hitchin town centre users, this may focus minds to identify solutions – I make some suggestions in the concluding remarks.

According to the Ordnance Survey App, the distance from the south eastern corner of the grounds of Wilshere Dacre School to Churchgate is almost 1100 yards (approx. 1km) and the time to walk that distance is about 15 minutes. For those of us who are able bodied, under normal conditions (i.e. with no snow or ice) the walk does not present many, if any, hazards that we have to consciously think about. For a significant minority of Hitchin's population that is not the case. In the account which follows, I am focussing on the experience of wheelchair users. They are by no means the only group whose daily lives are affected by the poor state of repair of our roads and pavements.

On Good Friday (7th April), I was fortunate enough to be able to accompany wheelchair user Sharon Reid and her husband and carer Adrian on the journey. This is a journey the couple make frequently to go shopping, visit town centre coffee shops and green spaces. It is not the only route they use to get into the town centre, but they chose it because it has multiple examples of the sort of problems they face most days.

Wheelchair design

The design of a wheelchair is an important consideration in identifying problems, and there are variations, each of which will have strengths and weaknesses depending on terrain. Sharon's wheelchair is of a type known as 'attendant propelled', so Adrian (the 'attendant') has to push and manoeuvre it. It should be born in mind that the attendant has a limited view of hazards due to the presence of the chair's occupant, so Adrian has to constantly make a judgement about how to cope with a hazard which he knows he is about to encounter, but can no longer see. The back wheels are 21 inches (53cm) in diameter, whereas the front wheels are much smaller - 8 inches (20cm) in diameter. The back wheels are probably 1¼ inch (3.2cm) wide, with solid rubber tyres. Previously pneumatic tyres were provided, but, although these gave a more comfortable ride, they were very prone to puncture, often due to broken glass. The front wheels are solid and 1 inch (2.5cm) in width. The chair is approximately 27inches (69cm) in width at its widest point. There is no suspension, so Sharon feels all bumps and vibrations. It has rim brakes, the levers for which are controlled by Sharon. There is no restraint to keep Sharon secure. She sits with feet resting on plastic foot rests which rotate out of the way when she leaves the chair.

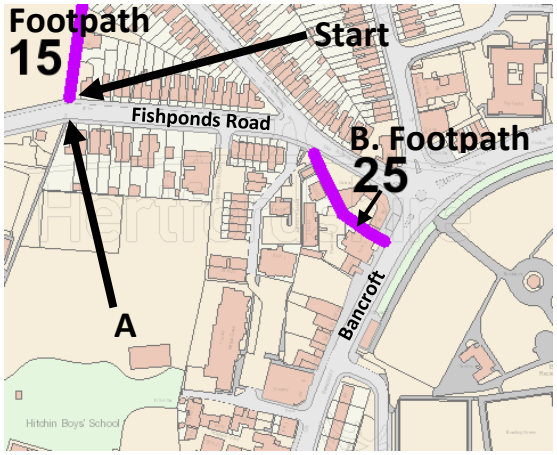
Journey description

In the account which follows, I have attempted to describe, provide pictures of, and classify the hazards encountered without always identifying their exact location.

The 'Guidance' section which follows the description of each hazard type is a direct quote from the relevant section of **A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure**

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1044542/inclusive-mobility-a-guide-to-best-practice-on-access-to-pedestrian-and-transport-infrastructure.pdf

A.Fishponds Road (footpath 15 junction) to Bancroft

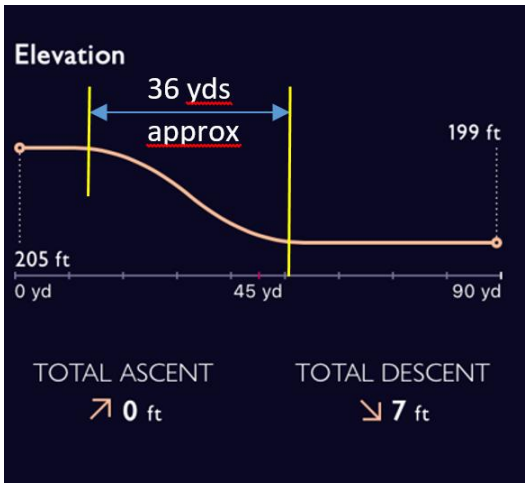


A. Our journey started at the southern end of footpath 15, where it meets the A505 Fishponds Road (see map above). There are dropped kerbs on both sides of the road and a refuge in the centre. Whilst the camber of the road causes no problems, the dropped kerb on the south side of Fishpond's Road has a sunken flagstone on its left hand side as the user approaches from the north (circled in picture). This has the same effect as increasing the camber - if Adrian does not keep to the right hand end of the ramp, the chair's footrest will catch on the kerb and Sharon will be tipped forward.

Guidance

Para 4.11. 'Care should be taken to prevent a wheelchair's front wheels or footrests catching on an opposing upslope. For this reason, at the foot of a dropped kerb, the camber of the road should be no more than 1 in 20, for a distance of 600mm from the kerb line, which approximates a wheeled mobility aid's wheelbase.'

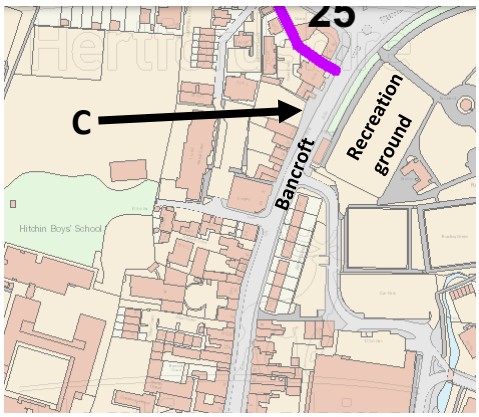
B. Footpath 25 falls 7ft (2.1m) in a total length of 90 yards (82m), which is an overall gradient of 1:39, conforming with guidance. However, the Ordnance Survey App shows the gradient profile of FP25 (right) revealing that the majority of the fall occurs in the middle section over a distance of approximately 36 yards (33m) giving a gradient of approximately 1:15 – steeper than recommended. Adrian choses to use FP25 because its surface is superior to the pavement passing in front of the car showroom on Fishpond's Road. Both alternatives are better than the pavement on the north side of Fishpond's Road alongside the Victoria pub, however, which is narrow, with a considerable crossfall towards the carriageway.



Guidance

Para 4.3. 'If a level route is not feasible, then gradients should not exceed 1 in 20. (A slope steeper than this is generally defined as a 'ramp').'

C.Vehicle Entrance to Parkview.



Almost all vehicle entrances present problems to the wheelchair user. Of those encountered on the route, the one leading into Parkview is the most difficult to manage. It consists of pavers, which are uneven because they are insufficiently supported by the base on which they are laid to cope with continuous vehicle use. There is a significant crossfall between the fence, which forms the boundary of the property, and the road surface in Bancroft. If the surface is icy, this represents a major hazard. At present, the crossfall gradient is slightly shallower closer to the building, so Adrian tries to take advantage of this, having then to either pass between the fence and the signpost support and redundant (lamp?) post, or between the supports. There

is no guarantee that the gradient profile will remain constant over time, so with continued deterioration, this may not be an option in future.

Guidance

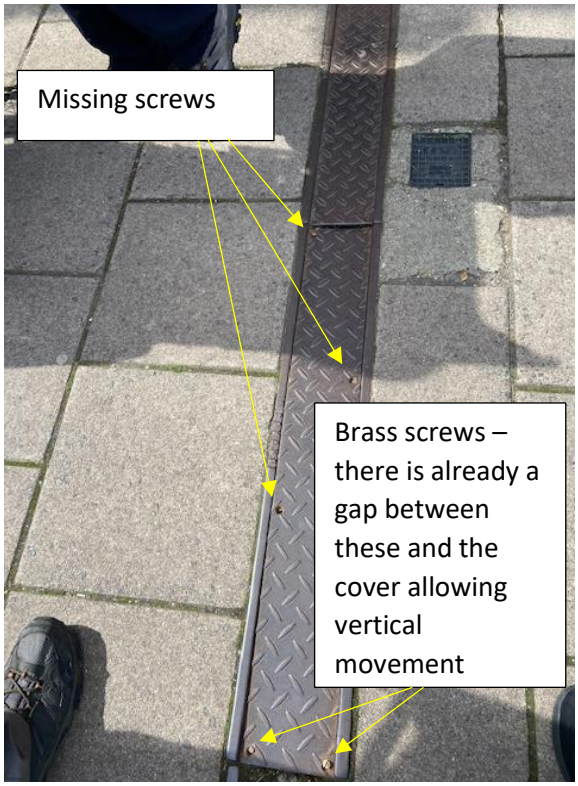
Para 4.3. 'Variable crossfalls can cause problems for wheelchair users and people who have a mobility impairment, so should be avoided wherever possible. This may be an issue where a footway has vehicle cross-overs, (and should be taken into account by local authorities in relation to their policy on front garden parking in residential areas).'

D. Bancroft and High Street.

This section of the route includes multiple examples of surface hazards, which could be avoided if best practice guidance was followed consistently and maintenance was better.

D1.Gully covers.

These are a regularly encountered hazard – many buildings have at least one. They appear to consist of a concealed black plastic pipe (due to damage, the pipe is visible in some cases) which is chased into a rectangular cross sectioned channel in the pavement which slopes down from the building to the road surface at the kerb. The purpose is to conduct rainwater from a building's external drainpipe to the road surface. The covers often appear to be secured by countersunk brass screws. This system is guaranteed to have a short lifespan because, in wet conditions, the combination of brass with the steel cover accelerates erosion of the ironwork. Before long, the diameter of the hole exceeds that of the screw head, resulting in the cover being no longer secure and allowing it to move up and down. It can then deform under pressure so that it sticks up in some places and is dented in others. In the end, the cover will crack. Some covers have sunk to the extent that they have been covered with tarmac which has itself sunk. In some cases, damage has been exacerbated by pavement parking.



The effect is to create a surface which is uneven for a wheelchair occupant and a possible trip hazard for any user, but especially the attendant, whose view of immediate hazards is compromised as previously explained. If the cover has sunk significantly, the small diameter front wheels of a wheelchair can catch in the dip, throwing the occupant of the chair forward, and likely causing injury to the attendant.

Guidance – see over

Guidance

Para 4.8. 'Wherever possible, gully covers and drainage slots should be positioned as far as possible from main pedestrian flows.'

D2. Inspection chamber covers.

There are a number of inspection covers throughout this section of the route and not all are flush with the surrounding pavement. In the picture to the left, the surface of the grill is about 15-20mm above the surrounding tarmac and pavers. Steel grills and covers like the one shown can be slippery in wet conditions.

There are numerous inspection chamber covers which are surrounded with deteriorating cement or tarmac. If the cement deteriorates to the extent that it becomes detached (see picture right) it causes jolting to the wheelchair occupant, becomes a trip hazard for the carer, and can cause steering difficulties.

Guidance

Para 4.8. 'Inspection chamber covers and service inspection chambers should be flush with the surface. Surfaces should be firm and slip-resistant in wet and dry conditions……..'

D3. Uneven, loose and cracked paving stones with joints frequently too wide.

Paving stones are often uneven. It is easy to find examples of sections of paving where the deviation of the footway surface under a 1 metre straight edge is of the order of 20mm or even more (see picture left). This is well in excess of the recommended 3mm.

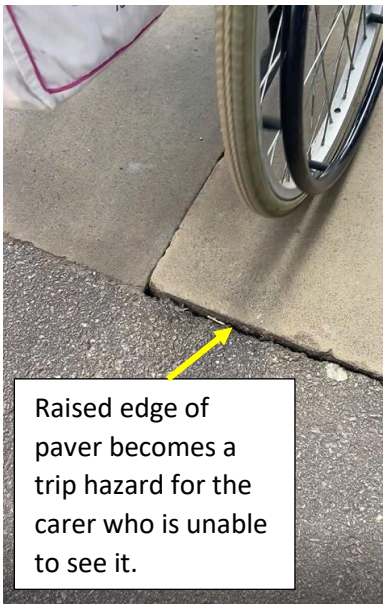
Damaged pavers such as those in the picture (right) are often associated with pavement parking (note the single yellow line) – they are clearly not intended to cope with the load. The resulting uneven surface provides multiple problems for the wheelchair user and attendant.

There are large gaps between pavers – sometimes of the order of 20mm or more in width and a similar depth – which should be filled with mortar. Where this is the case, sometimes the mortar is missing.

Where this is in the direction of travel, it is possible for a wheel to be trapped in the resulting gap. When at right angles to the direction of travel, it contributes to steering difficulties and potentially harmful vibration for the wheelchair occupant.

If gaps remain unfilled, water compromises the compacted base material. This can result in paving stones which rock, which ultimately leads to cracking.

The worst examples of paving stones which rock can cause steering difficulties and/or be trip hazards for carers when they rock back up after the back wheels of the wheelchair have passed over it as in the sequence below.



The worst example of damage to a paving stone is the surround to the letter box outside 3Es Accountants. Whilst not a particular hazard for the wheelchair user (it is well to the side of the walkway) it would be confusing for somebody with visual impairment using a stick.

Guidance – see over

Guidance

Para 4.8. 'Joints between flags and pavers should be not less than 2mm, and not more than 5mm, wide. For pedestrian only footways, joints between flags filled with compacted mortar may be wider (6-10mm). The maximum deviation of the footway surface under a 1 metre straight edge should not exceed 3mm.'

D5.Surface Obstacles

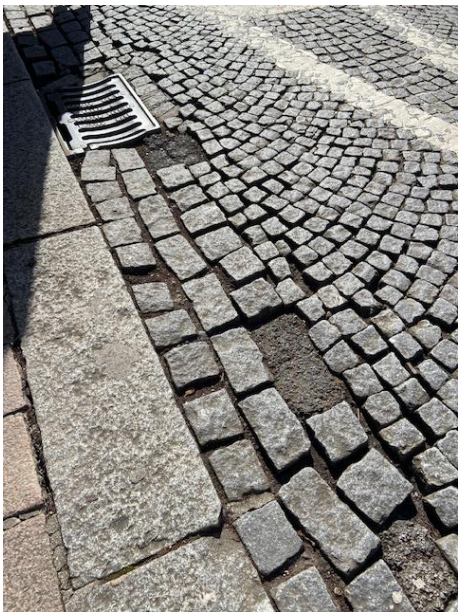
The most notable obstacles are outside seating for cafes, A boards and other street furniture. Pavement seating and tables outside Café Nero (picture left) effectively create a chicane, narrowing the usable pavement to such an extent that there is only just room for a wheelchair to pass unless the carer is prepared to allow the wheels to stray onto the sloping course of pavers which form the edge of the carriageway. This would be extremely uncomfortable for the occupant and would require an unusual degree of forearm strength to control. The carer also needs to manoeuvre around the fixed bollards which mark the pavement edge.

Guidance

Para 3.2. 'A wheelchair user and a non-wheelchair using person side-by-side need 1500mm width.'

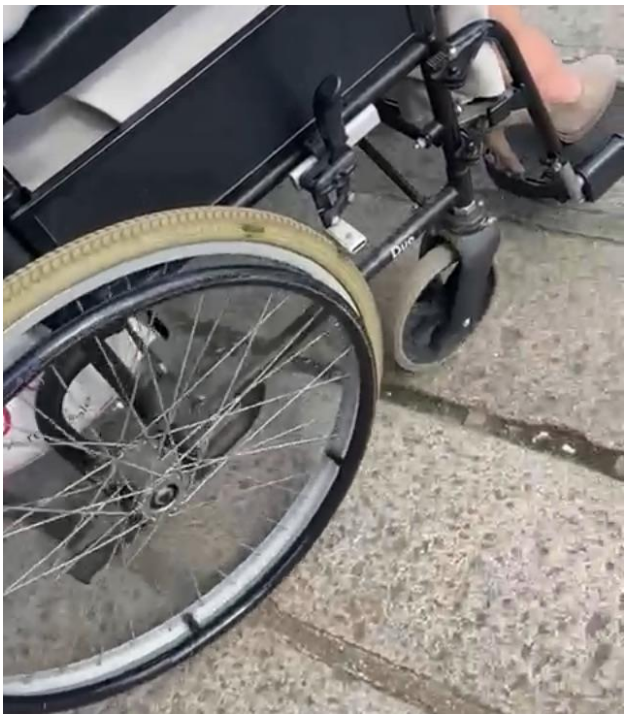
Para 4.2 'Footways and footpaths should be made as wide as is practicable, but under normal circumstances, a width of 2000mm is the minimum that should be provided, as this allows enough space for two wheelchair users to pass, even if they are using larger electric mobility scooters. If this is not feasible due to physical constraints, then a minimum width of 1500mm could be regarded as the minimum acceptable under most circumstances, as this should enable a wheelchair user and a walker to pass each other. Where there is an obstacle, such as lamp columns, sign posts or electric vehicle charging points, the absolute minimum width should be 1000mm, but the maximum length of such a restricted space should be 6 metres.'

E. Market Square



The cobbles in Market Square are a feature against which there is strong advice in the official guidance. As shown in the picture (left) they are poorly maintained making for a surface which is extremely uneven with many gaps large enough that the front wheels of a wheelchair can easily be caught between them. At the very least, they cause considerable potentially harmful vibration for both wheelchair occupant and carer.

The larger pavers (right) are intended to make it possible to cross the square without having to use the cobbles. Having tried pushing the wheelchair, I can say that even the pavers are sufficiently uneven to generate an uncomfortable level of vibration for both occupant and carer. On the day of this informal survey, it was noted that some of the seating and gazebos were situated on these pavers and a group of motorcyclists had parked their bikes on the ones at the southeast corner of the Square. Whilst it was possible to circumnavigate these obstacles, Adrian assured me that this becomes much more difficult on days when there are more gazebos or activities taking place.



Guidance

Para 4.8. 'New cobbled surfaces are unlikely to be appropriate and, even in historic environments, alternatives should be sought.'

F. Churchgate

Generally the surface conditions are relatively smooth, but there is at least one dangerous gap between pavers where the mortar is missing. A few days before our survey, Sharon was nearly tipped out of the chair when the wheel became lodged in the gap (picture left) and Adrian suffered painful bruising.

Guidance

Para 4.8. 'Joints between flags and pavers should be not less than 2mm, and not more than 5mm, wide. For pedestrian only footways, joints between flags filled with compacted mortar may be wider (6-10mm).'

Conclusions

Wheelchair users who live in Hitchin value the town centre, and may proportionately spend more time and money there than other Hitchin residents because of its proximity. Their experience of the town is compromised by a failure to give due priority to their needs. This can be addressed, although it will require resources, and improvements will take time. In the process, it will benefit all who use the town centre.

Suggestions.

- Identify, by consultation with appropriate groups and their carers, key access routes for wheelchair users and other vulnerable groups.
- Institute a rolling programme of maintenance along these routes.
- Take steps to prevent, and clamp-down on, activities which cause damage to infrastructure such as pavement parking.
- Review, strengthen and enforce licence conditions for those businesses which use pavements to extend their space.
- Erect gazebos etc and prevent motor cycle parking so that the riven paver routes across Market Place are not obstructed.

Bill Sellicks 20th May 2023