Q: What is Shared Space?

Shared Space in comparison to typical urban public spaces is that it embraces the design and management of vehicular activities (with relatively low operating speeds), and socially integrates various aspects of space users within the road transport system. The concept can be attributed firstly to *Traffic in Towns* study in the 1960’s that made the *woonerf* concept legal by 1976 with formal traffic guidelines and regulations.

The notion of space changed as the use and appearance of urban space as “social space” became vehicular corridors that erode interaction in the public sphere. Similarly, when we encourage bike corridors, there is still a focus on moving and flow rather than cutting across directions that increase interaction. This study highlights the importance of achieving a low-speed environment via design with a provision of safe zones for the visually impaired, space reallocation for pedestrians and street furniture for the ‘staying’ activity to enable a shared street to perform multi-functions, especially to create a sense of place.

A hazardous spatial environment reduces opportunities to access space for blind and partially sighted people. Shared Space’s intent is to increase safety through increased interactions rather than through hard delineations. Groups need to understand how to use space and what is expected of them in it.

Q: Who has the “right” of movement on the road? Is every user equal?

The Shared Space idea is primarily based on the perceived risk that necessitates road users to be more aware of one another and react more carefully. Based upon the theory of ‘risk compensation’ and later ‘risk homeostasis’, John Adam (2010) explains that the uncertainty of the right of way in a shared street environment enables road users’ more cautious behavior due to their tendency to take risks and the danger they perceived. Therefore creating a less hostile environment by firstly reducing car dominance (low speeds) and a cautious use of space by all, creating a fairly equal “right” of movement on the road.
Place function that links to other functions within and outside the road reserve.

Make the street a **destination**, geared towards “place making”. Rather than considering the street only as an arterial function, we should view it as a vibrant and interactive urban space, while also acknowledging access, service and loading functions.

This study describes the types of blindness and aids available. The main recommendations of the study are to:

- Provide orientation and alignment cues.
- Add detectable warnings (truncated domes) to indicate location of street.

Reference Link:
Typical design and operational characteristics of Shared Space:

- Pedestrians have priority to use the full width of the road while drivers are urged not to drive faster than walking speeds.
- Goal to encourage the driver to adopt careful driving behaviour
- Min. demarcation between footway and road, as continuous surface with special pavers.
- Through vehicular traffic is discouraged. Vehicle speeds and flows are restricted by street design (e.g. horizontal curves and the location of bollards and parking spaces).
- There are streetscape elements to encourage users to stay within the space.
- Encourage cooperative behaviour of users, by removing standard traffic controlled devices.
- Min. 1.8 m wide accessible route provided on either side of the street, demarcated by 600mm wide tactile delineator bands.

Before (left) and after (right) shared space transformation for Elliott Street with a mix of land uses in Auckland, New Zealand.

Road design and space allocation between a traffic-calmed street on Beresford Street (top) and a shared space on Fort Street (bottom) in Auckland, New Zealand.

In this study, the Shared Space locations were evaluated more negatively than the conventional locations. The salient problem encountered was related to orientation:

- This study has shown that navigating in an unfamiliar Shared-Space area is more complicated for VIPs than navigating in an unfamiliar, conventionally designed area. This is especially true for those who are blind and for those using a guide dog.

- In the absence of the regular cues such as curbs (which guide dogs are trained to use), both the dogs and their owners became confused. It can therefore lead to the highly undesirable situation of blind pedestrians walking in the middle of the street without knowing it and possibly without being able to react adequately to approaching vehicles. (These situations occurred 28 times in the Shared Space locations vs eight times in the conventional locations).
• Degree of hindrance caused by the observed characteristics: Accessibility problems associated with Shared Space
• Absence of curbs or any other demarcation between stretches of road that can be perceived in a tactile way.
• The possibility of cyclists riding on the section used by pedestrians.
• A walking route that is not marked by a sufficient brightness contrast (difference in reflectance factor less than 0.30).
• Insufficient brightness contrast between carriageway and “pedestrian zone” at the crossing (difference in reflectance factor less than 0.30).
• Absence of tactile warnings (e.g. blister paving) in dangerous situations, e.g. crossings or stairs.
• Absence of usable traditional guidance cues or guidance paths.
• Absence of designated parking places and/or parking that is possible anywhere.
• Curb edges or clearly detectable alternative demarcation between motorized traffic and pedestrians
• How to deal with cyclists in the pedestrian area?
• Usable traditional guidance cues and guidance paths
• Clearly detectable and marked places to cross
• Designated parking places or a no-parking zone
• Entering/Exiting a Shared Space area

“There is a ‘believability gap’ in that the evidence to support shared space does not necessarily convince its potential users that they will be safe and free from danger and harm”
This survey has demonstrated the substantial impact that shared surface streets and shared use pedestrian/cycle paths have had on the confidence, mobility and independence of the blind and partially sighted people interviewed.

This survey has found that the vast majority (91%) of blind and partially sighted people interviewed had concerns about using shared surface streets. In many cases people’s experiences of, or feelings toward, shared surface streets had a direct practical impact on independence and mobility, as people said they would seek alternative routes and actively avoid shared surface streets (44%) or were very reluctant to use them (18%). 65% of all respondents had had a collision or a near miss with a cyclist at some point on any type of path. As a result of these incidents the majority (74%) of blind and partially sighted respondents involved said their confidence had been affected.
Improving facilities

- shared surface streets and shared use pedestrian/cycle paths:
- clear differentiation of areas through colours and tactile delineation.
- the value of being told about and getting to know the layout of the area in question
- the importance of it being used and policed properly.

Q: How to eliminate barriers for visually impaired people through design?

- Move away from “clearly marked/designated” to “shared”
- Drivers clearly know expectations speed, direction crossing etc.
- Pedestrian knowing the footway area.
- Interpretation of how the space is used, the context of that space.
- Introducing ambiguity for the driver, instils caution. Yet should be not by ambiguous space for pedestrian.
- Curbs and Tactile surfaces, represent the major source of information for blind and partially sighted.
- Good use of color/tonal contrast and lighting, tactile features, enhancing usability of the space.
- Priority for pedestrians
- Appropriate traffic speed
- Logical layout and reference points
- Obstacle free, clearly defined pedestrian routes and crossings
- Visual contrasts and good lighting
- “Disability equality and consultation”
- Education and training

How to enforce that the space has priority to pedestrians

- Delivery drop off areas, only authorised vehicles (speed should be 10mph)
- Vehicles dropping off disabled people
- Access to other vehicles restricted to set times, low pedestrian period
- Vehicles to stop at designated area
- No cyclist access


• Shared Space does not necessarily centre around the physical design and configuration of a street or public space.

• It involves a fundamentally different relationship between the movement of vehicles and all the other important functions that a street supports.

• It is the dynamics of this relationship that defines Shared Space, not the design of the street itself.

• Shared Space areas should contribute to greater traffic safety because motorists in particular will feel insecure and consequently will be more alert. At the same time it is argued that pedestrians will feel that they can move freely in the entire street space instead of being confined to footways.

• Although the Shared Space concept requires “negotiation” as to the right of way, there must be a minimum of rules. In case of an accident, it should be possible to determine who is legally responsible.
1) Reintroduction of the curb

**Solution:** Explored in this study is whether it is possible to define and create a “Safe Space” as a counterpart to the Shared Space. The Safe Space would be seen as the equivalent of the footway in a traditional street but it would not prevent motorists, cyclists and pedestrians from sharing the larger part of the street area - the Shared Space – where they are confident about doing so.

2) Curb with sloping top
3) Centrally located guidance path

Design studies should be explored, possibly the guidance path could be made e.g. in granite in order to improve the visual appearance of the element - with a surface that is textured and non-slippery.

4) Textured of tactile division

In Lyngby, High Street, Denmark, division between shared and safe space is achieved by a textured surface area. This area contains parking bays, exhibits, fixtures, and street furniture. This textured area consists of precisely cut granite setts.
5) Central delineator strip

The central delineator strip is white, 12-20mm high, 150mm wide with sloping sides and a flat top of 50mm. A 20mm profile has been shown to be of more value to visually impaired people.

Design studies should be explored, possibly the central delineator strip could be made in e.g. granite, dark or lighter colors, in order to improve the visual appearance of the element. In this case with a surface that is textured and non-slippery.

Crossings

- Uncontrolled crossing marked by lamp poles and paving in different colour
- depending on the total length of street, “natural” intersections (side streets) etc., signal controlled crossings are provided every 200-300 m. These crossings should be of the Puffin-type.
Features include:

- A single surface to pave the length of exhibition road
- Removal of curbs to make it easier to move around for wheelchair users, those with pushchairs, motorised scooters and elderly people
- A logical, simple road layout including the removal of barriers and street clutter that create unnecessary obstacles
- Black drainage channel covers four metres out from the building line on each side of exhibition road, to provide a clear signal to young children and partially sighted people that these sections of exhibition road are ‘safe areas’
- Wide strips of ‘corduroy’ warning tactile –ridged paving used to warn blind and partially sighted people of a hazard and to proceed with caution – alongside the drainage channel cover, to alert blind people to the edge of the ‘safe area’ wide, direct controlled pedestrian crossings.

Tactile Map

- Working closely with specialist tactile design team Topografik, Guide Dogs for the Blind and the Royal National Institute for the Blind we have produced a robust three dimensional map featuring colour-coding, raised letters, symbols and braille.

Reference Link:
http://www.topografik.co.uk/wayfinding

Exhibition Road Access The Royal Borough of Kensington and Chelsea. 2016
Features include:

• The high contrast tones assist the visually impaired in reading the street. The finish is trowelled smooth with enough texture for traction.

• Visually impaired need a path, high contrast signage + tactile (not necessarily braille), features to denote area

• Intersections – identify through paving, use bollards for safety, provide visual cues

Reference Link:

https://www.halifax.ca/council/agendasc/documents/150310ca1152.pdf
The team that created the street’s redesign included wayfinding measures for the visually impaired throughout – a tactile guidance strip along one side of the street; a contrasting strip along the other; and textured paving areas to mark thresholds, potential hazards, and movement onto the shared surface.

Reference Link:
http://www.pps.org/reference/8-principles-streets-as-places/

New Road, Brighton, England
Removing the curbs gave access at all points for people in mobility aids. However, the lack of curbs and formal crossings is a challenge for visually-impaired pedestrians who rely on these navigational guides. This issue was identified in the design phase and will be monitored and assessed to ensure a safe environment is provided for the visually-impaired.

Reference Link:

• The largest scaled shared space proposal in Australia was for the CBD in Bendigo, Victoria, where Hargreaves Mall formed the central area of a proposed shared space masterplan.

• Fixed and operable bollards still act as visual markers determining road use for all users, with operable bollards removed for public events or service vehicles. At Rush\Wright Associates’ Maddern Square in the Melbourne suburb of Footscray, both seating and traffic management functions are incorporated in the design of its bollards.
• Street furniture, including bollards, benches, planters, and bicycle parking, can help define a shared space, subtly delineating the traveled way from the pedestrian-only space.

• A shared street sign should be used at the entrance to a shared street. In some cases, a modified YIELD TO PEDESTRIANS sign (MUTCD 2B-2) may be added to reinforce the conversion in early stages.

• Provide tactile warning strips at the entrance to all shared spaces. Warning strips should alert drivers and pedestrians.

Further References:


"Of the 16 (48%) respondents who thought that the snow removal was poor, 12 (75%) had visual impairments that resulted in contrast problems and difficulty detecting stairs and lampposts;”

“Another problem mentioned was that high snow banks along the streets dampen sounds from vehicles, which hamper people who are visually impaired from using hearing as partial compensation for their vision loss.”

“The respondents stated that sighted pedestrians and motorists are not considerate of persons with visual impairments.”


City of Mercer Island, Washington. 78th Avenue SE Shared Use Case Study

“A curbless street gave clues to the visually impaired by the use of bollards, a change in texture and landscape zones between sidewalk and the drivable plaza. Drainage occurs via an inverted crown, with a portion of the storm water directed to the planters.”


“Needs of people living with a disability and the elderly must be considered when implementing a home zone. Removing curbs on shared surfaces improves mobility for those in wheelchairs, while eliminating trip hazards for the elderly and the less mobile (Jones and IHIE, 2002). However, the visually impaired rely on curbs as navigation tools. Alternative wayfinding techniques are necessary to facilitate movement for these individuals in the absence of curbs. Potential solutions include separating pedestrian-only areas from the vehicle path with bollards or varying textures at the borders of footpaths. Contrasting colours on surface treatments may also help those with limited vision (Jones and IHIE, 2002). While these techniques are helpful, the best solution is to involve people living with a disability and the elderly early in the design process (Biddulph, 2001).”


Further References (cont.):

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