

# Shared Space in Urban Environments

**Guidance Note** 

July 2012



Project:	Shared Space in Urban Environments
Title:	Guidance Note
Document Reference:	E:\Shared Space\120706_Shared Space Guidance Note_Issue 3.docx
Prepared by:	Mairi Joyce
Reviewed by:	Bronwyn Coomer Smit

**Revisions:** 

Date	Status	Reference	Approved by	Initials
2 February 2012	Draft	R1A120202	B Coomer-Smit	
20 April 2012	lssue 1	R1B120420	B Coomer-Smit	
6 July 2012	Issue 2	R1C120706	B Coomer-Smit	

# **CONTENTS**

1	INTRO	DDUCTION	. 1	
	1.1	The Study Tour	. 1	
	1.2	What Is Shared Space?	. 1	
	1.3	Should I Implement A Shared Space?	. 2	
	1.4	How To Use This Guidance Note	. 2	
2	DEVE	LOPMENT OF THE SHARED SPACE CONCEPT	. 3	
3	AIMS	S AND OBJECTIVES OF SHARED SPACE		
4	DESIGN PRINCIPLES			
	4.1	Putting the Design Principles in Context	. 6	
	4.2	Vehicle Volumes	. 6	
	4.3	Pedestrian Volumes	. 8	
	4.4	Vehicle Speeds	. 8	
	4.5	Demarcation	11	
		4.5.1 Comfort Space	11	
		4.5.2 Designated Crossing Points	13	
	4.6	Thresholds	14	
	4.7	Vulnerable Users	14	
	4.8	Crime Prevention Through Environmental Design (CPTED)	17	
	4.9	Parking and Loading	17	
	4.10	Signage	18	
	4.11	Provision For Cyclists	19	
	4.12	Public Transport	20	
5	SHAR	HARED SPACE AND SHARED ZONES		
6	POST IMPLEMENTATION			
7	CONCLUSIONS			

# **APPENDICES**

APPENDIX A SHARED SPACE RESEARCH TRIP REPORT

# **1** INTRODUCTION

# 1.1 The Study Tour

In March 2010 the Institute of Professional Engineers New Zealand (IPENZ) Transportation Group Study Award was awarded to undertake research into the preparation of a Guidance Note for the implementation of Shared Spaces urban, town centre environments in New Zealand.

The project was split into three stages as follows:

- Stage 1: A Literature Review of existing design guidelines for shared spaces in New Zealand and overseas. This included liaison with New Zealand local authorities, the New Zealand Transport Agency (NZTA) and professional service providers (transport and urban design). Following the completion of this Literature Review a gap/opportunities analysis was completed to identify areas where liaison with overseas counterparts would be of benefit to developing a Guidance Note for the implementation of Shared Spaces in New Zealand.
- Stage 2: A Study Tour of a series of completed shared space schemes in the UK to observe their performance and discuss design issues with agencies overseas. To ensure sites with relevant issues were included, the final list of example sites and agencies was selected following the completion of Stage 1. Meetings were also held with key personnel involved in designing shared spaces and relevant overseas research groups. The UK was selected as a destination for the study tour as this is where the latest research on shared space in urban environments is emerging and parallels between the UK and NZ can be drawn relatively easily.
- **Stage 3: Writing up** findings, sharing with New Zealand local authorities and practitioners and seeking feedback. These findings have been used to develop a Guidance Note for practitioners in New Zealand.

Stage 1 was completed in November 2010 and cumulated in a Literature Review. Stage 2, the study tour, took place in July 2011 and a report describing the tour is attached in Appendix A. This report encompasses Stage 3 of the project, a Guidance Note for the implementation of Shared Spaces in urban, town centre environments in New Zealand.

# **1.2 What Is Shared Space?**

In New Zealand the term shared space is generally used to refer to streetscape designs in urban environments which minimise separation between pedestrians and vehicles (usually through the presence of a shared level surface) and the use of signs and markings associated with traditional traffic engineering. Examples include Elliot Street, Fort Street and Totara Avenue in Auckland.

However, a review of overseas literature reveals that the term shared space is applied to a variety of designs in many different contexts and that this can vary between different countries. For example in the Netherlands the term is readily applied to highly trafficked intersections as well as streetscape locations<sup>1</sup>. However, in the UK, case studies tend to be based around town centre commercial

<sup>&</sup>lt;sup>1</sup> Department for Transport, November 2009, Shared Space Project, Stage 1: Appraisal of Shared Space

shopping streets (eg New Road, Brighton, Ashford Ring Road, Kent), usually incorporating lower level traffic volumes but not always including a shared surface.

Whilst recognising that the term shared space can be applied to a variety of circumstances and environments, this Guidance Note concentrates on the application of shared space principles in town centre urban environments and uses case studies from the UK, visited as part of the Study tour, to provide guidance on the design principles of shared space.

### **1.3 Should I Implement A Shared Space?**

When implemented successfully, a shared space design can offer many advantages to a street (these are discussed further in Section 4). However, the implementation of a shared space should not be an aim or objective in itself. There are many successful streetscape designs which have been implemented which do not include shared spaces with a level surface. In addition, the concept of shared space is complex and relies on a variety of human behaviour concepts as well as traffic engineering principles. As a result the concept of shared space will not work well in all environments.

For this reason the decision to implement a shared space in a town centre urban environment should be made following careful analysis of the aims and objectives of shared spaces and the street in question (more details on the suitability of a street for a shared space are provided in Section 4). Focus should be centred on the desired outcomes of the project, not the physical design features. It is also important to note that a shared space should not be implemented in isolation but part of a Network Plan for the urban centre, in line with recognised transport planning principles.

### **1.4 How To Use This Guidance Note**

The information in this Guidance Note is based on the findings of the Literature Review and study tour of shared space schemes in the UK. The Guidance Note aims to provide information which can be used to help practitioners considering the implementation of shared spaces in urban town centre environments in New Zealand.

It is noted that the guidance is not meant to provide a standard design template for shared spaces. Rather, the aim is to introduce the reader to the principles of shared space design and provide information on how these principles have been adopted in the UK. The success or otherwise of these case studies can then be used to help practitioners design shared spaces in New Zealand.

One of the most important findings of the study tour is that the most successful shared spaces have been designed within the context of their existing environment and the aims and objectives of the street. Transferring one design from one location to another is unlikely to have the same outcome and careful consideration needs to be given to the most suitable design for the context of the site in question. However, there are some key design principles which are common to all shared spaces which need to be considered. This Guidance Note discusses these design principles but should be treated as a starting point only. It is not intended to be used as a 'recipe book' for the successful implementation of shared spaces.

# 2 DEVELOPMENT OF THE SHARED SPACE CONCEPT

Whilst the term shared space is attributed to Hamilton Baille<sup>2</sup>, an architect in the UK, the original design concept of shared space is generally attributed to the Dutch traffic engineer Hans Monderman, who coined the term "Woonerf" in the Netherlands in the 1970s. However, today examples of shared space schemes can be seen throughout Europe, the UK, the United States and Australasia.

The theory states that streets have historically been a place of movement, interaction and activity. While the road corridor provided for vehicle movement, it was also a place to walk, shop, talk and play. As motor vehicles became more common in the middle of the 20th century, two ideas came to dominate thinking about the design of roads:

- The most important role of roads is to facilitate fast journey times for cars and the road should be designed to accommodate the "efficient " (and often fast) movement of vehicles
- Mixing vehicular traffic and pedestrians is inherently dangerous and ideally pedestrians should be kept completely separated from traffic.

As a result of these ideas traffic control devices such as road signage, markings and traffic signals were increasingly implemented with the aim of regulating and standardising the road environment to enable the "efficient" movement of vehicles and "safer" environments.

The first idea (that roads should be designed primarily for vehicles) has recently been challenged through the publication of guidance such as the Manual for Streets and Link and Place<sup>3</sup> in the UK and the ITE context Sensitive Solution Guidelines<sup>4</sup> in the US. These documents argue that streets should be classified in terms of movement <u>and</u> place with place focussed streets being designed to prioritise pedestrians and other users over the motor car. The principles of these documents have been incorporated into recent New Zealand documents such as the revised NZS 4404: Land Development and Subdivision Standard<sup>5</sup>, Auckland City Council's Liveable Arterials<sup>6</sup> and North Shore City Council's Design of Streets Guide<sup>7</sup>.

The second idea (separating pedestrians and vehicles) has also recently been challenged. Traditional road safety theory states that drivers are only willing to accept a certain level of task complexity and by reducing task complexity (though standardising the road environment and separating pedestrian and vehicles), roads can be made safer. However, recent research from the human behaviour field indicates that when task complexity is reduced, drivers compensate through increasing speed. As a result it is hypothesised that non standard road environments (such as shared spaces) result in reduced vehicle speeds.

<sup>&</sup>lt;sup>2</sup> http://www.hamilton-baillie.co.uk/index.php?do=about, Visited 15/10/10

<sup>&</sup>lt;sup>3</sup> Jones et al, 2007, Link and Place a Guide to Street Planning and Design

<sup>&</sup>lt;sup>4</sup> Accessed at <u>http://www.ite.org/css/</u> 19/11/2010

<sup>&</sup>lt;sup>5</sup> New Zealand Standard, 2010, 4404: Land Development and Subdivision Infrastructure

<sup>&</sup>lt;sup>6</sup> Accessed at <u>http://www.aucklandcity.govt.nz/council/documents/liveablearterials/default.asp</u> 22/10/2010

<sup>&</sup>lt;sup>7</sup> North Shore City Council, 2010, Design of Streets

The development of Risk Homeostasis theory and how this influences the design of streetscapes has also influenced the principle of shared space<sup>8</sup>. Risk Homeostasis theory sates that humans have an inbuilt level of tolerance for risk and adapt their behaviour according to their perception of risk. With regard to shared space, it is hypothesised that separating pedestrians and vehicles results in drivers increasing their risk taking behaviour through, for example, driving faster or not looking out for pedestrians. By removing or reducing the separation of vehicles and pedestrians (through for examples a shared surface) drivers perceive a greater risk and therefore reduce their speed, resulting in an increased awareness of other road users. As a result an element of perceived risk is promoted as a positive design aspect in the shared space concept. It is the unpredictability and increased awareness of risk which is used to slow vehicle speeds and create a more useable environment for other road users.

The theory of shared space expands on both the Link and Place concept and the human behavioural principles. Shared space represents a deliberate effort to reassert the place status of streets while allowing the link status to be maintained. From the human behavioural perspective, it is hypothesised that by reducing demarcation (for example through the removal of kerbs) and creating less standard road environments, drivers typically slow their speed to negotiate with pedestrians and cyclists for right of way, resulting in a more equally balanced use of the streetscape. Pedestrians are safe but also gain greater freedom of movement and a greater sense of sharing the street.

# **3 AIMS AND OBJECTIVES OF SHARED SPACE**

When implemented successfully, shared spaces offer many advantages. The key aims and objectives of shared spaces in urban, town centre environments are discussed below.

**Improved pedestrian amenity** is one of the main objectives of a shared space in an urban town centre environment. By removing the separation between vehicles and pedestrians, the design automatically provides more space for pedestrians to move freely. In addition the non standard paving usually used in shared spaces, combined with the provision of seating and other street furniture or art, tends to create a pleasant environment for pedestrians. Lastly, the effect of reduced vehicle speeds and volumes (discussed below) also contribute to an improved environment for pedestrians. Not all local authorities in the UK have collected data on pedestrian numbers post implementation of shared spaces but where it has been collected, generally the number of pedestrians has increased in the street. For example, Brighton and Hove Council have recorded an increase in pedestrian numbers of 162 % on New Road following its upgrade to a shared space. There is also evidence that pedestrians are more likely to linger in a shared space and treat it as a 'place' (as opposed to just walking through)<sup>9</sup>.

**Reduced vehicle speeds** have been identified as an objective of shared spaces, but also as a key element to their successful operation. It is hypothesised that by reducing demarcation (for example through the removal of kerbs) drivers no longer assume priority and slow their speed to negotiate with

<sup>&</sup>lt;sup>8</sup> CABE, 2007, Living with Risk, Promoting Better Public Space Design"

<sup>&</sup>lt;sup>9</sup> Mayor J, 2010, The extent to which aspects of design and environment influence the staying activity in Shared Space streets, Thesis for MA Urban Design, University of Westminster (using streets in Brighton as case studies)

pedestrians and cyclists. There is now significant evidence showing that this theory is valid and that shared space design principles can be used to reduce vehicle speeds in a street. For example the average speed on the Ashford Ring Road in the UK has reduced from 65 km/hr to 30 km/hr<sup>10</sup> and average speeds along New Road in Brighton are now around 21 km/hr<sup>11</sup>. Provisional speed data has also been obtained from the shared spaces recently completed in Auckland which show 85 percentile speeds of around 20-25 km/hr<sup>12</sup> post implementation. Whilst a shared space design is not the only means available to reduce vehicle speed, the designs offer other benefits over traditional LATM methods such as flexibility of space and increased pedestrian amenity.

**Reduced vehicle volumes** may or may not be a key objective of a shared space but evidence has shown that a shared space is unlikely to operate successfully if vehicle volumes are too high as the number of vehicles using the street can impact on the pedestrian environment. As a result, it is important to consider that evidence has shown that where an alternative route is available, the implementation of a shared space is likely to result in a reduction in vehicle volumes on the street. For example the vehicle volumes along New Road in Brighton and the Ashford Ring Road reduced by around 90 % and 40 % respectively following the implementation of the shared space. This has implications with regard to traffic operation on surrounding streets and needs to be considered as part of the design process. This confirms the importance of implementing a shared space as part of a network plan for the area.

**Improving safety** (in terms of reducing crash rates) is often not identified as a principle objective of shared space in town centre environments. This is because shared space projects tend to be initiated by urban designers and landscape architects with the aim of improving amenity and a sense of place. However, it is noted that in the Netherlands, safety is often given as the primary objective of shared spaces, with amenity being a secondary objective, if at all. The objectives depend on the environment and the context of the specific area.

Whilst safety may not be given as a primary objective of shared spaces in town centre environments, creating a safe environment should be an objective of all streetscape designs. As discussed previously, Safety issues in shared spaces are complex as an element of risk is promoted as a positive design aspect in the design concept. It is the unpredictability and increased awareness of risk which is used to help slow vehicle speeds and create a more useable environment for pedestrians. Available data from schemes in Europe indicate that there is no evidence that shared space schemes result in more casualties than traditional street layouts where traffic volumes are below 14,000 vehicles per day. For streets with vehicle flows above 14,000 vehicles per day there is some evidence (although inconclusive) that applying shared space design principles may increase accident rates<sup>13</sup>. The shared space schemes visited in the UK have generally not been operating for long enough to establish clear accident patterns but discussions with the local authorities revealed that accident rates have declined, even though generally pedestrian numbers have increased. In addition, it is generally acknowledged that reducing the speed environment can reduce the severity of crashes.

<sup>&</sup>lt;sup>10</sup> Interview with Jamie Watson, Kent County Council, July 2011

<sup>&</sup>lt;sup>11</sup> Interview with Jim Mayor, Project Manager, Brighton and Hove Council, UK, July 2011

<sup>&</sup>lt;sup>12</sup> Data provided by Auckland Transport, October 2011

<sup>&</sup>lt;sup>13</sup> Department for Transport, November 2009, Shared Space Project, Stage 1: Appraisal of Shared Space

**Creation of flexible space** is another key advantage of a shared space design in a town centre environment. Generally the design allows the place function of the street to be prioritised but not at the total expense of the movement function. For example, access to property can be maintained without compromising the design, which can be a disadvantage of full pedestrianisation of a street. The level surface in particular allows a multitude of simultaneous functions to occur, which in turn creates a vibrancy in the street environment. In addition, the space can be redistributed at different times and used for events such as street markets.

**Improved economic activity** is often promoted as a benefit of shared space. There is now clear evidence that the creation of streets which prioritise walking and cycling can be good for the economic activity of businesses on the street<sup>14</sup>. Case studies from America, Australia and the UK have shown that streetscape enhancements can add value to an area and are associated with higher rents and the attraction of new business. Whilst these benefits are not solely attributed to shared space designs, the evidence shows that shared spaces which improve the quality of the street can result in improved economic activity. For example a study following the upgrade of New Road in Brighton found that 80 % of businesses felt that the improvements to the street had been good for their business. There are no longer any vacancies on the street (previously there had been three) and pedestrian footfall (and therefore potential customers) has increased by 162 %<sup>15</sup>.

# **4 DESIGN PRINCIPLES**

# 4.1 Putting the Design Principles in Context

Based on the findings from the Literature Review and study tour of the UK case studies, the following design guidance is recommended for the implementation of shared spaces in urban town centre environments in New Zealand.

It is noted that each design principle cannot be considered in isolation as the relationships between them are complex. As discussed previously, one of the most important findings of the study tour is that the most successful shared spaces have been designed within the context of their existing environment and the aims and objectives of the street. Therefore, transferring one design from one location to another is unlikely to have the same outcome and careful consideration needs to be given to the most suitable design for the context. For this reason this guidance should be treated as a starting point only and is not intended to be used as a 'recipe book' for the successful implementation of shared spaces.

# 4.2 Vehicle Volumes

The literature review identifies that there is conflicting information available on desirable vehicle and pedestrian volumes for shared spaces. This is not unexpected given the wide range of streetscape types that internationally the term encompasses. Examples of shared spaces in the UK, for example

6

<sup>&</sup>lt;sup>14,</sup> Tolley, R, 2011, Good for Business, The benefits of making streets more walking and cycling friendly, discussion paper, Heart Foundation Australia

<sup>&</sup>lt;sup>15</sup> Study results report on New Road, Brighton Provided by Brighton and Hove Council, July 2011

the Ashford Ring Road and Kensington High Street accommodate up to 12,000 v/day and 40,000 v/day respectively. However, from the findings of the study tour it is evident that these streetscape designs have a higher level of separation between vehicles and pedestrians than what is considered to be a shared space in New Zealand. Whilst these spaces are observed to operate well within their own context, a shared space with no demarcation between vehicles and pedestrians would generally not be considered to be appropriate for a street with very high traffic volumes.

The issue then arises as to what level of traffic would be considered to be acceptable for a shared space. The Manual for Streets<sup>16</sup> suggests that when vehicle flows exceed about 100 vehicles an hour the street is treated as a standard road with pedestrians using the side of the space as a footpath (even if they are able to use the whole space). Not only does this result in pedestrians not sharing the space as intended, it creates a compounding effect whereby the vehicle speeds remain high, making it even less likely the space will be shared effectively.

When considering traffic volumes, consideration should be given to the peak times for vehicle and pedestrian use. For example, it is likely to be acceptable to have higher traffic flows in the traditional morning and evening peak but traffic volumes of around 100 vehicles per hour throughout the rest of the day when people are more likely to be using the space.

The type of traffic is also important to the operation of the space. Generally it is preferable to have limited through traffic, which tends to travel at higher speeds, than traffic accessing destinations on the street itself.

Lastly, the availability of an alternative route is also a key consideration. Evidence has shown that where an alternative route exists, the implementation of a shared space can result in a reduction in vehicle volumes from the space. For example the vehicle volumes along New Road in Brighton and the Ashford Ring Road reduced by around 90 % and 40 % respectively following the implementation of the shared space. This also has implications with regard to traffic operation on surrounding streets. This emphasises the importance of implementing shared space as part of a Network Plan for the whole area.

In conclusion, whilst vehicle flows of 100 vehicles per hour should not be seen as an upper limit for shared spaces it does provide a starting point where if traffic volumes are significantly higher than this then careful consideration will need to be given to the design. However traffic characteristics such as the spread of traffic throughout the day, whether the route is used as a through route and the availability of alternative routes is considered more important than absolute numbers.

Research on this topic is ongoing as more shared space designs are implemented in different environments. For example Exhibition Road in London was completed in late 2011 and includes a level surface on a street accommodating around 20,000 vehicles per day. Initial observations are positive and as more data becomes available from schemes such as this, more knowledge will be gained on the most appropriate vehicle volumes for different shared space designs.

<sup>&</sup>lt;sup>16</sup> Department For Transport, 2007, Manual for Streets

It is noted that the evidence indicates that the reasons for requiring low traffic volumes are primarily related to ensuring that the objectives of the scheme are achieved. There is some evidence from the Netherlands that at locations with motorised traffic of greater than 14,000 vehicles per day, shared space layouts may have more casualties relative to traditional layouts and that risk to cyclists may be increased in these settings<sup>17</sup>, although this has never been translated into any official guidance. However, there is no evidence of increased accident rates in shared spaces with less than 14,000 vehicles per day and in most studies accident rates have reduced or remained the same following the implementation of a shared space, despite increased use of the streets by pedestrians<sup>17</sup>.

# 4.3 Pedestrian Volumes

There is no specific guidance on desirable numbers of pedestrians for shared spaces but generally successful shared spaces in town centre environments have high numbers of people using the space. Schemes should therefore be located on pedestrian desire lines and the surrounding land use should attract pedestrians to enable the aims of shared space to be achieved. This indicates that the location in which shared space is implemented needs to be considered carefully. Urban designers<sup>18</sup> involved in the design of some of the shared spaces in Auckland have suggested some criteria with regard to the selection of locations for shared space. These are outlined below:

- Streets where adacent land uses support the creation of social/people places
- Streets on pedestrian and cycling desire lines.

The findings of the Study Tour support these recommendations. The types of adjacent land uses which tend to support social/people places are wide and varied but there appears to be some evidence that food based activities are important. Within the design of the shared space itslef, it is also important to include place making design features, such as public seating and/or public art. This encourages people to stay on the space as opposed to using the street as a movement carriageway only9.

The presence of night time activities is also cosnidered to be important if the shared space is to be attractive to pedestrians throughout the day. This may include food based retail as well as entertainment activities such as theatres and cinemas. Linked to this is the consideration of Crime Prevention through Environmental Design (CPTED) principles which is discussed in Section 4.8 of this Guide.

# 4.4 Vehicle Speeds

The findings of the Study Tour indicate that vehicle speed is the most important factor in determining the success of a shared space<sup>19</sup>. In the UK, an operating speed of no more than 32 km/hr has been identified as a requirement for the successful operation of a shared space. However, ideally vehicle speeds will be below 24 km/hr for the most sharing to occur.

<sup>&</sup>lt;sup>17</sup> Department for Transport, November 2009, Shared Space Project, Stage 1: Appraisal of Shared Space

<sup>&</sup>lt;sup>18</sup>Boffa Miskell, 2010, Civilised Streets, Civilised Cities, Presentation to the IPENZ Transportation Group, Auckland Branch, April 2010

<sup>&</sup>lt;sup>19</sup> Interview with Ben Hamilton Baille, July 2011

**flow** TRANSPORTATION SPECIALISTS LTD

The literature review identifies that there is some discrepancies in the existing guidance with regard to how this reduction in speed is achived. Traditional guidance from New Zealand and Australia is based on traditional Local Area Traffic Management (LATM) techniques such as the use of sharp turns, chicanes or speed humps. Much of the guidance indicates that straight stretches of more than about 25 m or 50 m should be avoided<sup>20 and 21</sup>. However the contemporary shared space designs appear to have long straight stretches of seemingly straight open road which can result in uncertainly by practitioners that speed reductions will be achieved on implementation.

The Study Tour has found that evidence from the UK and New Zealand indicates that the required reduction in speed can be achieved without traditional LATM techniques. Rather, the reduction in speed can be achieved through tools such as visual narrowing (for example paving types), place making and edge friction (for example the presence of people). These points were discussed in depth with practitioners in the UK as part of the study tour and further examples are provided below.

The visual width of the carrigeway was identified as one of the most important tools to slow vehicle speeds. The term visual width encompases the actual physical width of the carriageway as well as methods used to narrow the appearance of the carriageway even further. Although level surafces indicate that vehicles and pedestrians can share the entire width of the space, in reality most designs include a section of the surface which is "for vehicles". This is discussed further in Section 4.5. The visual width of this "carriageway" is important with most practitioners in the UK recommending a width of around 5.5 m (preferable) to 6 m for two way traffic<sup>22</sup>. In addition it is recommended the geometry of the street be tightened as much as possible through the placing of street furniture and landscaping. The visual width of the carriagway can be further narrowed through the use of street furniture and paving patterns. This is illustrated in Figure 1.



Figure 1: Example of Visual Narrowing through Paving Patterns, Ashford Ring Road

 <sup>&</sup>lt;sup>20</sup> RTA, 1987, Traffic Authority of New South Wales Guidelines for Traffic Facilities Part 7.3 Shared Traffic Zones
<sup>21</sup> Vic Roads, 2008, Traffic Engineering Manual Volume 1 – Traffic Management

<sup>&</sup>lt;sup>22</sup> Interview with Martin Stockley

Place making is also identified as a method to slow vehicles. Making the street look and feel different can be achieved through changes in surfacing and creating focal points at intersections or other locations along the street with public art, landscaping or furniture. An example is illustrated in Figure 2. The change in surfacing has been shown to have a significant effect on vehicle speeds, with block paving found to reduce traffic speeds by between 4 km/hr and 7 km/hr when compared to speeds on asphalt surfaces<sup>23</sup>. It is recommended that focal points or changes in environment be created approximately every 150 m to ensure effective speed reduction<sup>19</sup>.

#### Figure 2: Example of Place Making, Seven Dials, London

Finally, edge friction is identified as important in achieving a reduction in vehicle speeds. Edge friction is defined as anything which increases task difficulty and results in drivers reducing their speed to compensate for this. The best example of good edge friction in shared spaces is the presence of people but other items such as shop frontages, tree canopies or banners across the road (creating edge friction on all four sides) can be used. On street parking is also a form of edge friction and may be appropriate in some circumstances but long term parking is not generally considered to be a good use of space in a shared space environment.

It is noted that the presence of people is an important factor in slowing vehicle speeds but that evidence has shown that even where significant numbers of people are not using the space the physical characteristics of shared spaces alone can result in a significant reduction in vehicle speeds. This is illustrated by the Ashford Ring Road example (shown in Figure 1) where the adjoining

<sup>&</sup>lt;sup>23</sup> Department of Transport, 2007, Manual for Streets

development has yet to take place but significant speed reductions are already being achieved due to the physical design of the street.

Specific examples illustrating the success of these techniques have been gathered in the UK. For example the average speed on the Ashford Ring Road has reduced from 65 km/hr to 30 km/hr<sup>24</sup> and average speeds along New Road in Brighton are around 21 km/hr<sup>25</sup>. Provisional speed data has also been obtained from the shared spaces recently completed in Auckland which also show 85 percentile speeds of around 20-25 km/hr<sup>26</sup>. However the Study Tour also found evidence of local authorities in the UK retrofitting more traditional speed reduction techniques such as variable speed signs and gateway features following initial observations to ensure sufficiently low speeds are achieved<sup>24</sup>.

In conclusion, the findings of the study tour indicate that reduced speeds can be achieved through the use of shared space design principles. However, as speed is the most important factor in determining the success of a shared space, the retrofitting of some more traditional LATM measures (such as a raised table) could be considered if the required reduction in speed is not being achieved with the existing design. This practice of retrofitting should not necessarily be seen as a failure with the design or the principle of shared space but as a part of the design process to ensure the design is right for the context of the street. This is discussed further in Section 6.

# 4.5 Demarcation

### 4.5.1 Comfort Space

Section 1.2 of this Guidance Note identifies that in New Zealand the term shared space generally refers to a streetscape design with a level surface. However this does not mean that there is no demarcation between pedestrian and vehicle space. In fact the findings of the study tour indicate that the majority of shared spaces with level surfaces include some form of demarcation between areas primarily used by vehicles and pedestrians. Further research has shown that some pedestrians actually prefer having an area where vehicles are discouraged or restricted from entering<sup>27</sup>. However, the need for demarcation will depend on the context.

When designing a shared space with a level surface it is recommended that an area of the street predominantly for pedestrians (where vehicles are unlikely to be present) is provided. This 'comfort space' can be achieved through the use of different colour surfacing or through physical devices such as landscaping and furniture. The level of comfort space required will depend on the traffic flows in the space with busier streets generally requiring more comfort space. In a high street situation, the comfort space is generally provided between the building line and the section of the space identified for street furniture such as café tables, benches or landscaping. Comfort space is important for all pedestrians but is particuarly important for people with disabilities and should be designed with their needs in mind. This is discussed further in Section 4.7.

<sup>&</sup>lt;sup>24</sup> Interview with Jamie Watson, Kent County Council, July 2011

<sup>&</sup>lt;sup>25</sup> Interview with Jim Mayor, Project Manager, Brighton and Hove Council, UK, July 2011

<sup>&</sup>lt;sup>26</sup> Data provided by Auckland Transport, October 2011

<sup>&</sup>lt;sup>27</sup> Department for Transport, November 2009, Shared Space Project, Stage 1: Appraisal of Shared Space

An example of how comfort space can be incorporated into a shared space design is illustrated in Figure 3. Figure 6 is a photograph illustrating this space in New Road in Brighton, UK.





<sup>&</sup>lt;sup>28</sup> Department of Transport, 2011, Local Transport Note 1/11, Shared Space, Page 43, Figure 6.7

#### Figure 4: Example of Comfort Space, New Road, Brighton



It can be seen that some pedestrians choose to use the space between the street furniture and the seating, where as others are happy to use the centre of the space, where contact with vehicles is more likely. It is noted that buildings and other vertical features which may be used to define comfort space in a level surface may need some form of physical protection if they are near vehicle swept paths as there is some evidence of vehicles hitting elements of street furniture following implementation.

#### 4.5.2 Designated Crossing Points

An extension of the provision of comfort space is the provision of designated crossing points for pedestrians. Although the theory of shared space states that pedestrians should feel free to cross at any point in the space, some of the example schemes in the UK include various forms of crossing points ranging from courtesy crossings (some marked like zebra crossings) to a signalised crossing<sup>29</sup>. There does not appear to be any consensus in the UK as to the most appropriate type of crossing facilities (or if they should be included) as each space has been designed for its own context. However, generally it was the schemes with higher traffic volumes which incorporated some of these features.

It is generally considered that if a shared space is being implemented in New Zealand, the design should be such that designated crossing points are not required. This is because the provision of a

<sup>&</sup>lt;sup>29</sup> The signalised crossing was installed in the Ashford Ring Road project as a result of political pressure but discussions with Council Staff indicate that it is rarely used.

designated crossing point may create an expectation amongst pedestrians and drivers that pedestrians should only cross at these points.

However, if it is concluded that the provision of a designated crossing point would benefit pedestrians then the study tour has shown that these features can be successfully incorporated into a shared space design without compromising the success of the space. It is noted that there is no evidence that the non-provision of designated crossing points results in increased risk of accidents and if crossing points are considered, it should be to improve the level of service for pedestrians, not as a means to improve safety.

# 4.6 Thresholds

The transition between a shared space and a standard road or pedestrian environment has been identified as requiring particular design consideration. The main objective must be to communicate to drivers that they are entering a different kind of environment and that they must reduce their speed. The specific design of the threshold will depend on the operating speed of the surrounding streets but is likely to require a reduction in useable road width or visual narrowing, a change in surfacing material and/or signage (although note the comments in Section 4.10). Research from the UK has also indicated that some kind of physical feature such as a raised table on the entry to the space may be desirable to ensure speeds are reduced. Examples of threshold designs used in the UK are illustrated in Figure 5.

#### Figure 5: Examples of Thresholds



New Road, Brighton

Knightsbridge, London

# 4.7 Vulnerable Users

There has been significant publicity in the UK with regard to the appropriateness of shared spaces for use by people with disabilities, specifically people with visual impairments<sup>30</sup>. A survey commissioned in 2009 by the UK organisation Guide Dogs for the Blind found that 91 % of blind or partially sighted

**flow** TRANSPORTATION SPECIALISTS LTD

Level 1, 11 Blake Street, Ponsonby | PO Box 47497, Ponsonby, Auckland 1144 | p 09 970 3820 | f 09 970 3890 | www.flownz.com

<sup>&</sup>lt;sup>30</sup> For example <u>http://www.guidedogs.org.uk/sharedstreets/index.php?id=203</u> Visited 20/10/2010

people surveyed had some concerns with using shared space streets<sup>31</sup>. Most concerns relate to level surface schemes with the main areas of concern being:

- Risk from vehicles because of the difficulty in identifying different parts of the street
- Difficulty in navigating through the space in the absence of a kerb to follow or clear land marks
- Lack of confidence in appropriate driver behaviour
- Lack of clearly defined comfort space free from vehicles in which to rest or re-orientate.

These concerns culminated in a campaign and judicial review into the proposed design of Exhibition Road in London, which has recently been upgraded to a shared space with a level surface. This process resulted in significant research being completed on how people with mobility and visual impairments can be catered for within a shared space environment and the final design of Exhibition Road includes the results of this research. The findings conclude that shared space with level surfaces should incorporate the following into their designs:

- A safe zone or comfort space located adjacent to the building line
- A navigational strip marked by appropriately designed tactile pavers and drainage channel.

Due to the relatively high volumes of traffic on Exhibition Road (around 20,000 vehicles per day prior to implementation) designated crossing points have also been incorporated and marked with tactile pavers. However, as discussed above, these crossing points are not incorporated into all shared space designs.

The design of the tactile pavers used for the navigational strip were the subject of significant trials by the University College London (UCL) involving both people with visual and mobility impairments. Discussions with accessibility consultants<sup>32</sup> in the UK duing the Study Tour reveal that the agreed solution includes an 800 mm wide corduroy strip (tactile delineator) located adjacent to a 230 mm drainage channel. The tactile strip does not include any colour contrast and matches the surrounding paving. However the drainage channel provides a contrasting colour tone from the surrounding paving. The details of the tactile delineator is illustrated in Figure 6 and how this is incorporated into the overall design is shown in Figure 7.

<sup>&</sup>lt;sup>31</sup> TNS-BMRB, March 2010, Report JN:197369

<sup>&</sup>lt;sup>32</sup> Interview With David Bonnett, David Bonnett Associates, UK, July 2011







Figure 7: Shared Space Zones, Exhibition Road, London



<sup>&</sup>lt;sup>33</sup> David Bonnett Associates, Access Consultancy Research and Design, Presentation to the UK Access Association, July 2011

In New Zealand, professionals working on the shared space schemes in Auckland have consulted with the Royal New Zealand Foundation for the Blind throughout the design process and have included a 'safe space' (or comfort space) in the form of an accessible strip located along the building edge which is delineated from the rest of the space by a tactile strip in a very similar way to the Exhibition Road design. The width of the tactile strip in the New Zealand designs is 600 mm. This is being monitored by users following implementation and amendments to recommendations will be made as necessary.

Whilst the provision of a comfort space or safe space along the building line marked by tactile strip should be a starting point for designers, it is recommended that contact is made with the Royal New Zealand Foundation for the Blind and other special interest groups in your community when designing a shared space. Additional trials and feedback on the existing designs should be obtained and recorded to ensure the most suitable designs are taken forward and included in other streetscape designs. Ideally, the results of this analysis should form recommendations to be included in a standard documents such as Roads and Traffic Guidelines 14: Guidelines for Facilities for Blind and Vision Impaired Pedestrians (RTS 14)<sup>34</sup>.

# 4.8 Crime Prevention Through Environmental Design (CPTED)

CPTED principles should be applied to the design of shared spaces as with all steetscape designs. The seven qualities that characterise well designed, safer places are identified as safe movement and connections, surveillance and sightlines, clear and logical orientation, activity mix, a sense of ownership, quality environments and physical portection<sup>35</sup>. The principle of shared space (many users sharing one area) means there is ample opportunity to incorporate CPTED principles into the design but careful consideration should be given to the following:

- Encouraging activities for different times of the day to increase surveillance opportunities
- The street layout and placement of street furnitire and landscaping to avoid hiding places
- Ongoing maintenance to ensure a quality environment.

# 4.9 Parking and Loading

Parking and loading within a shared space should be managed on a case by case basis. There is no evidence that allowing either in a shared space results in a safety concern but there are examples of where inappropriate parking behaviour has occured if parking is not managed effectively. Parking is not generally seen as a quality use of space in a shared space environment but there may be instances where a limited supply of parking may be required, for example parking for mobility impaired users.

In the UK most shared spaces include the implementation of an associated restricted parking zone and there is evidence of additional monitoring being required to enforce these rules, particuarly where parking was permitted on the street previously. In some instances additional signage communicating parking rules has been retrofitted following completion of a scheme<sup>36</sup>.

<sup>&</sup>lt;sup>34</sup> NZTA, 2007, Roads and Traffic Guidelines 14: Guidelines for Facilities for Blind and Vision Impaired Pedestrians

<sup>&</sup>lt;sup>35</sup> New Zealand Ministry of Justice, 2005, CPTED National Guidelines

<sup>&</sup>lt;sup>36</sup> Interview with Jamie Watson, Kent County Council, July 2011

When designing a shared space, consideration needs to be given as to how parking will be managed within the shared space. In New Zealand, parking regulations must be enforced through signage. Auckland Council has introduced a by-law which bans parking from all areas classified as shared zones and this is reinforced through regulatory signage on entry to the schemes and every 200 m as outlined in the TCD Rule 2010 amendment.

When considering signage, there needs to be a balance between regulatory requirements, communicating a clear message to the driver and maintaining the philosophy of reduced signs and markings. As with the general approach to design of shared spaces it is recommended that as little signage as possible be provided at the outset and then more be added if required. An example of the use of markings as opposed to signage for parking is illustrated in Figure 8 (it is noted these markings are accompanied by regulatory signage on the entry to the street).

#### Figure 8: Examples of Parking and Loading Signage in Shared Spaces



Loading is likely to be required in shared spaces as the properties will need to be serviced. The Study Tour found no evidence of loading creating any problems in shared spaces and the schemes visited did not incorporate any specific loading regulations. However in the schemes in Auckland, loading is not permitted to take place during peak pedestrian use times and it may be beneficial to consider similar rules if it is felt that loading activities may compromise the objectives of the space.

### 4.10 Signage

The Study Tour has found that some shared space streets in the UK include signage on the entry to the street and others do not. Where signage is included it varies but can include controlled parking zone and speed limit signage (generally 20 miles per hour). There is no standard shared space sign used in

Level 1, 11 Blake Street, Ponsonby | PO Box 47497, Ponsonby, Auckland 1144 | p 09 970 3820 | f 09 970 3890 | www.flownz.com

the UK. The variety of signage approaches used and discussions with practitioners in the UK indicates that the operation of the shared space is not greatly influenced by signage or classifications. Regulatory signage may be required to enforce regulations such as speed limits or parking and these can generally be incorporated into the street without compromising its design or operation.

In New Zealand, if a street is to be designated as a shared zone then standard NZTA signage is required. This signage is illustrated in Figure 9. It is noted that this signage does not include a designated speed limit or any information on parking or loading regulations. If speed limits or parking regulations (which differ from the normal road environment) are to be enforced then additional signage is required. Generally the design of the space should remove the need for speed limit signage but the need for additional signage should be considered on a case by case basis.

#### Figure 9: NZTA Approved Shared Zone Sign<sup>37</sup>



### **4.11 Provision For Cyclists**

As with the design of all streetscapes, the need for cyclists should be considered when designing shared spaces. There are some examples of conflicts between pedestrians and cyclists in some schemes in the Netherlands but it is difficult to compare this to the New Zealand context as the volumes of cyclists are significantly lower. In the UK there is no evidence of increased conflict between pedestrians and cyclists in shared spaces and in fact on New Road in Brighton cyclist numbers have increase by 22 % since the scheme opened.

<sup>&</sup>lt;sup>37</sup> Not yet published in the TCD Rule, provided by NZTA by email from Richard Bean, Senior Engineer, dated 15 December 2011

In general it is considered that cyclists should be considered in the design of streets involving shared space principles in the same way in which they are considered in all streetscape designs. Connectivity to the surrounding cycling network should be considered as well as on street facilities such as cycle parking. Lastly, the position and style of any design features should also consider the needs of cyclists.

# 4.12 Public Transport

Buses and taxis should be considered as part of the design process when implementing a shared space. Both of these activities are generally favourable in a people orientated environment. However, buses and taxis will also contribute to the overall volume of vehicles using the street and therefore the number needs to be considered carefully. There is also some evidence that buses and taxis are more likely to speed through a shared space environment and if volumes are expected to be high then this should be considered carefully. Generally the needs of both buses and taxis need to be considered on a case by case basis at an early stage of the design process.

# **5 SHARED SPACE AND SHARED ZONES**

It important to consider the legal position surrounding the implementation of shared space in New Zealand. The Transport (Road User) Rule 2004 does not define the term shared space, however it does include the definition of the term shared zone which is defined as;

"A road that has been designed to slow traffic and give priority to pedestrians. Drivers give way to pedestrians who, in turn, should not impede traffic."

The term shared zone is not new and guidance on the design of shared zones in Australia dates back to 1987<sup>38</sup>. However, it is noted that much of the existing guidance concentrates on the implementation of shared zones in residential areas and is more aligned with traditional Local Area Traffic Management (LATM) design guidance. The concept of shared space (as used today) is a broader term and as a result some of this shared zone guidance now requires updating. Specifically guidance around methods used to slow vehicles is not aligned with current thinking from the UK and other parts of Europe.

Whilst the term shared zone is not necessarily interchangeable with the term shared space, formally classifying a road as a shared zone is a tool which can be used to increase pedestrian priority in the street. There is an implied legal implication in the creation of a shared zone in New Zealand that pedestrians have priority over vehicles. However, it is considered even this is somewhat unclear, due to the fact the definition notes that pedestrians should not impede traffic. As far as we are aware, there have been no legal cases in New Zealand which tests this rule and as a result liability if an accident occurs has not been proven.

This is a key point of difference between the implementation of shared spaces in New Zealand and in the UK and Europe, as different road user rules apply. In Europe, general road user rules tend to

<sup>38</sup> Road Traffic Authority (RTA) New South Wales, 1987, Traffic Authority of New South Wales Guidelines for Traffic Facilities Part 7.3 Shared Traffic Zones

favour the pedestrian, and as a result shared spaces are not classified any differently to other standard roads.

In New Zealand, it is generally considered appropriate to classify shared space streets (with level surfaces) as official shared zones, although this is not a requirement. NZTA has developed standard signage which can be used to help define the area as a shared zone (discussed in Section 4.10). It is important to note that if a shared space scheme is to be implemented without classifying it as a shared zone then the street remains as a standard road and as a result vehicles have legal priority over pedestrians. However, as discussed above, the legal position on pedestrian priority in a street classified as a shared zone remains unclear.

It is also acknowledged that classifying a road as a shared zone will not automatically result in a successful shared space as the design elements are more important than the legal classification. Overall, careful consideration needs to be given to the classification of the street in accordance with the objectives and aims of the project, and legal advice sought where necessary.

# 6 POST IMPLEMENTATION

One of the key findings from the study tour is that the design of the shared space is not complete when the scheme first opens. The majority of the shared spaces visited in the UK involved amendments to the design following implementation, including the addition, removal or relocation of street furniture, signage or other traffic control devices.

Designers are encouraged to adopt a minimalist approach in the first instance and then retrofit if necessary. For example if there is a question as to whether a raised table is required to reduce speed, the raised table should not be installed initially but the street should be monitored and the raised table retrofitted if required.

It is noted that this approach can have implications with regard to funding following implementation and this needs to be discussed with the road controlling authority during the design process.

# 7 CONCLUSIONS

The shared space research tour has included a literature review and study tour to the UK which has cumulated in the formation of key guidance for the implementation of shared spaces in urban, town centres in New Zealand. Without diminishing the value of the guidance, one of the most important findings is that the most successful shared spaces have been designed within the context of their existing environment and the aims and objectives of the street. For this reason the guidance is not intended to form a "recipe" for the successful implementation of a shared space but to provide useful information to help designers determine the most appropriate design for the context within which they are working.

# APPENDIX A Shared Space Research Trip Report

flow TRANSPORTATION SPECIALISTS LTD Level 1, 11 Blake Street, Ponsonby | PO Box 47497, Ponsonby, Auckland 1144 | p 09 970 3820 | f 09 970 3890 | www.flownz.com

# SHARED SPACE RESEARCH TOUR – PLACES AND PEOPLE

In 2010 I was awarded the Institute of Professional Engineers (IPENZ) Transportation Group Study Award to travel to Europe and visit shared spaces. The aim of the study tour was to gather information which can be used to create a guidance note for practitioners working on streetscape schemes involving shared space here in NZ. Following a literature review and refinements of the scope with IPENZ, it was decided I would focus on schemes in the UK as this is where the latest research is emerging and parallels between the UK and NZ can be drawn relatively easily. I am currently in the process of writing up the guidance note but this summary note provides an overview of the places I visited and the people I met and what I have learnt from the tour.

In addition to the funds received from IPENZ, this tour was only possible due to the generosity of the UK practitioners who gave their time and shared their knowledge and experiences. I therefore would like to express my sincere thank you to IPENZ and everyone involved.



# **SUMMARY OF FINDINGS**

Shared Space is a term used to describe a particular streetscape design philosophy primarily aimed at changing the impact of motor traffic in public spaces used by pedestrians<sup>1</sup>. The design philosophy states that these design treatments enable reduced vehicle speeds due to drivers no longer assuming they have priority and being forced to be aware of other road users. The reduced speed and increased awareness results in an 'environment of care' where the use of the space is more balanced between all road users. Examples include the recently completed Elliot, Darby and Fort Streets in central Auckland and Totara Avenue in New Lynn in west Auckland.

During my tour of the UK, I visited a number of streetscape schemes using shared space principles including those in London, Brighton and Ashford in Kent. I also spoke with various key professionals who are well known for their involvement in shared space design. This note summarises the key observations and findings from each visit.

Overall, I found the study tour to be invaluable as I have learnt a significant amount on how shared space principles can be applied in a variety of contexts. However, more importantly, observing how these streetscapes work in person has provided me with confidence that these principles can be applied more widely here in NZ. My findings will be outlined in full in the guidance note with a few key points being summarised below:

- In the UK the term Shared Space is not used to describe a design type, the term is much broader and encompasses a wide variety of designs which enable pedestrians and vehicles to share a space. This means that there is no design recipe which can be followed to ensure their success. Although there are a number of principles that need to be applied, each street needs to be designed within its own context for the street to be successful
- Reducing separation between vehicles and pedestrians in a slow speed environment is safe! I observed schemes with varying designs, traffic volumes, land uses, pedestrian volumes and in all cases vehicles slowed to watch for pedestrians. There is no evidence of accident rates increasing as result of reducing separation between pedestrians and vehicles or reducing signage and markings and in most cases accident rates have stayed the same or have improved. Yes shared space is a new (ish) idea in NZ but it has been used a lot overseas and I believe we can be rest assured the principle is safe
- Speed is the most important factor in ensuring the success of a shared space design. If you can reduce vehicle speed the benefits of shared space will be realised and if the speeds stay high the design will have limited success. If this means that some more traditional traffic engineering measures have to be included (raised tables etc) then install them, with careful design these elements can be installed without compromising the other aims of the street

<sup>&</sup>lt;sup>1</sup> Department for Transport, November 2009, Shared Space Project, Stage 1: Appraisal of Shared Space

- NZ drivers will change their behaviour if the design is right, all countries believe they have the worst driving behaviour but the principles of shared space design are based on understanding human behaviour- we are all human beings
- We need to relax a bit, trust our instincts and use our imagination more. Yes a non standard design is harder work but it is achievable and many practitioners in NZ (transport professionals as well as urban designers, landscape architects etc) are open to these ideas. Many of the best UK schemes have been achieved through the bravery of professionals who were willing to try something new and we need to be prepared to take these same risks. The recently completed shared spaces in Auckland are fantastic but we need to keep developing new ideas and make sure we don't just 'copy and paste' the same designs throughout NZ.

### THE PLACES

#### Seven Dials, London

The first area I visited was Seven Dials, near Covent Garden in London. The area is essentially a shopping precinct which is also heavily visited by tourists. The Seven Dials monument forms the centrepiece of the area and is situated in the centre of a seven arm single lane roundabout. The road surface has been altered to give it the appearance of a pedestrian area and kerbs have been lowered to encourage people to wander across the street. Although the intersection operates as a roundabout, there are limited traffic control devices. The current design has been in place since the 1990s and is cited as a perfect demonstration of how a busy intersection can operate without formal controls, signage and regulation<sup>2</sup>. Records indicate that congestion is rare and there



has been no serious injuries recorded since it has been operating in its current form (over 16 years).

<sup>&</sup>lt;sup>2</sup> Ben Hamilton-Baille, Shared Space: Reconciling People, Places and Traffic

During my visit, I observed significant volumes of vehicles entering the roundabout and carefully manoeuvring around pedestrians. Vehicles were travelling at low speeds but were making continuous progress through the intersection. Pedestrians were aware of vehicles as they moved but were not alarmed and moved out of the way in a clam manner. At no time did I feel unsafe using this space or witness any driver or pedestrian behaviour which was inappropriate to the environment. What was particularly interesting during my visit was that the monument itself was boarded up for restoration and therefore people were not able to sit around the monument. The fact that the monument provides a focal point and the presence of pedestrians in the centre of the intersection is often noted as a significant reason for the slow vehicle speeds. Therefore it was interesting to observe that the intersection still appeared to operate safely without this pedestrian interaction in the centre.

#### New Road, Brighton



New Road in Brighton is another very famous shared space scheme which has won a number of awards since its 2007. completion in New Road is at the heart of Brighton's cultural quarter linking routes to key visitor attractions and accommodates civic activities and the more informal uses associated with theatres, cafes and restaurants. The upgrade project grew from the aspiration of politicians and theatre directors to maximise New Road's potential as a cultural The design quarter. includes a single surface which is shared by both pedestrians and vehicles and minimal use of signage and markings. In terms of traffic volumes New Road

originally had a flow of around 1,200 vehicles per day but there are also a number of alternative routes for vehicles and the street did not form a core network function. However, the theatre

attracted a number of vehicles, particularly in the evening and the street could become busy during commuter peak times.



I visited New Road in Brighton on a Friday lunch time, evening and a Saturday morning. Jim Mayor from Brighton and Hove City Council project managed the scheme and was kind enough to meet with me on site on the Friday afternoon and show me round. When I visited the street, my first reaction was that it was just a fantastic place to be. There were lots of people milling around, eating and drinking at cafes, sitting on the public benches and listening to music (street performers). It is hard to believe that before the upgrade New Road was a back street, which was rarely visited by pedestrians.

In terms of the operation of the street as a shared space I observed pedestrians using the entire cross section of the street, some using the strip between café tables and the building line and others using the centre of the carriageway. All vehicles who used the street slowed down to allow pedestrians to move out of the way and people were aware of their surroundings and moved when required. At no time did I feel unsafe or observe any circumstances where I felt people were in danger. During my visits in the middle of the day, I also observed a significant number of servicing vehicles operating in the space, some which were relatively large trucks. The truck drivers also behaved appropriately and generally I felt that the loading activity did not impact on the pedestrian dominance of the street or pedestrian safety.

Of note is the fact that I observed a very small number of vehicles and the Council has observed that traffic has reduced by 93 % indicating that the extent of true sharing that is occurring is limited, and for the majority of the time the space is dominated by pedestrians. However some

people I spoke to did inform me that the street has higher vehicles flows at different times of the day.

Jim Mayor from Brighton and Hove Council is a wealth of knowledge on this topic, as this project encouraged him to study for a Masters in Urban Design and as part of this he completed an evaluation of New Road. From Brighton and Hove's perspective they appear to be almost surprised by the attention the scheme has received. Whilst they are very happy with the outcome they did not set out to create a typical "shared space street" and they worked hard to ensure the design was right for the context. Success stories include a speed reduction to average speeds of around 10 m/hr (16 km p/hr) and an increase in pedestrian flows of 162 %. However, Jim noted that the street itself has always had the potential to be a great street due to its unique land uses, therefore people have to be careful not to assume they will achieve the same success with similar designs in other locations. Jim also noted the importance of political backing to these types of streetscape designs as you need people who are prepared to support the designers and shoulder some of the risk.

### Ashford Ring Road, Kent



The Ashford Ring Road project completed in 2008. was Ashford is a town located in the borough of Ashford and Kent in the south east of England. The purpose of the project was to break up the concrete collar around the town centre and create a new, multi-purpose public realm with easier and safer linkages for people to the town centre to aid future growth of the town. The whole inner-ring road has been converted from a one-way to a two-way road, and a third of its length has been transformed into a series of streets where the space is shared between vehicles and pedestrians. This project is particuarly interesting as the traffic volumes are higher than other examples (up to 12,000 vehicles per day).

I visited Ashford on a Thursday during the middle of the day and was shown around by Jamie Watson who is a Senior Traffic Engineer at Kent County Council. It is important to note that essentially the scheme is currently unfinished as due to the economic climate in the UK, the intended development on the southern side of the space has not eventuated. As a result large sections of the street has activity down one frontage only. As a result of this there is little demand for pedestrian movement across the street, although some demand is generated by the entrance to a pedestrian walkway on the southern side of Elwick Square.



The higher traffic volumes on this street resulted in a more traffic dominated feel than the more pedestrian focussed examples I visited. The street has a number of different treatments, the two main examples being a streetscape with low kerbs and the main Elwick Square, which is a T intersection with no formal controls shared by vehicles and pedestrians. It was interesting to note the moderate traffic speeds along even the more traditionally designed parts of the scheme, particularly given the lack of pedestrians, as this indicates that the design elements alone were having some impact on traffic speeds. I did observe interaction between pedestrians and vehicles in the main square, where generally vehicles travelled at slow enough speeds to allow pedestrians to cross with ease.

Jamie provided me with a good background to the development of the scheme. He noted that there had been some negative reaction from the public and Council had had to make some amendments to the design and also retrofit some elements following the opening of the scheme. He noted that there were still some elements which Council were unsure of. However

overall they were very pleased with the result which included a number of significant improvements including the fact that there had been no serious accidents since the scheme opened and average speeds were down to around 21 m/hr (33 km/hr). This is a great achievement given the high speeds and accident rates experienced when the road was a one way ring road and the fact that the southern side of the street is not yet completed. Most significantly Jamie stated that he was now very confident in the principles of shared space and would definitely recommend using these principles in other streetscape designs.

#### **Exhibition Road, London**



The Exhibition Road project is located in the Royal Borough of Kensington and Chelsea in London. When I visited the street, the project was under construction but is planned for completion later this year so although incomplete I was able to get a good understanding of how it will look. I was given a tour by Bill Mount who although recently retired, project managed the scheme for a number of years.

Exhibition Road is home to a number of famous land uses including the Victorian and Albert Museum, the Natural History Museum, the Science Museum, the Royal Albert Hall and Imperial College London. Again this project is

particularly interesting as once completed it is predicted to still cater for quite significant traffic volumes (??) and have four lanes of traffic in some sections.

The new design includes a distinctive chequered granite surface which features a single surface running from South Kensington Street Station to Hyde Park the full width of the road (from building to building). Although one flush surface pedestrian only safe areas have been provided through careful use of street furniture and landscaping. There has been significant involvement from visually impaired lobby groups in the UK (Guide Dogs for the Blind) which although initiated through concerns with the design (say no to shared space campaign) has resulted in a significant amount of new research into how people with visual impairments can be provided for in these types of streetscape design.

Professionals in the UK are very eager to see how this scheme will work once completed as the traffic volumes make this example quite different and monitoring of the street should provide some useful information on pedestrian/vehicle interaction which can help others working in streetscape design.

#### THE PEOPLE

#### Brian Quinn, UK Design Council

My tour of people started in London with an interview with Brian Quinn, an Urban Designer from the UK Design Council which recently merged with the Centre of Architecture and the Built Environment (CABE). CABE was responsible for a number of significant publications (Civilised Streets<sup>3</sup>, Paved with Gold<sup>4</sup>, This Way to Better Streets<sup>5</sup>) and have had a great influence in streetscape design and place making in the UK over the past 12 years.

Brian's main points regarding shared space were around the importance of place making and designing for the context of the street. When designed well, the benefits to the public can be fantastic but he acknowledged that there can be a challenge to convince people of these benefits. One very interesting point made was that shared space design principles require users to consider their rights and responsibilities not just their rights which can require a change to the way we think and behave in our public spaces, both as drivers and pedestrians.

Much of our discussion was around the potential effects of the recent reduction in funding for the continuation of CABE and the fact that the research and policy making arm is likely to be significantly reduced in the new structure. This seems to be a real loss for streetscape design and I hope that they will find some way to continue this work.

#### John Emslie, MVA

The next day I met with John Emslie, a Transport Planner from MVA consulting who is currently project managing the development of the UK Department of Transport (Dft) Shared Space Local Transport Note. This project has been running for over two years with the first part released in 2009 and the second part due for release by the end of this year. One of John's main points was the fact that there should be no such things as a "shared space scheme". As designers we should start with a vision and a blank page and if at the end of the project we have a streetscape in which different users share the space then we have a shared space. He argues that there is no recipe to creating a successful streetscape in which people share the space, streets need to be designed within their context and transporting schemes from one location to another is unlikely to work. For this reason the DfT guidance to be released later this year will not have tables indicating desirable traffic and pedestrian volumes for shared space. However, he did note that the findings of the research point to some principles which need to be considered

<sup>&</sup>lt;sup>3</sup> CABE, 2008, Civilised Streets

<sup>&</sup>lt;sup>4</sup> CABE, 2007, Paved with Gold

<sup>&</sup>lt;sup>5</sup> CABE, 2007, This Way to Better Streets



when creating a shared space environment. He stated that speed has been identified as the most important factor, a fact that was reinforced by others during my tour.

Another main theme which came through in our discussion was the idea that there are already many examples of successful shared spaces throughout the UK which were implemented before the term became popular. John stated that it is not a complicated idea and should be very straightforward but that as transport professionals our training can result in us shying away from non standard solutions. As part of our interview the team at MVA kindly took me on a tour of some schemes in central

London which have been in place for a number of years which gave me great insight into how the principles of shared space can work in different environments. From my discussions with John, the findings of the DfT project, when released later this year, will be extremely useful to NZ practitioners and will be a huge step forward in the world of shared space design.

#### Martin Stockley, Stockley Associates

My next meeting was with Martin Stockley of Martin Stockley Associates who has worked on a number of schemes involving shared space principles in the UK including New Road in Brighton. Martin is an Engineer who argues that many traditional streetscape designs encourage users who behave perfectly "normally" (eg civilised) in the majority of public spaces to behave "abnormally" when they are using the street (for example drive dangerously in close proximity to pedestrians, speed through intersections). He argues that there are two main reasons for this. The first is that humans do not react well to over regulation, particularly when the regulations go against our nature. The second is because the traditional streetscape environment appears much less hazardous than it actually is, it encourages users to act inappropriately.

Martin argues that the key to creating civilised streets is to enable people to behave in a normal civilised manner and to ensure users are aware of the hazards. Translated into streetscape design this means removing or reducing traffic control devices and ensuring the design itself makes sense to users, allowing them to make their own risk assessments so they can inform themselves of the most appropriate way to behave (for example to drive slowly). This requires us to think much more carefully about the context of our designs as well as to question the use of the standard traffic engineering tools (signage, markings and even signals) on our urban

streets. Although Martin has been working with these ideas long before the term shared space was used, you can see how shared space principles falls within this philosophy.

Martin is a very inspiring person who strongly believes in his philosophy of streetscape design. I think we could all learn a lot from his refusal to accept the norm and enthusiasm for trying new things with the aim of creating quality designs. If you look on the Stockley and Associates web site you will see that a number of Local Authorities in the UK are trying out these ideas with great success.

#### Phil Jones, Phile Jones Associates

The following day I met with Phil Jones, a Transport Planner who has worked on a number of shared space schemes in the UK and is internationally recognised as an expert in his field. Phil kindly invited me along to the Chartered Institute of Highways Traffic (CIHT) Urban Design Panel

meeting which was attended by representatives from University College London (UCL), The UK Department of Transport (DfT), Transport for London and various private consultants. This group were heavily involved in the development of the Manual for Streets and for the MfS 2. I was privileged to be able to attend the meeting and it was interesting to draw parallels between the CIHT organisation and our own IPENZ Transportation Group. Following the meeting Phil and Wayne from the DfT took me on a tour of some shared space streetscapes in London. The main points made were that we should not get too wrapped up in the details of what a shared space is and that there



are lots of ways to get to the outcome of a space which is shared successfully by different users. Together we visited the entrance to Sloan Square tube station, Knightsbridge, South Kensington tube station and Exhibition Road. All of these streetscapes had different characteristics including shared surfaces and kerbs, a variety of paving types, different forms and extents of signage, different forms of traffic control devices including signals and courtesy crossings. All of these schemes used the principles of shared space and worked well in their own way. From my discussions with Phil I learnt again that there appears to be no set list of requirements for creating shared space environments and there is no one thing that all shared spaces must have or will not work without. Each scheme has to be reviewed within its own context.

#### Ben Hamilton Baille, Hamilton-Baille Associates



I then travelled to Bristol to meet with Ben Hamilton-Baille Associates. Ben Hamilton-Baille is an architect and is generally credited with coming up with the term shared space and is internationally for renowned developing streets using shared space principles. His company was involved in the development of the Ashford Ring Road project, New Road and many other streetscape schemes involving shared space principle located throughout the UK. An

important aspect of the discussion was the definition of the term shared space. Ben stated in our interview that when he coined the term he was describing a relationship not a design type and that he is slightly concerned with the way the term is now being used. He argues that although shared space environments tend to have certain physical characteristics (for example an absence of signs and markings or reduced separation between vehicles and pedestrians), these are not fundamental to its definition. This is interesting as on the whole, the use of the term in NZ has been limited to streets with level surfaces. The importance of achieving low traffic speeds was again raised as the key to achieving a successful shared space and various methods of achieving lower speeds were discussed.

Another key point made was regarding the effect of applying shared space principles in different countries. Ben stated that during his work on the European Shared Space Project it became clear that the impact of culture on driver behaviour was limited. All countries (although all in mainland Europe and the UK) believed they had the worst drivers in the world and were sceptical whether these ideas would work in their country. Ben argues that shared space principles work because they are based on basic human behaviour and because of this the principles (if applied correctly) will work in any developed culture. This was comforting as we are often lead to believe that the drivers in NZ are too used to driving fast for these ideas to work here.

#### CONCLUSIONS

As stated at the start of this note, overall, I found the study tour to be invaluable as I have learnt a significant amount on how shared space principles can be applied in a variety of contexts. The people I spoke with were very enthusiastic about the concept and observing how these streetscape designs work in person has provided me with confidence that these principles can be applied more widely here in NZ.

Next time you are working on a streetscape scheme, be brave, think twice about using the standard designs and think about how you can add value to the context within which you are working. If my observations from the UK are anything to go by, the results will be well worth the effort.

Mairi Joyce Flow Transportation Specialists