



## Shared Space Performance Analysis, Port Macquarie NSW

by David Tooby

*Shared Space is a relatively new name for a concept that involves redressing the balance between traffic and pedestrian function in the street environment to create socially vibrant, functionally efficient and safe places for all users. The majority of the debate and the examples relating to this movement are coming out of Europe. However, an Australian example of this concept, which has been in operation for 14 years, is located in the regional New South Wales town of Port Macquarie.*

### Preamble

The post war emergence of the private motor vehicle as the principal form of transport for the masses has been attributed to a general decline in the amenity and pedestrian useability of streets. The need for streets to accommodate increased levels of traffic and parking has consequently increased potential conflicts with pedestrians. This has led to a segregation of traffic and pedestrian related functions which have only been exacerbated in recent times by an increasingly risk-adverse culture. Urban environments which have evolved from this trend are often characterised by a proliferation of regulatory signs, traffic signals, barriers and road marking, and an associated alienation of their equally important public space function.

In the 1970's Australia saw some radical experiments to redress this emerging problem. This included full street closure to traffic in town central business districts (CBD) to create open pedestrian

malls. In regional towns particularly these experiments often led to significant economic decline in the commercial sector of the CBD. In a number of cases these pedestrian malls have subsequently been reopened to traffic. This has served to highlight the importance of traffic and parking as essential components of the social and economic fabric of a CBD. Nevertheless, an acceptance that traffic is a vital component of the vitality of a CBD needs to be balanced with the equally important need to provide appropriate spaces for people movement, interaction and wellbeing. In many situations a fresh urban design approach is required to attain this balance.

Shared Space is a relatively new name for an emerging concept, particularly in Europe. It encapsulates a set of principles for the design management and maintenance of streets and public spaces and integration of traffic with other forms of human activity.<sup>①</sup>





Essentially the concept involves the stripping of signage and barriers for movement, generally decluttering the street environment, and the creation of a mixed space for motorists, cyclists and pedestrians. This deregulation may on the surface appear to be a recipe for chaos and potentially unsafe. However, the theory behind the concept is that this mixed environmental condition actually influences the behaviour of people much more powerfully than can be achieved through either legislation or formal rules. Hans Monderman, a traffic engineer who provided advice in relation to a Shared Space scheme in Kensington High Street, London, argued that;

*'designs that increase the perception of risk of personal injury reduce actual risk by forcing all users of the space to slow down, take more care and be more vigilant'. ②*

In the Kensington High Street case post construction analysis has shown a significant reduction in accidents.

This deregulatory approach has to date not been embraced in Australia. Street upgrades tend to focus on the upgrading of traffic and pedestrian facilities and the general aesthetics of the street, whilst maintaining a segregation of functions. The underlying risk-averse thinking which underpins this approach dictates that there should continue to be a clear delineation of right of way, responsibility, and ultimately, culpability.

In an increasingly litigious society it takes bold vision and initiative to implement any scheme which is not founded in traditional regulatory risk-averse thinking. Without proven examples of the performance and overall benefits of Shared Space schemes it is very difficult for community leaders and authorities to advocate the concept as a potential solution for street environments.

A long established Shared Space area in town centre upgrading works in Port Macquarie, on the mid north coast of New South Wales, provides such an example.

## The Context and Pre-Construction Situation

The intersection of Horton and Clarence Streets in Port Macquarie's CBD was undertaken as part of the Port Macquarie Town Centre Master Plan (TCMP). The TCMP was an initiative of Hastings Council, through its Economic Development Board, to redress the steady economic decline of the CBD, characterised by low building investment and minimal building development. The TCMP was prepared in 1992 and implemented in a number of stages from 1995. ③

The majority of the works programmed in the TCMP have now been completed, at a cost of approximately \$10 million. The intersection of Horton and Clarence Streets (the intersection) was constructed as part of the first stage of the TCMP.



The intersection is 30 metres wide and extends 60 metres in its east west dimension. The intersection accommodates five lead in roads which attributes to its expansive configuration. It opens onto the Town Green foreshore open space to its north and has strong visual connections to the Hastings River through the Town Green and to the east along Clarence Street. Two to five storey buildings with commercial ground floor frontage address all intersection corners. Whilst the intersection may not be the geographic centre of the CBD it is certainly the social and commercial centre of the CBD.



In 1995 the intersection was characterised by a conglomeration of uncoordinated signs, an abundance of white painted concrete median strips and islands and an overall poor aesthetic. Pedestrian crossing was facilitated by two marked crossings on the southern and western sides of the intersection.

Traffic Accident Statistics provided by Port Macquarie Hastings Council indicated that between 1986 and 1995 there were no accidents that resulted in injury or death at or adjacent the intersection.<sup>④</sup> However, anecdotal information from a number of sources indicate that the intersection experienced a relatively high frequency of minor vehicle accidents and vehicle queuing, due in large part to high pedestrian crossing demand which was only able to utilise limited pedestrian crossing opportunity at the two existing marked crossings. The need to address this poor configuration was identified in the Port Macquarie Town Centre Traffic Study in 1995.<sup>⑤</sup>

### Intersection Design and Implementation

In 1995 a design team led by consultants The Geolink Group was engaged by Council to undertake the detailed design of the TCMP, including the intersection of Horton and Clarence Streets.

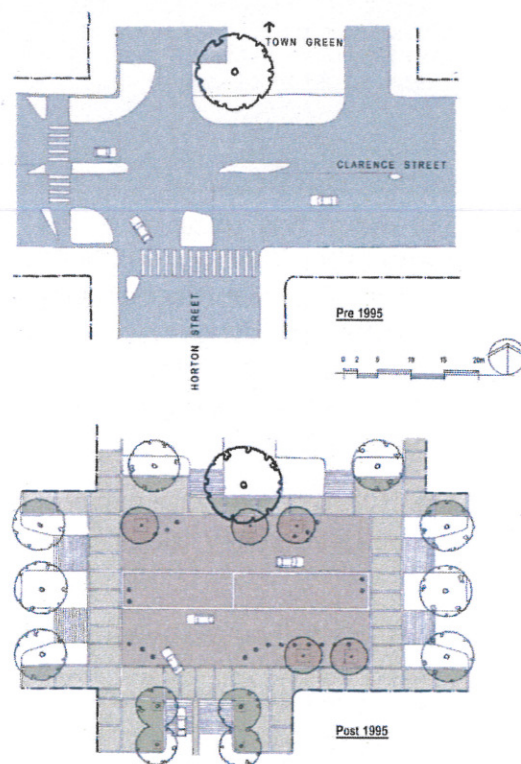
The key objectives of the design of the intersection were to:

- provide safe conditions for all
- afford general priority and directional freedom to pedestrians within a calmed traffic environment
- reduce the need for regulatory signage
- link the design to the overall themes generated for the TCMP

What evolved through the design process was the notion of a 'civic square' where pedestrians and vehicles co-exist and the divisions between them

are largely nullified. To maximise the effectiveness of this space the intersection was raised entirely to footpath height (generally 150mm above existing road surfaces).

A subtle definition of the space was achieved through the use of materials and elements not normally associated with road environments. This included the use of bollards in place of kerb and gutter and paver inlays in place of line marking. To reduce traffic speeds to 15 kmph or less, traffic ramps, incorporating a series of effective but subtle rumble strips, are located on all vehicle approaches. Unmarked pedestrian walkways are strategically located at the head of each of the ramps where vehicle speeds naturally slow to a crawl.



Of most importance to the design team was the realisation of the objective to reduce signage to a minimum and to avoid any signage that indicated right of way to any one user group.





The design was presented to the Town Centre Master Plan Committee (TCMPC) which was formed by Council to oversee the implementation of the TCMPC. The design was recognised as being unique and issues relating to safety and risk management were openly debated by the TCMPC and the design team.

The TCMPC endorsed the design in mid 1995 and the works were fully implemented by Christmas 1995.

### Post Construction Analysis and Discussion

The first year of establishment of the intersection attracted an understandable level of controversy. The NSW Staysafe Committee echoed the sentiments of many members of the community when they applauded the work in terms of traffic calming and aesthetics but described the Horton Street intersection as 'confusing'. The local newspaper reported that:

*'At present, it is a bit of a puzzle and pedestrians and motorists don't know whether to stop or keep going. Pedestrians should know if they have the right to cross in front of cars'. ©*

However, in the first year of establishment, apart from the occasional collision with bollards early in the piece, there were no accidents reported and traffic congestion appeared to be rare.

In an article written on early observations of the performance of the intersection it was noted that:

*'....the new intersection requires pedestrians and motorists to look and think before proceeding across the intersection. Everyone traverses the space cautiously and slowly. Whilst vehicles more commonly give way to pedestrians, the converse also occurs. Pedestrians are able to cross at all four corners – even diagonally if required. They can do so safely. There is far less vehicle congestion, as vehicles enter a continuum where pedestrian numbers are spread across the civic space and over a variety of crossing points and vehicles*



*'mingle' with the traversing pedestrians. In other words, that (so called) confusion is the very thing that calms the traffic and thereby promotes safety, as well as noise reduction and general civic geniality.'* ⑦

This early observation concluded that the new intersection actually challenges the way in which motorists and pedestrians perceive traffic function and priority. At the time this article was written however, it was too early to report conclusively on the performance of the intersection, particularly in terms of safety.

Now, almost fourteen years since the intersection was constructed, it is appropriate to assess all aspects of its performance, both at a statistical level, and through interviews with users and authorities.

In broad statistical terms the use of the intersection has changed little since its implementation in 1995. In June 1997 traffic volumes passing through the intersection were surveyed at approximately 800 and 600 vehicles per hour respectively during the lunch and afternoon peak hours. In 2001 these volumes had increased only slightly. A further survey in 2009 continues to indicate that little or no traffic growth has occurred at the intersection. ⑧ The intersection continues to be crossed by a high number of pedestrians, a total of 766 crossings being recorded in a weekday peak hour period in April 2009. Since 1995 there has been a single reported accident resulting in minor injury. ⑤



The true worth of the Shared Space concept however has been borne out through discussion with a number of authorities and users in recent times. Port Macquarie Hastings Council representatives have indicated that whilst the intersection is confusing for some users, particularly tourists and older people, it works on the principle of a need for heightened awareness. A senior representative of the local NSW Police indicated that there was significantly more confusion in the tourist season owing to the unfamiliarity with the intersection but considered on the whole that the intersection worked well. Importantly, this representative could not think of an alternative solution, including a roundabout or traffic lights, which would serve the intersection and its users better.

Informal interviews were also conducted with a large number of users. All indicated similar observations to Council and the police. It is important to note that all people interviewed recognised and appreciated the significant role the intersection has played in re-establishing a valuable public space in the heart of town.

Glen Holdsworth is a traffic engineer who was closely involved with the development of the intersection design concept in 1995. Glen offers a slightly different view of the operation of the intersection. He argues that the intersection is based on an "intrusion" principal which is to some degree at odds with the "Shared Space", design concept. He states that:

*The "intrusion" design principle effectively rejects "sharing" in favour of a competition for vehicular and pedestrian space in which neither the motorist nor the pedestrian are granted any privilege. This discomfort which generates out of this intrusive competition is interpreted by both pedestrians and motorists as a lack of safety, when in fact it makes the most critical contribution to creating a safe environment. It is a dichotomy that in order to create a safe pedestrian/vehicular environment, it is necessary to make it feel unsafe to some degree. Community acceptance of designs based on these*



*principles will always lie in the art of finding balance between the perception of safety and the reality. Support for this approach is found in the tendency for local street intersections which residents often describe as being unsafe to show little or no history of accidents.*⑨

Whether the concept is "Shared Space" or "Intrusion", is in many ways a moot point, in that the behavioural consequence of the intersection configuration is not disputed - That being to significantly emphasis duty of care of all users, to minimize the probability of conflict.

Two people interviewed, one a former senior Council staff representative, raised the issue of a user group which is potentially disadvantaged by the intersection configuration. In the absence of traffic signals or marked pedestrian crossings visually impaired people cannot cross the intersection with absolute surety that motorists will give way. Unfortunately, providing right of way to visually impaired people invariably means giving right of way to pedestrians generally. This would undoubtedly erode the whole Shared Space concept.

In 1997, a representative of locally visually impaired people cited discrimination, on the grounds that the intersection originally had two marked pedestrian crossings. The matter went first to Council and then, with the support of the National Federation of Blind Citizens of Australia, court action was threatened. The matter was resolved by constructing marked pedestrian crossings in nearby locations, but not at the intersection.

In 2001, Council commissioned a CBD Intersection Analysis report to review the current and future management strategies of three intersections in the CBD, including the intersection of Horton and Clarence Streets. The review was required to consider concerns which had been expressed in relation to the provision of safety and amenity for visually impaired people and other handicapped persons. The review included consideration being given to the installation of traffic signals at the

intersection. In relation to the intersection treatment the report concluded that:

*'...traffic signals would operate satisfactorily at the intersection for some years with respect to providing solely for vehicular demands. However, this would be at the expense of having impact on accessibility of kerb and centre-of-road parking in the east, west and south approaches to the intersection. Also, delays and inconvenience to pedestrians would increase significantly and significant proportions of pedestrians would ignore the signal instruction'*



Further, and importantly, the report concluded that:

*'Analysis of the existing intersection indicates that the intersection will continue to operate satisfactorily in respect to vehicular capacity for many years'. ⑩*

What is important to draw from this analysis is that, despite the perception and argument that the intersection does not provide adequately for visually impaired people, Council had understood as early as 1997, and continues to understand, the fundamental importance of the Shared Space concept of not assigning right of way to any one user group. In essence this is an endorsement of the Shared Space concept. However, it also recognises that the success of the Horton Street and Clarence Street intersection is not absolute.

## Conclusion

The Intersection of Horton and Clarence Street has, since its construction in 1995, attracted a significant amount of comment and debate. However, despite the debate and the analysis that been instigated from it, the configuration of the intersection remains unchanged from its original conception.

Whilst no concrete statistical data exists to support an emphatic claim that the intersection is safer than it was prior to 1995, discussions with a number of people who understood the operation of the intersection prior to its reconstruction indicate that there have been less accidents and it is generally safer for users. What is certain is that the new Horton Street intersection actually challenges the way in which motorists and pedestrians perceive traffic function and priority.

Sadly, in an increasing litigious society, civil laws have recently tended (perhaps unwittingly) to condone diminished personal responsibility, resulting in risk-adverse design solutions which employ segregation of user groups and over regulation as immovable standards. This design solution and the Share Space concept generally, effectively challenge this increasingly evident and disturbing legal (and hence behavioural) trend. Instead, through the use of an intrinsically low traffic speed environment, the design facilitates and requires a level of intuitive judgment on the part of each individual motorist and pedestrian. It is this behavioural response, from all users, that has resulted in the enhanced performance of the intersection.

What has never been questioned in the case of the Horton Street and Clarence Street intersection, and the constructed greater Port Macquarie Town Centre Master Plan works generally, is its enormous contribution to the much needed resurgence in both business centre confidence and redevelopment. The Town Centre is now pleasant and attractive, and boasts a vibrant business sector.

- ① About Shared Spaces; [www.shared-space.org](http://www.shared-space.org)
- ② CABA 2007, Living With Risk: Promoting Better Public Space Design – P57.
- ③ Port Macquarie Town Centre Master Plan, Tract Consultants and Gazzard Sheldon, 1992
- ④ Traffic Accident Statistics, Horton and Clarence Streets 1986 to 2006, Port Macquarie Hastings Council, 2009
- ⑤ Port Macquarie Town Centre Traffic Study, TTM Consulting Pty Ltd, 1995.
- ⑥ Port Macquarie News, 1996.
- ⑦ Intersection Renewal Challenges Conventional Practice, David Tooby and Rupert Milne Home, Landscape Australia 4/1997.
- ⑧ Various traffic surveys 1997 to 2009, TTM Consulting Pty Ltd.
- ⑨ Traffic Engineering Concept: Horton/Clarence Street Intersection, Glen Holdsworth, 2009 (unpublished).
- ⑩ Port Macquarie CBD Intersection Analysis, TTM Consulting Pty Ltd, 2001.