

Shared Space: Reconciling People, Places and Traffic

BEN HAMILTON-BAILLIE

Under the label of 'shared space', a radically different approach to street design, traffic flow and road safety is rapidly emerging. Combining a greater understanding of behavioural psychology with a changing perception of risk and safety, shared space offers a set of principles that suggest new radically different possibilities for successfully combining movement with the other civic function of streets and urban spaces. Shared space has evolved most rapidly in the Denmark, Germany, Sweden and the northern part of Holland. However there is a growing range of examples in France, Spain, the UK and other European countries. The paper considers the potential for shared space principles to prompt a new approach to the design, management and maintenance of streets and public spaces in cities, towns and villages. Drawing on well-established examples from a variety of countries, the author examines the outcomes of schemes that deliberately integrate traffic into the social and cultural protocols that govern the rest of public life. The findings raise important implications for governments and local authorities, for professionals, for communities and for citizens.

Imagine if you had never seen a skating rink. Someone is explaining the concept to you for the first time, hoping for your support in setting one up. He explains that the floor consists of smooth, slippery ice, surrounded by a steel handrail. Customers pay to put on boots with steel blades on the soles, and then glide at will around the limited space. There are no rules. What would be your reaction? You would almost certainly have concerns about safety and the risk to skaters. How would you prevent skaters colliding with each other? How would you separate beginners from experts? How would you control and regulate so many unpredictable movements and prevent chaos? It would sound a crazy and irresponsible idea!

Yet skating rinks work with few rules and no overseeing regulator. Informal social protocols serve to keep skaters moving in a roughly consistent direction, with

beginners on the outside and faster skaters on the inside. Part of the pleasure derives from a surprising and enjoyable collective consensus, and the ability of all participants to communicate, anticipate and react in ways that bring to mind the behaviour of shoals of fish or flocks of birds. Regulating the activity through precise rules and controls would destroy the dynamic interactions essential to the process. Humans are obviously complex and adaptable creatures!

The analogy serves to illustrate the contrast between assumptions and predictions about the outcomes of complex human interactions and the findings from empirical observations of real life. This has particular relevance for the shaping of public space, given that a high proportion of our streets and public spaces, the public realm, is configured on assumptions about traffic behaviour and road safety. This paper outlines a fresh approach to

the century old problem of how to reconcile the movement of people and traffic, drawing on case studies, observations and practical experience of numerous street design projects emerging across Europe. The approach, increasingly referred to as 'shared space', builds on new findings from the fields of behavioural and environmental psychology, and in particular the development of **risk compensation theory** (Adams, 1995). By exploring the background to conventional responses to traffic in towns and the emergence of a contrasting set of principles that underpin a number of recent urban projects, the paper suggests that significant opportunities may be emerging that allow traffic to be integrated into the complex informal social protocols of public space without loss of safety, mobility or accessibility. Shared space may represent an important step towards widening the opportunities for communities and individuals to shape and influence the built environment in ways that encourage diversity, distinctiveness, urban quality and civility.

Background and Methodology

The author is an architect and urban designer, specializing in the design and development of mixed-use streets and public spaces. The lack of a formal theoretical framework or a coherent body of research examining alternative philosophies of traffic engineering limits the extent to which firm conclusions can be drawn. Nevertheless, extensive observations in practice by the author and many other practitioners, combined with case studies and monitoring reports from innovative schemes, suggest that a number of long-standing assumptions about the role of governments in regulating and controlling traffic movement might be beneficially reconsidered in the light of such experience. Many of the case studies are drawn from the work of the Commission for Architecture and the Built Environment (CABE), whose work is increasingly focused on improving

the quality of streets and spaces in the UK. The author has contributed to the research for a number of these case studies (CABE, 2007a), and draws on other findings from mainland Europe, especially Sweden and The Netherlands.

Both the methodology and central hypothesis underpinning the paper can be summed up by the conclusions of Allan B. Jacobs, Professor of Urban Design at the University of California, Berkeley and former director of the City Planning Commission of San Francisco. The author of many classic works on cities such as *Looking at Cities* (1985), *Great Streets* (1995), and *The Boulevard Book* (2001), the Project for Public Spaces (PPS) describes Jacobs as 'the ultimate student of the street' (PPS, 2007). His key perspectives, summarized on the PPS 'Placemakers' profile, include:

- ♦ *'Utilizing the Power of Observation.* Direct observation forms the foundation of most of Jacob's work and accomplishments. He explains how most modern street planning is based on traffic assumptions, rather than real research and observation of existing places. He calls for planners and designers to study what does and does not work in existing streets, and to use these observations to better design great public streets – to "copy the good examples".
- ♦ *Fostering Interaction between Pedestrians and Cars.* Contrary to traditional planning assumptions, Jacobs suggests that the segregation of cars and pedestrians decreases safety and community vitality. Based on field research and observation, he demonstrates that intersections and streets that allow every type of movement and interaction between pedestrians and drivers work best, serving as attractive, welcoming, and exciting places that help build the local community. According to Jacobs' findings, when cars are more fully aware of and integrated into the pedestrian realm, both pedestrians and drivers are safer.' (PPS, 2007)

The Context for Shared Space

Interest in the potential for integration of traffic into the public realm comes at a time of growing local, national and international concern about the declining state of streets and streetscapes. The European Union has recognized the significance of the issue for economic and social cohesion and equality through its InterReg programme, which is funding research into shared space (Fryslân Province, 2005). In the USA, the Congress for New Urbanism (CNU) and the National 'Main Streets' conference have both focused attention on the critical relationship between urban regeneration and street quality (CNU, 2007). In the United Kingdom the government's advisor on design, the Commission for Architecture and the Built Environment (CABE Space) has prioritized streets and streetscape issues as a key area for research, development and training (CABE, 2007b). The publication of *Save our Streets* (English Heritage, 2005) revealed a surprisingly high level of widespread popular dissatisfaction with the state of urban, suburban and rural streetscapes in the UK, concerns echoed by research and campaigns by the Campaign to Protect Rural England (CPRE, 2007), the English Historic

Towns Forum (EHTF, 2007), and the Civic Trust (Civic Trust, 2007).

Concern about declining streetscapes tends to revolve around a number of interconnected themes. These range from issues relating to the environment (emissions, pollution etc), those affecting economic activity (pedestrian flows, traffic congestion, rental values), to those related to health (such as obesity, mental health, public safety etc) and those concerned with the quality of civic life and community cohesion (inclusiveness, anti-social behaviour, civility etc.). It is worth touching on some of these in more detail.

Firstly there is the issue of safety. Although there is growing awareness of the complexities of safety and the difficulties in adequately defining the term, most governments assume at least partial responsibility for reducing the numbers of deaths and injuries. Although overall numbers of road casualties are falling, and the UK compares well to other European countries in terms of road deaths and injuries, such reductions are not evenly distributed. Pedestrian casualties remain high, especially amongst children (IPPR, 2002). Children in poorer neighbourhoods fare particularly badly. Road safety, and the desire to reduce casualties, remains an important motive for improving street design.



Figure 1. Regulation and segregation in the public realm and the resulting clutter – the junction of Kew Road and Chiswick High Road. (Photo: English Heritage)

Linked to perceptions of safety are concerns about the decline in walking and bicycling as modes of transport, and of growing car dependency. The health implications parallel the wider concern of the urgent need to reduce CO₂ emissions from transport. The UK has the lowest levels of pedestrian and bicycle share in Europe; twice as many trips are made by car as by walking and cycling combined. By contrast, in The Netherlands active modes account for almost exactly the same proportion of trips as those by car. Between 1992 and 2004, the number of walking trips and journeys by bicycle per person per year declined in Great Britain by one-fifth. This reduction has been especially notable amongst children, and recent research links reductions in long-term health outlooks and obesity with the decline in active travel (Cavill, 2007).

Economic decline is also increasingly linked to the quality and accessibility of streetscapes. Recent research by CABE (2007c) begins to quantify a long-recognized link between economic regeneration and the quality of streetscapes. The standardization associated with regulated traffic measures diminishes the particular qualities and identity of specific places and settlements. It is exactly these qualities of distinctiveness that appear to attract the attention of commercial investors (Florida, 2005).

The drive towards 'inclusive' design (measures that facilitate participation by the widest cross-section of people) also spurs efforts to improve the configuration of our streets and public spaces. Perceptions of danger and the inclusion of physical barriers such as high kerbs, bollards and pedestrian guardrails are increasingly linked to difficulties encountered by those who do not drive; in particular children, older people and those with mental or physical disabilities.

Finally, the need to improve the quality of streets in their ability to cope with movement presents a challenge to engineers and urban designers. Congestion and unreliable journey times in towns and cities remain sources of

concern to almost all governments and highway authorities, and the introduction of traffic controls and other highway measures do not appear to have succeeded in improving journey times or reducing congestion. Average speeds for cars across London remain between 11 and 13 mph, roughly the same as at the beginning of the twentieth century (DETR, 1998).

Most of the problems highlighted by contemporary studies relate to both the impact of motor vehicles on the built environment, and the measures introduced to try and cope with the presence of traffic. The accumulation of 'street clutter' – the signs, markings, signals, bollards and barriers associated with traffic engineering – is the most evident visual manifestation of measures aimed to regulate and control movement, and remains a source of growing concern about the decline in visual and spatial quality in the public realm. But concern about clutter masks a deeper concern about the effect that such measures have on the psychology of road users, and on the interrelationships between people as drivers, cyclists, pedestrians or other participants in our streets and public spaces. An increasing understanding of behavioural and environmental psychology, and the degree to which our environment influences our actions and decisions is prompting a re-evaluation of some of the key assumptions that underpin conventional approaches to safety and traffic engineering (Adams, 1988). Understanding this change requires a brief review of the principles that have governed traffic engineering since the 1920s.

The Segregation Principle

Attempts to rationalize traffic movement in cities pre-date the arrival of the automobile. The first signal-controlled pedestrian crossing was installed in London in 1868 at the intersection of George and Bridge Streets near the Houses of Parliament (it exploded and killed a policeman before being dismantled in 1872). In 1905 Eugène Hénard published his

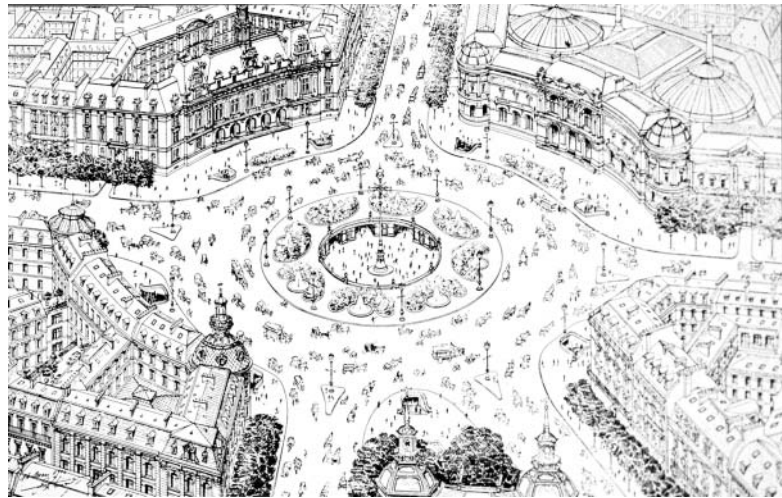


Figure 2. Hénard's sketch for rationalizing and segregating traffic. (Source: Hénard 1905)

proposals for organizing circulation around the Place de l'Opera in Paris, introducing the concept of the roundabout with underpasses and grade separation between pedestrians and (still) horse-drawn traffic.

In 1933, the Charter of Athens recommended strict separation of traffic from civic spaces, a theme taken up with enthusiasm by Le Corbusier and other members of the *Congrès Internationaux d'Architecture Moderne* (CIAM).¹ The principle of segregation was most clearly and forcefully supported by the committee chaired by Colin Buchanan, whose seminal report *Traffic in Towns* was published in 1963. Buchanan argued that the two

principal purposes associated with streets and public spaces, those of movement and of social interaction, would need to be strictly segregated as traffic volumes increased. The Ministry of Transport adopted the principle with enthusiasm. 'Traffic segregation should be the keynote of modern road design' was a concluding recommendation of its publication *Roads in Urban Areas* of 1966. The principle led to the familiar urban landscape of underpasses and overbridges, barriers and signals that are such a familiar component of modern towns.

Segregation of traffic from other aspects of urban life matched the *zeitgeist* of 1960s

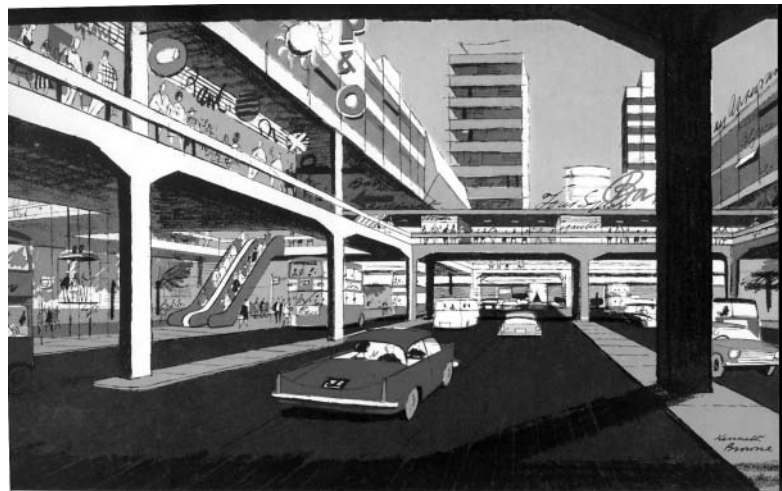


Figure 3. Segregation of traffic from civic spaces. (Source: Buchanan *et al.*, 1963)

planning. The separation of land uses from each other and the clear zoning of land for specific purposes (employment, residential, commercial, industrial) seemed a rational response to the potential friction of mixed use. Even children's play areas should be defined and planned for. The notion of the state as controller and regulator of activities, taking responsibility for order and safety, chimed with the social welfare aspirations of both left and right spectrums of political thought. Potential conflict and friction between different activities could be designed-out through planning and regulation. It is a theme that continues to underpin the guidance offered by the Department for Transport through traffic manuals, and is evident in the interpretation of safety in education and in design checks such as the safety audit process.

A fascinating parallel to the development of segregation in street design has been researched and described by Joe Moran (2006) in his paper 'Crossing the road in Britain, 1931–1976'. The political and cultural history of this mundane, everyday activity offers us an example of the assumptions, values and beliefs behind the attempts by governments to formalize and regulate the relationship between drivers and pedestrians. In contrast to North America and Western Europe, where red lights for pedestrians are legally binding and there are fines for jay walking, the relatively informal law and etiquette of crossing roads in the UK is, as Moran argues 'a product of the complex history and fraught politics of motor transport, road safety and urban design' (*Ibid.*, p. 478). The development of formal crossings, with their tradition of zoological names from 'zebras' though 'puffins', 'pandas', to 'pelicans' and 'toucans'² have become such an established part of the urban environment that they are now largely taken for granted. Yet there remains little research into their effect on pedestrian safety, accessibility and behaviour, due perhaps to continued widespread popular faith in their effectiveness (*Ibid.*, p. 496).

Experiments in Integration: The Development of Shared Space

The concept of shared space, that of all street users moving and interacting in their use of space on the basis of informal social protocols and negotiation, is nothing new. It can be argued that such *ad hoc* arrangements were the *status quo ante* of the introduction of segregation associated with conventional highway design. Raised pavements and kerbs have existed for many years, but principally as a means to keep pedestrians clear of the mud and dirt of the 'carriageway', rather than as a method of regulating the use of space. Visit any Mediterranean hill town or market square, and one can observe the informal sharing of street space by vehicles and other users, and such arrangements remain commonplace throughout the world. In the UK, there are numerous village squares, mews courts, car parks, camp sites, rural lanes and other spaces where shared space conditions prevail. But until recently, we have had no terminology or analytical categories to describe such arrangements, and little research data to understand how the necessary informal protocols develop and operate.

The conscious application of shared space and the deliberate integration of traffic into social space date back to experiments carried out by pioneers such as Joost Vahl and others in The Netherlands in the late 1960s and early 1970s (Van den Boonen, 2002). Searching for ways to reduce the impact of traffic on the qualities of social space and, in particular, to prevent the decline in freedom of movement available to children, Vahl and his colleagues began to strip out standardized road signing, marking, kerbs and barriers. Playful, creative and quixotic, Vahl created a new vocabulary of street design rich in local references, surprise and intrigue. The popularity of the resulting rich urban landscapes caused significant interest across other mainland European countries, especially Denmark and France, giving rise to wide variations



Figure 4. Integrated streets – early *woonerf*, Rijswijk, The Netherlands.

in the concept (Vahl and Giskes, 1990). In 1976 the Dutch government recognized and formalized the approach, defining the concept of the *woonerf* (roughly translated as ‘yard for living’) as a means to design low speed residential roads.

Ironically, the formal definition and regulation of the *woonerf* signalled its demise. As soon as there were standards established for the *woonerf*, with guidance on the number and spacing of ‘traffic calming devices’, and a formal sign to identify such spaces, enthusiasm for the concept began to fade. At the core of Vahl’s concepts was a shift away from the regulatory world of government definitions towards the unstated rules of behaviour which govern everyday social behaviour. As soon as the *woonerf* was merely just another category in the standard road hierarchy, its use and popularity began to fade. Joost Vahl went on to explore his unofficial principles for street planning and design in the small town of Culemborg, south of Utrecht, but the *woonerf* did not develop further in The Netherlands. Interest and enthusiasm in other countries followed a similar trajectory. In the late 1990s, UK government belatedly experimented with a

series of pilot projects and the publication of guidance on ‘Home Zones’ (IHIE, 2002).

Hans Monderman’s Experiments in Friesland

Just as interest in the *woonerf* began to fade in The Netherlands, the rural provinces in the north of the country began to adapt the concept of integration and the use of social protocols for the streets and public spaces of small towns and villages. Hans Monderman, a traffic engineer from Friesland, was appointed Head of Road Safety for the region in 1978 following growing national concern about rising child pedestrian casualties. Unconvinced by the conventional vocabulary of measures such as traffic calming and other artificial interventions in the road environment, Monderman began to experiment with simple design and landscaping measures that emphasized the distinctive history and context of each settlement, deliberately removing or downgrading highway measures such as road markings, signs, chicanes and road humps. The village of Oudehaske was the first experiment with ‘making a village more like a village’ (Engwicht, 2006), and



Figure 5. Makkinga, Friesland. All traffic signs, signals and markings removed. (Photo: Andrew Burmann)

to his own astonishment, Monderman recorded reductions in traffic speeds of over 40 per cent (conventional traffic calming was achieving reductions closer to 10 per cent). Further successful village schemes followed, recording dramatic reductions in speeds and the severity of accidents.³ In 1992 the village of Makkinga became the first small town to remove every standard road sign, signal and road marking. In their place, the new street designs paid close attention to the particular landmarks and preferred pedestrian routes ('desire lines'⁴) of the community, emphasizing links between school, shop, church and village green, and even reflecting the canopy

of a well-loved ancient copper beech tree. The lack of priority signs and markings at junctions seemed to make no difference to the safe movement of traffic, cyclists and pedestrians.

Monderman's pioneering schemes gave increasing confidence to the idea that road signs and markings, signals and barriers were not essential requirements for safe and efficient traffic movement. Indeed the reductions in speeds and concurrent decline in the severity of accidents seemed to point to a closer relationship between safe traffic movement and the distinctive spatial quality of streets and spaces. Subsequent schemes



Figure 6. Wolvega, Friesland. Remodelled intersection of High Street and main road.

by Monderman and his colleagues began to address more complex intersections in busier towns. The market town of Wolvega in Friesland is based around a crossroads where a former national 'A' road bisects the main shopping street. In 1997 traffic signals were removed, and the junction was remodelled as an informal town square with no formal crossings, priority markings or controls. In their place, a striking piece of public art serving as a lighting support as well as a psychological bridge reconnects the two sides of the high street.

In 1998 a five-way intersection in the nearby town of Oosterwolde was redesigned. All the former standardized priority markings and highway kerbs were removed, to be replaced by a simple paved square on a slightly raised platform, recalling its history as the focal point at the head of an ancient canal system. Cars, bicycles, trucks, pedestrians, wheelchair users negotiate their way across the space employing an intricate and unspoken set of protocols reminiscent of the ice-skating

rink. It is not unusual to see conversations taking place in the middle of the intersection as lorries and cars weave through the apparent chaos of the unregulated space. Yet in its nine years of operation, speeds and serious accidents have reduced, traffic flows remain unaffected despite significant increases in numbers of vehicles, and the space has been transformed into a lively focal point with rejuvenated cafés and shops around its perimeter.

The few professionals and journalists from outside the region who noticed these smaller schemes during the 1990s tended to assume that such informal traffic arrangements could only function in small, homogeneous villages and market towns. Many also assumed that foreigners, not familiar with local protocols, might not respond as locals do. But more recent schemes have begun to indicate that shared space principles, the integration of traffic into the social and cultural fabric of the built environment, might be suitable for busier town centre intersections and high



Figure 7. De Brink, Oosterwolde, The Netherlands.



Figure 8. Rijksstraatweg, Haren, near Groningen, The Netherlands.

streets. In 2002 the main shopping street in the suburban town of Haren, near Groningen, was redesigned along shared space principles. The 800 metre-long Rijksstraatweg carries between 8,500 and 12,000 vehicles per day through the main shopping and civic area. The former centre-line road markings, traffic signals, separate bicycle lanes and high kerbs were all removed. In their place, a simple 6 metre-wide carriageway links two major civic spaces where the former carriageway becomes an integral part of the surrounding public spaces. The position of trees blurs the distinction between road and public realm, and simple drainage details and low kerbs suggest subtle demarcations. Despite traffic speeds falling by around 5 km/h, the local bus company reports more reliable journey times. Pedestrians criss-cross the street amongst the passing traffic as the social life of the adjacent cafés and shops merges seamlessly with the street.

The late Hans Monderman's last scheme in the city of Drachten, just south of Leeuwarden in Friesland, suggests that shared

space might offer opportunities to rethink the space set aside for major traffic intersections. For many years a busy junction on the edge of the town centre, close to the regional bus station and the forecourt for the local theatre, was configured as a standard traffic-signal controlled intersection, with formal pedestrian crossings, separate left-turning, bus and bicycle lanes and the usual assortment of signs and road markings. The resulting space, known as the Laweiplein, was unattractive to pedestrians and bicyclists, and tended to cause long traffic delays and congestion. The accident history was poor, especially for bicyclists. In 2002, after many years' discussion of alternative designs, the junction was remodelled. The resulting arrangement has been carefully monitored by the local authority (Smallerland Municipality, 2007). The improvements in capacity of the busy junction, the reductions in delays and in serious accidents, and the remarkable changes in the interaction between all road users in what has now become a lively public space would suggest that shared space principles

may be of value in rethinking some of our busier streetscapes.

The volume of traffic at around 22,000 vehicles a day meant that a small roundabout was essential to organize the flows. However at the Laweiplein the roundabout is not an alien piece of traffic engineering, but forms an integral part of the overall design for the space. The emphasis is firmly placed on the creation of a coherent public square. Vertical water jets surround the junction, animating the space and attracting human activity. Signs and markings are reduced to their absolute minimum, and the widths of carriageways never exceed 6 metres. With a consistent colour palette for the asphalt and paving, subtle kerb designs and careful lighting that places emphasis on the overall space, the solution has sometimes been described as a 'squareabout'. Pedestrians and cyclists cross at simple 'courtesy crossings' close to the narrow entrances to the roundabout, negotiating movement with the slow-moving traffic through unstated protocols. It is very rare to see a pedestrian or cyclist have to pause for long at the kerb, and yet even at the busiest times the complex movements do not appear to disrupt traffic flows. Average annual injury rates at the intersection have fallen from 8.3 to 1 in the three years since

reconstruction (Smallerland Municipality, 2007, p. 26).

The Laweiplein example challenges many long-standing assumptions concerning the ability of people, whether drivers, bicyclists or pedestrians, to resolve potential conflict through informal protocols and human interaction prompted by clues from the built environment. Freed from the conventional regulatory framework of traffic-signals and rights-of-way, all the various participants in the constantly moving dynamic of the space appear to adopt a remarkable range of anticipatory and communication skills. The smooth flow of traffic and its interaction with cyclists and pedestrians prompts comparison with the ice-skating rink. It is a dynamic that appears difficult to predict or model, and indeed all the formal capacity engineering models⁵ for the Laweiplein proved wildly inaccurate. No evidence could be found from video analysis and observations, or from questionnaires, that non-local drivers were unable to respond to the spatial clues. There are, to date, few indications that the civility, patience and courtesy engendered by the new arrangements diminish with time. The number of visits to the junction by professionals and journalists from around the world suggest that the outcomes of



Figure 9. Laweiplein intersection, Drachten – before.

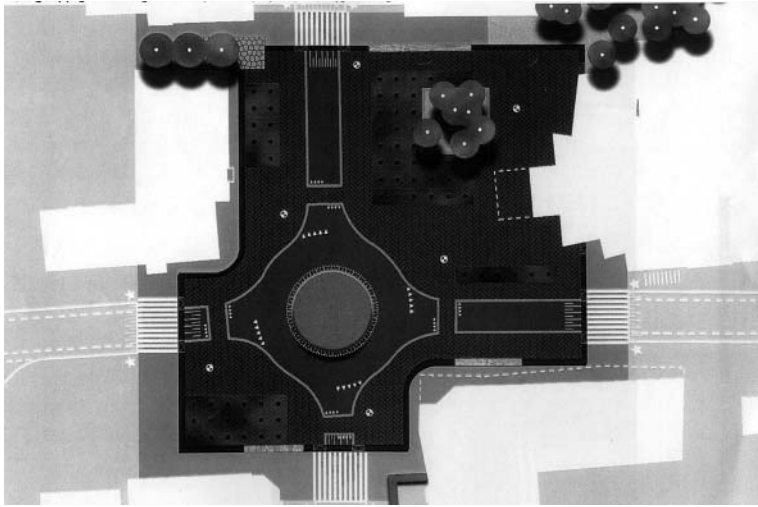


Figure 10. Laweiplein intersection concept plan.



Figure 11. Laweiplein, Drachten. Traffic as integral part of a public square – after.

this counter-intuitive scheme may have profound implications for wider urban traffic engineering and the design of public space across other parts of the world.⁶

Shared Space Projects Elsewhere in Mainland Europe

Innovation in the design of streets and intersections along shared space principles is not confined to Northern Holland. There are examples to be found in most European countries. Bilbao, Barcelona, Madrid and San Sebastian in Spain have seen examples of

streets designed to influence driver behaviour through reference to their local context. In Germany, the small town of Kevalear near the Dutch border has remodelled its town centre to allow traffic to move through an open square with few concessions to highway engineering. Further north, the town of Bohmte, near Osnabruck, is in the process of re-modelling its high street, the Bremerstrasse, along shared space principles. In France, the *Villes plus sures* (Safer Towns) programme applied similar integrated principles to the redesign of scores of small towns and villages. Denmark and Sweden have

developed the practice further than most countries, and shared space is now a widely accepted urban design principle in much of Scandinavia. Two examples are particularly noteworthy.

In the Copenhagen suburb of Lyngby, the main shopping street was remodelled in 2003 along designs prepared by Bjarne Winterberg of the engineering firm Ramboll Nyvig. The street, like so many other suburban high streets, combines a variety of shops and cafés with a fairly high volume of bus, car and bicycle traffic (around 14,000 vehicles per day). Careful selection of materials and precisely controlled dimensions succeed in creating a distinctive space with low-speed continuous flows of traffic interacting with busy cross-flows of pedestrians. Particular care has been taken to detail paving, street furniture and materials to provide a clear and consistent design language for the whole street and to provide tactile clues and

guidance for people with physical or visual disabilities. Subtle changes in paving details alert drivers to the most likely places where pedestrians cross (the desire lines), and these are almost always diagonal. Pedestrians, as Professor John Adams observes, are the world's greatest 'Pythagorians' – always preferring the hypotenuse! (Adams, 2007, p. 1).

In the Swedish university town of Norrköping, south-west of Stockholm, a major intersection near the town centre known as Skvallertorget (Gossip Square) provides a striking demonstration of the opportunities presented by shared space design principles. Formerly a traffic-signal controlled intersection in a bleak and under-valued urban setting, the space was remodelled in 2004 in response to the relocation of a university faculty close to the square. To help reconnect the space with the city centre and to cope with the increasing volume of student cyclists



Figure 12. Gran Via, Bilbao.



Figure 13. Skvallertorget, Norrköping, Sweden before and after remodelling of the intersection.

and pedestrians, the whole intersection has been treated as a single, coherent plaza where all suggestion of priorities or linear emphasis has been removed. The signals are gone. In their place, a distinctive paving pattern reinforces the spatial qualities; lighting columns are placed, unprotected by kerbs, wherever needed. A clear boundary around the square of contrasting material helps define the space and offers some tactile and visual guidance.

The intersection has been monitored by the Swedish engineering firm Tyrens

following three years of operation (Jaredson, 2002). Around 13,000 vehicles, including bendy-buses, traverse the square each day. Pedestrian volumes have, as expected, greatly increased, as has economic activity around the square. Most pedestrians take a direct route across the middle of the space, negotiating movement with the cyclists and vehicles. Traffic speeds have reduced significantly, and delays and congestion have also fallen. Surveys of drivers, cyclists and pedestrians indicated that satisfaction and confidence with the new arrangements is increasing,

although there remains unease and concern amongst some older citizens and amongst the blind and partially-sighted. Whatever its shortcomings, as an example of shared space Skvallertorget in Norrköping demonstrates that traffic signals, road markings, kerbs, crossings and barriers are not essential elements that have to be tolerated as an unfortunate necessity for the maintenance of safety and efficiency of movement. A distinctive, coherent and integrated piece of public space can successfully serve the needs of passing traffic without such disruptive, expensive and disfiguring components.

Shared Space in the UK

As with the introduction of the *woonerf* or 'home zone', shared space principles and practice have taken hold later in the UK than in much of mainland Europe. However there are signs that the concept is now developing faster in the UK than in other countries.⁷ The widespread and growing recognition of the importance of the public realm to the social wellbeing and economic vitality of communities, combined with increasing popular dissatisfaction with the state of British streets (English Heritage, 2006), appears to have prompted strong interest from local authorities, developers and community groups. The Commission for Architecture and the Built Environment, CABE Space, has played an important role in researching and promoting interest in shared space in England. The Scottish Executive published its Planning Advice Note No. 76 *Residential Streets* in December 2005, based on many of the key principles, and the publication of the *Manual for Streets* by the Department for Transport in March 2007 provides formal recognition to the principle of streets as places as well as corridors for movement.

Completed projects that test the principles of shared space are still thin on the ground in the UK. Whilst there are many fringes of pedestrianized town centres that adopt some

characteristics such as level kerbs and shared surfaces, there are few that clearly establish a transformation in the relationship between traffic and other activities in the public realm. Nevertheless there are a number of notable examples that point towards new directions in street design and which demonstrate the potential for the new approach to the built environment.

Poundbury, the extension to Dorchester promoted by the Prince of Wales' Trust and the Duchy of Cornwall, continues to demonstrate the potential for simplified streets and public spaces that are not dominated by signs, markings and wide sight lines. Few other new residential developments have achieved such integration, although there are notable examples in nearby Charlton Down, and in the extension to Harlow New Town at Newhall (CABE, 2007a). Shared space forms the underlying design philosophy for major schemes in development at Ashford in Kent, Sherford in Devon, Waterlooville in Hampshire, Craigmillar in Edinburgh and Calderwood in West Lothian.

Several English county councils have started to incorporate shared space principles into policy manuals for towns and village streetscapes. Devon, Dorset, East Sussex, Essex, Hampshire and Kent County Councils have started to develop and adopt the principles, and Suffolk County Council serves as the UK partner in the current European Union 'InterReg' shared space research project. Wiltshire County Council has explored the removal of road markings in a number of rural villages (TRL, 2003), and there are isolated examples of pilot rural schemes in Eynsham in Oxfordshire, Clifton in Cumbria and Wellow near Bath.

But it is, perhaps inevitably, in city centres where the most significant progress has been made to rethink conventional engineering solutions and to readjust the relationship between traffic and other activities. There are notable examples of the application of shared space design principles in the regeneration of

Ancoats Urban Village and New Islington in Manchester, in the redesign of Hope Street, Liverpool, and in the city centre of Sheffield. The forecourt of Bristol Temple Meads Railway Station is an early example from 1993 of shared space design successfully exploited to resolve the complexity of vehicle and passenger activity in the historic context of Brunel's Great Western Railway terminus (CABE, 2007a). In Blackett Street, Newcastle, and in Newbury town centre, shared space design principles have successfully resolved the relationship between busy bus corridors and pedestrian spaces, and similar principles are in preparation for Westgate, Oxford and Brighton Marina.

In London, the Royal Borough of Kensington and Chelsea (RBKC) has spearheaded the introduction of shared space, building on the widely recognized success of its reconfiguration of Kensington High Street (CABE,

2007a). Whilst retaining the conventional format of footways and formal crossing points, Kensington High Street demonstrated what can be achieved through the removal of pedestrian barriers, signs and other street clutter. Despite carrying over 40,000 vehicles per day, this busy arterial route into West London succeeds through creating a dynamic between all the multitudinous users and activities of the street. The use of the central medium strip for bicycle parking encourages informal cross-flows of pedestrians, and the careful integration of street design with the surrounding context, combined with the simplicity and clarity of the detailing, create a coherent piece of public space that appears to promote informal interaction and mutual consideration amongst all the players in this busy section of London streetscape.

The success of Kensington High Street has prompted the Royal Borough to produce



Figure 14. Blackett Street, Newcastle.



Figure 15. Kensington High Street, West London (Photo: RBKC).

a comprehensive streetscape design guide (RBKC, 2005) which codifies many of the key principles of shared space under the heading 'Barrier-free Design'. More ambitious proposals are in preparation for Exhibition Road in Kensington, intended to permit traffic to continue to move through a linear public space that responds to the richly varied cultural context of this much-visited street.

Perhaps the best example of shared space, and one that has withstood the

test of time, can be found in the heart of London's Covent Garden. As a result of the tireless efforts of the Seven Dials Monument Trust, the restoration of Seven Dials in the early 1990s not only restored a distinctive historic monument to one of London's most memorable spaces, but created a perfect demonstration of the potential for a busy junction to operate without formal controls, signage or regulation. The base of the restored sundial serves to attract much human activity at the focal point of



Figure 16. Proposals for Exhibition Road. (Illustration: RBKC)

the converging seven streets, humanizing and animating what would otherwise be a mere roundabout. Traffic moves slowly and steadily around the monument, which has none of the conventional roundabout direction signs. Congestion is rare, and there have been no serious injuries recorded during the 16 years of operation of the current arrangements.⁸ Although not the busiest or most typical of London street intersections, Seven Dials nevertheless merits careful observation and analysis for anyone keen to explore the potential for environmental design and human psychology to reconcile the complex relationship between people, places and traffic.

The Future of Shared Space

The ideas, concepts and practice illustrated

by the examples from Britain and mainland Europe demand a fundamental reconsideration of many long-standing assumptions about traffic in towns, and represent a sea-change in our approach to street design, traffic planning and the opportunities for a public realm. It is an approach that is still in its infancy, and there remain many barriers to overcome, observations to be made, evaluations to be conducted and experience to be gained. Questions remain as to what extent shared space can help resolve busier streets and intersections. Creativity and development is required to improve perceptions of safety and navigational aids for the visually impaired. The relationship between visual clues (such as apparent road widths, signs, kerbs and road markings) and driver behaviour remains little understood. Nevertheless shared space opens up a whole



Figure 17. Seven Dials, Covent Garden. Perfect integration of traffic with the public realm.

new vocabulary and design framework for the built environment, bringing together a number of strands of current thinking.

The end to separation of traffic movement from the public realm and the move towards shared space has important implications for the training and professional development of all the disparate disciplines involved. Integration of engineering with urban design implies a broadening of awareness and knowledge amongst professionals and technicians who, until recently, have shared only a sketchy understanding of each other's roles. It is encouraging to see the Public Realm Information Advice Network (PRIAN), supported by the Institute of Highway Engineers and English Heritage, amongst others, extending and developing training in the comprehensive design and management of the public realm.⁹

Shared space raises the potential for a radically different vision for the streets of towns and cities for the future. With sufficient professional support and political determination, it could hold the key to reversing the long-lamented decline in the quality of streets, both in Britain and across the rest of the world, where cars and traffic are likely to remain an inevitable component of our social and economic structures. If the findings from the increasing number of shared space schemes continue to demonstrate the positive outcomes from treating drivers as intelligent citizens, governed by the same social protocols that underpin civility in other public places, there is a hope that the segregated world of post-war urban planning will no longer need to blight the coherence and quality of the built environment.

NOTES

1. See CIAM – *The Athens Charter*. http://www.open2.net/modernity/4_2.htm. Accessed 1 February 2008.

2. 'Panda' crossings were introduced in the UK in April 1962 to establish a signalized pedestrian crossing. They were replaced by 'pelicans' in

1968, and then by 'puffins'. 'Toucans' refer to combined pedestrian and bicycle crossings ('two can cross').

3. A brief history and summary of research findings on these and other schemes can be found at <http://www.shared-space.org/> – 'Projects' page.

4. '*desire line*: The shortest, most direct route between facilities or places', from Cowan (2005).

5. The Laweiplein was modelled using, amongst other software packages, 'Omni-X' system to calculate theoretical capacity and delays (Smalingerland Municipality, 2007, p. 16)

6. A selection of international press reports can be found on the European Shared-Space research project website; <http://shared-space.org>.

7. Shared Space newsletter, June 2007, available at http://www.shared-space.org/files/18445/5LRnieuwsbriefSS.07_7.pdf.

8. Based on records of Seven Dials Trust, and enquiries with Camden Borough Council (July 2007).

9. PRIAN. Design and Management of the Public Realm. www.publicrealm.info.

REFERENCES

Adams, John (1988) *Evaluating the effectiveness of road safety measures*. Traffic Engineering & Control, June, pp. 344–352. Available at <http://www.geog.ucl.ac.uk/~jadams/PDFs/Evaluating%20safety%20measures.pdf>

Adams, John (1995) *Risk*. London: Routledge.

Adams, John (2007) *Shared Space – Would it Work in Los Angeles?* Available at john-adams.co.uk/2007/09/08/shared-space-would-it-work-in-los-angeles/. Accessed 14 September 2007.

Buchanan, Colin *et al.* (1963) *Traffic in Towns*. London: HMSO.

CABE Space (2005) *What Are We Scared Of? The Value of Risk in Designing Public Space*. London: CABE.

CABE Space (2007a) *This Way to Better Streets*. www.cabe.org.uk/streets

CABE Space (2007b) *Campaigns and Research: Public Space*. Available at <http://www.cabe.org.uk/default.aspx?contentitemid=185>. Accessed 14 September 2007.

CABE Space (2007c) *Paved with Gold: The Real Value of Street Design*. Available at <http://>

- cabe.org.uk/default.aspx?contentitemid=1956. Accessed 14 September 2007.
- Cavill, Nick (ed.) (2007) *Building Health*. London: National Heart Forum, CABE and Living Streets. Available at http://www.heartforum.org.uk/Publications_NHFreports_Pub_BuildHealth.aspx. Accessed 1 February 2008.
- CNU (Congress for New Urbanism) (2007) *CNU/ITE Street Design Manual*. Available at <http://www.cnu.org/node/127>. Accessed 14 September 2007.
- The Civic Trust (2007) *Civic Trust Streets Award*. Available at <http://www.civictrust.org.uk/awards/awards.shtml>. Accessed 14 September 2007.
- Cowan, R. (2005) *The Dictionary of Urbanism*. Tisbury: Streetwise Press.
- CPRE (Campaign to Protect Rural England) (2007) *Roads: Clutter Challenge*. Available at <http://www.cpre.org.uk/campaigns>. Accessed 14 September 2007.
- DETR (Department of the Environment, Transport and the Regions) (1998) *Traffic Speeds in Inner London*. London: DETR.
- DfT (Department for Transport) (2005) *Transport Statistics Bulletin, National Travel Survey 2004*. SB (05)30. London: DfT.
- DfT and DCLG (2007) *Manual for Streets*. London: Thomas Telford. Available on-line at <http://www.manualforstreets.org.uk/>.
- EHTF (English Historic Towns Forum) (2007) *Streetscape*. Available at <http://83.170.75.16/mod/resource/view.php?id=63>. Accessed 14 September 2007.
- English Heritage (2005) *Save Our Streets*. Available at <http://www.english-heritage.org.uk/server/show/nav.8680>. Accessed 14 September 2007.
- English Heritage (2006) *Streets for All*. London: English Heritage.
- Engwicht, David (2006) *Mental Speed Bumps*. Melbourne: Creative Communities International. Available at <http://www.ccishop.com/home.php>.
- Florida, Richard (2005) *Cities and the Creative Class*. London: Routledge.
- Fryslân Province (2005) *Room for Everyone*. Leeuwarden. Published in the framework of the Interreg IIIB project 'Shared Space'. Available from www.shared-space.org.
- Gehl, J. (1987) *Life between Buildings*. New York: Van Nostrand.
- Hamilton-Baillie, B. and Jones, P. (2005) Improving traffic behaviour and safety through urban design. *ICE Proceedings (Civil Engineering)*, **158**, pp. 39–47.
- Hénard, E. (1905) *Études sur les transformations de Paris et autres écrits sur l'urbanisme*. Paris.
- IHIE (Institute of Highway Incorporated Engineers) (2002) *Home Zone Design Guidelines*. London: IHIE.
- IPPR (Institute of Public Policy Research) (2002) *Streets Ahead*. Available from <http://www.ippr.org.uk/publicationsandreports/publications>.
- Jacobs, Alan, B. (1985) *Looking at Cities*. Cambridge, MA: Harvard University Press.
- Jacobs, Alan B. (1995) *Great Streets*. Cambridge, MA: MIT Press.
- Jacobs, Alan B., Macdonald, Elizabeth and Rofé, Yodan (2001) *The Boulevard Book: History, Evolution, Design of Multiway Boulevards*. Cambridge, MA: MIT Press.
- Jaredson, S. (2002) *Evaluation of Skvallertorget in Norrköping*. Norrköping: Linköpings University.
- Ministry of Transport (1966) *Roads in Urban Areas*. London: HMSO, p. 14.
- Moran, J. (2006) Crossing the road in Britain, 1931–1976. *The Historical Journal*, **49**, pp. 477–496.
- PRIAN (Public Realm Information and Advice Network) (2007) Available at <http://www.publicrealm.info/index.php?index>. Accessed 14 September 2007.
- Project for Public Spaces (2007) *Placemaker Profiles*. Available at <http://www.pps.org/info/placemakingtools/placemakers/ajacobs>. Accessed 14 September 2007.
- RBKC (Royal Borough of Kensington & Chelsea) (2005) *Streetscape Design Guide*. Internal policy document available from Royal Borough.
- Scottish Executive (2005) *Residential Streets*. Planning Advice Note 76. Edinburgh: Scottish Executive.
- Smallerland Municipality (2007) *The Laweiplein: Evaluation of the Reconstruction into a Square with Roundabout*. Leeuwarden: Noordelijke Hogeschool. (English version available from the author – ben@hamilton-baillie.co.uk)
- Transport Research Laboratory (1998) *The Factors that Influence Drivers' Choice of Speed*. TRL 325. Crowthorne: TRL.
- Transport Research Laboratory (2003) *Road Design Measures to Reduce Drivers' Speed via Psychological Processes: A Literature Review*. TRL 564. Crowthorne: TRL.

- Transport Research Laboratory (2005) *'Psychological' Traffic Calming*. TRL 641. Crowthorne: TRL.
- Transport Research Laboratory and CEEMA (2003) *An Evaluation of the Effect of Removing White Lines*. For Wiltshire County Council.
- Vahl, H.G. and Giskes, J (1990) *Traffic Calming through Integrated Urban Planning*. Paris. Amarcande.
- Van den Boomen, T. (2002) *Weg met de regels! Het Nieuwe Woonerf*. NCR Handelsblad, 2 June 2000, p. 5. Available in English (translated July 2001) at <http://www.hamilton-baillie.co.uk/articles.htm#media>
- Wolf, P.M. (1969) *Eugène Hénard and the Beginnings of Urbanism in Paris, 1900–1914*. The Hague: International Federation for Housing and Planning.