

Streets Past and Future, Tim Pharoah

Streets past and future

Tim Pharoah draws lessons from past attempts at street design improvements

Why are streets the way they are? Is conventional street design still appropriate? The familiar arrangement of carriageways and footways is increasingly being challenged, so it is timely to review traditional street design, and some of the innovative changes taking place.



Origins

The basic street form is readily identifiable in Roman street remains. Even the minimum width of 4.5 metres bears comparison with today's design guides. Drainage requirements had an important impact: it is the drainage gutter that gives rise to the kerb. There have been many other influences in history on street design, such as widths to allow a coach and horses to pass or to turn, narrow streets to provide shade and shelter (or arcades for the same purpose as in Bologna, Italy), labyrinthine medieval streets to confuse invaders, streets oriented to keep out winds (Vitruvius, 1st century B.C.), or to let winds in (Vauban, Freiburg, 21st century), corner designs to allow a tram radius (Barcelona l'Eixample), and short street blocks to maximise corner plots for shops (Portland, Oregon). Other influences relate to power and glory, such as the military logic of Roman straight streets, and the awe-inspiring vistas created by the Haussman boulevards of Paris.

Definitions

Without exploring the semantics of street definition, it is important to recognise that the terms used may reflect or even reinforce what is intended in terms of traffic priorities. *Manual for Streets*, for example, argues for the abandonment of the road hierarchy of primary, secondary and distributor roads, all terms which convey only the vehicle traffic function. Instead the classification should reflect the wider role of the street, for example: street, high street; main street; avenue, lane, courtyard.

The classification of routes and spaces gets interesting when the nature of their use is disputed or controversial. Most people would accept that only motorised vehicular traffic should use motorways, while at the other end of the scale, people accept the prohibition of motor vehicles in some shopping streets or historic squares. But for almost everything in between, it is less easy to decide on the appropriate balance between people and vehicles, and how routes and spaces should be designed to promote that balance.

Perhaps 99 per cent of urban streets are recognisable as having a carriageway flanked on either side by a footway, apart from the many suburban streets in North America that have no footway at all. There are many variations of course, such as separate ways for cycles, separate ways for buses, additional carriageways for access to properties, and promenades in the centre. Many streets have space for trees

or other landscaping. But what has become commonplace and widely accepted is the basic form of the urban street whereby the available space is divided between different classes of road user (notice how odd street user would sound!).

Shared or divided space

But how did this division arise, and is there good reason for it to continue? Paintings of streets in the 19th century (see for example those of York by Louise Rayner) indicate that the surface often was shared, even where a separate paved footway was provided, between horses, carriages and carts and people on foot. Trams and bicycles had entered the mix in the late 19th century, and the latter in particular led to calls for better street surfaces. This sharing was not always accepted as a good state of affairs, especially in the centre of busy cities where traffic volumes were high. But it continued until the arrival in significant numbers of private motor vehicles. It is important to say private, because trams and buses shared the street space with pedestrians apparently without too much problem, as indeed they sometimes do today.

The idea of dividing the street space between users probably first arose from a desire for people on foot to avoid mud and animal mess (and in earlier times human mess as well). Thus the first areas to be paved were footways, which I imagine is why they are called in Britain 'pavements'. In some parts of the world the footways were boarded rather than paved, and that presumably gave rise to the terms boardwalk and sidewalk. A conflict also arose between local street life and through carriage traffic, once roads were good enough to allow long distance movement on wheels.

Urban streets have always played a part in drainage, both of surface water and sewage from adjacent buildings. Where drainage was on the surface, there was another reason to create separate footways, raised slightly from the rest of the street. The formation of gutters was thus a sensible corollary to the need to keep footways dry and clean and to channel water to keep the 'carriage way' passable. The gutter also makes it easier to channel surface water into drains under the street. Despite the formal separation brought with kerbs and gutters, streets were nevertheless shared between vehicles, animals and pedestrians, especially in dry conditions. Separation in terms of pedestrian and vehicle behaviour really came about as a result of the increase in speed of vehicles following the widespread use of petrol powered cars. As their numbers and speeds increased, people retreated to the footways or (as shown in the photo of Bank) to small islands in the sea of motor traffic. (Notice the two policeman on traffic duty, and no horse-drawn cabs or buses.)

The term 'soft separation' has been introduced in some countries to denote street designs which demarcate pedestrian and vehicle areas without any change of level, giving greater freedom of pedestrian movement. This contrasts with 'hard separation' where kerbs and especially guardrails restrict pedestrians and define the vehicle space.

Recently in Britain (and for the past few decades in other parts of northern Europe) the role of kerbs and guardrails has increasingly been questioned. The argument runs something like this: the kerb separates pedestrians from vehicles, which gives drivers the sense that the carriageway is theirs exclusively, so that pedestrians feel that they can only enter or cross that space by permission of regulation (pedestrian crossing) or courtesy of the driver. The kerb also presents a barrier to movement for people encumbered with buggies or shopping trolleys, or with restricted mobility. The argument has become more shrill in Britain because the division between pedestrians and vehicles is now reinforced by guardrails, which increase the visual as well as the physical separation. The transformation of the street from a shared space to a separated space is complete when pedestrians are barred from crossing at surface level, or only at limited places and for limited time after applying to drivers for their permission (i.e. at push-button light-controlled crossing places).



New designs

The hard separation model is now being seriously challenged, with designs that do away with formal or physical distinction between carriageway and footway. This reinvention of shared surfaces began in the Netherlands in the early 1970s, with the Woonerf that spread throughout the country, and abroad. In Britain this has translated to the Home Zone, though unfortunately without the crucial changes to street laws that were adopted elsewhere in Europe. The mews form is a British precursor of the shared surface solution and Home Zones are a recent fashion. But all these examples are confined to streets with very little vehicle traffic. The challenge to separation is now more radical with the introduction of shared surface designs on busier streets. The best known examples are the streets in Friesland converted by Hans Monderman, and in Chambéry by Michel Deronzier. These have involved urban junctions carrying up to 20,000 vehicles a day. All indicators of priority including traffic lights, white lines and signs are removed, and instead both pedestrians and drivers use eye contact to negotiate who goes first.

Before signing up too readily to the new order, we have to be very careful not to prejudice the trend towards reducing road casualties, although so far, evidence on the safety of shared spaces is encouraging: for example casualties reduced by 80 per cent in Chambéry over a 20 year period of street conversion.

There are two variables that can determine whether the removal of formal separation in the street, and reliance on sharing and mutual respect will work successfully. The first is the speed of vehicles. The second, and closely related to the first, is the attitude and behaviour of drivers in particular, but all other road users as well.

The early attempts at getting more sharing and reducing the dominance of vehicles included re-designing streets to make it physically difficult for drivers to go faster than walking pace. The redesigns themselves reinforced the message to drivers that they were there as guests, and should drive slowly and considerately. These were the shared-surface streets created particularly in the Netherlands and Germany in the 1970s through to the 1990s.



Speed reduction

As Britain ever so slowly tries to re-learn all the lessons of those early schemes by introducing Home Zones, the instigators in mainland Europe have had second thoughts. Apart from the high costs of reconstruction (which brought the German programme to an end after re-unification), and the confinement of the measure to very lightly-trafficked streets, there was a reaction to the visual disturbance of the street scene with frequent chicanes, planters, walls, lights, and patterned paving. In Germany in particular, breaking the visual linearity of the street with chicanes was disliked. In addition, vulnerable and visually impaired people disliked the absence of any separate area for pedestrians. Protected footway areas are therefore provided, even if the carriageway is shared. The problem of speed has been tackled on a much wider scale by the introduction of 20mph zones or their equivalent throughout the developed world. These are cheaper because they involve small scale physical intervention such as speed humps or cushions, or treatments at junctions.

Twenty years ago, such measures were the subject of experiment in Germany and the Netherlands; today they are commonplace in the UK. Local authorities are often torn, however, between the demands of residents who want traffic calming measures in their streets and the demands of people who find them uncomfortable to drive on and want them removed. The battle for slower urban driving speeds will continue, and success will depend as much on changing hearts and minds as on traffic engineering.



Now the shared space philosophy has re-invigorated the separation-sharing debate between designers and engineers, and schemes are gradually emerging, such as Exhibition Road in Kensington. The shared space idea is expressed in different ways, but is based on a belief that people should be entrusted to respect each other, whether on foot, in a motor vehicle, or on a bicycle. This respect is nurtured in design terms by removing everything in the street that denotes priority for one type of user over another. In Drachten only one set of traffic signals remains in the town, while white lines, give-way signs, signals, and formal crossings have been removed. Pedestrians, cyclists and drivers make eye

contact at points of potential conflict and easily negotiate who goes first. For this to happen, drivers seem to understand that they must drive slowly and carefully. There are no humps or chicanes – these would be anti-driver and not pro-pedestrian, and thus would run counter to the philosophy of sharing and mutual respect.

This approach raises many issues which we cannot go into here, but it opens the possibility for more holistic thinking about the way streets are designed and laid out. The assumption can no longer be made that safety and efficiency depends on the separation of different users. The new Manual for Streets encourages new thinking and experimentation in street design, and hopefully we can look forward to an exciting period of innovation and experimentation to produce streets for people rather than roads with cars.

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Top: Bank, London. Photo used with kind permission of Sky High Ltd -The Traffic Survey Company
www.skyhightraffic.co.uk

Top row

left: Chambéry, France, soft separation of pedestrians and vehicles

centre: Kyoto, Japan, hard separation with guardrails

right: Drachten, Netherlands., shared space at busy crossroads

Bottom row

left: Northmoor home zone, cluttered shared surface design

centre: Oisterwijk, Netherlands, Raised junction with build-outs and cycle lanes

right: Kelheim shared space

Bottom: Sign of the future?