10 Traffic Signs, Marking and Street Furniture

The purposes of this chapter are to:

- Discuss the influence of signs and street furniture on making streets successful
- Present evidence on the benefits and risks of reducing signing
- Describe the flexibility open to designers in applying signing.

The key recommendations are:

- Streets should be designed with the minimum of signing necessary to effectively control behaviour
- If signing may be required, consideration should be given to addressing the behaviour of users through other means, recognising the wide range of uses which streets must support
- Street furniture should be minimised and, where necessary, should be visually integrated into the street

10.1 INTRODUCTION

10.1.1 In considering traffic signing in streets it is critical to recognise that they are provided in the context of a space that must support community activity as well as movement. The influence of pedestrians on driving speed was supported by work carried out by Aronsson and Bang, which identified the regularity of pedestrians crossing roads as the most significant influence on driver speed reduction, with buses at bus stops and pedestrians on footways also tending to reduce driver speed. (Aronsson, Bang, Factors Influencing Speed Profiles in Urban Streets, 3rd International Symposium on Highway Geometric Design, 2005).

10.1.2 This work suggests that, if designers can successfully create low speed environments in which community activity can take place, then that activity can in turn reinforce the design by encouraging lower driver speeds and may be more effective at controlling driver behaviour than formal highway infrastructure such as signing. In this approach, community and public activity becomes an active part of the street design. This is the implicit objective of designing for people and community first and traffic movement (of all vehicular classes) second.

10.1.3 Traffic signs, markings and street furniture are functional components of streets designed to enable correct use. The Traffic Signs Regulations and General Directions (TSRGD, DfT 2002) sets out the absolute legal requirements for the use of traffic signs and will not be duplicated in this Chapter. In addition the Department for Transport published the Traffic Signs Manual (DfT dates various) which gives advice on the application of traffic signs in practice. This Chapter will discuss the use of traffic signs, markings and street furniture in the 'streets' context. It will focus on identifying the relationship between these features and other considerations.

10.2 TRAFFIC SIGNS AND MARKINGS

10.2.1 Traffic signs and markings are provided in order to explain legal obligations and give advice and information, thereby influencing the behaviour of street users.

10.2.2 Road markings and other features such as bollards, studs and signals that are prescribed in TSRGD are, in legal terms, signs and therefore the term ‘signs’ will be used in this chapter to refer to both signs and road markings, except where specified.

10.2.3 Where non-standard highway signing is considered potentially beneficial, application may be made to DfT for approval to use it. DfT may authorise its use on an experimental basis.

10.2.4 The Traffic Signs Manual describes three classes of sign:

- Regulatory Signs
- Warning Signs
- Informatory signs

10.2.5 Of these, regulatory signs tend to be most common in streets and, where it is necessary to introduce regulatory orders, exist to notify users of them.

10.3 OTHER INFORMATION

10.3.1 Non-prescribed signs can also be used to assist orientation and navigation in streets, whether for pedestrians, cyclists or drivers. Common non-prescribed signs include location signs, for example street names, and fingerpost signs to specific destinations within and beyond the settlement.

10.3.2 Information does not necessarily have to be communicated visually. Information provided by tactile or audible means can also influence behaviour. This includes features provided to assist disabled people in orientation and navigation. Most of these signs are tactile. The recommended use of tactile information is described in Guidance on the Use of Tactile Paving Surfaces (DfT, 1999). Further guidance on the use of tactile surfaces, and other features to convey information to disabled people, is given in Inclusive Mobility (DfT, 2005). Inclusive Mobility also includes information on the provision of visual signing that is legible to people with partial sight.

10.3.3 Informal information can also be given through the use of different surfaces which through visual or textural contrast can designate boundaries, indicate parking areas, encourage slower speeds etc.

10.4 STREET FURNITURE

10.4.1 Street furniture may perform a variety of functions. It can variously including lighting, sign columns, seating, guard-railing and so on. Some street furniture is of direct function, for example seating, others, such as sign or lamp columns, exist purely to provide mounting points for equipment.

10.4.2 In addition to street furniture owned and maintained by transportation authorities, street furniture may also be installed and maintained by statutory undertakers and utility companies. Often this furniture relates to subsurface equipment, for example telecommunications junction boxes, but it can also be of direct use to the public, for example telephone boxes and post boxes.

10.5 STREETSCAPE

10.5.1 Both signing and street furniture may be necessary for the successful operation of a street and may provide amenities to users. These features can however also detract from the visual appearance of a street by introducing clutter.

10.5.2 The cluttering of a street often takes place over time as a result of introducing features to address specific issues, for example guard-railing may be installed in response to vulnerable road user casualties. Often the result of this retrospective installation is that signs and street furniture are introduced without regard to the overall appearance and use of the street or the prevailing style of street furniture. Moreover, it is common for street furniture to be superseded but not removed, leading to the accumulation of clutter.

10.5.3 Most signing and street furniture is located in or around pedestrian footways and, as well as detracting from the visual appearance of a street, can also introduce hazards for blind and partially-sighted people; represent barriers to movement if they restrict footway widths significantly; and, in some situations, can contribute to feelings of unease if they provide hiding places for potential assailants or attract graffiti and flyposting.

10.5.4 In a primarily residential and local context, it is arguable that signing and markings may be less necessary, as most users will be local and are likely to take their behavioural and navigation cues from the design and layout of the street, rather than the instructions in signs and markings, this is particularly the case where it is anticipated that levels of enforcement will be low.

10.6 MAINTENANCE

10.6.1 Where signing and street furniture is introduced, it will clearly require maintenance. For this reason unnecessary features should be avoided and the design of necessary features should allow for their continuing maintenance.

10.7 PRINCIPLES

10.7.1 Streets should be designed around the principle that they are first and foremost public spaces, with the efficient movement of vehicles a secondary consideration.

10.7.2 It is recommended that a starting point in the design or review of streets be to attempt to develop them with the minimum of statutory signing and markings to influence driver behaviour.

10.7.3 In designing with the minimum of signing, it should be remembered that no signs are fundamentally required by TSRGD, they are only needed where traffic regulation or other orders are made – in the absence of TROs, no signing is required by TSRGD.

10.7.4 The Traffic Signs Manual makes it clear that signing should not be used unless it serves a clear function:

“Signs are used to control and guide traffic and to promote road safety. They should only be used where they can usefully serve these functions.”

Traffic Signs Manual, Chapter 1, Introduction, HMSO, 1982

10.7.5 Street layouts, geometries and route hierarchies should ideally make the street environment self-explaining to all users. Features such as public art, planting and distinctive architecture can all be used to assist navigation in streets and communicate messages about correct behaviour without the need for signing. Use of streets by pedestrian is of paramount importance and the use of such features can both assist them in navigation and contribute to the distinctiveness of a street network.

10.7.6 Where signing indicates the existence of a Traffic Regulation Order (TRO) or other legal requirement, then it should be incorporated as required by TSRGD. In applying this signing, however, consideration should be given to the flexibility within the regulations to meet the legal requirement without significantly adding to street clutter or detracting from the visual appearance of the street.

10.7.7 Simplified streets - the use of deliberately ambiguous environments to control driver behaviour and restrain speed by requiring users to interpret the environment, decide on the appropriate behaviour, and negotiate priority, are an emerging technique. In a residential context this approach has been well validated in the UK provided that traffic speeds can be kept sufficiently low - in British Home Zones studied as part of the DfT's Home Zones Pilot Project, the mean vehicle speed, averaged across the seven home zones, was 14.5mph after implementation and the 85th percentile was18.4 mph. (Webster et al, Pilot Home Zone Scheme: Summary Evaluation of the Schemes, TRL, Date TBC).

10.7.8 The use of simplified streets is being explored increasingly by some UK highway authorities in more heavily trafficked environments, with Seven Dials in Covent Garden, Blackett Street in Newcastle and proposals for Exhibition Road in Kensington and Chelsea being well-known examples at the time of writing.

10.7.9 Elliot et al (2003) set out key principles relevant to considering traffic signing in the context of the whole driving environment:

- More complex environments tend to be associated with slower driving speeds, the likely mechanisms being increases in cognitive load and perceived risk;
- Natural traffic calming such as a hump back bridge or a winding road can be very effective at reducing speeds, as well as being more acceptable to drivers. Carefully designed schemes, using the properties of natural traffic calming, have the potential to achieve a similar effect;
- Emphasising changes in environment, e.g. highway/village boundary can increase awareness and/or reduce speed;
- Enclosing a distant view and/or breaking up linearity can reduce speeds;
- Creating uncertainty can reduce speeds;
- Combinations of measures tend to be more effective than individual ones, but can be visually intrusive and may be costly; and
- Roadside activity, e.g. parked vehicles, the presence of pedestrians or a cycle lane can reduce speeds.

(Elliot, Kennedy, McColl Road Design Measures to reduce drivers' speed via "psychological" processes, a literature review, TRL 564, 2003.)

10.7.10 Examples such as Poundbury in Dorset, which features unmarked junctions and no traffic signing, and which has operated successfully with no casualties since construction, indicate the validity of this approach provided the wider design reinforces slow traffic speeds and pedestrian priority.

10.8 APPLICATION OF SIGNING AND MARKINGS

TRAFFIC SIGNS

More isn't always more

10.8.1 Signing and markings are generally introduced for specific purposes, for example to inform drivers of priority or of the legal speed limit. It is sometimes the case that, where users fail to behave according to the signs' instructions, further signing and emphasis is added, without necessarily resulting in changes to behaviour.

10.8.2 In introducing signing into streets therefore, a key test should be whether that signing is effective in causing a change in behaviour. If signing proves ineffective, it may be that another strategy should be considered than simply adding further signing.

10.8.3 In attempting to minimise the use of signing, reference should also be made to the legal context, in which it is well established that road users have a duty to proceed with due caution, and cannot expect potential hazards to be signed. More information on the legal framework around driver liability is given in Chapter 3.

Starston, Norfolk

Starston in Norfolk is a village on the B1134. The Starston scheme (de -restricted Rural Village) would have required 24 additional signs to implement a 30mph limit. Instead the scheme involved the removal of road markings and rationalised signing, with over half of the existing signs being removed and many replaced with smaller signs more in keeping with the rural character of the village. New place name signs were also installed, designed by a local artist, to reinforce the sense of place and the village character of the environment. These measures, together with a new natural coloured road surfacing, reduced mean speeds by up to 7mph. (TRL 500, Wheeler, Kennedy, Davies and Green, Countryside Traffic Measures Group: Traffic Calming Schemes in Norfolk and Suffolk, 2001).

All Things Are Not Necessarily Equal

10.8.4 In determining what signing or street furniture is necessary in a given situation, it is recommended that designers do not take prevailing or predicted conditions as a given and then attempt to design signing to manage or compensate for the conditions.

10.8.5 For example, guard railing is frequently introduced where casualties are predicted or recorded as a result of pedestrians crossing roads. While such measures may reduce, or displace, pedestrian crossing movements, they can nevertheless have a detrimental effect on streetscape and pedestrians' ability to move around the street, the absence of this pedestrian activity may in turn encourage faster driving resulting,

reversing the virtuous cycle of more pedestrians leading to slower traffic. In determining whether such features are necessary then, the conditions that give rise to their consideration should be reviewed to see if they can be addressed. For example, can traffic flows be reduced, can traffic speeds be reduced etc in order, in this example, to reduce pedestrian casualties without constraining their movement.

10.8.6 This approach is consistent with the 'Hierarchy of Provision' approach recommended by DfT in Local Transport Note 1/04: where problems exist for cyclists or pedestrians the following steps should be considered, IN THIS ORDER, to identify a solution:

	Pedestrians	**Cyclists**
Consider First	Traffic reduction	Traffic reduction
	Speed reduction	↴
	Reallocation of road space to pedestrians	Junction treatment, hazard site treatment, traffic management
	Provision of direct at-grade crossings	Redistribution of the carriageway (bus lanes, widened nearside lane etc.
	Improved pedestrian routes on existing desire lines	Cycle lanes, segregated cycle tracks constructed by reallocation of carriageway space, cycle tracks away from roads
Consider Last	New pedestrian alignment or grade separation	Conversion of footways/footpaths to unsegregated shared use cycle tracks alongside the carriageway

(DfT LTN 1/04 Policy Planning and Design for Cycling and Walking, 2004)

10.8.7 Clearly it is important that genuine consideration should be given to the potential for each measure, in order, before opting for measures closer to the 'consider last' end of the scale.

10.9 DESIGNING SIGNING

How Much Signing is Necessary

10.9.1 In determining where signing is necessary in a street, the following considerations should be addressed. The prompts given in **Table 11.1** are designed to assist in decision-making.

Table 11.1

Consideration	**Prompts**
Navigation	▪ What signing is necessary to assist pedestrians in navigating?

Consideration	Prompts
	■ Is the necessary information available for disabled people? ■ Are street signs specified? ■ Can navigation be assisted without signing? E.g. movement frameworks, landmarks, sightlines et al
Place	■ What is the context of the development? E.g. rural/urban/suburban/village, local vernacular, appropriate materials, historic/modern environment. ■ How can necessary information be integrated into the place without dominating it? ■ How can signing contribute to the sense of place, for example Village Sign, locally distinctive formats
TROs	■ Are TROs or other orders necessary? ■ Can behaviour be influenced by means other than signing? ■ Can signing required to indicate TROs be specified at minimum size/level?: c.f Traffic Signs Manual
Speed	■ Is the forward visibility of signs and their size appropriate to the desired speed of traffic? ■ Can traffic speeds be controlled to reduce the need for signing, e.g. no-priority junctions ■ Can features such as landscaping be used to break up forward visibility to reduce traffic speed? ■ Can speeds be brought low enough for 10.10 shared surfaces (85%ile <20mph) 10.11 cycles to be integrated into highways (85%ile >20-30mph)
Relative flows	■ What are the flows of users, do they justify the use of priority measures such as pedestrian crossings, junction markings, bus lanes et al?

Consideration	Prompts
Alignments	■ Can the geometry and alignments of footways and highways be adjusted to encourage safe and appropriate use?
Sensitive locations	■ Can sensitive locations such as school entrances, health centres, local shops etc. be reinforced with geometric measures, vertical deflections, surface variation et al to reduce the need for signing?
Parking	■ Can parking behaviour be managed by the physical layout of the street?

10.11.1 Consideration of a proposed design within this framework will assist decisions on the level of signing that is appropriate to the anticipated use of the street.

10.12APPROPRIATE SIGNING

10.12.1 The Traffic Signs Manual allows for significant flexibility in the application of statutory signing. In a residential and low volume context, it is often the case that, where there is a requirement for signing, minimum standards may be sufficient. Table xxxx summarises the minimum standard of provision for a number of common highway signs.

10.12.2 These are largely taken from the Traffic Signs Manual, however some supplementary sources of guidance are also included for information. Where information is not derived from the TSM its origin is referenced.

10.13SHARED SPACE

10.13.1 Shared space is discussed in Chapter 7. In terms of signing and the provision of street furniture, shared space approaches clearly have significant implications for the development of streets, with the principle of minimising these features, discussed above, being extended to a total absence.

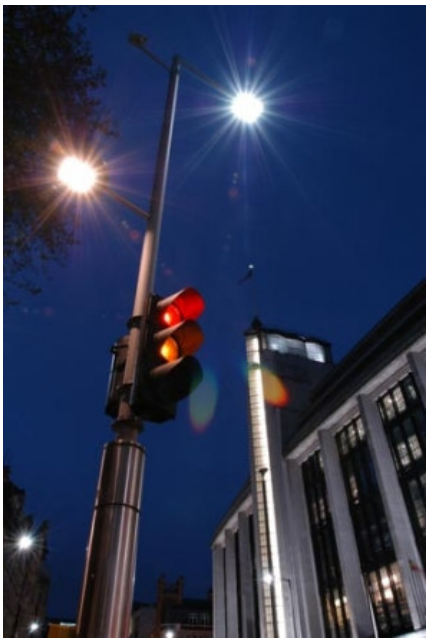
10.13.2 There are also more conventional schemes, such as the 'barrier-free' projects being carried out by the Borough of Kensington and Chelsea that share some of the principles of Shared Space. The most notable example to date is Kensington High Street, where a major programme of public realm improvements was completed in 2003. The scheme involved

- Removal of guardrailing including at staggered pedestrian crossings;
- Changing some pedestrian crossings from staggered to straight;
- Reducing signage clutter, including placing traffic signal heads on lighting columns and mounting signs at reduced heights; and
- Widening the central reservation to 3m as a location for cycle parking.

Cycle parking on central reservation

Signage mounted at low level

Staggered crossing with guardrailing removed



Traffic signals on lighting columns

10.13.3 Although there were serious concerns over the potential effect of the changes on road safety, in fact there has been a reduction of 47% in the number of accidents over the three years since the scheme was implemented, which compares to a fall of 35% in accidents across the Borough as a whole.

10.13.4 In 2006 the Borough of Kensington and Chelsea were intending to apply a more comprehensive Shared Space treatment to Exhibition Road, the major street serving the Science, Victoria and Albert and Natural History Museums.

Draft proposals for Exhibition Road, London

10.14LOCATING SIGNING

10.14.1 The Traffic Signs Manual states that "it is desirable to limit the number of posts in footways, especially in urban areas, because proliferation creates additional hazards for visually handicapped pedestrians and unnecessary obstructions for people with perambulators and wheelchairs. Where possible signs should be attached to adjacent walls, so that they are not more than 2 metres from the edge of the carriageway, or be grouped on posts…" TSM Chapter 1, 1.57

10.14.2 A European study found that drivers require a preview time of 2 seconds in order to effectively interpret markings etc. (Requirements for Horizontal Road Marking, Cost 331, European Commission, 1999). In the residential streets context, this would give the following distances at typical design speeds:

mph	**Preview Distance (m)**
30	27
20	18
15	13
10	9

10.14.3 Where traffic signing is necessary, consideration should be given to locating it in a manner sympathetic to the surrounding streetscape.

10.14.4 For example, in a rural context, it may be appropriate to use materials such as wood to provide sign columns.

Wooden post mounted 20mph sign, Stiffkey, Norfolk

10.15COMMON SITUATIONS

CENTRE LINES

10.15.1 The use of white centre lines is described in the Traffic Signs Manual, Chapter 5 (DfT, 2003). It specifies a minimum road width of 5.5m, below which white lines should not be used, and argues that particularly in a rural context (p14) white lines on roads below that width may be misleading to drivers by implying that there is room for two way working. The Traffic Signs Manual however, states no requirement for white centre lining on local roads.

10.15.2 White centre lines are often introduced as a safety feature. In fact there is little research to indicate that any safety benefits arise from the use of white centre lines on local roads.

> In Starston, following the laying of the new surface, white centre lines were not initially replaced. The speed of traffic travelling towards the central area from both directions had been reduced substantially two months after the scheme opened.
>
> Following a Road Safety Audit, Norfolk County Council reinstalled the white lines and noted that, six months after the initial scheme opening, there was some erosion of the earlier reduction achieved on the longer western approach three months after the centre line markings were put back, although speed reductions were sustained on the shorter eastern approach.
>
> (Ralph, Innovations in Rural Speed Management, DTLR Good Practice Conference proceedings, June 2001)
>
> The implication of the Starston example is that the erosion of speed reductions may have been as a result of the reinstallation of the white lines, but that driver behaviour was clearly also responding to other interacting factors, of which forward visibility appears to be one. This emphasises the importance of coordinating an entire design, rather than a single element, around the objective of low traffic speeds.

10.15.3 Research undertaken in Wiltshire found that drivers exhibited better lane discipline when there was no centre white line. Vehicles also maintained a wider margin between each other in opposing directions and there was no sign that the removal of the central line encouraged drivers to adopt inappropriate speeds. At 12 test sites it resulted in slower speeds and reduced accidents, although the council had concerns regarding liability (archive.thisiswiltshire.co.uk; Traffic Engineering and Control v. 36, 2002)

10.15.4 Wiltshire's study showed quite clearly that there are safety advantages to be gained by removing centre lines in 30mph zones. In addition, reducing the effective carriageway width by the addition of cycle lanes did not increase the risk of conflicts for drivers or cyclists.

10.15.5 A small study by TRL on a resurfaced road, with and without white lines suggested that speeds were reduced in the absence of lining.

	With White Lines	Without White Lines	Difference
Mean	49.7 mph	46.0 mph	**3.7 mph Slower**
Mode	51 mph	44 mph	**7 mph Slower**
Median	48 mph	45 mph	**3 mph Slower**
Speed Range	35-71	31-62	
Vehicles travelling			
50 mph or over	44%	23.40%	**20.6% Decrease**
Vehicles travelling			
over the speed limit	8%	1.71%	**6.3% Decrease**

In a rural context, research carried out, while not conclusive, suggests that reduction of lining is effective in reducing vehicle speeds, as well as being inherently more sympathetic to the rural character of the roads.

Local Distributor Road with no centre lining, Guildford

ROAD SPACE ALLOCATION

10.15.6 In some contexts, road markings are used to attempt to allocate road space to specific users, whether indicating the existence of a Traffic Regulation Order, for example a bus lane, or advice to the user, for example an advisory cycle lane.

10.15.7 The use of road markings to allocate space may be effective, although generally a degree of enforcement is required, but may also detract visually from the appearance of a street without necessarily changing behaviour and can also increase the maintenance requirement.

Poorly designed cycle facility: visually intrusive, confusing, unhelpful to cyclists

10.16PARKING

10.16.1 In residential locations parking can often represent a difficult issue with high densities of kerbside parking, particularly in the evenings and weekends. It is sometimes necessary to manage kerbside parking through the use of parking restrictions, signified by road signs.

10.16.2 Where designated parking spaces are marked on the highway, the Traffic Signs Manual allows some flexibility, for example noting that markings are not necessarily required if physical measures such as kerbs or surface changes restrict or designate parking.

Kerb build out controls parking and locates street tree in highway space leaving footway clear, Peterborough

10.16.3 As noted above, restrictions on traffic are often abused in situations where enforcement is limited and a first consideration should be whether parking restrictions are likely to be enforced and, if not, whether landscaping and street furniture may be a

more effective means of managing parking behaviour as well as being potentially more visually integrated into the streetscape.

10.17 JUNCTION PRIORITY

10.17.1 Most junctions are designed with vehicular priority indicated by either Stop or Give Way markings, as set out in the Traffic Signs Manual Chapter 5 (DfT, 2003). The Traffic Signs Manual allows for the use of smaller signing on lower speed roads, based on the actual 85th percentile speed of vehicles.

10.17.2 There is however no requirement for junction priority to be specified. Particularly on lower volume roads, designers have specified junctions with no marked priority.

Three-way intersection with no marked priority, Eastleigh

10.17.3 In such circumstances, priority is likely to be either negotiated by vehicles, or taken by those drivers who infer an implicit priority based on:

- occupying the wider of the carriageways going into the junction;
- not being required to change direction; and
- using the link with the highest flows into the junction.

10.17.4 Little detailed research has been carried out on the use of this technique to date in the UK. Continental examples include sites such as Kaden-Torenstraat in Drachten, where flows of up to 17,000 vehicles and 2,000 cyclists and pedestrians per day use a junction with no priority. In the short term this scheme appears to have reduced collisions from 30 in the seven years prior to installation to 4 in the two years following.

10.17.5 At sites in the UK studied as part of the development of this Manual it was found that such junctions appear to perform well in terms of recorded casualties, but that there is some evidence of higher vehicle approach speeds – this may represent a desire by drivers only to slow if there is another vehicle with which to negotiate. Where it is intended to provide unmarked junctions for reasons of visual amenity then, it is

recommended that designers ensure that the geometry on junction approaches encourages appropriate speed.

Four way junction with no marked priority, Guildford

10.18 NON-STATUTORY SIGNING

10.18.1 Signing can assist people in orientating themselves and navigating in streets. Street signs, direction signs etc can all assist people in moving around effectively.

10.18.2 It has been suggested that the size of lettering on non-statutory signing should be appropriate to the speed of use, for example, if the design speed of an area is only ten mph, then that signing should not be visible to drivers travelling significantly faster than that speed. In using smaller sized signs, however care should be taken that they meet the needs of partially sighted people and conform to the guidance in Inclusive Mobility.

10.18.3 Non-statutory signing can also contribute to the sense of place of a street and may also function as public art in some contexts. This may include examples such as village signs, as well as the permitted use of supplementary plates on statutory Home Zone signs, which allow for scheme specific artwork and messages.

10.18.4 A further category of information provision that should be considered is that which provides amenity to residents. This may include local transport information boards, for example giving details of bus routes, as well as community notice boards, which can provide a valuable opportunity for information exchange within a community and support the development of a cohesive community in a new location.

10.19 OTHER VISUAL CUES

10.19.1 Other visual cues and the overall street context may also be used to communicate messages about correct behaviour to users. These can include both static features and dynamic street activity, suggesting that certain design features may affect driver behaviour both in their own right or by stimulating human activity in the street.

10.19.2 Kennedy (2005, ibid) reports on a study of self-reported speeds and simulator trials:

"*Using edge marking to visually narrow the road reduced reported speeds in the focus groups and questionnaire survey and actual speeds in the driving simulator. The reduction was greatest where the edging was textured and therefore appeared to be unsuitable for driving on".*

10.19.3 TRL assessed the self-reported response of 350 drivers to a range of visual features.

"The study found a number of design features reduced assessed driving speed. These included building extent (particularly close to the road), parked cars along the roadside, buses and cycles within their own designated lanes, decrease in the number of traffic lanes and carriageway width, the introduction of a structure in the road, and replacing roadside lighting with lighting on a central reserve. The features that reduced assessed driving speed generally also increased driver stress".

"Other features that influenced assessed speed were those associated with activity or potential activity (in addition to the traffic actually using the road) in or close to the carriageway. Such features were shown to be important…On-street parking had a marked effect (the more cars the slower the assessed speed), particularly when the vehicles were parked perpendicular to the road.…The replacement of office-type buildings with shops led to a slight reduction in assessed speed…

the number of pedestrians was found to strongly influence speed assessments in the group discussions…the group discussions suggested that it was the unpredictability of the activity close to the carriageway that caused respondents to reduce their assessed speed.

10.19.4 Features that did not produce a change in assessed speed were street trees and a statue on the central reserve [in 30mph environments]

(Chinn and Elliott, The Effect of Road Appearance on Perceived Safe Travel Speed, Unpublished Project Report PA 3828/02, 2002)

10.20 STREET FURNITURE

10.20.1 The use of street furniture can have a number of operational, functional and aesthetic consequences for a street.

10.21 USE FOR ORIENTATION:

10.21.1 Evidence suggests that many people navigate in streets by visual cues and line of sight, rather than, for example, written information. Street furniture can assist this process by providing visual landmarks that link spaces and routes within networks.

10.21.2 Anecdotally, this is intuitive, for example pedestrians giving directions to others will tend to identify landmarks such as pubs, churches etc to indicate routes.

Use of art as a street feature to contribute to navigation and sense of place, Guildford

10.22DANGER OF CLUTTER

10.22.1 In providing street furniture for functional reasons, as noted above, there is a danger that clutter can be created, leading to both barriers to pedestrian movement as well as reducing the visual amenity of a street.

Orpington High Street

10.22.2 There are a number of measures that may be used to reduce the cluttering effect of necessary street features.

10.23STREET SIGNING ON BUILDINGS

10.23.1 In a residential context, the location of street signing on buildings or boundary walls, rather than on dedicated posts should be considered. This will assist in simplifying the streetscape as well as reducing potential hazards to blind and partially sighted people.

Street Sign mounted on building

10.24LIGHTING ON BUILDINGS

10.24.1 Similarly, mounting lighting on buildings can provide a means of ensuring appropriate lighting levels without introducing additional street furniture at surface level. The provision of lighting is discussed in more detail in Chapter 11.

10.25LOCATION OF STREET FURNITURE

10.25.1 Although much street furniture is provided for the benefit of motorised users, it is generally located in the footway, compromising the space for pedestrians. In some circumstances, it may be possible to challenge the idea that street furniture and other features must necessarily be placed among pedestrians. Consideration should be given to whether features, duly protected, should be placed in highway space, generally on build-outs, in order to leave pedestrian space clear and potentially to affect driver behaviour.

Street trees in the vehicle space, Newhall

10.25.2 Where street furniture is necessary in the footway, it is recommended that features should be aligned in order to minimise the chicane effect of obstructions to pedestrian movement. Inclusive Mobility (DfT, 2005) recommends that ideally it should be aligned at the rear edge of the footway.

10.26SENSE OF PLACE

10.26.1 The design of street furniture should ideally be integrated into the overall appearance of a street. For example, it may not be appropriate to use standard designs that are not sympathetic to the design of the space. Conversely, incongruous elements such as the use of heritage style lamp columns etc in modern development can also be inappropriate.

10.26.2 Other street furniture such as planters can also be used to contribute to the sense of place in a street as well as having other benefits such as channelising traffic.

10.26.3 Street furniture that contributes to human activity can also contribute to the sense of place. The most obvious example of this is seating, or features that can act as secondary seating – for example bollards suitable for sitting on. In addition street features such as play equipment may be appropriate in some locations, particularly designated Home Zones or Play Streets, in order to anchor human activity.

10.27 GUARD RAILING

10.27.1 Guard railing, as discussed above, is generally installed with the intention of restricting the movement of vulnerable road users in order to reduce conflict between them and motorised traffic. In a street context, the use of guard railing can be undesirable, and also can be effective at restricting pedestrians in reality.

Pedestrian circumvents high street guard railing

10.27.2 Recent experimentation with the removal of guard railing has shown that it can be removed without, in the short term, increases in pedestrian casualties, even in highly trafficked situations such as Kensington High Street, as described above.

10.28 MULTI-FUNCTIONAL STREET FURNITURE

10.28.1 It may sometimes be necessary to introduce deliberate barriers to pedestrian movement, particularly to segregate pedestrians from vehicle traffic, although this should only be considered if it is considered impossible to reduce traffic flows and speed. Where this is necessary, consideration should be given to the use of features such as surface textures, bench seating, soft landscaping et al that can channel pedestrian movement whilst also contributing to the amenity of the street.

10.29 CONCLUSION

10.29.1 Traffic signs, road markings and street furniture can be essential elements in the design and operation of streets. Where they are a statutory requirement, the correct signing and use is described in detail in TSRGD and the Traffic Signs Manual.

10.29.2 In terms of developing streets however, the use of these features might be described as ‘a necessary evil’, given their visual intrusions and the difficulties they can present to pedestrians, including vulnerable people.

10.29.3 In developing streets, a primary focus should be on how to incorporate the necessary minimum of signing and furniture to make the spaces functional. In making functionality the test against which decisions about signing, information and street furniture are taken, the diverse functions of streets, over and above simple vehicle and people movement must be recognised. The role of streets as social spaces, play spaces and places to live should be regarded as of equal significance to their function as highways.

10.30 SUMMARY

10.30.1 This checklist summarises appropriate design considerations for the integration of signs, markings and street furniture into streets.

PEDESTRIAN MOVEMENT

- Is the layout of the street self-explaining to pedestrians?
- Can street features be used to assist pedestrian navigation?
- Can street signing, including distances, be provided to assist pedestrian orientation?
- What features are necessary to assist disabled people in orientation and navigation?
- Can footway clutter be reduced or relocated?
- Is essential street furniture aligned to provide clear routes for pedestrians?
- Is the necessary street furniture in place to provide amenity to pedestrians, e.g. seating, appropriate lighting, information boards et al?

SENSE OF PLACE

- How can the visual intrusion of signing be reduced?
- Can locally appropriate materials be incorporated?
- Can necessary signing, lighting etc be located on vehicles?

DRIVER BEHAVIOUR

- At which junctions is it necessary to indicate priority?
- Have all signs and markings been reduced to minimum size?
- What features may be used to control driver behaviour without signing?
- Are the size and positioning of signs appropriate to the design speed of the environment?