Manual for Streets

Manual for Streets is expected to be used predominantly for the design, construction, adoption and maintenance of new residential streets, but it is also applicable to existing residential streets subject to re-design. It aims to assist in the creation of high quality residential streets that:

- build and strengthen communities;
- balance the needs of all users;
- form part of a well-connected network;
- create safe and attractive places which have their own identity; and
- are cost-effective to construct and maintain.

Transformation in the quality of streets requires a fundamental culture change in the way streets are designed. This needs a more collaborative approach between design professions and other stakeholders with people thinking creatively about their various roles in the design process. This publication is therefore aimed at all those who have a part to play in creating high-quality streets.
Manual for Streets
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- Tony Aston (Guide Dogs for the Blind Association), David Balcombe (Essex County Council), Peter Barker (Guide Dogs for the Blind Association), Richard Button (Colchester Borough Council)
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Additional consultation and advice
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- Mark Ainsworth (George Wimpey), John Barell (Jacobs Consultancy), Terry Brown (GMW Architects), Hywel Butts (Welsh Assembly Government), Mark Coatham (Institution of Lighting Engineers), Mike Darwne (Leeds City Council), Adrian Lord (Arup / Cycling England), Kevin Pearson (Avon Fire & Rescue Service), Michael Powis (Nottinghamshire Police), Gary Kemp (Disabled Persons Transport Advisory Committee), Malcolm Lister (London Borough of Hounslow)

In addition to those already listed, substantial comments on drafts of the manual were received from:
- Duncan Barratt (West Sussex County Council), Neil Benson (Warwickshire County Council), Daniel Black (Sustrans), Rob Carmen (Medway Council), Greg Davine (Surrey County Council), John Emyle (MVA Consultancy), Heather Evans (Cyclist’s Touring Club), David Groves (Cornwall County Council), Steve Mead (Derbyshire County Council), Christine Robinson (Essex County Council), Mick Sankus (Medway Council), Mike Schneider (North Somerset Borough Council), Graham Paul Smith (Oxford Brooks University), Fiona Webb (Mid Bedfordshire District Council), Bob White (Kent County Council)

Case studies
A number of case studies were investigated in the compilation of the Manual. These are listed below, along with the individuals who provided assistance:

- Beauclerc, Rochester: Pete Prince, Medway Council
- Sarah Hill-Sanders, Chelmsford Borough Council
- Chris Robinson, Essex County Council
- Charlton Down, Dorset: Stephen Hardy, Dorset Council
- Chris Robinson, Essex County Council
- Crown Street, Glasgow: Elaine Murray, Glasgow City Council
- Ian Madgwick, Dorset County Council
- Ian Thompson, Chelmsford Borough Council
- Hulme, Manchester: Kevin Gillham, Manchester City Council
- Brian Kerridge, Manchester City Council
- Limehouse Fields, Tower Hamlets: Angelina Eke, Tower Hamlets Borough Council
- Mike Walsh, Essex County Council
- Mriganka Saxena, Roger Evans Associates
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- David Taylor, Surrey County Council
- Staithe, South Bank, Gateshead: Alastair Andrew, Gateshead Council
- Andy Szandrowski, Gateshead Council
Status and application


MfS focuses on lightly-trafficked residential streets, but many of its key principles may be applicable to other types of street, for example high streets and lightly-trafficked lanes in rural areas. It is the responsibility of users of MfS to ensure that its application to the design of streets not specifically covered is appropriate.

MfS does not apply to the trunk road network. The design requirements for trunk roads are set out in the Design Manual for Roads and Bridges (DMRB).

MfS only applies formally in England and Wales. The policy, legal and technical frameworks are generally the same in England and Wales, but where differences exist these are made clear.
Foreword

Streets are the arteries of our communities – a community’s success can depend on how well it is connected to local services and the wider world. However, it is all too easy to forget that streets are not just there to get people from A to B. In reality, streets have many other functions. They form vital components of residential areas and greatly affect the overall quality of life for local people.

Places and streets that have stood the test of time are those where traffic and other activities have been integrated successfully, and where buildings and spaces, and the needs of people, not just of their vehicles, shape the area. Experience suggests that many of the street patterns built today will last for hundreds of years. We owe it to present and future generations to create well-designed places that will serve the needs of the local community well.

In 2003, we published detailed research1 which demonstrated that the combined effect of the existing policy, legal and technical framework was not helping to generate consistently good quality streets. Without changes this framework was holding back the creation of the sustainable residential environments that communities need and deserve.

As a society, we have learned to appreciate the value of a clear and well-connected street network, well defined public and private spaces, and streets that can be used in safety by a wide range of people. We also understand the benefits of ensuring that the different functions of streets are integral to their design from the outset. But we need to do more to recognise the role that streets play in the life of a community, particularly the positive opportunities that they can bring for social interaction. To achieve this we need strong leadership and clear vision. Importantly, we need to tackle climate change, and helping and encouraging people to choose more sustainable ways of getting around will be key.

Manual for Streets explains how to respond to these issues. Although it does not set out new policy or legislation, it shows how the design of residential streets can be enhanced. It also advises on how street design can help create better places – places with local distinctiveness and identity. In addition, it establishes a common reference point for all those involved in the design of residential neighbourhoods.

This publication represents a strong Government and Welsh Assembly commitment to the creation of sustainable and inclusive public spaces. We hope that everyone who plays a part in making and shaping the built environment will embrace its principles to help deliver places that work for communities now, and in the future.

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Preface


For too long the focus has been on the movement function of residential streets. The result has often been places that are dominated by motor vehicles to the extent that they fail to make a positive contribution to the quality of life. MfS demonstrates the benefits that flow from good design and assigns a higher priority to pedestrians and cyclists, setting out an approach to residential streets that recognises their role in creating places that work for all members of the community. MfS refocuses on the place function of residential streets, giving clear guidance on how to achieve well-designed streets and spaces that serve the community in a range of ways.

MfS updates the link between planning policy and residential street design. It challenges some established working practices and standards that are failing to produce good-quality outcomes, and asks professionals to think differently about their role in creating successful neighbourhoods. It places particular emphasis on the importance of collaborative working and coordinated decision-making, as well as on the value of strong leadership and a clear vision of design quality at the local level.

Research carried out in the preparation of Manual for Streets indicated that many of the criteria routinely applied in street design are based on questionable or outdated practice. For example, it showed that, when long forward visibility is provided and generous carriageway width is specified, driving speeds tend to increase. This demonstrates that driver behaviour is not fixed; rather, it can be influenced by the environment. MfS addresses these points, recommending revised key geometric design criteria to allow streets to be designed as places in their own right while still ensuring that road safety is maintained.

MfS is clear that uncoordinated decision-making can result in disconnected, bland places that fail to make a contribution to the creation of thriving communities. It recommends that development teams are established to negotiate issues in the round and retain a focus on the creation of locally distinct, high-quality places. Where high levels of change are anticipated, designers and other stakeholders are encouraged to work together strategically from an early stage. MfS also recommends the use of tools such as masterplans and design codes.

Neighbourhoods where buildings, streets and spaces combine to create locally distinct places and which make a positive contribution to the life of local communities need to become more widespread. MfS provides a clear framework for the use of local systems and procedures; it also identifies the tools available to ensure that growth and change are planned for and managed in an integrated way. The aspirations of MfS – interdisciplinary working, strategic coordination and balanced decision making – will only become a reality if they are developed and applied at a local level. This is already happening in some places, and the results are promising – this document aims to make the adoption of such practice the norm.

MfS does not set out new policy or introduce new additional burdens on local authorities, highway authorities or developers. Rather it presents guidance on how to do things differently within the existing policy, technical and legal framework.
Context and process
Introduction
1.1 Aims of the document

1.1.1 There is a need to bring about a transformation in the quality of streets. This requires a fundamental culture change in the way streets are designed and adopted, including a more collaborative approach between the design professions and other stakeholders. People need to think creatively about their various roles in the process of delivering streets, breaking away from standardised, prescriptive, risk-averse methods to create high-quality places.

1.1.2 Streets make up the greater part of the public realm. Better-designed streets therefore contribute significantly to the quality of the built environment and play a key role in the creation of sustainable, inclusive, mixed communities consistent with the policy objectives of Planning Policy Statement 1: Delivering Sustainable Development (PPS1), Planning Policy Statement 3: Housing (PPS3) and Planning Policy Wales (PPW).

1.1.3 Manual for Streets (MfS) is expected to be used predominantly for the design, construction, adoption and maintenance of new residential streets, but it is also applicable to existing residential streets subject to re-design. For new streets, MfS advocates a return to more traditional patterns which are easier to assimilate into existing built-up areas and which have been proven to stand the test of time in many ways.

1.1.4 Streets should not be designed just to accommodate the movement of motor vehicles. It is important that designers place a high priority on meeting the needs of pedestrians, cyclists and public transport users, so that growth in these modes of travel is encouraged (Fig. 1.1).

1.1.5 MfS aims to assist in the creation of streets that:
- help to build and strengthen the communities they serve;
- meet the needs of all users, by embodying the principles of inclusive design (see box);
- form part of a well-connected network;
- are attractive and have their own distinctive identity;
- are cost-effective to construct and maintain; and
- are safe.

The principles of inclusive design

Inclusive design:
- places people at the heart of the design process;
- acknowledges diversity and difference;
- offers choice where a single solution cannot accommodate all users;
- provides for flexibility in use; and
- provides buildings and environments that are convenient and enjoyable to use for everyone.

4. MfS discourages the building of streets that are:
- primarily designed to meet the needs of motor traffic;
- bland and unattractive;
- unsafe and unwelcoming to pedestrians and cyclists;
- difficult to serve by public transport; and
- poorly designed and constructed (Fig. 1.2).
For the purposes of this document, a street is defined as a highway that has important public realm functions beyond the movement of traffic. Most critically, streets should have a sense of place, which is mainly realised through local distinctiveness and sensitivity in design. They also provide direct access to the buildings and the spaces that line them. Most highways in built-up areas can therefore be considered as streets.

1.2 Who the manual is for

1.2.1 MfS is directed to all those with a part to play in the planning, design, approval or adoption of new residential streets, and modifications to existing residential streets. This includes the following (in alphabetical order):

- Organisations:
  - developers;
  - disability and other user groups;
  - emergency services;
  - highway and traffic authorities;
  - planning authorities;
  - public transport providers;
  - utility and drainage companies; and
  - waste collection authorities.

- Professions:
  - access/accessibility officers;
  - arboriculturists;
  - architects;
  - drainage engineers;
  - highway/traffic engineers;
  - landscape architects;
  - local authority risk managers;
  - police architectural liaison officers and crime prevention officers;
  - road safety auditors;
  - street lighting engineers;
  - town planners;
  - transport planners;
  - urban designers.

1.2.2 These lists are not exhaustive and there are other groups with a stake in the design of streets. Local communities, elected members and civic groups, in particular, are encouraged to make use of this document.

1.2.3 MfS covers a broad range of issues and it is recommended that practitioners read every section regardless of their specific area of interest. This will create a better understanding of the many and, in some cases, conflicting priorities that can arise. A good design will represent a balance of views with any conflicts resolved through compromise and creativity.

1.3 Promoting joint working

1.3.1 In the past street design has been dominated by some stakeholders at the expense of others, often resulting in unimaginatively designed streets which tend to favour motorists over other users.

1.3.2 MfS aims to address this by encouraging a more holistic approach to street design, while assigning a higher priority to the needs of pedestrians, cyclists and public transport. The intention is to create streets that encourage greater social interaction and enjoyment while still performing successfully as conduits for movement.

1.3.3 It is important for the various parts of local government to work together when giving input to a development proposal. Developers may be faced with conflicting requirements if different parts of local government fail to coordinate their input. This can cause delay and a loss of design quality. This is particularly problematic when one section of a local authority – for example the highway adoption or maintenance engineers – become involved late on in the process and require significant changes to the design. A collaborative process is required from the outset.

1.4 DMRB and other design standards

1.4.1 The Department for Transport does not set design standards for highways – these are set by the relevant highway authority.
1.4.2 The Secretary of State for Transport is the highway authority for trunk roads in England and acts through the Highways Agency (HA). In Wales the Welsh Assembly Government is the highway authority for trunk roads. The standard for trunk roads is the Design Manual for Roads and Bridges (DMRB).5

1.4.3 Some trunk roads could be described as ‘streets’ within the definition given in MfS, but their strategic nature means that traffic movement is their primary function. MfS does not apply to trunk roads.

1.4.4 The DMRB is not an appropriate design standard for most streets, particularly those in lightly-traffic residential and mixed-use areas.

1.4.5 Although MfS provides guidance on technical matters, local standards and design guidance are important tools for designing in accordance with the local context. Many local highway authorities have developed their own standards and guidance. Some of these documents, particularly those published in recent years, have addressed issues of placemaking and urban design, but most have not. It is therefore strongly recommended that local authorities review their standards and guidance to embrace the principles of MfS. Local standards and guidance should focus on creating and improving local distinctiveness through the appropriate choice of layouts and materials while adhering to the overall guidance given in MfS.

1.5 Development of Manual for Streets

1.5.1 The preparation of MfS was recommended in Better Streets, Better Places,6 which advised on how to overcome barriers to the creation of better quality streets.

1.5.2 MfS has been produced as a collaborative effort involving a wide range of key stakeholders with an interest in street design. It has been developed by a multi-disciplinary team of highway engineers, urban designers, planners and researchers. The recommendations contained herein are based on a combination of:

- primary research;
- a review of existing research;
- case studies;
- existing good practice guidance; and
- consultation with stakeholders and practitioners.

1.5.1 During its preparation, efforts have been made to ensure that MfS represents a broad consensus and that it is widely accepted as good practice.

1.6 Changes in approach

1.6.1 The main changes in the approach to street design that MfS recommends are as follows:

- applying a user hierarchy to the design process with pedestrians at the top;
- emphasising a collaborative approach to the delivery of streets;
- recognising the importance of the community function of streets as spaces for social interaction;
- promoting an inclusive environment that recognises the needs of people of all ages and abilities;
- reflecting and supporting pedestrian desire lines in networks and detailed designs;
- developing masterplans and preparing design codes that implement them for larger-scale developments, and using design and access statements for all scales of development;
- creating networks of streets that provide permeability and connectivity to main destinations and a choice of routes;
- moving away from hierarchies of standard road types based on traffic flows and/or the number of buildings served;
- developing street character types on a location-specific basis with reference to both the place and movement functions for each street;
- encouraging innovation with a flexible approach to street layouts and the use of locally distinctive, durable and maintainable materials and street furniture;
- using quality audit systems that demonstrate how designs will meet key objectives for the local environment;
- designing to keep vehicle speeds at or below 20 mph on residential streets unless there are overriding reasons for accepting higher speeds; and
- using the minimum of highway design features necessary to make the streets work properly.

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2 Streets in context
2.1 Introduction

2.1.1 This chapter sets out the overall framework in which streets are designed, built and maintained.

Streets – an historical perspective

Most historic places owe their layout to their original function. Towns have grown up around a market place (Fig. 2.1), a bridgehead or a harbour; villages were formed according to the pattern of farming and the ownership of the land. The layouts catered mostly for movement on foot. The era of motorised transport and especially privately-owned motor vehicles has, superficially at least, removed the constraint that kept urban settlements compact and walkable.

When the regulation of roads and streets began, spread of fire was the main concern. Subsequently health came to the forefront and the classic 36 ft wide bye-law street was devised as a means of ensuring the passage of air in densely built-up areas. Later, the desire to guarantee that sunshine would get to every house led to the requirement for a 70 ft separation between house fronts, and this shaped many developments from the 1920s onwards.

It was not until after the Second World War, and particularly with the dramatic increase in car ownership from the 1960s onwards, that traffic considerations came to dominate road design.

Figure 2.1 Newark: (a) the Market Place, 1774; and (b) in 2006.
2.2.2 Streets have to fulfil a complex variety of functions in order to meet people’s needs as places for living, working and moving around in. This requires a careful and multi-disciplinary approach that balances potential conflicts between different objectives.

2.2.3 In the decades following the Second World War, there was a desire to achieve a clear distinction between two types of highway:

- distributor roads, designed for movement, where pedestrians were excluded or, at best, marginalised; and
- access roads, designed to serve buildings, where pedestrians were accommodated.

This led to layouts where buildings were set in the space between streets rather than on them, and where movement on foot and by vehicle was segregated, sometimes using decks, bridges or subways. Many developments constructed using such layouts have had significant social problems and have either been demolished or undergone major regeneration (Fig. 2.2).

2.2.4 This approach to network planning limited multi-functional streets to the most lightly-trafficked routes. This has led to development patterns where busy distributor roads link relatively small cells of housing. Such layouts are often not conducive to anything but the shortest of trips on foot or by bicycle. It is now widely recognised that there are many advantages in extending the use of multi-functional streets in urban areas to busier routes.

2.2.5 Streets that are good quality places achieve a number of positive outcomes, creating a virtuous circle:

- attractive and well-connected permeable street networks encourage more people to walk and cycle to local destinations, improving their health while reducing motor traffic, energy use and pollution;\(^1\)
- more people on the streets leads to improved personal security and road safety – research shows that the presence of pedestrians on streets causes drivers to travel more slowly;\(^2\)
- people meeting one another on a casual basis strengthens communities and encourages a sense of pride in local environments; and
- people who live in good-quality environments are more likely to have a sense of ownership and a stake in maintaining the quality of their local streets and public spaces.

2.2.6 Well-designed streets thus have a crucial part to play in the delivery of sustainable communities, defined as ‘places where people want to live and work, now and in the future’.\(^3\)

2.2.7 Lanes in rural areas can provide other functions than just movement, including various leisure activities such as walking, cycling and horse riding.

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Figure 2.2 A poor-quality space with a layout where pedestrians and vehicles are segregated. It has not been a success and the area is now undergoing regeneration.
2.3 **Principal functions of streets**

2.3.1 Streets have five principal functions;

- place;
- movement;
- access;
- parking; and
- drainage, utilities and street lighting.

These functions are derived from *Paving the Way*.4

**Place**

2.3.2 The place function is essentially what distinguishes a street from a road. The sense of place is fundamental to a richer and more fulfilling environment. It comes largely from creating a strong relationship between the street and the buildings and spaces that frame it. The Local Government White Paper5 makes it clear that, in creating sustainable communities, local authorities have an essential and strategic role.

2.3.3 An important principle was established in *Places, Streets and Movement*6 when planning new developments, achieving a good place should come before designing street alignments, cross-sections and other details. Streets should be fitted around significant buildings, public spaces, important views, topography, sunlight and microclimate.

2.3.4 A sense of place encompasses a number of aspects, most notably the street’s:

- visual quality; and
- propensity to encourage social activity (Fig. 2.3).

These are covered in more detail in Chapters 4 and 5.

2.3.5 The choice of surface materials, planting and street furniture has a large part to play in achieving a sense of place. The excessive or insensitive use of traffic signs and other street furniture has a negative impact on the success of the street as a place. It is particularly desirable to minimise the environmental impact of highway infrastructure in rural areas, for example, where excessive lighting and the inappropriate use of kerbing, signs, road markings and street furniture can urbanise the environment.

**Movement**

2.3.6 Providing for movement along a street is vital, but it should not be considered independently of the street’s other functions. The need to cater for motor vehicles is well understood by transport planners, but the passage of people on foot and cycle has often been neglected. Walking and cycling are important modes of travel, offering a more sustainable alternative to the car, making a positive contribution to the overall character of a place, public health and to tackling climate change through reductions in carbon emissions. Providing for movement is covered in more detail in Chapters 6 and 7.

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Figure 2.3 A residential environment showing distinctive character.
Access

2.3.7 Access to buildings and public spaces is another important function of streets. Pedestrian access should be designed for people of all ages and abilities.

2.3.8 Providing frontages that are directly accessible on foot and that are overlooked from the street is highly desirable in most circumstances as this helps to ensure that streets are lively and active places. The access function is covered in Chapters 6 and 7.

Parking

2.3.9 Parking is a key function of many streets, although it is not always a requirement. A well-designed arrangement of on-street parking provides convenient access to frontages and can add to the vitality of a street. Conversely, poorly designed parking can create safety problems and reduce the visual quality of a street. Parking is covered in more detail in Chapter 8.

Drainage, utilities and street lighting

2.3.10 Streets are the main conduits for drainage and utilities. Buried services can have a major impact on the design and maintenance requirements of streets. Sustainable drainage systems can bring environmental benefits, such as flood control, creating wildlife habitats and efficient wastewater recycling (Fig. 2.4). Drainage and utilities are covered in Chapter 11, and street lighting is covered in Chapter 10.

2.4 The balance between place and movement

2.4.1 Of the five functions, place and movement are the most important in determining the character of streets.

2.4.2 In the past, road design hierarchies have been based almost exclusively on the importance attributed to vehicular movement. This has led to the marginalisation of pedestrians and cyclists in the upper tiers where vehicular capacity requirements predominate. The principle that a road was primarily for motor traffic has tended to filter down into the design of streets in the bottom tiers of the hierarchy.

2.4.3 This approach has created disjointed patterns of development. High-speed roads often have poor provision for pedestrian activity, cutting residential areas off from each other and from other parts of a settlement. In addition, the hierarchy does not allow for busy arterial streets, which feature in most towns and cities.

2.4.4 Streets should no longer be designed by assuming ‘place’ to be automatically subservient to ‘movement’. Both should be considered in combination, with their relative importance depending on the street’s function within a network. It is only by considering both aspects that the right balance will be achieved. It is seldom appropriate to focus solely on one to the exclusion of the other, even in streets carrying heavier volumes of traffic, such as high streets.

2.4.5 Place status denotes the relative significance of a street, junction or section of a street in human terms. The most important places will usually be near the centre of any settlement or built-up area, but important places will also exist along arterial routes, in district centres, local centres and within neighbourhoods.

2.4.6 Movement status can be expressed in terms of traffic volume and the importance of the street, or section of street, within a network – either for general traffic or within a mode-specific (e.g. bus or cycle) network. It can vary along the length of a route, such as where a street passes through a town centre.
2.4.7 Highway authorities assess the relative importance of particular routes within an urban area as part of their normal responsibilities, such as those under the New Roads and Streetworks Act 1991.\(^7\) One of the network management duties under the Traffic Management Act 2004\(^8\) is that all local traffic authorities should determine specific policies or objectives for different roads or classes of road in their road network. See also the Network Management Duties Guidance\(^9\) published by the Department for Transport in November 2004 (Wales: guidance published November 2006\(^{10}\)). This states that it is for the authority to decide the levels of priority given to different road users on each road, for example, particular routes may be defined as being important to the response times of the emergency services.

2.4.8 Another way of assessing the movement status of a street is to consider the geographical scale of the destinations it serves. Here, movement status can range from national networks (including motorways) through to city, town, district, neighbourhood and local networks, where the movement function of motor vehicles would be minimal.

**Place and movement matrix**

2.4.9 Defining the relative importance of particular streets/roads in terms of place and movement functions should inform subsequent design choices. For example:

- motorways – high movement function, low place function;
- high streets – medium movement function, medium to high place function; and
- Residential streets – low to medium movement function, low to medium place function.

2.4.10 This way of looking at streets can be expressed as a two-dimensional hierarchy,\(^{11}\) where the axes are defined in terms of place and movement (Fig. 2.5). It recognises that, whilst some streets are more important than others in terms of traffic flow, some are also more important than others in terms of their place function and deserve to be treated differently. This approach allows designers to break away from previous approaches to hierarchy, whereby street designs were only based on traffic considerations.

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\(^8\) Traffic Management Act 2004. London: TSO.


\(^11\) The two-dimensional hierarchy as a way of informing street design was developed by the EU project ARTISTS. See www.tft.lth.se/artists/
2.4.11 In many situations it will be possible to determine the place status of existing streets by consulting with the people living there. Such community consultation is encouraged.

2.4.12 In new developments, locations with a relatively high place function would be those where people are likely to gather and interact with each other, such as outside schools, in local town and district centres or near parades of shops. Streets that pass through these areas need to reflect these aspects of their design, which will have been identified at the masterplan/scheme design stage.

2.4.13 Once the relative significance of the movement and place functions has been established, it is possible to set objectives for particular parts of a network. This will allow the local authority to select appropriate design criteria for creating new links or for changing existing ones.

2.4.14 Movement and place considerations are important in determining the appropriate design speeds, speed limits and road geometry, etc., along with the level of adjacent development and traffic composition (see Department for Transport Circular 01/2006; Wales: Welsh Office Circular 1/1993).

2.5 Policy, legal and technical context

2.5.1 There is a complex set of legislation, policies and guidance applying to the design of highways. There is a tendency among some designers to treat guidance as hard and fast rules because of the mistaken assumption that to do otherwise would be illegal or counter to a stringent policy. This tends to restrict innovation, leading to standardised streets with little sense of place or quality. In fact, there is considerable scope for designers and approving authorities to adopt a more flexible approach on many issues.

2.5.2 The following comprise the various tiers of instruction and advice:

- the legal framework of statutes, regulations and case law;
- government policy;
- government guidance;
- local policies;
- local guidance; and
- design standards.

2.5.3 Parliament and the courts establish the legal framework within which highway authorities, planning authorities and other organisations operate.

2.5.4 The Government develops policies aimed at meeting various objectives which local authorities are asked to follow. It also issues supporting guidance to help authorities implement these policies.

2.5.5 Within this overall framework highway and planning authorities have considerable leeway to develop local policies and standards, and to make technical judgements with regard to how they are applied. Other bodies also produce advisory and research material that they can draw on.

2.6 Risk and liability

2.6.1 A major concern expressed by some highway authorities when considering more innovative designs, or designs that are at variance with established practice, is whether they would incur a liability in the event of damage or injury.

2.6.2 This can lead to an over-cautious approach, where designers strictly comply with guidance regardless of its suitability, and to the detriment of innovation. This is not conducive to creating distinctive places that help to support thriving communities.

2.6.3 In fact, imaginative and context-specific design that does not rely on conventional standards can achieve high levels of safety. The design of Poundbury in Dorset, for example, did not comply fully with standards and guidance then extant, yet it has few reported accidents. This issue was explored in some detail in the publication *Highway Risk and Liability Claims*.

2.6.4 Most claims against highway authorities relate to alleged deficiencies in maintenance. The duty of the highway authority to maintain the highway is set out in section 41 of the Highways Act 1980, and case law has clarified the law in this area.

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2.6.5 The most recent judgement of note was Gorringe v. Calderdale MBC (2004), where a case was brought against a highway authority for failing to maintain a ‘SLOW’ marking on the approach to a sharp crest. The judgement confirmed a number of important points:
  • the authority’s duty to ‘maintain’ covers the fabric of a highway, but not signs and markings;
  • there is no requirement for the highway authority to ‘give warning of obvious dangers’; and
  • drivers are ‘first and foremost responsible for their own safety’.

2.6.6 Some claims for negligence and/or failure to carry out a statutory duty have been made under section 39 of the Road Traffic Act 1988, which places a general duty on highway authorities to promote road safety. In connection with new roads, section 39 (3)(c) states that highway authorities ‘in constructing new roads, must take such measures as appear to the authority to be appropriate to reduce the possibilities of such accidents when the roads come into use’.

2.6.7 The Gorringe v. Calderdale judgment made it clear that section 39 of the Road Traffic Act 1988 cannot be enforced by an individual, however, and does not form the basis for a liability claim.

2.6.8 Most claims against an authority are for maintenance defects, claims for design faults being relatively rare.

2.6.9 Advice to highway authorities on managing their risks associated with new designs is given in Chapter 5 of Highway Risk and Liability Claims. In summary, this advises that authorities should put procedures in place that allow rational decisions to be made with the minimum of bureaucracy, and that create an audit trail that could subsequently be used as evidence in court.

2.6.10 Suggested procedures (which accord with those set out in Chapter 3 of MFS) include the following key steps:
  • set clear and concise scheme objectives;
  • work up the design against these objectives; and
  • review the design against these objectives through a quality audit.

2.7 Disability discrimination

2.7.1 Highway and planning authorities must comply with the Disability Equality Duty under the Disability Discrimination Act 2005. This means that in their decisions and actions, authorities are required to have due regard to the six principles of:
  • promote equality of opportunity between disabled persons and other persons;
  • eliminate discrimination that is unlawful under the 2005 Act;
  • eliminate harassment of disabled persons that is related to their disabilities;
  • promote positive attitudes towards disabled persons;
  • encourage participation by disabled persons in public life; and
  • take steps to take account of disabled persons’ disabilities, even where that involves treating disabled persons more favourably than other persons.

2.7.2 Those who fail to observe these requirements will be at the risk of a claim. Not only is there an expectation of positive action, but the duty is retrospective and local authorities will be expected to take reasonable action to rectify occurrences of non-compliance in existing areas.

2.7.3 The Disability Rights Commission (DRC) have published a Statutory Code of Practice on the Disability Equality Duty and they have also published specific guidance for those dealing with planning, buildings and the street environment.
The design process – from policy to implementation
3.1 Introduction

3.1.1 The life of a scheme, from conception to implementation and beyond, can be broken down into seven key stages, as shown in Fig. 3.1.

3.1.2 This seven-stage process is generally applicable to all schemes, from large new developments, through to smaller infill schemes and improvements to existing streets. The key aspects are that:

- design decisions reflect current policies;
- policies are interpreted on a case-by-case basis and are used to define objectives; and
- scheme designs are tested against these objectives before approval is given to their implementation.

3.1.3 The process is a general one and should be applied in a way appropriate to the size and importance of the proposal. For example, the design stage refers to the desirability of preparing a masterplan for large schemes. This is unlikely to be the case for smaller developments and improvement schemes for existing streets which are likely to be less complex, and, in some cases, a scheme layout is generally all that is required.
3.2.2 Local authorities should enable developers to engage effectively with individual departments by establishing a single point of contact. Some local authorities have created development teams so that all council departments with an interest in street design work together during the design and approval process (see ‘Walsall case study box’). Authorities that have adopted a similar approach for larger schemes include North Somerset District Council and Oxfordshire County Council in association with the District Councils. This has clear advantages when dealing with large or small development proposals. The same approach can be adopted by local authorities internally when considering improvements to existing streets.

3.2.3 The benefits of an integrated approach applies to all stages in the process, up to and including planning how the street will be maintained in future.

3.3 Steps in the design process

3.3.1 The seven-stage process will need to be tailored to particular situations, depending on the type and complexity of the scheme. It is therefore recommended that, at the outset, a project plan is drawn up by the developer and agreed with stakeholders. The plan should include a flow chart diagram and an indication of the level and scope of information required at each stage.

From a list of available time slots at least 10 days in advance, applicants book a meeting with the Development Team, submitting their preliminary proposals at the same time. This gives ample opportunity for initial consideration of the application, including site visits if necessary.

At the meeting, developers present their proposal to the Development Team where they receive initial comments and advice. The Team provides a formal, written, fully considered response within three weeks.

Significant advantages of this approach are that the developers can plan their presentation to suit their development programme and the Team can offer advice on key elements of the proposal at an early stage, thus minimising the need for costly changes later on.

3.3.2 Consultation with the public (including organisations representing particular groups) is not shown as a single, discrete stage. Public consultation should take place at appropriate points in the process. The timing and number of public consultation events will vary depending on the size and complexity of the scheme.

3.3.3 Where schemes are significant because of their size, the site or other reasons, local planning authorities and developers are encouraged to submit them to the Commission for Architecture and the Built Environment (CABE) for Design Review at the earliest opportunity. Design Review is a free advice service offering expert, independent assessments of schemes.

3.3.4 Table 3.1 shows how the process can be applied. It should be noted that these steps are indicative and will vary in detail from scheme to scheme.

3.4 Stage 1: policy review

3.4.1 Street designs should generally be consistent with national, regional and local policy. The process begins with a review of relevant planning and transportation policies, and the identification of the required key design principles.

3.4.2 The starting point for the review of local policy is the Local Development Framework. The Local Transport Plan will need to be considered and authorities may also have prepared a Public
### Table 3.1 Indicative steps in the design process for new developments and changes to existing streets

<table>
<thead>
<tr>
<th>Key stages</th>
<th>Key activity/outputs</th>
<th>Responsibility</th>
<th>Large development</th>
<th>Small development</th>
<th>Changes to existing streets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Policy review</td>
<td>Review national, regional and local policy context</td>
<td>Design team</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Review Local Transport Plan</td>
<td>Design team</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Review Public Realm Strategy</td>
<td>Design team</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Review any Street Design Guidance not included in the Local Development Framework</td>
<td>Design team</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2. Objective setting</td>
<td>Prepare Development Brief</td>
<td>Planning and highway authorities</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Agree objectives</td>
<td>All</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3. Design</td>
<td>Carry out context appraisal</td>
<td>Design team</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Develop proposed movement framework</td>
<td>Design team</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Prepare outline masterplan or scheme layout</td>
<td>Design team, working closely with other stakeholders</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Develop street character types</td>
<td>Design team</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Design street network</td>
<td>Design team</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Produce detailed masterplan or scheme layout</td>
<td>Design team</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Produce design code</td>
<td>Design team</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Quality auditing</td>
<td>Carry out particular audits required to assess compliance with objectives</td>
<td>Prepared by design team, considered by planning and highway authorities</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5. Planning approval</td>
<td>Prepare design and access statement and other supporting documents</td>
<td>Prepared by design team for approval by the planning authority in consultation with the highway authority</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Outline planning application</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Full planning application</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>6. Implementation</td>
<td>Detailed design and technical approval</td>
<td>Design team</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Construction</td>
<td>Promoter</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Adoption</td>
<td>Highway authority</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>7. Monitoring</td>
<td>Travel plan</td>
<td>Promoter</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Road user monitoring</td>
<td>Highway authority</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
Stage 2: objective setting

3.5.1 It is important that objectives for each particular scheme are agreed by all parties and reviewed later in the process to ensure that they are being met. Objectives need to reflect the local policies and the wider planning framework to ensure a consistency of approach across an area.

3.5.2 On complex and lengthy projects, objectives may need to be reviewed and revised as the design process proceeds, with any changes agreed by all parties.

3.5.3 Objectives should be expressed as outcomes that can be readily measured, and should not be expressed in vague terms, or require or invoke particular solutions. The objectives will often be related to the various activities expected to take place in particular locations and streets. There may also be objectives that apply across the whole of a new development area.

3.5.4 Typical objectives might be:

- enabling local children to walk and cycle unaccompanied from all parts of a development to a school, local park or open space;
- promoting and enhancing the vitality and viability of a local retail centre;
- ensuring that a development will be served by public transport that is viable in the long term; and
- keeping traffic speeds at 20 mph or less in all streets on a development.

3.5.5 Objectives could be expressed as a design checklist, which provides a simple summary of the key aspects that need to be met.

3.5.6 For some sites, a Development Brief or other form of guidance may have been prepared to establish the key principles of development, and will need to be taken into account at the objective setting stage.

Stage 3: design

Context appraisal

3.6.1 A context appraisal will normally be undertaken to determine how buildings and streets are arranged within the local area. This will be used to help determine an appropriate form for the development of, or changes to, existing streets.

3.6.2 The context appraisal will identify how an area has developed in terms of form, scale, the pattern and character of streets and how a site or existing street relates to existing buildings and/or open space. It may also be appropriate to identify poor-quality streets or areas which need to be improved. One way of achieving this is by undertaking a Landscape Character Appraisal.

3.6.3 On smaller schemes it may only be necessary to consider context in a relatively local area, but this does not prevent designers from drawing on good-quality examples of local distinctiveness from the wider area.

Figure 3.3 New housing with: (a) good (b) poor integration into an existing street.
3.6.4 When existing streets are being redesigned, it is very important to have a detailed understanding of how they sit within an urban area. Care needs to be taken to retain and develop the relationship between the streets and the buildings and public spaces that surround them, and to capitalise on links to important local destinations. There is a need to identify opportunities to repair incomplete or poor-quality connections (Fig. 3.3).

Analysis of existing places

3.6.5 As part of the context appraisal, the relative importance of existing places within the locality will need to be identified. Places to be identified include important buildings and public open spaces, and key destinations such as educational institutions and areas of employment or commerce (Fig. 3.4).
3.6.6 The analysis will determine which places in the surrounding area need to be made accessible to local people, particularly on foot and by bicycle, and the appropriate design and layout of that area.

3.6.7 This analysis will also help to establish whether additional centres of activity are required as part of a new development, such as a new local centre or school.

**Analysis of existing movement patterns**

3.6.8 It is recommended that the design of a scheme should follow the user hierarchy shown in Table 3.2.

<table>
<thead>
<tr>
<th>Consider first</th>
<th>Pedestrians</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cyclists</td>
</tr>
<tr>
<td></td>
<td>Public transport users</td>
</tr>
<tr>
<td></td>
<td>Specialist service vehicles (e.g. emergency services, waste, etc.)</td>
</tr>
</tbody>
</table>

| Consider last           | Other motor traffic |

3.6.9 The hierarchy is not meant to be rigidly applied and does not necessarily mean that it is always more important to provide for pedestrians than it is for the other modes. However, they should at least be considered first, followed by consideration for the others in the order given. This helps ensure that the street will serve all of its users in a balanced way. There may be situations where some upper-tier modes are not provided for – for example, buses might not need to be accommodated in a short, narrow section of street where access for cars is required.

3.6.10 An analysis of movement within an existing settlement will help identify any changes required for it to mesh with a new development. It could also influence movement patterns required within the new development.

3.6.11 The position of a street within the existing movement framework will determine the demands it needs to meet, and these, in turn, will inform decisions on its capacity, cross-section and connectivity.

3.6.12 Establishing the movement requirements of existing streets is particularly important when changes are planned so that the needs of all road users are fully taken into account.

**Proposed movement framework**

3.6.13 For new developments, an understanding of how an existing area functions in terms of movement and place enables the proposed points of connection and linkage to be identified, both within and from the site, so that important desire lines are achieved. This process will help ensure that a new development enhances the existing movement framework of an area rather than disrupting or severing it (Fig. 3.5).
3.6.14 Guidance on the design of movement frameworks is set out in more detail in Chapter 4. The movement framework is a key input to the development of the masterplans.

Outline masterplan or scheme layout

3.6.15 Although not always needed, especially where proposals are small scale, an outline masterplan helps to establish the scheme's broad development principles (Fig. 3.6).

3.6.16 An outline masterplan that has been produced through collaboration with key stakeholders is usually more robust and realistic than it would otherwise be. For larger sites, a series of stakeholder events is often the most productive way of achieving this as it brings all the parties together to generate a design vision which reflects community and stakeholder objections. For smaller sites, the process need not be so involved and design proposals may be more appropriately informed by a simple scheme layout developed though targeted meetings with key stakeholders and/or correspondence.

3.6.17 For simpler schemes adequately served by detailed layouts, outline scheme layouts are usually not likely to be needed (Fig. 3.7). An exception might be where, for example, the site is in a conservation area.

Figure 3.6 A concept masterplan with 3-D visualisation.

Figure 3.7 Small scheme design for an infill development (a) outlined in red. Location of new houses (b) shown in green together with new access street. Note that the new access street can be extended to allow for future growth at the top of the diagram.
3.6.18 The outline masterplan will bring together the movement framework with other important aspects of the design of a new development, such as the need for new local facilities, important views and microclimate considerations.

3.6.19 When developing outline masterplans for large-scale proposals, such as an urban extension, the design team needs to consider the longer-term vision for the area in question. Such a future-proofing exercise involves looking beyond the usual planning periods to consider where development may be in, say, 20 or 30 years. The issues identified may influence the masterplan. An example would be allowing for the future growth of a settlement by continuing streets to the edge of the site so that they can be extended at a later date (Fig. 3.8). This principle also applies to smaller-scale schemes which need to take account of future development proposals around an application site and, where appropriate in discussions with the local planning authority, to ensure that linkages are established wherever possible and that the site is swiftly integrated into its surroundings.

Street character types

3.6.20 Once the outline masterplan has been prepared, the next step will be to establish the characteristics of the various types of street that are required for the new development.

3.6.21 Street character types set out not only the basic parameters of streets, such as carriageway and footway widths, but also the street’s relationship to buildings and the private realm, and other important details, such as parking arrangements, street trees, planting and lighting.

3.6.22 Further guidance on determining street character types is given in Chapter 7.

3.6.23 Street character types can also be expressed through design codes, which are discussed later in this chapter.

Street network

3.6.24 It is recommended that the proposed street network is based on a combination of the proposed movement framework and the proposed street types (Fig. 3.9).

Figure 3.8 Ballater, Aberdeenshire – the ability for future growth is not compromised in the south-west of the village (a) with its permeable street pattern, but more recent cul-de-sac type development in the north-east (b) does not allow for a connected growth of the village.
Detailed masterplan or detailed scheme layout

3.6.25 Detailed masterplans are likely to be needed for schemes at the higher end of the scale in terms of size and complexity. For relatively simple proposals, a detailed scheme layout is all that is likely to be needed. Guidance on the masterplanning process is given in *Creating Successful Masterplans: A Guide for Clients*.

3.6.26 It is important when preparing a detailed masterplan, that all of the critical features which impact on the efficiency and quality of the development – and which cannot be changed once it is built – are carefully considered (Fig. 3.10).

3.6.27 The full extent of the masterplanning process is beyond the scope of MfS, but it is recommended that the following key features relating to street design are addressed:

- connections to the surrounding area;
- connections through the site;
- street layout and dimensions;
- building lines;
- building heights;
- routes for utilities;
- parking provision, design and control;
- landscape design and structural planting;
- materials, management and maintenance regime;
- servicing and access for emergency vehicles;
- speed control; and
- SUDS and sewer routes.

Figure 3.9 Street network diagram for Upton, Northamptonshire, showing the main route through a connected layout and linkages to key spaces and places within the development, with street character types identified.

Figure 3.10 An example of a large-scale masterplan – Sherford New Community near Plymouth.
Design codes

3.6.28 Design codes are an effective mechanism for implementing the masterplan (Fig. 3.11). They comprise detailed written and graphically presented rules for building out a site or an area. They are often promoted by local authorities but they may be put forward by the private sector.

3.6.29 Design codes determine the two- and three-dimensional design elements which are key to the quality of a development. Although not appropriate in all circumstances, they can be valuable for helping local authorities and developers to deliver high-quality design.

3.6.30 The elements which are coded will differ according to circumstances, but they might include aspects relating to layout, townscape.
and landscape considerations, or architecture or building performance. Codes may also usefully establish the relationships of plots, sometimes the building form or even materials. However, given the primary need to secure a quality townscape and a sense of place, the most important role of a design code will be in securing the lasting structural elements of a place, such as the street pattern and street dimensions. Getting these structural elements right will enable the other elements of a design to evolve. To do this successfully, however, the design code will need to be underpinned by a specific design vision, such as a masterplan or a design and development framework.

3.6.31 A key benefit of design codes is the collaborative nature of their preparation – a process that brings together a broad range of professionals and organisations with a role in delivering the development. Typically, this comprises land, design, development and public interests. Regardless of whether a code is promoted by the private sector or a local authority, it is essential that engineers, designers and planners work together to develop the code to help ensure that each aspect of the design successfully reinforces the overall sense of place.

3.6.32 When a code is prepared by a local authority, a Development Team approach will bring advantages. Representatives from the authority’s key departments will need to work together. These will include planning (both policy and development control), highways, landscape, parks and recreation, and, where appropriate, the housing authority and the authority’s estates management team. The inclusion of the authority’s legal team will also be helpful, particularly where the codes relate to planning conditions, section 106 and 278 agreements, unilateral undertakings or local development orders. In particular, the highways team in an authority plays a key role in the preparation of a design code and in adopting the infrastructure that results.

3.6.33 Detailed guidance on the preparation and implementation of design codes, including advice on how they can be formalised, is set out in Preparing Design Codes – A Practice Manual.\textsuperscript{4} This guidance makes it clear that:

‘Highways policy and standards are decisive influences on design code preparation, and design codes provide a key opportunity to improve highways design that takes account of urban design considerations and helps create quality places. The preparation of a design code can provide a ready opportunity to work closely with highways authorities to review any outdated local highways standards.’

3.6.34 In this context it is essential that, when design codes are being prepared, the coding team consider carefully what the design objectives are and the required outcomes to deliver those objectives. It is recommended that careful consideration should be given to the scope for the design code to address those aspects of the street environment that will be crucial to delivering the required outcomes. Those which are not can be left to the discretion of the developer and his or her designer (see box and Fig. 3.12).

### Design codes

Street-related design elements and issues which a design code may relate to include:

- the function of the street and its position in the Place and Movement hierarchy, such as boulevards, high streets, courtyards, mews, covered streets, arcades or colonnades;
- the principal dimensions of streets;
- junctions and types of traffic calming;
- treatments of major junctions, bridges and public transport links;
- location and standards for on-and off-street parking, including car parks and parking courts, and related specifications;
- street lighting and street furniture specifications and locations;
- specifications for trees and planting;
- location of public art;
- drainage and rainwater run-off systems;
- routeing and details of public utilities; and
- arrangements for maintenance and servicing.
### Criteria | Street Specification
--- | ---
Standard Design | Variation 1 (One-sided parking) | Variation 2 (Variable Kerb)

#### Design Speeds
- **Speed Limit**: 20 mph (at entrance)
- **Control Speed**: 20 mph (internally)

#### Street dimensions and character
- **Minimum carriageway width**: 5.5 m
- **Footway**: 2.0-3.0 m on each side
- **Cycle way**: No - Parallel routes provided on other streets
- **Verge**: No
- **Private strip**: 2.0 m
- **Direct vehicular access to properties**: Yes
- **Plot Boundary Treatment**: 2.0 m private area to building line with up to 1.0 m encroachment 0.9-1.1 m railing on plot boundary with footway
- **Maximum number of properties served**: Not restricted

#### Public Transport
- **Bus access**: No

#### Street design details
- **Pull out strip**: No
- **Traffic calming**: Features at 60 m-80 m c/c, parking, trees, formal crossings
- **Vehicle swept path to be accommodated**: Removal/refuse vehicles enter and leave using own side of road only (assuming 20 mph)
- **On street parking**: Yes, both sides, 2.0 m wide
- **Gradients (footways)**: 1:15 Maximum, footway to follow carriageway
- **Maximum forward visibility**: 33 m, 20 m (measured 1.0m out from kerb)
- **Junction sightlines (x/y)**: 2.4 m/33 m
- **Junction spacing-same side/other side**: 60 m/30 m
- **Junction radii**: 4 m
- **Stats services (excluding storm and capping layer drainage)**: In footway, each side. Drainage below carriageway

#### Materials
- **Footway Surfacing**: Natural grey, pre-cast concrete paving flags, 63 mm thick staggered joint, variable sizes: 600x450 mm, 450x450 mm-10%, 300 x 450 mm
- **Parking Zone**: Natural grey tumbled pre-cast concrete paving 80 mm thick with 225-300 mm exposed granite aggregate pre-cast kerb 20 mm high
- **Kerbing**: 225-300 mm wide x 200 mm square edged exposed granite aggregate pre-cast kerb 125 mm high
- **Carriageway**: Black-top
- **6 rows of 100 mm x 100-250 mm cropped granite setts
- **Pedestrian Crossing**: Stainless steel tactile studs inserted into paving/tactile paving
- **Street Lighting**: LC4, LC5 Maximum to eaves height (see Appendix 4)
- **Street Furniture**: SF3, SF6, SF9 (see Appendix 4)
- **Trees**: Acer platanoides ‘Obelisk’
- **Feature Trees**: Corylus Columna - specific locations detailed in Development Briefs

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Figure 3.12 (a) and (b) Design code for particular street character type in Upton, Northampton (note (b) is on the next page).
3.7  Stage 4: quality auditing

3.7.1  Properly documented design audit and sign-off systems are important. They help ensure that street designs are appropriate and meet objectives agreed at the outset. Such audits may include documents required by the local planning authority to support an outline or detailed application. In existing streets, quality audits provide an opportunity for decision makers to make a balanced assessment of different considerations before approving a particular solution (see ‘Devon case study box’).

3.7.2  Being made up of a series of assessments, a quality audit is likely to be carried out by various professionals and each may be undertaken within particular guidelines. By grouping the assessments together, any compromises in the design will be apparent, making it easier for decision makers to view the scheme in the round.

3.7.3  Auditing should not be a box ticking exercise. It is an integral part of the design and implementation process. Audits inform this process and demonstrate that appropriate consideration has been given to all of the relevant aspects. The quality audit may include some or all of the following, or variations on them, depending on the nature of the scheme and the objectives it is seeking to meet:

• an audit of visual quality;
• a review of how the streets will be used by the community;
• a road safety audit, including a risk assessment (see below);
• an access audit;
• a walking audit;
• a cycle audit;
• a non-motorised user audit;
• a community street audit (in existing streets); and
• a Placecheck audit.

3.7.4  Access auditors should take account of the advice given in Inclusive Mobility. The Centre for Accessible Environments has also published guidance on access audits in relation to public buildings. It contains much useful general advice on access auditing in the public realm.

3.7.5  Road safety audits (RSAs) are routinely carried out on highway schemes. The Institution of Highways and Transportation (IHT) Guidelines on Road safety audits sit alongside the Highways Agency standard contained in DMRB as the recognised industry standard documents in the UK. The procedures set out in DMRB are a formal requirement only for trunk roads.

3.7.6  RSAs are not mandatory for local highway authorities. Many residential streets, where the design is carried out by a developer’s consultant, are assessed independently by the local highway authority. In some authorities there is no requirement for a further check by an RSA team, particularly where it is clear that motorised traffic volumes and speeds, and the degree of potential conflict between different user-groups, are not going to be significant.

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Case study

Devon: quality audit

Devon County Council has developed a process whereby both an environmental audit and a road safety audit (Fig. 3.13) are carried out when improvement schemes are being prepared.

The two audits are carried out separately and if there is a difference of opinion between the two over any aspect, the matter is referred to a senior officer for a decision. It is therefore possible to demonstrate that decisions have been properly considered in case of future dispute.

This process is, in essence, a quality auditing process.

Road safety audits

3.7.5  Road safety audits (RSAs) are routinely carried out on highway schemes. The Institution of Highways and Transportation (IHT) Guidelines on RSA sit alongside the Highways Agency standard contained in DMRB as the recognised industry standard documents in the UK. The procedures set out in DMRB are a formal requirement only for trunk roads.

3.7.6  RSAs are not mandatory for local highway authorities. Many residential streets, where the design is carried out by a developer’s consultant, are assessed independently by the local highway authority. In some authorities there is no requirement for a further check by an RSA team, particularly where it is clear that motorised traffic volumes and speeds, and the degree of potential conflict between different user-groups, are not going to be significant.
3.7.7 The purpose of the RSA is to identify road safety problems, with the objective of minimising the number and severity of casualties. An RSA is not a check on compliance with design standards. Audits take all road users into account, including pedestrians and cyclists. The standard procedure is that the auditor makes recommendations for changes to the design to address perceived safety concerns. The design team reviews the RSA report and decides whether or not to accept particular recommendations.

3.7.8 It is important to note that the design team retains responsibility for the scheme, and is not governed by the findings of the RSA. There is therefore no sense in which a scheme ‘passes’ or ‘fails’ the RSA process. Designers do not have to comply with the recommendations of a safety audit, although in such cases they would be expected to justify their reasoning in a written report.

3.7.9 The process set out in DMRB requires the audit team to be independent of the design team. Road safety issues are therefore often considered in isolation from visual quality and placemaking issues, and it can be difficult to achieve a balanced design through dialogue and compromise. However, the requirement for independence need not prevent contact between the design team and the audit team throughout the process.

3.7.10 It is beyond the scope of MfS to define in detail a wholly new and more balanced approach to RSAs, and the IHT guidelines are due to be revised. However, involving road safety professionals as an integral part of the design team could help to overcome some of the reported problems. This allows ideas to be tested and considered in more balanced and creative ways.

3.7.11 One area of concern with the existing system is that RSAs may seek to identify all possible risks without distinguishing between major and minor ones, or quantifying the probability of them taking place. There can also be a tendency for auditors to encourage designs that achieve safety by segregating vulnerable road users from road traffic. Such designs can perform poorly in terms of streetscape quality, pedestrian amenity and security and, in some circumstances, can actually reduce safety levels.

3.7.12 It would therefore be useful if RSAs included an assessment of the relative significance of any potential safety problems. A risk assessment to consider the severity of a safety problem and the likelihood of occurrence would make it considerably easier for decision makers to strike an appropriate balance. An example of a risk assessment framework is given in *Highway Risk and Liability Claims.*

3.1.13 Careful monitoring (such as through conflict studies) of the ways in which people use the completed scheme can identify any potential safety problems. This can be particularly useful when designers move away from conventional standards. Monitoring is discussed further in Section 3.10 below.

3.8 Stage 5: planning approval

3.8.1 New development proposals need to be submitted for approval to the planning authority who, in turn, consults with the local highway authority on street design issues.

3.8.2 Where outline planning permission is being sought, various supporting information needs to be provided as agreed with the planning and highway authorities. This may include some or all of the following, depending on the type size and complexity of the scheme (this list is not necessarily exhaustive):

- preliminary street designs and layouts;
- a Design and Access Statement (see box), 16, 17, 18
- a Transport Assessment;
- a Travel Plan;
- an Environmental Statement or Environmental Impact Assessment;
- a Sustainability Appraisal;
- a Flood Risk Assessment; and
- a Drainage Report.

**Design and Access Statement**

Since August 2006, Design and Access Statements (DASs) have been required for most planning applications for new developments. DASs are documents that explain the design thinking behind a planning application and are therefore important documents. They normally include a written description and justification of the planning application, often using photographs, maps and drawings to help clarify various issues.
3.8.3 It is critical that as many issues as possible are resolved at the outline planning application stage so that they can receive thorough and timely consideration. This will help to make detailed planning applications or the consideration of reserved matters as straightforward as possible.

3.8.4 The local planning authority needs to ensure that the key features set out in paragraph 3.6.27 above, and any site-specific issues of importance, are resolved before outline permission is granted. The design of streets, spaces and parking is important and should be considered alongside other planning matters, such as the design of the built form and use, conservation, landscape and housing type.

3.8.5 Ideally, following outline consent, only matters of detail, such as detailed layout and material choices, will be left for consideration at the detailed application stage.

3.8.6 For small developments and schemes in sensitive locations, such as conservation areas, it will often be appropriate for detailed planning approval to be sought without first obtaining outline consent. This enables the approving authorities to consider the effects of the development in detail before approving the development in principle.

3.8.7 In existing streets, the highway authority is normally both the designer and the approving body. It is recommended that well-documented approval systems are used that properly assess the impact of proposed changes to prevent the gradual degradation of the street scene through ill-considered small-scale schemes.

3.9 Stage 6: implementation

Detailed design, technical approval, construction and adoption

3.9.1 In the past, developers have sought to satisfy the detailed planning process before commencing the detailed design of streets in order to meet the highway adoption process. This has led to problems in some circumstances where the detailed design and technical approval process throws up problems that can only be resolved by changing the scheme that was approved at the detailed planning stage.

3.9.2 A more integrated approach is recommended, with highway adoption engineers being fully involved throughout, so that schemes that are approved at detailed planning stage can move through the technical approval stage without requiring any significant changes. Highway adoption is dealt with in more detail in Chapter 11.

3.10 Stage 7: monitoring

3.10.1 Planning Policy Statement 3: Housing (PPS3) makes clear that local planning authorities and agencies are expected to report on progress towards the achievement of consistently good design standards through the Annual Monitoring Report process, assessing achievement against their design quality objectives (PPS3, paragraphs 75–77). This is likely to include some consideration of the design quality of new streets or existing street modifications as part of the wider public realm.

3.10.2 Monitoring is an integral element of the disability equality duty under the Disability Discrimination Act 2005. Within their Disability Equality Schemes, local authorities are expected to set out their arrangements for monitoring the effectiveness of their policies and practices as they relate to the interests of disabled people. This includes both planning and highways functions. The information will help authorities to make decisions about what actions and changes to their policies and practices would best improve disability equality.

3.10.3 Monitoring for reasons other than those above has seldom been undertaken to date but can be highly desirable. Monitoring can be used to see how completed schemes or existing street environments function in practice, so that changes can be made to new designs, particularly innovative ones, at an early stage.

3.10.4 Monitoring can also be an important aspect of residential travel plans, where patterns of movement are reviewed against planned targets.