Stockport Metropolitan Borough Council
Local Development Framework

# Transport and Highways in Residential Areas

## Supplementary Planning Document

STOCKPORT
METROPOLITAN BOROUGH COUNCIL

有关在居民区的运输和高速公路的补充规划文件**(Chinese)**

وثيقة التخطيط التكميلية الخاصة بالنقل و الطرق العامة فى المناطق السكنية(Arabic)

حمل ونقل و بزرگراه ها در نواحی مسکونی ، مطالب مربوط به طراحی های تکمیلی(Farsi)

رہائشی علاقوں میں نقل وحمل اور ہائی ویز سے متعلق ضمنی منصوبہ بندی دستاویز(Urdu)

আবাসিক এলাকায় পরিবহন এবং হাইওয়ে সংক্রান্ত পরিপূরক প্ল্যানিং ডকুমেন্ট (Bangla)

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# 1 Introduction

## 1.1 Why produce a guide?

**1.1.1** This is a guide informs the design of highway and infrastructure in residential developments in Stockport. It is intended to form part of Stockport's Local Development Framework, and as such will be adopted as a Supplementary Planning Document.

**1.1.2** Highway space should be seen as part of the overall urban design, with its layout playing an important part in creating an environment that is safe, convenient, nuisance-free, visually attractive, and economical for construction and maintenance, and thereby contributing to sustainability in Stockport. The highway must not dominate the design process but safety for all road users remains of prime importance and there is a need to provide certain minimum standards that will ensure that safety is not compromised.

**1.1.3** Creating good housing layouts is important as they shape the environment in which we all live. Creativity in designing layouts should be achieved through a balanced approach. Other than providing for the minimum standards, this guide does not attempt to constrain the designer in providing definitive or prescriptive types of layout, and the creation of innovative and individual layouts to suit particular sites are actively encouraged.

## 1.2 What is it for?

**1.2.1** This Transport and Highways in Residential Areas Design Guide has been produced to assist in the general design of the highway layouts and transport infrastructure provision required for the approval of appropriate safe and sustainable new developments within Stockport Metropolitan Borough.

**1.2.2** It is for use solely within Stockport, superseding guidance produced by Greater Manchester County Council in 'The Layout of Roads In Residential Areas'.

## 1.3 Who is it for?

**1.3.1** The guide will be useful for a range of people including: developers, builders, architects, urban planners, highway and traffic engineers, the general public, and the Development Control team in Stockport.

**1.3.2** Developers are encouraged to hold pre-application discussions with Stockport Planning officers in advance of submitting their planning applications, in order to ensure that they include all appropriate information and provide clarity of intent in their planning applications, to minimise delay and confusion in the determination of those applications.

## 1.4 How should it be used?

**1.4.1** The guide will be adopted as a Supplementary Planning Document and used by Stockport Council when reviewing the highway aspects of planning applications. It will be kept under review to ensure that it keeps pace with best practice.

# 1 Introduction

**1.4.2** All new residential developments are to be considered within the boundaries set down in this guide, but sufficient scope is left for the design of unique schemes in Stockport Borough. Much will depend on local context and as such, there is no 'standard formula' for designing layouts.

**1.4.3** The guidance concentrates on the transport issues relevant to the planning process. Good urban design in developments is reliant upon a wide range of factors, and therefore this guide should be read in conjunction with other planning guidance documents.

**1.4.4** It should be read in conjunction with technical design guidance being developed in order to specify the materials and construction details to be employed on highway and associated improvement schemes in Stockport.

## 1.5 Background

**1.5.1** The principles in this guidance relate to the policies within Stockport's adopted Unitary Development Plan Review (UDP). Each chapter relates specifically to relevant policies. Policy ST2.3, The Road User Hierarchy influences the content of all chapters in the guide.

**1.5.2** Policy TD1 details Stockport's approach when considering Transport and Development. This policy is fundamental to this guide.

**1.5.3** Policy HP1.2 further emphasises the need for close interaction between transport and land use policies, required in line with PPG3, that developments should be located so that they are sustainable and readily accessible by non-car modes of travel.

**1.5.4** In explaining this policy, the Council:

> "will also have regard to the advice in PPG3 Housing (especially paragraphs 30, 31 and 32) in respect of the sequential approach to housing development in particular the location and accessibility of potential development sites to jobs, shops and services by modes other than the car, and the potential for improving such accessibility.
>
> In terms of accessible and sustainable locations, all housing sites should comply with at least one of the following:
>
> - within 800 metres walking distance of an existing significant shopping centre including Stockport's eight district centres and Stockport Town Centre;
> - within 400 metres walking distance of a bus stop on a high frequency bus route; or
> - within 1000 metres walking distance of a railway station with a frequent service."

**1.5.5** This design guide also draws from relevant good practice guidance including:

# Introduction 1

- By Design Urban design in the planning system: towards better practice (CABE 2000)
- Places, Streets and Movement (DETR 1998)
- Better Place to Live By Design Urban design in the planning system: towards better practice; (DB32)
- Urban Design Compendium (English Partnerships and the Housing Corporation)
- Safer Places: The Planning System and Crime Prevention (ODPM and Home Office, 2004)
- Homezone Design Guidelines (IHIE June 2002)

## 1.6 Structure

**1.6.1** Following this introduction, the Chapters in this guide are:

- Provision for Non-Car Users;
- Design Standards;
- Speed Management;
- Parking;
- Development of Streetscene;
- Lighting in Residential and Mixed Use Developments;

and an Appendix containing:

- A Glossary of Terms

# 2 Provision for Non-Car Users

## 2.1 Introduction

**2.1.1** If new development should be accessible by a range of transport modes. Priority should be given to pedestrian and cyclist access, and proximity to public transport before provision for the private car is considered.

**2.1.2** Development will not be permitted unless any associated transport impact can be accommodated in a sustainable manner. This may mean that the developer makes a reasonable and relevant contribution to the improvement of access to the development's location by sustainable modes.

**2.1.3** The provision and design of facilities for non-car users is important; current local and national guidance advocates the need for a modal shift away from the private car. Therefore, the provision of high quality infrastructure for pedestrians, cyclists and those using public transport is necessary.

**2.1.4** Sustainable transport is a central theme in the Development Control process; planning applications may be refused if there is inadequate recognition of the importance of sustainable transport in the development proposals.

**2.1.5** This chapter details the design considerations for the top three modes in the UDP road user hierarchy: pedestrians, cyclists and public transport users, and also includes the mobility impaired within these categories.

**2.1.6** There are various policies in the UDP relating to accessibility for non-car users. In particular HP1.2 addresses the location of housing developments with particular reference to their accessibility, and hence sustainability stating:

**2.1.7** Against this background the Council's approach to the location of housing developments will have regard to the "accessibility of potential development sites to jobs, shops and services by modes other than the car, and the potential for improving such access". Standards are set out for maximum walking distances from developments to Stockport's eight district centres or the town centre, to high frequency bus routes or to a rail station with frequent services

**2.1.8** Other UDP Policies relating to access for non-car users include ST1, ST3 and TD1.6.

**2.1.9** In the design of a new development or redevelopment areas, special consideration must be given to the practical needs of the disabled. Where possible, street patterns should allow maximum opportunity for movement through the area particularly by sustainable means.

**2.1.10** Parts of the Disability Discrimination Act (DDA) 1995 have been coming into force over the last few years and it was fully implemented from October 2004. Part III gives disabled people important rights of access to everyday services that others take for granted, and Part V gives accessibility regulations for the use of taxis, public service vehicles and rail vehicles.

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**2.1.11** For those walking or cycling (or using either of these modes to access public transport), the ideal environment has low vehicle flows and traffic speeds below 20mph. Adopting these guidelines would mean that whilst an area is accessible to all modes, pedestrians and cyclists are given greater protection and enjoy priority over car users.

**2.1.12** Where possible, street patterns should allow maximum opportunity for movement through an area by resembling an interconnected 'lattice'. Although disconnected layouts (cul-de-sacs) are still an option for the layout of new developments, they should not be the predominant design. (See 3.3.1 'Layout considerations'.)

## 2.2 Pedestrians/Mobility Impaired

**2.2.1** The UDP Policy concerned with walking is shown below.

### Policy

**ST1.4 Walking**

The Council will require that walking facilities are maintained and improved in new developments and highway schemes, in line with both the Borough's Strategic Walking Network.

Any replacement of existing walking facilities should be no less convenient, safe or aesthetically attractive and should be of equal legal status to those facilities being replaced.

Where necessary improvements cannot be directly provided as part of the development, contributions to the enhancement of the Strategic Walking Network will be required to an extent commensurate with the impact of the development.

Development should not sever formal routes used by pedestrians.

**2.2.2** Other policy documents relating to pedestrians include the Greater Manchester Local Transport Plan and the Strategy for Walking in Stockport.

**2.2.3** The Greater Manchester Local Transport Plan (GMLTP) suggests that to achieve its aim of improving the environment, attractiveness and safety of places, the proportion of trips by modes other than private cars including journeys made on foot should be increased. This in turn means improving conditions for pedestrians.

**2.2.4** The Strategy for Walking in Stockport stresses the importance of strategic planning for walking as described in 'Encouraging Walking: Advice to Local Authorities' (DETR, 2000). Land use planning that actively seeks to make walking easy and attractive is necessary. Therefore, there is a need to provide clear connected networks of walking routes to key destinations, especially to public transport interchanges.

**2.2.5** Developers of larger developments (a total of 50 or more units with houses counting as 1 unit and flats as half a unit) should not submit their schemes until they have been put through an

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audit of pedestrian facilities. For more information on assessing schemes please contact Stockport Council's Sustainable Travel team on 0161 474 4593.

**2.2.6** Attention should be focussed on improving the routes to and from key destinations, and start-finish points. These include from large residential areas to shops, schools, bus stops, rail stations and public transport interchanges, and movement within the town, district and local centres. This is essential to ensure full social inclusion. The Stockport MBC Strategic Walking Plan should be used as a guide to identify where these particular routes are.

**2.2.7** HP1.2 explains that in order to be accessible and sustainable, the location of housing developments should comply with at least one of the following and be:

- "within 800 metres walking distance of an existing significant shopping centre including Stockport's eight district centres and Stockport Town Centre;
- within 400 metres walking distance of a bus stop on a high frequency bus route; or
- within 1000 metres walking distance of a railway station with a frequent service."

**2.2.8** The UDP Review policy HP1.2 'The Phasing of Housing Development' states that 'A high frequency bus route has at least three buses in each direction per hour during the day and at least one bus per hour in the evening and on Saturdays and Sundays in each direction. Services must connect directly to one of the significant shopping centres or Manchester City Centre.' and that 'A railways station with a frequent service has at least two trains per hour in each direction during the day and at least one train per hour in the evening and on Saturdays and Sundays'.

**2.2.9** The desire lines of mobility-impaired people, whether on foot, in wheel chairs or with a guide dog are the same as for able-bodied people. Therefore, attention should be paid to providing facilities on these normal desire lines. The design of any development should have regard to the people using the development and their needs.

**2.2.10** In existing and new developments some of the key considerations are:

- To provide even surfaced and wide footways;
- To enable people to walk where they can be seen by other people, i.e. drivers, residents and other pedestrians;
- That segregated footpaths should be at the front of buildings, well connected to routes and other footpaths, and overlooked by houses and other buildings;
- To encourage low traffic flows and speeds to improve pedestrian safety;
- To create barrier-free and direct footways; and
- To avoid bends without adequate forward visibility.

## 2.2.1 Pedestrian Routes

**2.2.1.1** It is important that the different types of pedestrian routes are understood, as each serves a different purpose. Pedestrian routes include footways, shared surfaces, and Public Rights of Way such as footpaths and bridleways.

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## 2.2.2 Footways

**2.2.2.1** Footways run adjacent to the carriageway and are separated from the carriageway by an upstand of 125mm, except at pedestrian crossing points and vehicular crossovers. They should follow pedestrian desire lines avoiding sudden directional changes, and be included in visibility zones. To ensure continuity of pedestrian movement, safe crossings should be provided at appropriate locations. The most appropriate feature should be chosen from the range available including puffin crossings, informal crossings across raised junctions and pedestrian refuges. The standard width of a footway in Stockport is 2m.

**2.2.2.2** Where homezones are not the chosen form of development footways are a requirement on all roads with 25 or more units, although in general, wherever possible, new developments should be built using homezone principles.

## 2.2.3 Shared surfaces

**2.2.3.1** A shared surface is designed so that pedestrians, vehicles and other road users share the same space. Where a shared surface is not used, footways should always be provided for pedestrians. The number of units served by a shared surface should be no more than 25.

**2.2.3.2** A shared surface is typically 6.5m in width, including a 2m service strip indicated by a different surface treatment. Shared surface is typically used for cul-de-sacs, mews courts or housing squares.

## 2.2.4 Public rights of way

**2.2.4.1** Public Rights of Way include Footpaths and Bridleways (see below). Where existing public rights of way run through the area of new development or are adjacent, UDP Policy ST2.6 states "The Council will require that on-site or adjacent Public Rights of Way are maintained and improved in new developments and highway schemes."

## 2.2.5 Footpaths

**2.2.5.1** Footpaths are separate from the existing footway/carriageway while being integrated into the main street pattern and providing safer or more direct pedestrian links. Footpaths may also be combined with cycle paths. They should have active frontages and, where possible, be overlooked day and night. Street lighting should be used to improve safety and to remove any areas of concealment. In certain circumstances, footpaths may occasionally be used as an access route for emergency vehicles but non-emergency vehicular use is not permissible; collapsible bollards can be used to enforce this.

**2.2.5.2** A range of hard materials can be used for footpaths dependant on potential usage and the local environment. They should be signed, may require surface markings, and will be adoptable by the highway authority if used to access local amenities. (see Table 3.1 for minimum footway widths etc.)

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## 2.2.6 Bridleways

**2.2.6.1** Bridleways are similar to footpaths but their legal status means they may be used by pedestrians, cyclists and horse riders.

**2.2.6.2** The minimum widths of footways and footpaths need to alter according to the nature of a development and its surrounding environment. Table 3.1 'Minimum widths based on the category of road/local environment' and Table 3.2 'Minimum Standards for Cycle Facilities' detail the minimum widths depending on the category of road/local environment and the type of development.

## 2.2.7 Design standards

**2.2.7.1** It is difficult for the elderly, disabled, and those with pushchairs to cross roads and junctions without dropped kerbs. These should always be provided where there is a desire line for pedestrians to cross. It is also important to convey messages to the visually impaired at controlled and uncontrolled crossing points through the provision of tactile paving. Different types of tactile surfaces have different purposes, and each should be used for its intended purpose.

**2.2.7.2** Footways provide an opportunity for ancillary features and elements of urban design that make walking more pleasant or form part of the wider environment. When planning the location and style of ancillary facilities, they should be given careful consideration so they do not become a hindrance to some users.

**2.2.7.3** Street furniture is sometimes hazardous to people with disabilities and therefore special consideration should be given to its design, height, colour and positioning in the public realm.

**2.2.7.4** Design Standards for pedestrians are detailed in 3 'Design Standards'. Other chapters relating to facilities and measures to aid pedestrians are:

- 4 'Speed Management'; and
- 6 'Streetscene'.

## 2.3 Cyclists

**2.3.1** The UDP Policy concerned with cycling is as follows:

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## Policy

**ST1.5 Cycling**

The Council will require that the needs and safety of cyclists are provided for in new developments and highway schemes. Where necessary improvements to transport infrastructure to aid cyclists cannot be directly provided as part of the development, fair and reasonable contributions commensurate with the impact of the development will be required. Development should not sever formal routes used by cyclists, or unreasonably prevent accessibility by cycle, unless suitable alternatives are provided.

Adequate cycle parking should be provided at new developments in line with the Council's adopted cycle parking standards.

**2.3.2** In order to promote cycling as a viable alternative to the car, especially for local journeys, Stockport is developing a network of cycle routes and introducing supporting infrastructure for cyclists. Consequently developers of major developments (50 or more units with houses counting as 1 unit and flats as half a unit) should not submit their schemes until they have been put through an audit of cycle facilities. For more information on assessing schemes please contact Stockport Council's Cycling Officer on 0161 474 4593.

**2.3.3** Where large developments are being considered a strategy for cycling should be developed. This should demonstrate that cycling has been fully integrated into the development and the wider environment. In rural areas demand needs to be ascertained through site surveys and monitoring prior to designing a scheme.

## 2.3.1 Route planning

**2.3.1.1** Cycle routes are a mix of cycle ways, cycle lanes, cycle crossings and lightly trafficked roads, forming routes between key destinations, such as schools and shopping areas, and residential areas. They are a means of bypassing or making safer use of busy roads, whilst still providing cyclists with direct, attractive and safe ways of reaching town and local centres. They should be signed individually, particularly where they depart from general traffic routes or provide opportunities for links to national or regional cycle routes (details of which can be obtained from Stockport Council's Sustainable Transport Team), and should intersect so that, over time, neighbourhoods will become cycle "friendly" and a network of cycle routes will be established across Stockport.

**2.3.1.2** Design criteria for commuter and utility routes will adopt a twin approach making use of on-carriageway provision when appropriate:

- Some use of main roads for confident commuters. This will ensure that routes are fast, convenient and well surfaced;
- Recreational routes, those specifically designed for less confident cyclists, and those associated with Safer Routes to School schemes should offer a greater degree of protection from traffic. Within urban areas this is likely to be partly an independent network for cyclists, but one which may at times be shared with pedestrians.

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**2.3.1.3** However, for both approaches, the directness of a route, priority of that route relative to other traffic, and a well maintained and swept surface are also important to cyclists.

**A Strategy for Cycling**
Cyclists need routes which are coherent, direct, safe, attractive and comfortable. The aim of the Council is to develop a network of routes which fulfil these needs therefore new development should have regard to this. Existing and proposed infrastructure needs to take into account the requirements of all road users, including cyclists. In addition to safe routes a range of other cycle facilities need to be provided, including secure cycle parking

**2.3.1.4** These objectives can be achieved on much of the existing carriageway network, particularly when providing for the more confident cyclist. It may be that a series of small initiatives such as signing, crossings and new quiet links within the existing road network will aid the less confident cyclist.

**2.3.1.5** Route planning should look for quality environments that already exist and where possible take advantage of quieter neighbourhoods. These are purpose developed and make use of lightly trafficked 'safer' streets and other traffic free or lightly used routes, creating overall more pleasant environments for cyclists. Routing opportunities include relatively lightly trafficked residential streets and canal towpaths (where a working partnership with British Waterways will need to be established on a case by case basis) riverbanks or former railway lines that can be adapted to provide traffic free routes for cyclists.

**2.3.1.6** Studies show that at roundabouts, circulating cyclists are particularly vulnerable to accidents involving motor vehicles entering/leaving the roundabout. Wide entry widths and small diameter central islands further increase the accident rate. Avoiding this kind of roundabout on a cycle route is therefore desirable. Where it is not possible, options exist to either convert parts of surrounding footways to cycle ways (although care should be taken to design them in ways which do not lead to the development of a fragmented network), to increase vehicle deflection on entry and exit, so that vehicle speeds are controlled, or to devise alternative solutions through discussion with Stockport Council's Sustainable Transport Team.

**2.3.1.7** Where there is a cycleway on an overbridge, the balustrade should be at a height of 1.4m.

**2.3.1.8** Approved signposting of alternative routes that avoid through routes for motor vehicles is good practice. In particular where they are at the extremities of a network, such signage should include distances to key destinations and the National Cycling Network or regional network, allowing cyclists to judge the accessibility of destinations by cycle.

## 2.3.2 Cycle routes

**2.3.2.1** It is important that the different types of cycle route are understood, as each serves a different purpose. Cycle routes include Mandatory Cycle Lanes, Advisory Cycle Lanes, and cycle tracks which are Rights of Way for cyclists and have legal status.

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## 2.3.3 Mandatory Cycle Lanes

**2.3.3.1** This is an on-carriageway facility operating with or in an opposing direction to general traffic. It must be indicated by a solid white line on the kerb side of the carriageway. Motorists are prohibited from entering the lane. The standard adopted for marking cycle lanes in Stockport requires that the presence of the lane should be reinforced by a 300 mm wide strip of green along the inside edge of the white line and the use of cycle logos. Where a lane crosses the mouth of a side road junction, it should be fully coloured green.

**2.3.3.2** Where there are houses or shops with no off-street parking, provision for parked vehicles should be considered.

## 2.3.4 Advisory Cycle Lanes

**2.3.4.1** This is an on-carriageway facility indicated by a broken white line. As with a mandatory lane it may operate either with or against the general flow of traffic and its presence should be reinforced with green road colouring and cycle logos. Whilst motorists are not prohibited from entering an advisory cycle lane, parking within it will be conditioned by any prevailing traffic regulation orders. On-street parking bays may sometimes be provided between the kerb and the advisory cycle lane.

## 2.3.5 Cycle Tracks

**2.3.5.1** Cycle tracks are purpose built or converted footpaths and footways. They may be shared surfaces and as such would generally be expected to have a white line or kerb in the centre to separate pedestrians from cyclists and be clearly indicated by signs and markings.

## 2.4 Public Transport

**2.4.1** In addition to the general policies that include public transport as an element detailed in 2.1 ‘Introduction’, Stockport UDP contains policies specifically about public transport:

**2.4.2** High quality, road-based public transport services are vital in achieving maximum effectiveness from the road network and to offer an acceptable alternative to non-essential use of the private car. The most commonly used mode of urban public transport service is the bus. This is both cost and environmentally effective as large numbers of people may be transported while occupying relatively little road-space.

## 2.4.1 Pedestrian and cycle interchanges

**2.4.1.1** Public transport should not operate autonomously; good quality access routes for pedestrians and cyclists are important. The design guidelines outlined for pedestrians and cyclists are needed to ensure good quality modal interchanging.

## 2.4.2 Bus-stop locations

**2.4.2.1** The location of bus stops should be considered from the outset, and not added later in the development. Bus stops must be located to allow passengers to board and alight, safely and conveniently, with minimum disruption to other road users. Bus stops should be accessible from

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shopping and business areas, they should be located at rail stations and as close to other main passenger origins and destinations as possible.

**2.4.2.2** When developing an area, clusters of community facilities and services will enhance its attraction as a destination for bus services.

**2.4.2.3** The criteria for new bus stops are:

- Located at natural focal points, for example a shopping centre or a road junction. On roads where there is a heavy flow of traffic, they should be situated close to pedestrian crossings;
- On through routes, stops need to be erected either side of the road, but not directly opposite as this can cause traffic congestion. They should be staggered so that buses can stop tail to tail and move away from each other when they depart from the stop. The spacing of bus stops will need to take account of the density and type of the development, but as a guide should be 300-400m apart;
- Lay-bys can often cause delays in buses rejoining the carriageway, and should only be used if considered absolutely essential e.g. for safety reasons. Half-width lay-bys can provide a suitable compromise;
- Provision of the bus stop pole, sign and shelter needs to be made through GMPTE;
- Bus stops should be well lit, both for passenger security and to illuminate the sign. A shelter should be provided wherever possible. A shelter with seating is essential at hospitals;
- Away from residential and other sensitive frontages, where noise and disturbance is undesirable
- Never between a signal detector and a stop-line, where a detector is in use;
- New schools should have bus and separate coach facilities designed within the grounds; and
- Barrier, railings and queue areas should be created where large numbers of passengers are likely to wait.

**2.4.2.4** In some areas all of these criteria may not be achievable, in which case safety should dictate the deviation from the ideal.

**2.4.2.5** Care should be taken to ensure that cyclists using segregated cycle routes are not brought into conflict with buses or bus passengers.

## 2.4.3 Bus-stop spacing

**2.4.3.1** Normally bus stop frequency is between two and three stops/kilometre. The distance between two stops should be 300m or less in densely populated areas. No property should be more than 400m walking distance from the nearest bus stops on a high frequency bus route, ie. a route having at least three buses per hour in each direction from Monday to Saturday inclusive, and at least one per hour in each direction in the evening and on Sunday. Services must connect directly to one of the significant shopping centres or Manchester CIty Centre.

**2.4.3.2** Stops should be split to reduce bus-on-bus delays and traffic congestion where buses are on different routes, but using the same street or the same stop.

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## 2.4.4 Bus-stop improvements

**2.4.4.1** Passenger-waiting areas should be attractive, convenient, well lit and designed to permit level access by low floor buses. Appropriate facilities should be provided for elderly and disabled people including information in Braille for blind people - steps should not be located in the vicinity of bus stops, the waiting area should be wide enough so that waiting passengers (including parents with children in pushchairs) do not obstruct the footway and minimum kerb heights of 160mm should be introduced.

**2.4.4.2** Bus stop lay-bys should be designed to discourage parking and loading in them. The use of coloured surfacing, and traffic regulation orders may be used to achieve this where necessary.

**2.4.4.3** Care should be taken where there are adjacent cycle lanes to ensure that the potential for conflicts between cyclists, public transport users and buses is minimised.

## 2.4.5 Bus routes

**2.4.5.1** The possibility of a new bus service, or extension to an existing one, should be discussed with Stockport Council.

**2.4.5.2** Any speed management proposals that are on bus routes should be designed to be bus and cycle “friendly".

**2.4.5.3** Where buses experience delays, their routes should have priority measures included, for example, bus only links (which may be shared by cyclists), priority at signals, or electronically controlled bollards.

**2.4.5.4** Developers should work with Stockport Council to ensure that a development has an adequate level of bus service to comply with the requirements of UDP Review policy HP1.2. This may need the diversion of an existing service, an increase in the frequency of an existing service or a whole new service. In all cases consultation will need to take place with the Greater Manchester Passenger Transport Executive (GMPTE). Where a service is diverted, improved or set up for a development, any costs associated with this will need to be met by the developer for a minimum period. The service must be running at the date of the first occupation of the development. It must then run for a period of 10 years from that date or for a period of 5 years after the occupation of the last unit in a development whichever comes the sooner.

**2.4.5.5** Developer contributions will be secured via a Section 106 Agreement under the Planning Act 1990. The agreement will normally include a schedule of the service to be provided rather than a fixed commuted sum, although the latter may be acceptable in some cases providing adequate allowance is made for bus service tender price inflation. If a service is to be provided the cost of the bus service support will be calculated following tendering of the service by GMPTE. This will occur approximately 6 months prior to the anticipated date of occupation of the dwellings. The full tendered cost of the bus service support will then need to be paid prior to first occupation of any unit within the development or phase of development to which it is applicable.

**2.4.5.6** All developments of over 25 units need to examine distances to schools and walking, cycling and public transport routes to those facilities. Where routes are inadequate or distances

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long then there may be a need to improve walking/cycling routes or provide a school bus service. Where a school bus service is needed it will normally be secured by a Section 106 Agreement with the developer being required to pay the full tendered cost of the service for a minimum period of 10 years from the date of first occupation or 5 years after the last unit is occupied, whichever comes sooner. In some instances a fixed sum contribution may be appropriate (for example where more than one developer is contributing to a service provision) but this will need to take account of bus service tender cost inflation in its calculation.

**2.4.5.7** The contribution to improving the bus service in this way in order to satisfy the accessibility criteria in policy HP1.2 should not be at the expense of other planning objectives such as the provision of affordable housing or recreational open space even when a contribution could not have been foreseen at the time the development was purchased.

## 2.4.6 Service information

**2.4.6.1** All bus stops should have a timetable with information on the current services using the stop, as well as fare information. Automatic Vehicle Location (AVL) and countdowns should be installed on key strategic routes for passenger assistance. AVLs display the expected arrival time of the next bus. 'Real Time Information' can remove some of the uncertainty from bus travel and alleviate some of the worry associated with not knowing whether the bus will turn up or not. It also allows passengers to consider alternative travel options if there is a problem with a route.

## 2.4.7 Rail

**2.4.7.1** In general, housing developments should be no more than 1000 metres walking distance from a railway station with frequent services, i.e. at least 2 trains per hour in each direction during week days and at least 1 per hour in the evening or at weekends.

**2.4.7.2** Where there are rail facilities close to a large development, improvements to the rail facilities may be necessary. These improvements will include enhanced pedestrian and cycle links, disabled parking provision, other car parking, “kiss and ride facilities,” direction signs, information, CCTV, better lighting, security enhancement, secure cycle storage, and access improvements, all as appropriate,.

**2.4.7.3** Where a development application may involve rail improvements, the Stockport Council Policy unit should be contacted.

## 2.4.8 Other Measures

**2.4.8.1** In addition to the above, the Council may make sustainability initiatives a condition of planning permission, secured under a Section 106 Agreement under the Planning Act 1990. Asit is considered important to encourage the use of public transport developers may be asked to contribute to some of the following measures:

- Improvements to public transport infrastructure e.g. bus stops, or improvements to railway stations
- Contribution to a Quality Bus Partnership where the site lies on a Quality Bus Corridor

# Provision for Non-Car Users 2

- A buyers/tenants pack including public transport and cycle route information, location maps of nearby services (e.g. grocery stores, post offices, health centres, schools, etc.)
- Measures aimed at implementing and maintaining the cycle network
- A ”free” one year travel pass included with the purchase price/rental of each unit
- Personal Journey Planner
- Residential Green Travel Plan
- Internet facility promoting public transport use.

**2.4.8.2** The Council would welcome discussion of innovative proposals aimed at securing modal shift and reducing reliance to the private car.

# 3 Design Standards

## 3.1 Introduction

**3.1.1** This chapter details the Design Standards for development within Stockport Metropolitan Borough Council. These concur with and supplement the policies contained in the UDP. The following sections are concerned with development locations, roads in residential developments, design guidance for pedestrian and cycle facilities, and highway design.

## 3.2 Development locations

**3.2.1** By controlling development locations within the Borough, the environmental impact of traffic and congestion on the Borough's roads will be minimised and an appropriate shape of urban form will be developed in Stockport.

**3.2.2** The location of development should:

- Minimise, so far as is possible, impact on traffic levels; and
- Enable access by non-car modes of transport.

**3.2.3** Where appropriate, development should:

- Support the relocation of services and facilities closer to existing residential areas;
- Have restrictions on parking at locations readily accessed by other modes;
- Support improved public transport to any sites or centres inadequately served; and
- Contribute to transport enhancements based on location and scale of development.

**3.2.4** The UDP specifies the lines of proposed future highway schemes which are protected from new development.

### 3.2.1 Safety and capacity on the highway network

**3.2.1.1** All submitted layouts for new residential roads, new junctions with the existing road network and modifications to the existing road network must be accompanied by a Stage 1 Safety Audit.

## 3.3 Roads in residential developments

**3.3.1** It is important that roads in residential developments have a design which fits around the desired form of the residential layout and does not dominate it. They should be safe and attractive for use by pedestrians and cyclists and not just focussed on provision for vehicular traffic. In this way new developments will be able to contribute positively to sustainability objectives in Stockport through creating an environment that fosters non-polluting travel modes, especially for local journeys.

**3.3.2** The development of a hierarchy of roads is also important so that traffic can travel on appropriate roads, and so that the creation of attractive routes through residential areas for

# Design Standards 3

non-access traffic is avoided. Different road types, which have different functions, characteristics and standards, are described in 3.6.1 'Road hierachy'.

**3.3.3** The design of residential roads should influence users to respond to their surroundings. Pedestrians and cyclists should feel safe, and drivers should be aware that they are in a residential area and therefore travel at an appropriate speed.

## 3.3.1 Layout considerations

**3.3.1.1** Two types of hierarchical road layout arrangements are generally used:

- a disconnected (tree-like) arrangement of cul-de-sacs; and
- an interconnected network arrangement.

**3.3.1.2** Both layouts will be subject to the same overall standards with regard to the description of the road, its function, width and restrictions, including where large developments contain a mix of each type.

**3.3.1.3** A well-designed interconnected layout (emphasising the access needs of cyclists and pedestrians) can effectively discourage non-access traffic and ensure adequate speed restraint whilst providing better opportunities for foot and cycle journeys than is possible with entirely disconnected residential developments.

**3.3.1.4** Layouts which are disconnected for motorists through the use of measures such as buildouts and cycle gates more readily prevent roads from being used as rat-runs and are beneficial in serving awkward land shapes.

**3.3.1.5** Regardless of the chosen design, new developments should allow maximum opportunities for safe movement through an area, especially by non-car modes and help foster a sense of security for residents through promoting the use of the streets.

**3.3.1.6** Where cul de sacs exceed 250 metres, an emergency access will be required such that the distance from the start of the emergency access to the end of the cul de sac is less than 250 metres. Alternatively, where the above is not possible or desirable, the use of residential sprinklers is acceptable.

## 3.4 Pedestrian design guidance

**3.4.1** Pedestrians are vulnerable road users and the following guidance should be followed to enable them to have good facilities and be as safe as possible.

## 3.4.1 Footways and footpaths

**3.4.1.1** Table 3.1 'Minimum widths based on the category of road/local environment' details the minimum standards for different types of footway and footpath.

| Footways | Minimum Width |
|---|---|
| All distributor roads | 2.00m |

# 3 Design Standards

| Footways | Minimum Width |
|---|---|
| Residential Access Roads | 2.00m |
| Outside Schools/shops/community buildings | 3.50m |
| Footpaths | Minimum Width |
| Normal pedestrian route | 2.0m |
| Shared Footpath/ Cyclepath or Bridleway | 4.0m if enclosed both sides<br><br>3.5m if enclosed on one side<br><br>3.0m if not enclosed either side (3.7m where also an emergency vehicle access point) |
| Major pedestrian route | 3.0m |
| Separate footpaths and minor pedestrian routes which are not fenced or enclosed on both sides | 1.5m (With 1.8m wide passing places every 25m)Local narrowing to 1.2m over a short distance is acceptable to retain existing features |
| Enclosed footpaths | 2.0m if enclosed both sides<br><br>1.8m if enclosed one side |

Table 3.1 Minimum widths based on the category of road/local environment

## 3.4.2 Gradient and crossfall for pedestrians

**3.4.2.1** Some people, particularly those with mobility impairments, find it difficult to walk on steep slopes. In general, gradients for footpaths should not exceed 5% (1:20), i.e. for every vertical rise of 1m, the horizontal distance should be 20m or more. Where this is not possible due to the local topography, a gradient of 8% (1:12) is the absolute maximum, except where there are alternative facilities for wheelchairs and prams when a maximum gradient of 12.5% is acceptable. Shared surface gradients s should not exceed 7%.

**3.4.2.2** Opportunities reduce gradients to or near to the optimum standard, through the use of cut and fill should be fully investigated.

**3.4.2.3** The maximum length of a ramp shall not exceed 10m unless provision is made for a level landing, which should be a minimum of 2m in length. Handrails should accompany the ramp.

**3.4.2.4** For personal comfort the crossfall of the footway should be 1:40.

## 3.4.3 Steps in developments

**3.4.3.1** Steps should be avoided in new developments where possible. If steps are necessary due to topography an alternative footpath or footway without steps must be provided. This may

take the form of suitably graded ramped access for the elderly, children in pushchairs and the mobility impaired.

**3.4.3.2** Where steps do exist, seating should be provided close to steps to enable the elderly or infirm to rest before continuing their walk. In accordance with the DDA requirements, steps are to be indicated with 'Corduroy' paving and handrails provided.

### 3.4.4 Dropped kerbs at crossing points

**3.4.4.1** Kerbs should be dropped at all roads and junctions where there is a desire line for pedestrians to cross. The gradient of the dropped kerb should not be greater than 8% and the kerb level and the carriageway surface should be flush. Tactile surfacing at dropped crossing points should be used to aid the visually impaired.

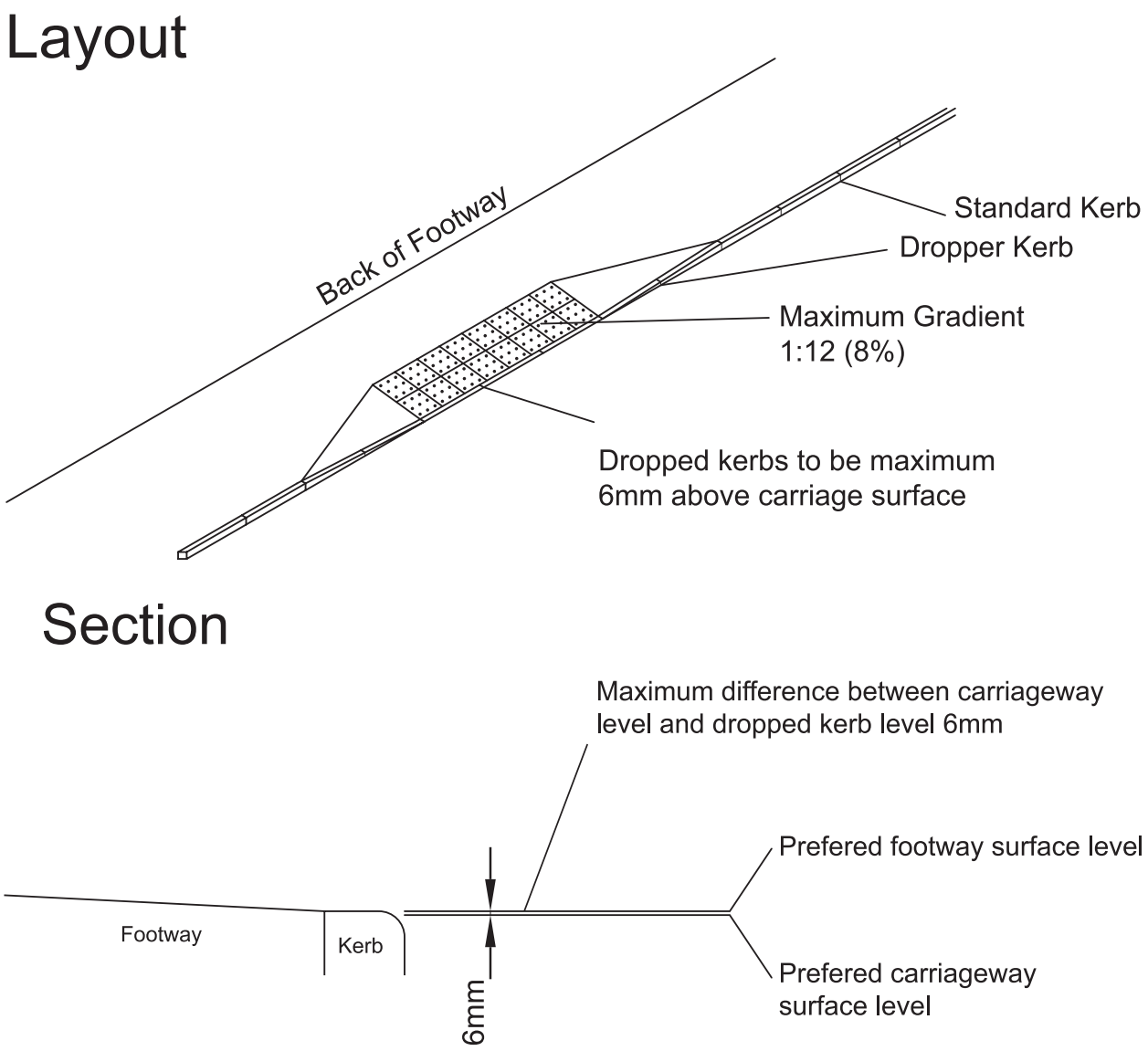


Figure 1 Dropped kerb at crossing points

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## 3.4.5 Post-development footway reinstatement

**3.4.5.1** All developments fronting existing roads will be expected to reconstruct the footway fronting the site following completion of construction works. This is necessary due to the extent of damage to footways and verges which occurs during the construction process. Such re-construction will include provision of new footway crossings, closure of old footway crossings and provision of pedestrian drop crossings as necessary. In conservation areas, The Town Centre or District Centres, there may be a requirement to use appropriate non-standard kerbing/ paving materials for the location. The requirement to reconstruct existing footways and the materials to be used will be included in planning conditions.

## 3.5 Cycle design guidance

**3.5.1** Cyclists are vulnerable road users and the following guidance should be followed to enable them to have good facilities and be as safe as possible and to help promote cycling, especially for local journeys.

## 3.5.1 Facilities for cyclists

**3.5.1.1** Minimum widths for different elements of cycling infrastructure are shown in Table 3.2 'Minimum Standards for Cycle Facilities'. These will all be scheme and location specific and, under exceptional circumstances, infrastructure may be delivered at below these standards in the interest of providing an integrated and continuous facility. Under such circumstances, it will be necessary to liaise with the Council's Cycling Officer or Sustainable Transport Manager.

| | |
|---|---|
| Cycleway<br><br>(a facility solely for the use of cyclists, segregated from but running alongside the main carriageway) | For a two way facility: 3m. Local narrowing to 2m over a short distance may be acceptable to retain existing features (e.g. trees with Tree Preservation Orders). Ideally there would be a 1m clearance between the edge of the cyclepath and |

| | |
|---|---|
| | any obstructions; may permit 0.5m under certain conditions. For a one way facility, 1.5m is the desired minimum. |
| Forward visibility | 20m. At cycle way junctions a 2.00m x 15m visibility splay is required. |
| Contra-flow cycle lane | 1.5m minimum recommended, 2m preferred |
| Shared foot/cycle path | (see Table 3.1 'Minimum widths based on the category of road/local environment') |
| Cycle Lane (a defined lane on the carriageway for cyclists) | 1.5m is a standard lane width (min 1.2m). An aspiration to deliver 2.0m wide cycle lanes should be acted upon where it can be ensured that this will not confuse other road users. |
| Segregated shared use path (for cyclists and pedestrians) | 4m is the optimum width (min 3m) with allocation of available space to pedestrians and cyclists being scheme dependent. Raised white line or level difference should be provided. |
| Headroom Clearance | 2.5m |
| Cycle Parking - Space size | minimum 1.5 sqm per cycle space within shared store |

Table 3.2 Minimum Standards for Cycle Facilities

**3.5.1.2** Joint footways should only be used where segregated footways and cycleways cannot be accommodated as they can lead to conflicts between cyclists and pedestrians. They must be designed with care and clearly signed to give guidance as to direction of flow for cyclists, who should also be signed to give way to pedestrians where a minimum 2m shared surface cannot be achieved.

## 3.5.2 Kerbing

**3.5.2.1** To enable a smooth ride for cyclists, any kerbing should be dropped to the same level as the carriageway and any necessary upstand limited to 6mm.

**3.5.2.2** Where footpaths or footways are adjacent to cycle ways, they should, wherever possible be separated through the use of: kerbing; difference of level (with the footway higher than cycle way); or a white line (profiled to DfT standards and with breaks to prevent rainwater ponding) Protection must be provided where a cyclist rejoins the main carriageway by the introduction of a coloured, 10m cycle lane complete with cycling logo.

## 3.5.3 Protection from vehicles

**3.5.3.1** As well as providing the facilities for cyclists described in 3.5.1 'Facilities for cyclists' to the appropriate standards to protect cyclists from other vehicles, give way markings and bollards should be used where appropriate.

**3.5.3.2** Give way markings should be used at junctions of a minor road with a major road. These protect the cyclist on the major road from encroaching traffic.

# 3 Design Standards

**3.5.3.3** Bollards or “A” frames should be used to stop motor vehicles from entering cycle ways which are either for the use of cyclists or shared provision for pedestrians and cyclists. Such barriers may need to be collapsible to ensure regular maintenance of the cycleway.

## 3.5.4 Gradient for cyclists

**3.5.4.1** Where provision for cyclists is alongside or shared with facilities for pedestrians, the gradient should not exceed the guidance given for pedestrians in 3.4.2 ‘Gradient and crossfall for pedestrians’. Similarly, for cycle provision such as cycle lanes which run on the carriageway, the gradient should not exceed the guidance given for highway design 3.8.2 ‘Gradient’. On cycle-only routes, any gradient steeper than 1 in 10 would generally be seen as a deterrent to cycling.

## 3.5.5 Cycle facilities at junctions

**3.5.5.1** At signal junctions, Advanced Stop Lines (ASLs) should be installed ahead of the stop line for general traffic. ASLs must be preceded by a mandatory or an advisory cycle lane, designed in accordance with Traffic Signs Regulations and General Directions (TSRGD) 2002, and should be installed at all signalised junctions where space allows. The approach lane should preferably be 1.5 m wide, but at constrained sites narrower widths should be considered. The cycle reservoir should be between 4m and 5m in depth. If the reservoir is shallower than 4m to 5m in depth cyclists can feel intimidated by the close proximity of the vehicles queuing behind them. If the reservoir is deeper than this, motorists may feel encouraged to encroach into it. The cycle logo (TSRGD Diagram 1057) should be placed in the cycle reservoir highlighted by green coloured surfacing to remind road users of its purpose and to discourage encroachment by motor vehicles.

**3.5.5.2** When designing facilities at road junctions and crossings, a cyclist should be considered as a vehicle rather than as a pedestrian, and adequate sight lines should be provided at intersections. Thus cycle/pedestrian road crossing facilities whether controlled or not should be parallel and not shared except when specifically designed for shared used such as a Toucan crossing.

**3.5.5.3** A Toucan crossing, which allows both pedestrians and cyclists to cross at a signalled crossing, should be considered where a route crosses a road carrying 500 vehicles per hour or more, with cycle flows in excess of 30-40 per hour, or where the 85th percentile speed is over 30mph. The minimum width for a Toucan crossing is 4m. The cycle signal needs to be installed on either the near or far aspect signal head, and the appropriate 'L'-shaped tactile paving used, in accordance with DfT guidance on the use of tactile paving.

**3.5.5.4** Where there are more than 30-40 cyclists out of a total traffic flow of 500vph, signal controlled cycle crossings should be considered. Cycle crossings should also be considered where their provision would encourage the use of a cycle route. Where appropriate, “jug-handle” cycle crossings with associated cycle signals may be considered.

**3.5.5.5** Treatment at the merge/diverge point to high-speed roads is required at grade separated junctions to enable cyclist to cross the merging and diverging traffic safely. This could be done through traffic signals, separate cycle routes, carriageway markings, signs, or a combination of these with care to be taken to ensure that cycle routes become neither too disjointed nor circuitous.

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## 3.6 Highway design

**3.6.1** The layout of the road network and its associated junctions will depend largely on the hierarchy of roads that make up the development.

**3.6.2** UDP Review policies ST1 and ST1.1 relate to the Strategic Transport Corridors and Road Network.

## 3.6.1 Road hierachy

**3.6.1.1** Four main types of road make up the hierarchy, as follows:

- Primary Distributor;
- District Distributor;
- Local Distributor;
- Residential (Major, Minor, Shared Surface, Driveway).


Figure 2 Road Hierachy example within Stockport

# 3 Design Standards

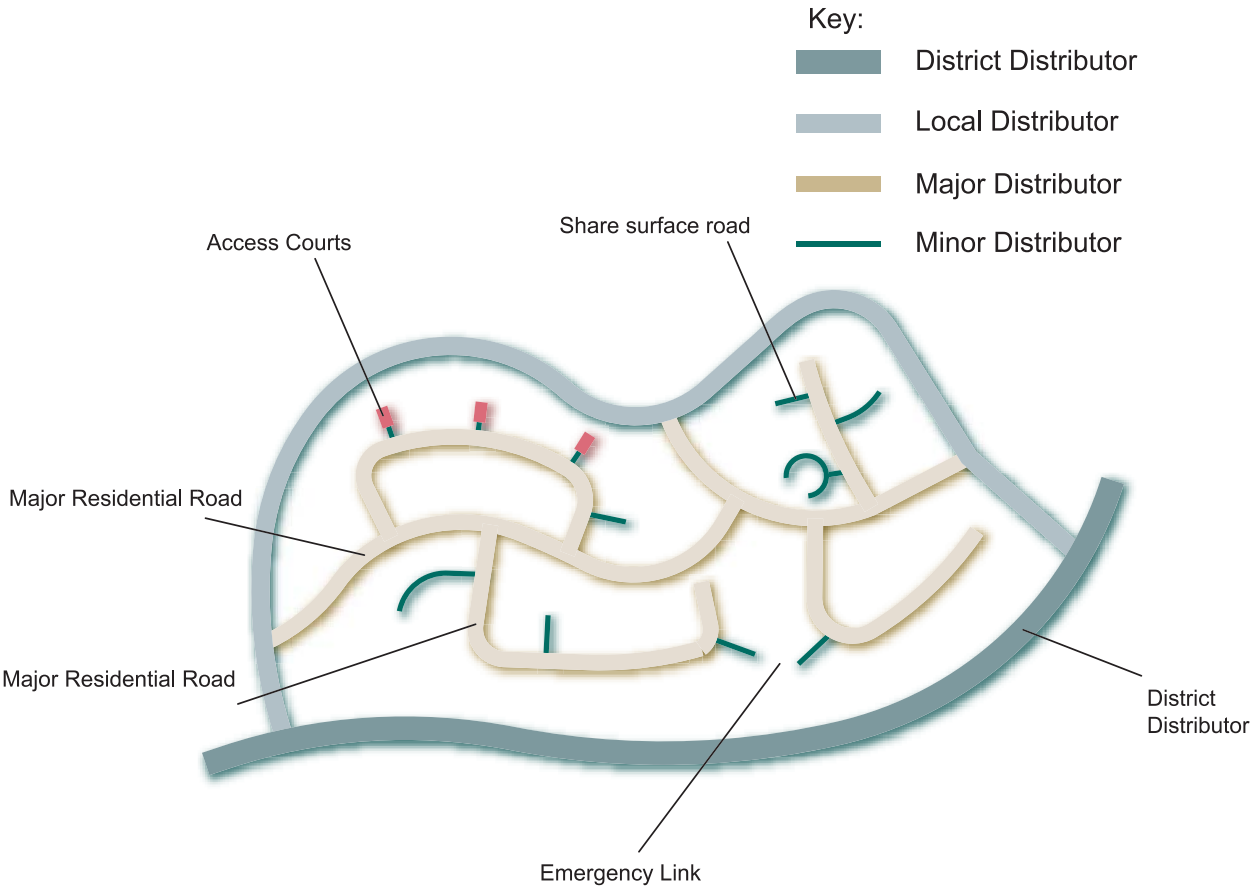


Figure 3 Schematic Road Hierarchy

## 3.6.2 Primary distributor

**3.6.2.1** Primary Distributors carry most of the strategic traffic to and from a primary destination. Within Stockport, roads of this type are the M60, the A6 and the A34.

## 3.6.3 District distributor

**3.6.3.1** The purpose of these roads is to distribute traffic between the residential, industrial and principal business areas. They connect the strategic roads that make up the primary road network with local distributors.

**3.6.3.2** Due to their nature, they normally carry public service vehicles and commercial traffic. There is a general presumption against individual frontage access and residential on-street parking on district distributors.

## 3.6.4 Local distributor

**3.6.4.1** Local distributor roads form the links between residential access roads and the district distributor roads, providing bus routes to residential areas and distributing access traffic.

**3.6.4.2** Direct frontage access to residential properties will be restricted on Local Distributors. A turning facility will normally be needed within the property curtilage to avoid vehicles reversing on the highway. The basic required local distributor road standards are:

| | |
|---|---|
| Provides access to: | Major residential roads Minor access roads Shared surface roads |
| Minimum carriageway width | 6.75m plus additional 1.5m for each with flow cycle lane |
| Minimum centreline radius | 40m |
| Footway provided on both sides | 2.0m |
| Segregated cycle way required: | |
| on one side | Minimum width 2.0m or 3.5 if combined with footway |
| on two sides | Minimum 1m per side (2m preferred) - if combined with footway, minimum 2.5m required |

Table 3.3 Local Distributor Road Table

## 3.6.5 Residential

**3.6.5.1** Residential Roads have a hierarchy of their own which is:

- Major Residential Access Road;
- Minor Residential Access Road;
- Homezone;
- Shared Surface; and
- Driveway.

## 3.6.6 Major residential access roads

**3.6.6.1** Access roads form the major part of residential road networks and provide direct access to individual dwellings and parking spaces. The design speeds for all major access roads should be 20mph, this is normally secured through the TRO process. Major residential roads serve between 50 and 300 units.

| | |
|---|---|
| Serves | Between 50 and 300 units |
| Gains access from | Classified roads local distributor |
| Provides access to | Minor residential access roads<br><br>Shared surface roads |

# 3 Design Standards

| | Private drives |
|---|---|
| Minimum carriageway width | 5.5m, 6.75m for bus routes |
| Minimum centreline radius | 20m |
| Footway provided on both sides | 2.0m |

Table 3.4 Major Residential Road Table

## 3.6.7 Minor residential roads

**3.6.7.1** Minor residential access roads give direct frontage access to dwellings and may not necessarily be through routes for motor vehicles. The design speed of minor residential access roads should be 20mph or less.

| Serves | Up to 50 units |
|---|---|
| Minimum carriageway width | 5.5m throughout the development<br><br>Pinch points/narrowing to 3.7m over short distances are acceptable provided there is good intervisibility |
| Minimum centreline radius | 15m |
| Footway provided on both sides where there is frontage access (or where a footway on the opposite side provides a direct route out of an area or onto another road) | Minimum width 2.0m |
| Margin is required where there is no frontage access | Minimum margin width 1.0m |

Table 3.5 Minor Residential Road Table

## 3.6.8 Homezones

**3.6.8.1** The Department for Transport, Local Government and the Regions (DTLR) has defined a homezone as:

**3.6.8.2** "…residential streets in which the road space is shared between drivers of motor vehicles and other road users, with the wider needs of residents (including people who walk and cycle, and children) in mind. The aim is to change the way that streets are used and to improve the quality of life in residential streets by making them places for people, not just traffic. Changes to the layout of the street should emphasise this change of use, so that motorists perceive that they should give informal priority to other road users."

**3.6.8.3** It is important that for shared surface streets, the principles of homezones are incorporated into the design. This guide provides specifications for the dimensions of shared surface streets; however the design needs to go beyond this to encourage an attractive and safe on-street residential

environment. The street should be designed as a valued public space and not just a place for movement.

**3.6.8.4** A homezone treatment should not be seen as anti-car but as a way of reducing the dominance of both moving and parked cars. Car speeds should be reduced to a level where the pedestrian has priority through appropriate design. This might include suitably located landscaping or street furniture, but not the more traditional traffic calming measures. The area should include a 'gateway' entrance to signify the change in the nature of the space.

**3.6.8.5** The approach to design is not geared around accident prevention, although this is important, but on encouraging a variety of uses including play, movement by all modes, social interaction and community activities.

**3.6.8.6** Informal play areas should be incorporated into the design, ideally protected from moving cars by street furniture such as bollards or informal seating, as shown in the figures below. These areas should be seen as complementing the play spaces being promoted by the Council in larger developments.

**3.6.8.7** It is not proposed that new streets should be cluttered with homezone signage, but that movement in these areas should be constrained by the design elements. For example, the following ideals should be observed:

- The design should not permit speeds greater than 10mph;
- Traffic flows should be low;
- They should consist of shared surfaces, indirect traffic routes, areas of planting, and features, such as seating, to encourage community use of the street;
- Gateways should mark the limits of the area and inform drivers they should give informal priority to other street users;
- A sense of community should be fostered, leading to an increase in natural surveillance;
- A greater diversity of activity and use of the street by residents should be encouraged, including children's play;
- Residents should be encouraged to walk and cycle within their local area and to nearby destinations; and
- No more than 50 residential units to be served via a single street designed as a homezone.

**3.6.8.8** More information regarding homezones can be found at www.homezones.org or in 'Homezones: Challenging the Future of our Streets (Department for Transport, 2005)'.

### 3.6.9 Shared surface

**3.6.9.1** Shared surface roads have the highway space shared by all users. The design of shared surface roads should have particular regard to the mobility impaired.

**3.6.9.2** Higher density developments on a shared surface road are an opportunity to create attractive and unique dwellings. These would usually be in a housing square or mews court layout; living spaces are arranged around a central space which allows a clear area for parking and turning.

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**3.6.9.3** These may be particularly appropriate in an urban context, or for infill sites off established roads where standard house types are unlikely to be suitable. They are often developed where special attention to privacy, parking and dwelling curtilages is required due to their proximity to existing dwellings.

| | |
|---|---|
| Serves | Up to 25 units |
| Minimum centreline radius | 15m |
| Shared surface roads no footway provided | Minimum core width 6.5m including a 2m service strip |
| Margin provided on both sides | Minimum margin width 0.5m |

Table 3.6 Shared Surface Table

## 3.6.10 Shared private driveway

**3.6.10.1** Shared private drives are not constructed, adopted or maintained as public highway. They should be hard surfaced and have a minimum width of 5.5m for 10m from the highway and a minimum width of 3.7m thereafter. The maximum permitted length of a shared private drive shall be 65m measured from the kerb line of the highway to the furthest dwelling frontage, and no more than 5 dwellings shall be served from it. If this distance is exceeded then an adoptable layout with a turning head will be required. Visibility distances at junctions with the highway should comply with requirements in section 3.7.

**3.6.10.2** Lighting is not a requirement of shared private drives but if it is to be provided then it should be included in plans so consultation can be made with the Street Lighting Engineer to ensure that there is no conflict with the adopted road lighting. The maximum permitted gradient for a shared private drive is 10% with a platform of gradient no greater than 6.7% and length not less than 10m at the junction with the adopted highway. Intended shared private drives should be clearly identified as such on submitted drawings.

**3.6.10.3** Shared private driveways may be accessed from a major or minor residential road or shared surface road. There should be good visibility between shared drives and the public highway based on the design speed of the public road.

## 3.6.11 Bin stores

**3.6.11.1** Shared private drives are not constructed, adopted or maintained as public highway. They should be hard surfaced and have a minimum width of 5.5m for 10m from the highway and a minimum width of 3.7m thereafter. The maximum permitted length of a shared private drive shall be 65m measured from the kerb line of the highway to the furthest dwelling frontage, and no more than 5 dwellings shall be served from it. If this distance is exceeded then an adoptable layout with a turning head will be required. Visibility distances at junctions with the highway should comply with requirements in 3.7 ‘Visibility requirements’.

**3.6.11.2** Lighting is not a requirement of shared private drives but if it is to be provided then it should be included in plans so consultation can be made with the Street Lighting Engineer to ensure that there is no conflict with the adopted road lighting. The maximum permitted gradient

for a shared private drive is 10% with a platform of gradient no greater than 6.7% and length not less than 10m at the junction with the adopted highway. Intended shared private drives should be clearly identified as such on submitted drawings.

**3.6.11.3** Shared private driveways may be accessed from a major or minor residential road or shared surface road. There should be good visibility between shared drives and the public highway based on the design speed of the public road.

### 3.6.12 Private driveway

**3.6.12.1** Individual private drives serve only one dwelling. They should have a minimum width of 3.3m and length of 5.5m if they lead to a garage. If there is no garage at the end of the drive and it is not necessary to pass between a vehicle on the drive and the front of the dwelling to reach a doorway, the length may be reduced to 5.0m. Where a driveway is intended for tandem use by two vehicles a minimum length of 10.0m should be provided. Driveway lengths between 7m and 10m should be avoided as this can lead to two vehicles being parked with one vehicle partially obstructing the footway. Visibility splays for an Individual Private Driveway should be provided in accordance with requirements in Section

| Design Speed (kph) | 70 | 60 | 50 | 32 |
|---|---|---|---|---|
| Stopping Sight Distance (m) | 120 | 90 | 70 | 33 |

Table 3.7 Stopping Sight Distance Table

## 3.7 Visibility requirements

**3.7.1** Visibility along a road is important and standards are detailed below regarding stopping sight distances and visibility on bends.

### 3.7.1 Stopping sight distances

**3.7.1.1** Design Manuals for Roads Stopping sight distances are determined in Design Manual for Roads and Bridges (DMRB) Volume 6 Section 1 TD9/93.

**3.7.1.2** Figure 4 ‘Measure of Stopping Sight Distance’ shows the stopping sight distance appropriate for each design speed.

# 3 Design Standards

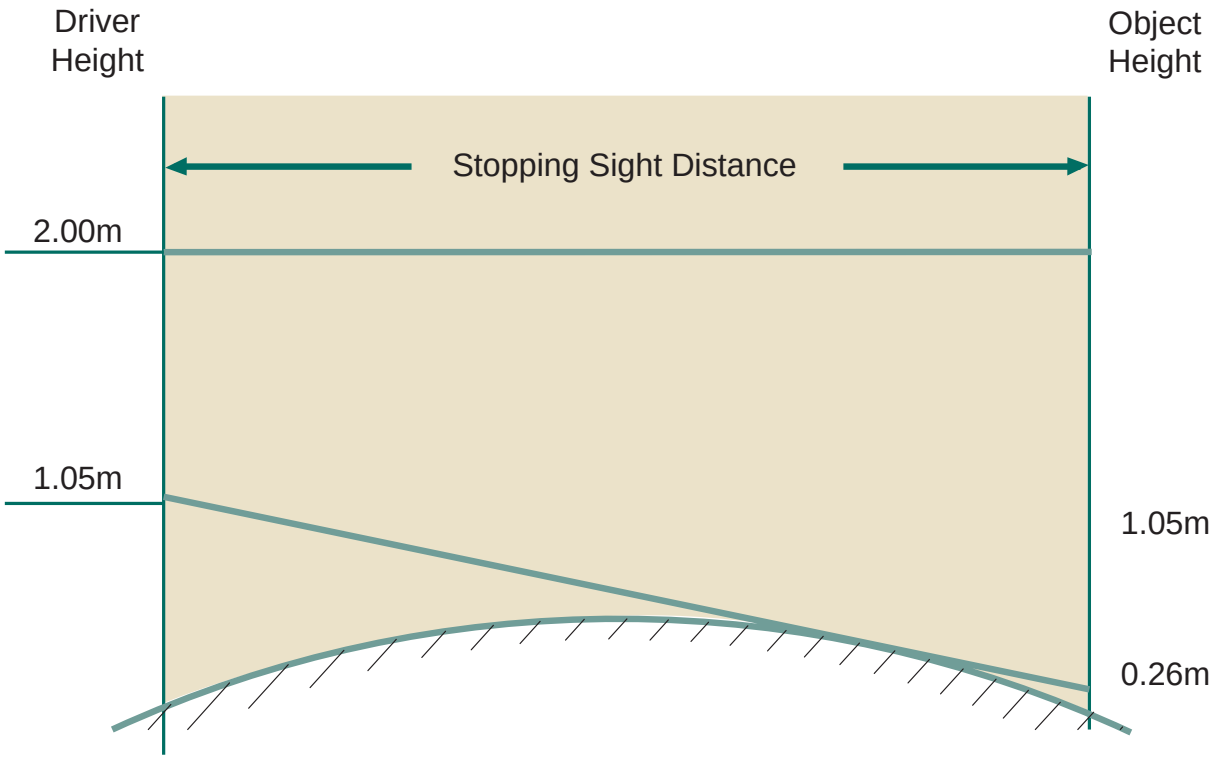


Figure 4 Measure of Stopping Sight Distance

**3.7.1.3** The stopping sight distance is measured from a minimum driver's eye height of between 1.05m and 2.00m, to an object height of between 0.26m and 2.00m both above the road surface, as shown in Figure 4 'Measure of Stopping Sight Distance'. It must be checked in both the horizontal and vertical plane, between any two points in the centre of the lane on the inside of the curve.

**3.7.1.4** Care shall be taken to ensure that no substantial fixed objects obstruct the sightlines including road furniture such as traffic signs. However, isolated slim objects such as lamp columns, sign supports, or slim footbridge supports of width 550mm or under can be ignored.

## 3.7.2 Visibility on bends

**3.7.2.1** The visibility on bends is influenced by, and also influences, the speed of vehicles and their stopping distances. To enable drivers to see and stop on bends if necessary, a forward visibility curve is required. The construction of a forward visibility curve is set out in Figure 5 'Visibility on Bends: Forward Visibility Splay'.

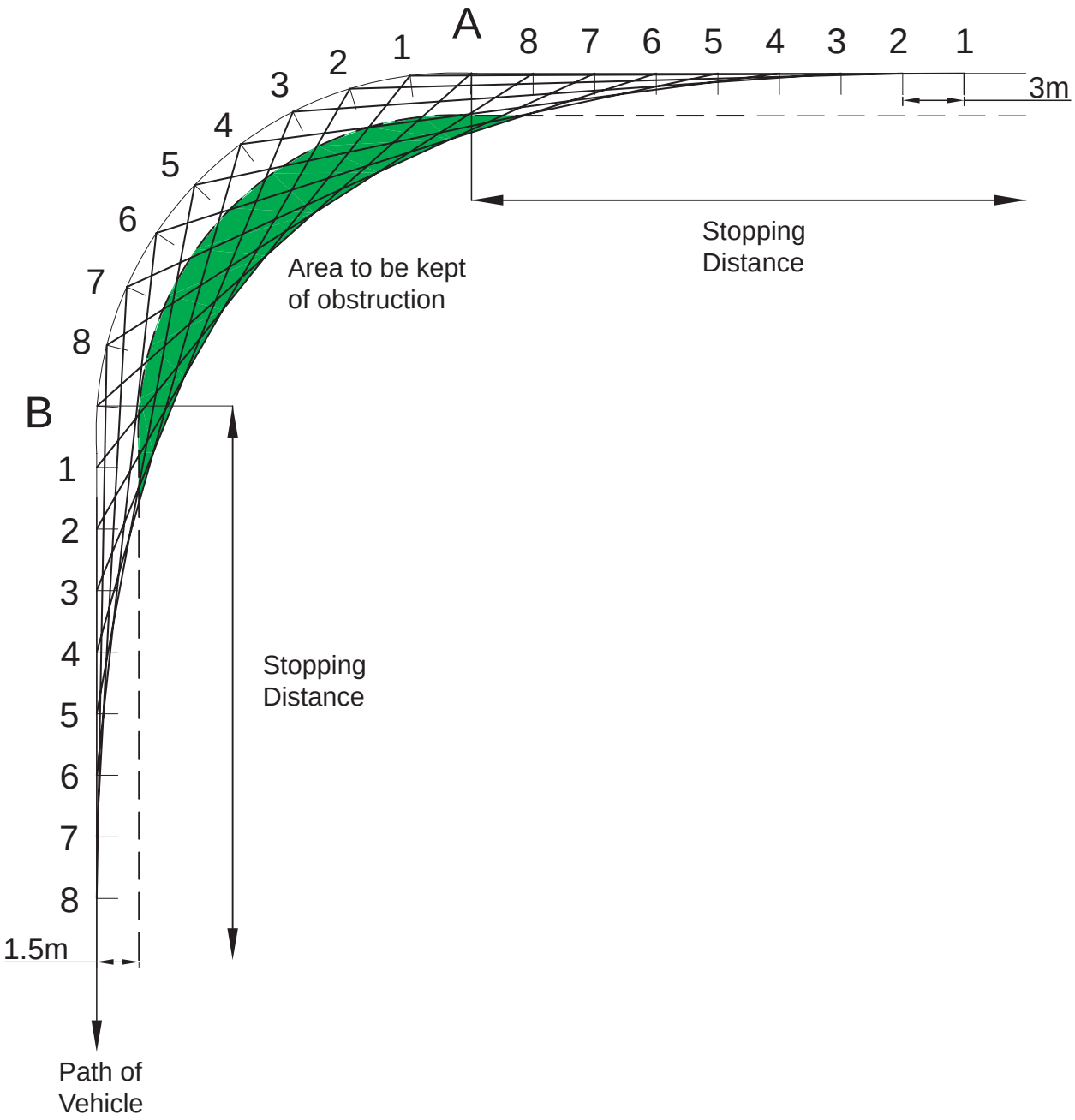


Figure 5 Visibility on Bends: Forward Visibility Splay

**3.7.2.2** The following gives guidance on how to construct a forward visibility curve:

- Draw a line parallel to the inside kerb, 1.5m into the carriageway, to represent the path of the vehicle;
- Determine the required stopping distance based on the expected speed of vehicle, and measure this distance back along the vehicle path from tangent point A;
- Divide the stopping distance into equal increments of around 3m and number these points in order;

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- Mark the same stopping distance (with the same number of increments marked with the same numbers) around the curve, then do this again finishing at a full stopping distance beyond the tangent point B; then
- Join together the same numbers and the area covered is the area to be kept clear of obstruction.

**3.7.2.3** The 'splay' produced by the visibility curve will form part of the public highway.

**3.7.2.4** Forward visibility splays may be reduced to 15m for homezones and shared surface layouts where design speeds should not exceed 10mph.

## 3.7.3 Visibility at priority junctions

**3.7.3.1** Visibility zones are required at all junctions. The provision of adequate visibility is essential in order to provide a safe stopping distance for all traffic. Stopping distance should be sufficient to allow a driver to stop a vehicle at a comfortable rate of deceleration in wet weather conditions.

**3.7.3.2** Guidance for calculating the visibility splay is as follows:

**3.7.3.3** In the horizontal plane, the visibility for turning out of non-priority roads is defined by the 'x' distance (Table 3.8 ‘Forward visibility 'X' distance approaching a junction’) and the 'y' distance (Table 3.9 ‘'Y' distance along major road’).

| 'X' distance for Residential Roads | Distance in metres |
|---|---|
| Single dwellings or small groups of up to six units for junctions with unclassified road | 2.0 |
| Applies to all access to classified roads and developments of 6-50 units with access to unclassified roads. | 2.4 |
| Applies to all developments where number of units exceeds 50 | 4.5 |

Table 3.8 Forward visibility 'X' distance approaching a junction

| 'Y' distance for Residential Roads | Distance in metres |
|---|---|
| Primary distributor with 40mph speed limit | 120 |
| Primary, district or local distributor with 30mph speed limit | 90 |
| Major residential access road with 30mph speed limit | 90 (60 if actual speed is constrained to 30mph) |
| Minor residential access road with 20mph speed limit | 45 (33 if actual speed is constrained to 20mph) |

Table 3.9 'Y' distance along major road

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**3.7.3.4** Figure 6 'Area of Unobstructed Visibility' shows how these distances are used to create the area where vision should be unobstructed.

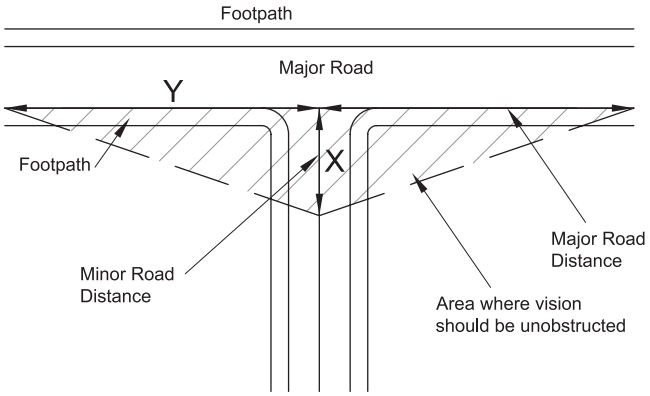


Figure 6 Area of Unobstructed Visibility

**3.7.3.5** It is also necessary to provide visibility splays at junctions of footpaths and cyclepaths with carriageways. An 'x' distance of 1m should be provided for residential roads serving up to 300 units and an 'x' distance of 1.5 m should be used elsewhere.

**3.7.3.6** Where vehicles or cycles cross the footway, a 1m x 1m visibility splay should be provided. At the junction of a driveway and a carriageway, visibility to the same standard as a road junction should be provided.

**3.7.3.7** Within the area defined by the appropriate 'x' distance and 'y' distance, there should be clear sightlines between a height of 0.6 and 2m in all cases. These sightlines should be determined from an eye height of 1.05m to 2m. These should take account of what both drivers and pedestrians can see. Figure 7 'Visibility Sightlines' demonstrates this.

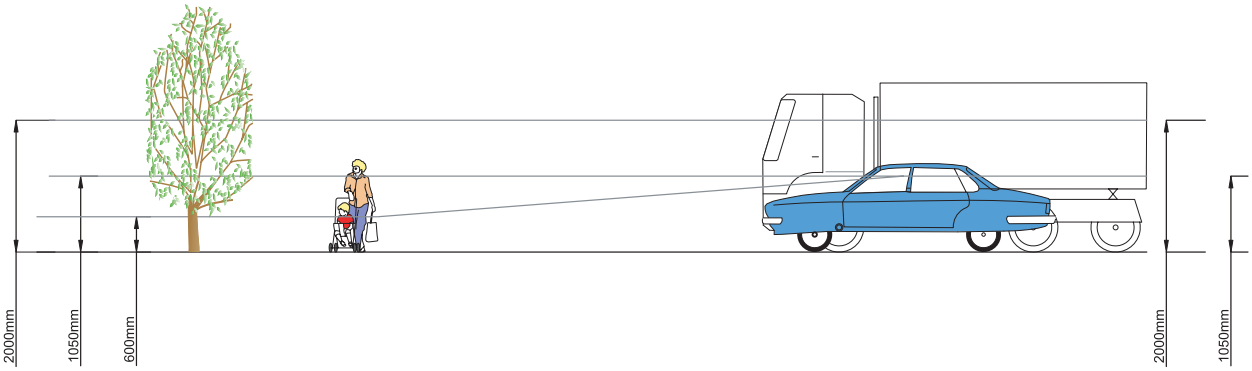


Figure 7 Visibility Sightlines

**3.7.3.8** Where a visibility splay is backed by a hedge, or it is intended to plant a hedge, then a distance of 1m should be allowed between the rear of the visibility splay and the hedge/intended hedge to allow for growth

## 3.8 Other design specifications

### 3.8.1 Turning places

**3.8.1.1** Turning facilities are required at the ends of cul-de-sacs and the size of the turning space will depend on the vehicle normally expected to use them. The normal design vehicle for a residential layout is a refuse vehicle; however where the Council assesses that the cul de sac may need to be served by a bus route, allowance may need to be made for a 12m length bus in the design.

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**3.8.1.2** There is no particular standard layout for a turning head, although it must provide sufficient space for a vehicle to manoeuvre safely. Care also needs to be taken to ensure that a turning area does not become an alternative area for people to park their cars. One way in which this can be avoided is by ensuring that the turning area provides direct access to the private drives of adjacent properties. Designated parking bays may also be provided adjacent to the head, to enable the turning head to be kept clear.

**3.8.1.3** Approximate turning areas are illustrated in Figure 8 ‘Turning Areas within Residential Developments’ for a refuse vehicle.

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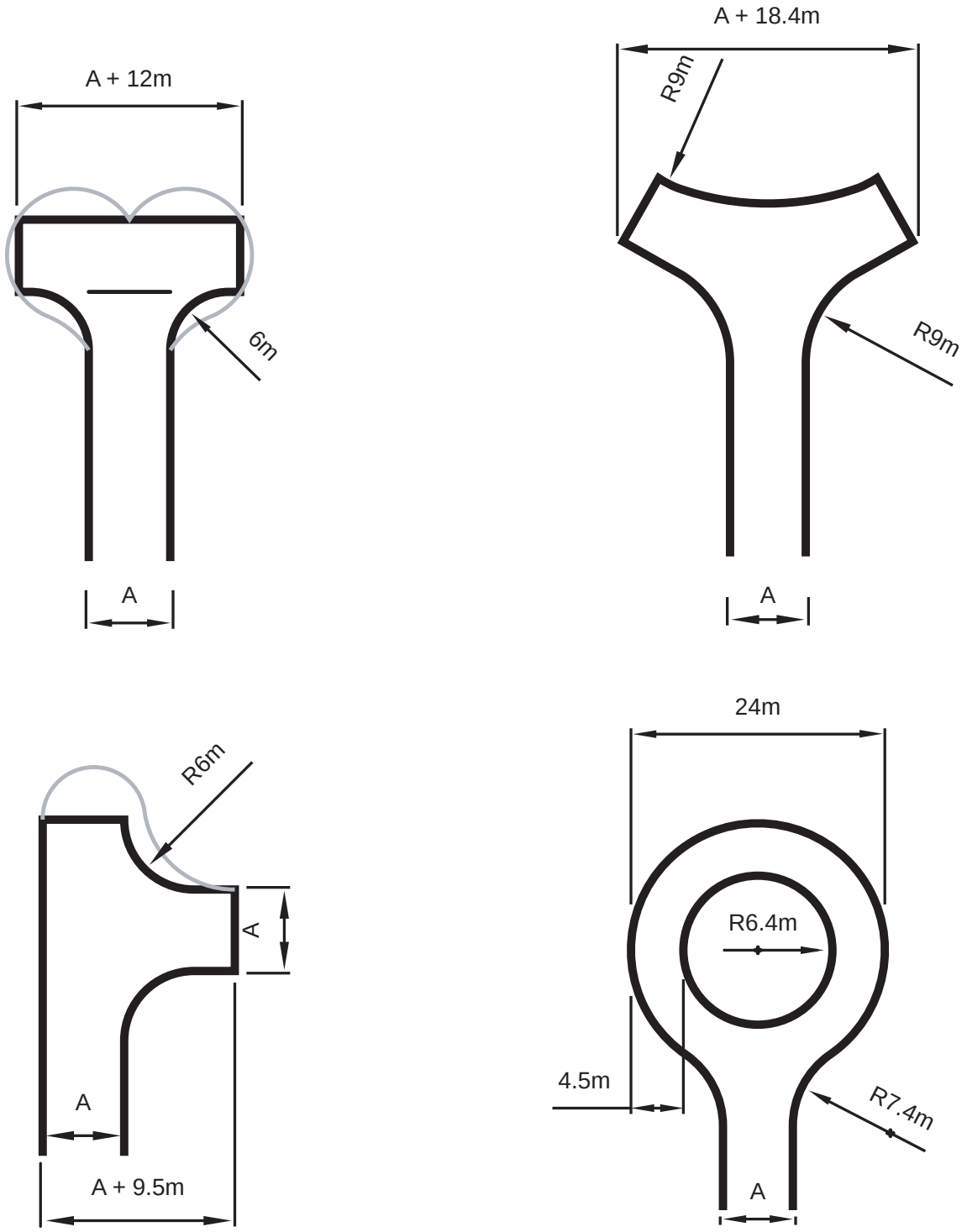


A = Minimum width for road type either 5.5m or 4.5m

Figure 8 Turning Areas within Residential Developments

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## 3.8.2 Gradient

**3.8.2.1** The general aim for the highway is to avoid gradients in excess of 7% (1:14) with 1:10 as the normal maximum. A 'platform' with maximum gradient 6.7% (1:15) and minimum length 10m should be provided at the approaches to junctions.

**3.8.2.2** Where changes in gradient from positive to negative occur (summit of hill), or negative to positive (bottom of valley), these should be curved and smoothed appropriately to ensure maximum forward visibility and comfort for the highway user.

**3.8.2.3** Private drives should not be designed with a gradient steeper than 1:10 and should be as level as possible.

## 3.8.3 Provision and spacing of junctions

**3.8.3.1** Junctions are an important part of the highway network, providing points of entry from one road to another. Junction design should minimise the risk of accidents; while providing appropriate capacity for the expected traffic levels, they must be designed for appropriate speeds. They should also be as safe as possible for pedestrians, cyclists and the visually or mobility impaired.

**3.8.3.2** When deciding on the frequency and location of junctions, the nature and status of the roads being connected should be taken into consideration. The minimum spacing of junctions should exceed the stopping sight distance for the 85th percentile speed of the major road, and junctions should be spaced at regular intervals.

**3.8.3.3** In general, junctions should be placed away from existing junctions due to turning conflicts, and new priority crossroad junctions will not be permitted.

**3.8.3.4** For major residential developments off a classified road of 50 units (50 houses or 100 flats) or more, a ghost island right turn facility should be provided, ensuring that it does not create a hazard for cyclists. Where use of an existing junction off a classified road experiences significant intensification of use (greater than 10% increase) and resultant turning movements exceed 500 Annual Average Weekday Traffic flow (AAWT) then ghost island right turn facilities should be added to the junction, (ensuring that they do not constitute a hazard for cyclists). Other junction improvements such as improved visibility or pedestrian facilities may also be needed to mitigate increased use.

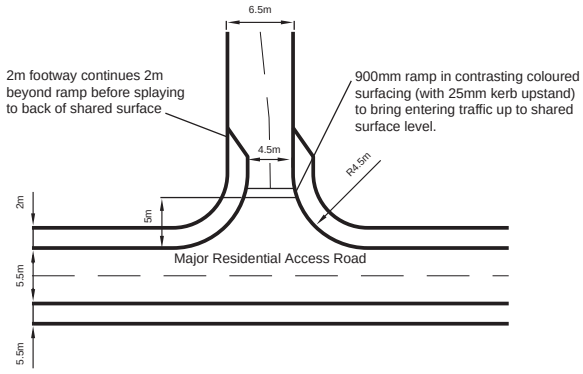


Figure 9 Junction for a shared surface cul-de-sac with major residential access road

**3.8.3.5** The dimensions of ghost island right turn junctions (shown on Figure 10 ‘Major/minor priority junction with Ghost Island’ and Figure 11 ‘Major/minor priority junction with Ghost Island and major road Cycle Lanes’) should be as follows:

- Through lane width 3.5m or 3.0m plus a 1.5m cycle lane where the road is identified as part of the Cycle Network;
- Right turn lane width 3.0m (minimum 2.5m where only light vehicles are likely to use the facility);
- Tapers of 1:10 about the centreline or 1:20 if on one side only (minimum 1:15); and
- Island or refuge to be provided at the end of the right turn lane with minimum island/refuge to kerb clear width 4.0m either side.

**3.8.3.6** Dropped kerbs with tactile paving must be provided at all junctions across the mouth of the non-priority road in accordance with guidance on the use of tactile paving surfaces. The dropped kerbs must be flush with the road surface.

**3.8.3.7** If the non-priority road is a shared surface, a 900mm ramp should be provided to lift the carriageway level to that of the shared surface and provided in a contrasting colour. The ramp should be located 5m beyond the junction radius and the footways continued for a minimum distance of 2m beyond the ramp to join with the shared surface.

| Major priority road | Minor non priority road | Radius (m) | Min junction spacing (m) | | Carriageway width of minor arm at junction |
|---|---|---|---|---|---|
| | | | Adjacent | Opposite | |
| Classified Road / Local distributor | Any other road | 6m or 9m if pedestrian refuge in minor arm | 60 | 30 | 5.5 or 6.75m if intended for bus service, see fig 3.38 if refuge required |
| Major or minor residential access road | Major or minor residential access road | 6 or 4.5 | 45 | 15 | 5.5 |
| | Shared private drive | Dropped crossing | 20m | N/a | 5.5 |
| | Single private drive | Dropped crossing | 20m | N/a | 3.3 |

Table 3.10 Junction Detail Summary Table

## 3.8.4 Priority junctions

**3.8.4.1** Priority junctions are the most common type of junction control. Traffic on the minor road gives way to traffic on the major road and is normally controlled by 'Give Way' signs and road markings. However, in exceptional circumstances where there are severe visibility restrictions, 'Stop' signs and road markings may be considered, with appropriate reference to the Traffic Signs Regulations.

**3.8.4.2** The main advantage of all major/minor priority junctions is that through-traffic on the major road is not delayed. However, high road speeds along the main route should not be encouraged.

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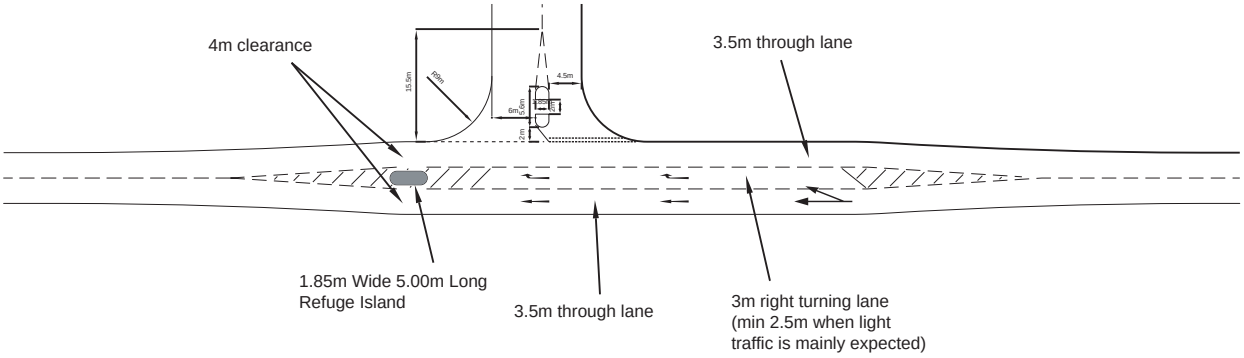


Figure 10 Major/minor priority junction with Ghost Island

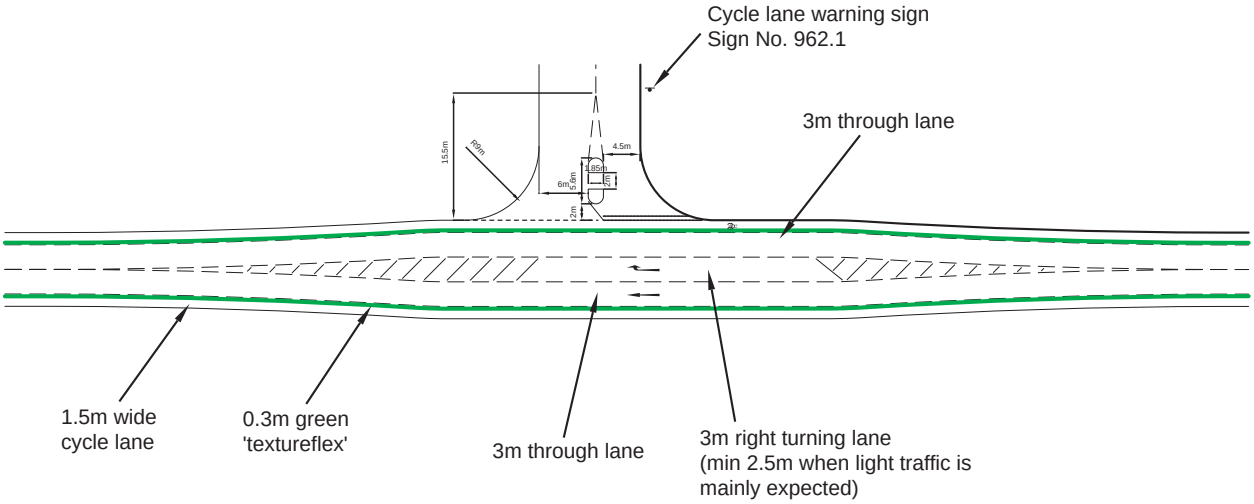


Figure 11 Major/minor priority junction with Ghost Island and major road Cycle Lanes

## 3.8.5 Junction layout

**3.8.5.1** The nature and scale of the priority junction to be used is based upon a number of factors including traffic flow, the nature and proportions of buses and HGVs, an initial assessment of entry and turning capacities and occurrence of road traffic accidents in the area. It should also be based on a consideration of the particular site characteristics such as type of development and topography.

**3.8.5.2** In order to help prevent accidents taking place at the junction it is important to ensure that the proposed layout of the junction is designed to meet safety standards. The safety standards are:

- At priority junctions the major and minor arms should meet as close to right angles as possible to ensure that good visibility in all directions is maintained and the turning radii are kept to a maximum for all movements; and
- The visibility at the junction should conform to the standards as described in Section 3.7.3 ‘Visibility at priority junctions’.

**3.8.5.3** A space of at least 30m between junctions on either side of the priority road is required where the road serves between 100-300 dwellings and where the speed limit is more than 20mph. However, where the speed limit is 20mph or less, junctions may be located closer together as described in 4 ‘Speed Management’.

## 3.8.6 Traffic islands and refuges

**3.8.6.1** In order to assist pedestrian crossing movements, a pedestrian refuge may be required in the minor arm of a priority junction in locations where turning movements exceed 500AAWT and there is a significant pedestrian crossing movement. They will normally be required where there is a double exit lane from the minor arm.

**3.8.6.2** Figure 12 ‘Junction with Pedestrian Refuge and Single Lane Exit’ and Figure 13 ‘Junction with Pedestrian Refuge and Two Lane Exit’ show the minimum layout requirements for a side road incorporating a pedestrian refuge at road junctions with a single or double exit lane. The refuge should have a minimum crossing width of 2m. The junction radii should be 9m with a minimum exit width from the minor road of 4.5m (6m for a double lane exit) and entry width of 6m. These dimensions allow access by a bus or furniture lorry without over-run of the footway.

## 3.8.7 Junction treatments

**3.8.7.1** In order to prevent traffic entering the non-priority road at high speed, and to indicate to drivers that they are entering a different type of road within the hierarchy, it may be appropriate to introduce traffic calming features at the mouth of a priority junction, for example, red surfacing. The types of treatments that may be applicable are described in more detail in 4 ‘Speed Management’.

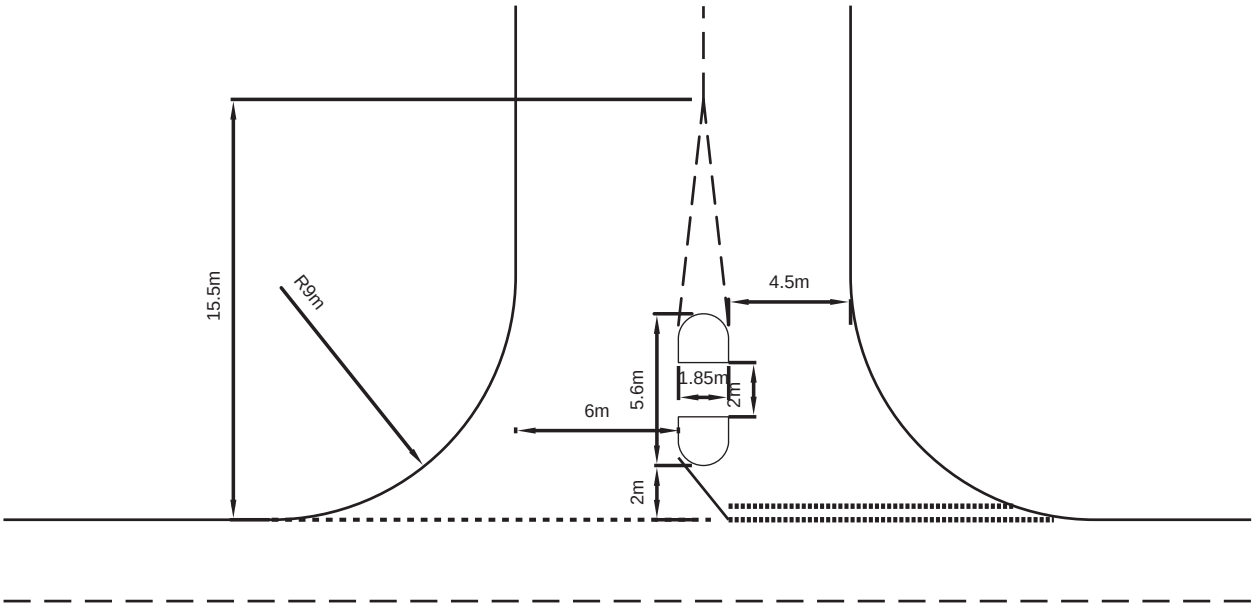


Figure 12 Junction with Pedestrian Refuge and Single Lane Exit

# 3 Design Standards

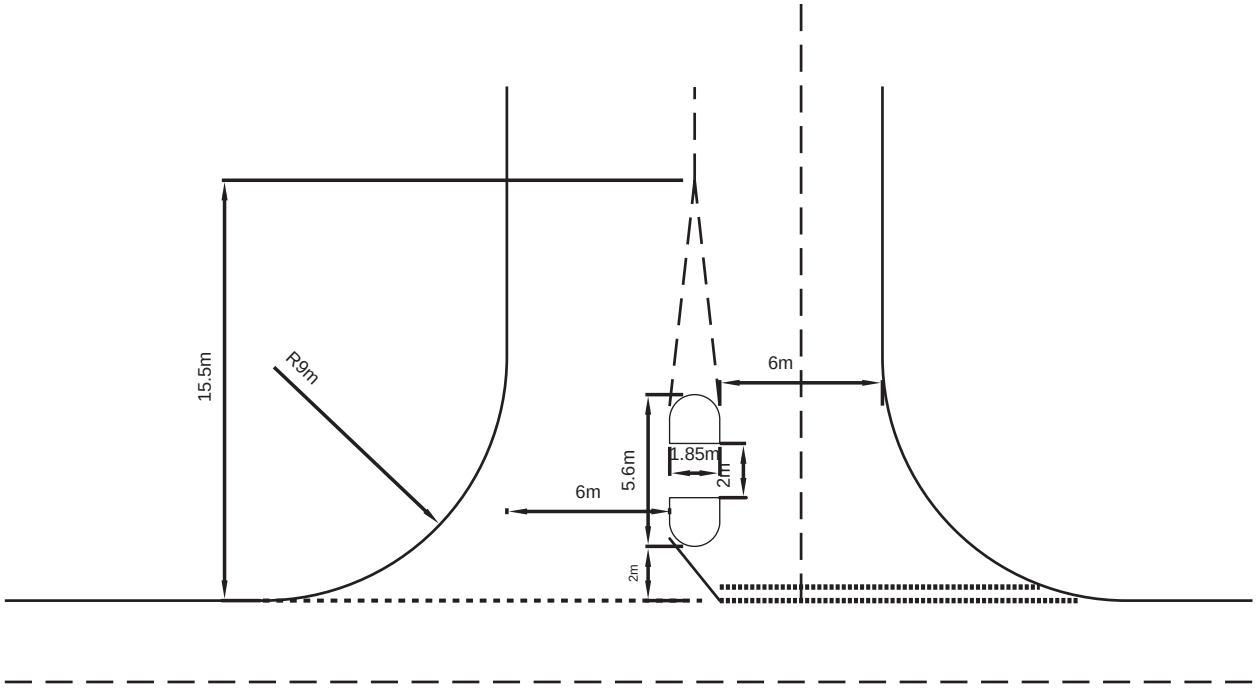


Figure 13 Junction with Pedestrian Refuge and Two Lane Exit

## 3.8.8 Mini-roundabouts

**3.8.8.1** A mini-roundabout is defined as 'a roundabout having a one-way circulatory carriageway around a flush or slightly raised circular marking less than 4m in diameter and with or without flared approaches'.

**3.8.8.2** Mini-roundabouts can be effective in improving existing urban junctions that experience safety and side-road delay problems. It may also be appropriate to install a mini-roundabout at the junctions between old and new development.

**3.8.8.3** Drivers should be aware in good time that they are approaching a roundabout by the layout design. Mini-roundabouts should only be used when all approaches are subject to a 30mph speed limit or less. Private access off a mini-roundabout is not normally acceptable.

**3.8.8.4** Mini-roundabouts need to have proper deflection islands otherwise they will not be accepted. A mini-roundabout is not normally acceptable if just provided to overcome lack of visibility splay.

**3.8.8.5** Where physical deflection is not possible on approaches, road markings and small traffic deflection islands should be used so that some vehicle deflection occurs. 'Keep Left' bollards and other essential signs should be used but these islands should be kept free of unnecessary clutter.

**3.8.8.6** The mini-roundabout (1m to 4m diameter) should be as large as possible in relation to the site and be domed to a maximum height of 125mm at the centre for a 4m island. The ratio of height to diameter should always be 1:32. The doming, in conjunction with the presence of some adverse crossfall, will help to make the roundabout more conspicuous to drivers. No bollards, signs, lighting columns or other street furniture should be placed on the dome, which should be

completely white and reflective. This is because at times of bad visibility, surface materials such as natural stone sets, which do not contrast with the surrounding road surface, are not sufficiently conspicuous.

**3.8.8.7** Care should be taken not to create the capacity for 'U' turns unnecessarily; as such manoeuvres are not normally expected at mini-roundabouts, due to their compactness.

**3.8.8.8** Within residential areas a mini-roundabout may be acceptable provided:

- There is be no vehicular or pedestrian access (except public footpaths) to any branch within a 20m radius of the centre of the island;
- The centre lines of all the branches intersect at the centre of the island;
- The angle between two adjacent branches is at least 80°;
- The roundabout is not relied on for turning heavy goods vehicles; and
- All arms serve a minimum of 50 units.

**3.8.8.9** Care needs to be taken on design of mini roundabouts to ensure that appropriate provision is made for both pedestrian and cyclist safety.

## 3.8.9 Roundabouts

**3.8.9.1** Mini-roundabouts are more likely to be used in residential developments than conventional roundabouts. It may however, be appropriate to introduce a roundabout at the junctions between local distributor and a major residential roads for large residential developments, depending on the traffic levels and patterns expected at the junction. A roundabout may be appropriate where there are 5 arms to a junction. If there are 3 arms, a priority junction would be the preferred design. If there are 4 arms, traffic signals may be appropriate.

**3.8.9.2** Roundabouts perform particularly well with 3 arms, being more efficient than signals, provided the traffic demand is well balanced between the arms. If the number of entries is above 5, driver comprehension is affected and the roundabout becomes larger with the probability that higher circulatory speeds will be generated.

**3.8.9.3** The geometric design considerations for roundabouts are detailed in DMRB Volume 6 Section 2 - TD 16/93.

**3.8.9.4** Roundabouts can present a particular hazard for pedal cyclists. Measures to be considered to improve safety for cyclists at roundabouts include:

- With flow cycle lanes around the circulatory carriageway;
- Creation of joint cycle/pedestrian footways around the periphery of the junction with suitable crossing facilities;
- Signposting alternative cycle routes away from the roundabout, ensuring that cyclists do not have to cycle significantly further; and
- Signalising the roundabout at main road junctions and considering directing cyclists on a cycle route straight across it.

**3.8.9.5** Pedestrian safety is also of paramount importance at roundabouts. Separate pedestrian routes with crossings away from the flared entries to roundabouts are preferable. Here the

# 3 Design Standards

carriageway widths are less and vehicular traffic movements are more straightforward. However, this is not always practical, in which case the following facilities should normally be considered:

- Unmarked crossing place (dropped kerbs) with a central refuge if possible; and
- Some form of controlled crossing with or without a central refuge which includes for cyclists.

## 3.8.10 Traffic signal junctions

**3.8.10.1** The installation of traffic signals will be considered for new development in the following circumstances:

- Where traffic generated by the development will have a significant impact on an existing junction and cause it to exceed capacity in peak assessment periods;
- Where traffic generated by the development will have a significant impact on an existing junction and cause possible conflict with a nearby signalised or zebra crossing;and
- Where there is significant benefit for public transport operations, pedestrian safety and cyclists in providing signals.

**3.8.10.2** Traffic signals will not normally be considered where the major road is unclassified, to serve a private development access point or to alleviate lack of junction visibility due to land ownership constraints.

**3.8.10.3** Any submission of a signal controlled junction layout must comply with Department for Transport design standards contained within DMRB Volume 6 Section 2 TD50/04 and be accompanied by analysis using VISSIM, TRANSYT LINSIG or other appropriate programs. A Stage 1 Safety Audit must accompany the submission.

**3.8.10.4** A commuted sum for maintenance of a traffic signal junction or signal crossing is required equivalent to 15 years maintenance charges.

**3.8.10.5** Where a new development is likely to generate significant pedestrian movement or where traffic generated by a development may have a significant impact on a road where significant pedestrian crossing movement occurs then there may be a need to install a Puffin or Zebra crossing. Where cycle movements are significant a Toucan crossing may be needed and where equestrian movements are expected a Pegasus crossing may be required.

**3.8.10.6** Any submission of a signal controlled or Zebra crossing must be accompanied by analysis of anticipated movements, traffic flows and a Stage 1 Safety Audit.

## 3.8.11 Landscaping at junctions

**3.8.11.1** The design of landscaping at junctions shall be carried out in consultation with the appropriate specialist. The designer shall consider the maintenance implications and where the responsibility for maintenance is passed to a third party, maintenance standards must be agreed.

**3.8.11.2** If the designer wishes to enhance the standard of planting or landscaping around junctions this shall only be with the agreement of Stockport's Planning Officer, and shall not compromise visibility or safety.

**3.8.11.3** Further details regarding landscaping are given in 8 ‘Soft Landscaping’ of this guide.

# 4 Speed Management

## 4.1 Introduction

**4.1.1** Speed management should be considered from the start of the design process rather than being added as an afterthought. The form of development will dictate the method of speed management but, in all cases, it should be an integral part of the development's overall design solution.

**4.1.2** There are certain methods of controlling speed which are inherent in the urban form itself. Wherever possible, traffic speeds should be managed by the arrangement of buildings and spaces without the need for other physical traffic calming measures. These methods are described in 4.2 'Methods of speed management using layout design'. Other more physical measures may be necessary and appropriate features are described in 4.3 'Speed management using physical measures'.

## 4.2 Methods of speed management using layout design

**4.2.1** Residential developments should be designed on the basis that traffic speeds should not generally exceed 20mph. Consequently, features that allow speeds in excess of 20mph, such as long straight stretches of road without any form of speed control are unacceptable. Also, the available design options mean that it is unlikely that formal 20mph zones will be acceptable or necessary in new residential developments.

**4.2.2** Layouts should incorporate speed control features and the absolute maximum distance between these features must be 80m. The Homezone guidelines specify that the maximum spacing between traffic calming features should be 30m.

**4.2.3** A good combination of features is ultimately what creates a low-speed environment and the design of the building arrangement and junctions is key. The rigid application of standard solutions should be avoided. Full consideration should be given to the types of vehicles and users, particularly cyclists and pedestrians, wishing to access the section of highway before the combination of measures is chosen.

**4.2.4** The following methods of speed management can be implemented on a small or large scale, based on the needs of local residents and highway users, and should be inbuilt into the design of the development.

### 4.2.1 Road alignment

**4.2.1.1** Changing the alignment of buildings, fences, hedges and walls, as well as changing road shapes should be used to influence traffic speed.

**4.2.1.2** Localised narrowing may be used as a way of preserving existing trees and features, or as informal spaces or an area for planting, where it is part of the overall design, taking care that that a hazard is not created for vulnerable road users.

# Speed Management 4

**4.2.1.3** Speed Regulating Curves may be used to restrain traffic speeds within a layout, either between junctions or other speed controls. They can either be used individually or in a sequence of up to three.

## 4.2.2 Use of junctions

**4.2.2.1** At junctions within developments, smaller corner radii should be used rather than wide sweeping curves to force slower and more careful vehicular movement at junctions. Care should be taken to allow larger vehicles to turn, if they are appropriate, in the development.

**4.2.2.2** Also, more frequent junctions should be used to reduce the speed of movement through a development, subject to separation distances.

## 4.3 Speed management using physical measures

**4.3.1** The following sections give guidance on the use of other methods of speed management, which have more physical appearances.

## 4.3.1 Gateway features

**4.3.1.1** Gateway features may be used to increase driver awareness of entering a road (or section of road) where a different priority exists. Within Stockport, these are already used effectively, for example, on entering a District Centre or a 20mph zone.

**4.3.1.2** Gateways may be a formal feature using hard landscaping; place-unique signing or other vertical features are often used at the side of the road, sometimes extending over it.

**4.3.1.3** Careful design of gateway features is required to ensure that they do not cause obstruction to visibility or restrict vehicle movements to the detriment of road safety.

**4.3.1.4** More informal gateways using carriageway markings, planting, or a different type of road surface treatment may also be effective in raising driver awareness at existing junctions.

**4.3.1.5** Changes in road surface materials and colours can be a very cost-effective way of raising awareness amongst drivers that they need to slow down. Coloured surfacing can be used to mark the presence of a change in road type needing an associated reduction in speed. This treatment is only likely to be effective if used in conjunction with other gateway features. It should not be relied upon to enforce lower speeds.

**4.3.1.6** Where coloured surfacing is used on the public highway a commuted sum may be required for future maintenance/renewal.

## 4.3.2 Roundabouts

**4.3.2.1** The presence of a roundabout will force a vehicle to slow down in order that it is able to negotiate the deflection angle when entering the circulatory lane, or even stop to give way to other vehicles already on the roundabout.

**4.3.2.2** Roundabouts are dealt with in more detail in 3.8.9 ‘Roundabouts’.

# 4 Speed Management

## 4.3.3 Reduction of road width

**4.3.3.1** Traffic islands can be used to reduce vehicle speed through narrowing the carriageway. This measure is only appropriate on major residential roads, and local, district and primary distributors.

**4.3.3.2** If the primary purpose of the island is speed reduction, it should not be located more than 80m away from a junction or feature that indicates a change of driving environment. Ideally it should be located within 60m of such features so that drivers do not approach it too fast.

**4.3.3.3** Where narrowing reduces the carriageway width to less than 4m then cycle bypass facilities should be considered. A minimum of 4m carriageway width is normally required past any island/refuge on a classified road or any road where abnormal loads may reasonably be expected.

**4.3.3.4** Islands can form part of a gateway treatment or be used in conjunction with over-run areas or as part of a chicane to create a deflection. They are effective in reducing speeds on the arms of roundabouts which in turn reduces the circulation speed of the roundabout. Islands can also be used in an offset location, for example to protect a cycle lane from turning traffic.

**4.3.3.5** Traffic Islands can also be used as pedestrian crossing points. Pedestrian desire lines should be taken into account when placing them and care should be taken not to locate them where they would encourage dangerous crossing. They can be used to encourage crossing at a particular point in the carriageway but if providing a place for pedestrians to cross is a primary objective, then a pedestrian refuge may be more suitable. Both facilities may be a necessity if the island is being used as deflector to ensure safety for pedestrians.

**4.3.3.6** All traffic islands should have internally illuminated bollards, and an upright keep left sign. The normal minimum width of a pedestrian refuge is 1.85m with a 2m crossing width (See Figure 12 ‘Junction with Pedestrian Refuge and Single Lane Exit’ and Figure 13 ‘Junction with Pedestrian Refuge and Two Lane Exit’ for details).

**4.3.3.7** Build Outs and Chicanes are a useful method of carriageway narrowing to manage speeds.

**4.3.3.8** There are two types of chicane formation:

**4.3.3.9** The 'single lane' formation has staggered build-outs on either side of the road so that traffic has to give way to traffic coming from the opposite direction.

**4.3.3.10** The 'two way' formation uses build outs to create a deflection but still has two lanes separated by road markings.

**4.3.3.11** Where possible a cycle by pass should be provided down the kerbside of the chicane, with deviation from a straight line for cyclists minimised. Care must be taken to ensure that such bypasses are not likely to be blocked by parked vehicles and that there is adequate access to them for cleaning and maintenance.

**4.3.3.12** Case studies have shown that entry paths of 15 degrees reduce vehicle speeds to less than 20mph. Path angles were found to be greater at single lane chicanes. 85th percentile speeds between chicanes have been recorded around 29mph.

**4.3.3.13** Where chicanes are proposed the traffic flow should not exceed 600 vehicles per hour.

**4.3.3.14** A speed reduction feature such as a gateway, roundabout or T-junction should be present, between 40-80m before the chicanes are reached. All chicanes should be illuminated.

**4.3.3.15** The actual narrowing of the carriageway is not always necessary or desirable to secure lower traffic speeds. A road's width can appear to be narrowed using side strips (which may be a cycle lane where it would provide a useful facility), or dragon's teeth to influence the speed at which the driver feels comfortable, without physically restricting access for larger vehicles.

**4.3.3.16** Changes in road surface materials or colours can be used effectively to reduce speeds. The technique can be implemented as a raised over-run area, for example, using set paving to deter cars but not lorries from using the edge of the carriageway.

### 4.3.4 Vertical measures

**4.3.4.1** The location of vertical traffic calming features should be given careful consideration, due to their potential impact on cyclists, the concerns of bus operators and emergency services, increased traffic noise, reduced local air quality and vibrations to buildings that may be caused.

**4.3.4.2** The following measures are acceptable:

- Raised junctions (or plateau junctions) where pedestrian flows are high.
  These offer an effective way of enhancing opportunities both for road crossing points and for slowing down traffic. Specific care needs to be taken to ensure that the raised junctions do not appear to be part of the footway, especially for the safety of children and the visually impaired. The ramp should normally be constructed with pre-formed concrete blocks, with block infill and a minimum 750mm side gap left for cyclists.
  A raised surface at road junctions is a good method for slowing vehicles down when turning through an area where there may be a high volume of pedestrians and cyclists. The raised surface gives a higher profile to these more vulnerable road users and provides a good location for crossing. Raised plateaux can be developed between 75mm and 100mm. The width of raised junctions should be the entire carriageway space, with the heights being between 50mm and 100mm. There is no maximum length due to the varying sizes and formation of residential junctions though they should have a minimum 6000mm flat-top, with two ramps at 600mm.
  Raised junctions should include crossing points with tactile paving, bollards if necessary to stop over-run, and the ramps should be constructed using pre-formed ramps with block infill on the flat surface.
  Wide flat top humps are the only form of road hump which are acceptable.
- Wide flat top humps - these can can create informal crossing points and slow traffic down. As with raised junctions, they should include crossing points with tactile paving and the ramps should be constructed using pre-formed concrete ramps with block infill on the flat surface. They should have minimum 2500mm flat-top plateau, with two ramps at 600mm.

# 4 Speed Management

- Speed Cushions - may be used to slow traffic down in existing residential areas, but should not be necessary in carefully designed new residential developments.
  Cushions are most commonly built in pairs transversely across the road but may be built in threes on wider carriageways, to discourage cars from trying to 'squeeze' between the cushions. The layout should also accommodate a cycle bypass.
  The side ramp gradients of speed cushions should not be steeper than 1:4, and on and off gradients should not be greater than 1:8. The maximum height should be 80mm, and the cushion should be between 2m and 2.5m in length. Spacing should be between 60m and 80m apart (based on a 1.6m cushion). The minimum gap between the kerb and cushion should be 750mm, though 1m is preferred in order to contribute to the development of a cycle friendly environment. Cushions cannot guarantee an 85th percentile speed of less than 20mph, and therefore should not be solely relied upon to enforce a 20mph zone.
- Rumble Devices - these cause vibrations and noise changes to alert drivers to a change in driving environment.
  Speed reduction through the use of rumble strips or similar devices is generally minimal, so they should not be used on their own, but can be effective as a gateway treatment into a residential area.
  They can be developed from a range of, materials including coarse chipping, block paving, or gravel filled cellular blocks. Devices may be up to 15mm high, but no vertical face should exceed 6mm, to avoid difficulties for two wheeled vehicles. If they are not designed to cover all traffic lanes, care should be taken to ensure that vehicles are unlikely to try and swerve to avoid them. A gap of 750mm-1m should be maintained between the device and the kerb. It is important that they should be highly visible and reflective, but not white so that they are not mistaken for white lines.
  In some locations, rumble strips may be inappropriate due to noise.

# 5 Parking

## 5.1 Introduction

**5.1.1** The design and layout of garages and parking areas has a major effect on the appearance of a development. They should be located carefully and landscaped so as not to be obtrusive. Preferably, residents parking should be located within the curtilage of dwellings.

**5.1.2** The policies in the UDP relating to parking are as follows

### Policy

**TD1.4 Parking in Developments**

Development should provide appropriate car parking which does not exceed, and disabled, cycle and motorcycle parking of at least, the standard levels set out in Appendix 9 of Stockport's UDP, (or the standards most recently adopted by the Council) and in line with the transport assessment for the site, in order to minimise unnecessary car travel to the site. Developers will also be responsible for ensuring that highway safety and residential amenity are protected from parking related to their site and that measures are taken, in line with other [TD] Policies… to encourage sustainable travel to sites.

### Policy

**TD1.6 Accessibility and the Design of Development**

The design of development for housing, jobs, shopping, leisure and services should provide for the following:

- Pedestrian access that is safe, convenient and of high aesthetic quality;
- Safe and convenient cycle access and parking;
- Access and appropriate parking facilities for the mobility impaired;
- Good access to public transport including physical measures to facilitate access within development sites where appropriate;
- Goods and delivery access and parking should be safe, practical in operation and sensitively located; and
- Safe and secure access to car parking appropriate to the nature of the development.

**5.1.3** Maximum standards, rather than the previous minimum ones, are now used to determine the number of car parking spaces to be provided for residents of development. Where a lack of parking may prejudice highway operation or safety due to overspill of parking onto the highway and the problem cannot be addressed by other means, then developments may still be resisted

# 5 Parking

due to these off site impacts. Concerns may also be raised due to the impact of overspill parking which may compromise the access to the development.

**5.1.4** Regard should always be given to design principles in parking standards and the incorporation of pollution control. All new road developments should include sustainable urban drainage systems (SuDS) in their designs. For more information on SuDS, see Topic 6 of the Sustainable Design and Construction Supplementary Planning Document.

## 5.2 Parking on highway

**5.2.1** The needs of residents, visitors and service vehicles, for both short-term and long-term parking would normally be met by off-curtilage parking located close to property entrances where it can be observed from properties and designed so as not to disbenefit other road users.

**5.2.2** Visitor parking should be designed and located so as to discourage the use of turning areas at the head of the cul-de-sacs from being used for car parking. Shared surface must have off-street parking, unless specifically designed as part of the layout.

## 5.3 Parking within the curtilage

**5.3.1** Parking within property curtilages may take place in garages, in front or rear gardens, and on driveways, all of which are easily accessible, secure and easy to supervise. Through minimising hard landscaping at the front of properties and using planting to screen cars, it is possible to to ensure that cars do not dominate residential developments and detract from their overall design.

### 5.3.1 Integral garages

**5.3.1.1** The building line for houses is set back a minimum of 5.5m from property boundaries so that there is room to park a car in front of an integral garage door.

**5.3.1.2** In order to give character to properties and help to minimise the visual impact of integral garages, care needs to be given to detail such as colour and the way the door is opened, to ensure the garage complements the overall design of the dwelling.

### 5.3.2 Non-integral garages

**5.3.2.1** Detached garages or garages built at the side of a dwelling should be located so that they do not detract from the overall appearance or safety of a development.

### 5.3.3 Use of garages

**5.3.3.1** Garages should be suitably sized to allow a degree of storage space, and be wide enough to permit easy access into and out of the vehicle. Recommended minimum internal dimensions are 6m length by 3.6m to allow both car and cycle parking within the garage.

### 5.3.4 Parking in front gardens

**5.3.4.1** Parking in front gardens should be limited where possible and not intrude on the architecture and landscape of a development.

### 5.3.5 Parking in rear gardens

**5.3.5.1** This may be appropriate when there is easy access from the rear of the property, otherwise too much of the land within property boundaries would become driveway, reducing the overall appearance of a development.

### 5.3.6 Private driveways

**5.3.6.1** These are unadopted areas that provide pedestrian and vehicular access from the public highway to individual dwellings, together with resident/visitor parking.

## 5.4 Grouped parking

**5.4.1** The main advantage of grouped parking is that it allows good use to be made of the private garden area, rather than having a driveway or garage.

**5.4.2** Developers should ensure that where grouped parking areas are proposed:

- They are overlooked by some properties;
- Surfacing and landscaping is of a high standard, is designed appropriately, can be maintained and is adequately drained;
- Individual parking bays are delineated in a permanent manner, for example, using setts;
- Landscaping is used appropriately to prevent a mass of cars, especially when the area is in front of or on the main approach to dwellings;
- Grouped parking areas are sited within about 20m of the dwellings which they serve and linked by a safe and attractive path; and
- Parking spaces assigned to particular dwellings, together with visitors' parking bays, should be clearly but discretely signed.

**5.4.3** Grouped parking may be particularly appropriate when used with features such as town squares or courtyards. The Highway Authority will not adopt private parking areas.

## 5.5 Parking for the disabled

**5.5.1** Disabled drivers may need special parking provision, and should be able to park outside or near their homes. Current Residential Parking standards in Table 5.1 ‘Parking standards’ give maximum provision for dwellings.

**5.5.2** If parking is dedicated to individual dwellings, one space should be provided to disabled standard. This disabled provision is included in the maximum parking provision. Where parking is not reserved to individual dwellings, there should be a minimum of one space per ten dwellings to disabled standard. This disabled provision is in addition to the maximum parking provision.

# 5 Parking

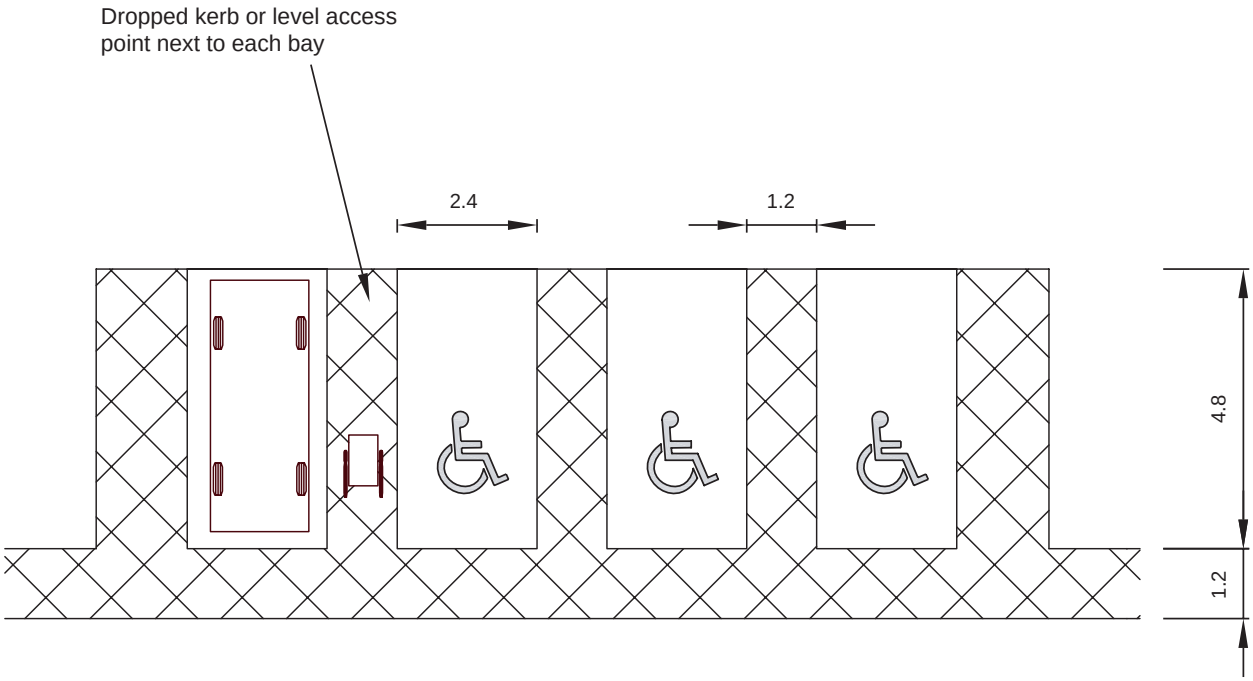


Figure 14 Off-Street Disabled Parking Bays

## 5.6 Cycle parking

**5.6.1** It is recommended that garage sizes should be a minimum of 6m by 3.6m to allow for storage of a cycle. Table 5.1 'Parking standards' details current Residential Parking Standards for Stockport. With reference to cycle parking, if no garage space is provided with a dwelling, then 1 lockable cycle store should be provided.

**5.6.2** For developments such as flats or housing courts where a shared parking shed or store is provided, it shall have a minimum floor are a of 1.5 sq m per cycle to be stored. Details of the layout within the store will normally be required to be submitted for approval prior to any start of building on site. The route to the store from the highway should be designed to allow easy access for cyclists. Cycle sheds or stores should have a high level of security both as a result of careful location and robust design. Where a large development is proposed then cycle storage should be divided up for security such that no more than 24 dwellings share a store.

## 5.7 Parking standards

**5.7.1** The following parking standards have been adopted by Stockport Council and are contained within Appendix 9 of the Unitary Development Plan Review (2006):

| Type of Development | Max General parking provision | Max Town Centre parking provision | Minimum disabled parking provision | Minimum cycle parking provision | Minimum motorcycle parking provision | Comments |
|---|---|---|---|---|---|---|
| Housing (Including Flats) | 2 per dwelling | 1.25 per dwelling | If parking reserved to individual dwellings 1 per dwelling to disabled standard.If parking not reserved to individual dwellings minimum 1 per 10 dwellings | If no garage 1 in lockable store | No requirement | If parking reserved to individual dwellings disabled provision included in maximum provision. If parking not reserved to individual dwellings disabled provision is in addition to maximum. Maximum excludes garages within individual dwelling curtilages but includes shared access enclosed car parks. |
| Sheltered Housing | 1 per 3 dwellings plus 2 per wardens dwelling | 1 per 3 dwellings plus 1 per wardens dwelling | 10% of spaces to be disabled standard | No requirement | No requirement | |

Table 5.1 Parking standards

# 6 Streetscene

## 6.1 Introduction

**6.1.1** Development should contribute to local distinctiveness, character and sustainability, as such, there is no specific streetscene design that is best practice. A development that complements and enhances the existing identity of a place is inherently more sustainable than a development that has inappropriate design and does not fit within the wider area.

**6.1.2** Hard landscaping can have a significant impact on the appearance of an area. The use of many different materials, colours, street furniture designs, signing and lighting leads to a cluttered visually unattractive environment whereas the choice of a limited number of complementary materials, colours and designs can unify a street and create an attractive place where people want to live and play.

**6.1.3** This chapter details a palette of approved materials, patterns and colours that may be used within Stockport in residential developments. 6.2 'Colour and materials palette' details the colour and materials palette, 6.3 'Street furniture' details the use of street furniture and 6.4 'Traffic signs' concerns traffic signs. The chapter ends with streetscene good practice.

## 6.2 Colour and materials palette

**6.2.1** Undertaking a detailed study of an area prior to development, especially for infill residential areas, is highly recommended. Unifying the colours and materials of the new development with the existing built environment helps to strengthen the local distinctiveness of an area. Colour and materials choices should be objective rather than subjective.

**6.2.2** Contemporary street and pavement materials include:

- Bitumen/macadam;
- Brick paviors;
- Concrete blocks;
- Concrete slabs;
- Granite, York Stone and other approved natural stone; and
- Pre-cast concrete kerbing.

**6.2.3** Often, to create an area with a sense of place, fewer materials and colours are preferable to a wide variety in close proximity to each other. Simple designs and patterns often work better, leaving more elaborate designs for special places or gateway features for an area to indicate a change in place.

### 6.2.1 Conservation areas

**6.2.1.1** It is important that due care is taken when identifying suitable materials for developments within conservation areas. Where possible, materials should be chosen to best balance the needs of vulnerable users whilst complementing and enhancing the streetscape. Further guidance on specific schemes should be sought from the Council's Conservation Officer.

# Streetscene 6

## 6.3 Street furniture

**6.3.1** A street should be more than just a corridor for travel from one place to another. The streetscene can add value to an area to make it attractive and a place where people want to be, rather than a space to rush through. Street furniture can aid interaction in the street, although careful regard needs to be given to its design and location to ensure that pedestrian routes are not obstructed, especially for vulnerable users, or that furniture, unless designed for the purpose, does not provide alternative parking for cyclists or motor cyclists.

**6.3.2** Street furniture in residential areas includes:

- Street name plates;
- Litter bins;
- Utility service cabinets;
- Play equipment;
- Bollards;
- Seating;
- Gateway features; and
- Street lighting columns.

**6.3.3** In general, it is preferable to combine different street furniture elements together, for example, by providing seating near a children's play area. By careful design, the amount of street furniture can be lessened to minimise clutter in the public realm, whilst still offering all the benefits.

**6.3.4** The chosen street furniture should match or complement any existing furniture in the locality. Specific palettes of materials will have been developed for areas such as the town centre, district centres and conservation areas.

## 6.4 Traffic signs

**6.4.1** Traffic signs are a necessary part of the highway to warn road users of potential hazards, to order drivers to act in a certain way, to give directions and to advise of certain regulations. Traffic signs should be kept to the necessary minimum within a residential area and they should not detract from other elements of streetscene.

**6.4.2** Signs should not create unnecessary street clutter or block important views that give character to an area. Care should be taken that the location of signs, especially the view of the back of signs, does not create a visual blight. Signs should be located so that they do not interfere with visibility splays or create a vehicle or pedestrian obstruction. Where a sign is suspended over a footway or pedestrian area, a minimum clearance of 2100mm is acceptable (2.5m on cycleways). Where illuminated signs are provided care should be taken in placing them, so that they do not shine into nearby windows to the detriment of residential amenity. Consideration should also be given to the use of sustainable power sources, whilst remaining mindful of replacement or repair costs.

**6.4.3** All traffic signs should be of the size, colour and type as prescribed by the Secretary of State for the Transport as indicated in The Traffic Signs Regulations and General Directions 2002. Detailed specifications are included in the construction manual.

# 6 Streetscene

## 6.5 Streetscene good practice

**6.5.1** Good practice for the siting of street furniture is as follows:

- A balance should be made between siting litter bins close to seating to prevent litter being dropped and siting it far enough away to prevent the nuisance of wasps and unpleasant smells in warm weather for those using the seats;
- Seating should be away from windy and cold positions, and sensitive tree planting can be used to provide an element of shade;
- Ease of access and servicing must not be prejudiced by the siting of elements of street furniture and every effort should be made to avoid the appearance of clutter when designing streetscapes to incorporate street furniture;
- Street name plates fixed to properties are less likely to suffer from vandalism than stand-alone signs in the street;
- Floorscape should be of durable materials since any disrepair creates both a hazard for vulnerable users and detracts from an area's image;
- Specifications must be carefully chosen to ensure that areas do not become a maintenance liability;
- Where maintenance occurs, footways and paved areas should be installed or reinstated with materials to match the surrounding materials on completion of the works;
- Unsympathetic materials must not be used for maintenance, for example, black tarmac in an area of block paving or stone setts;
- With all new developments, close consideration must be given to landscape proposals and the boundary treatment between the new development and the back of the Highway Authority land; and
- Comprehensive landscaping proposals should be a planning condition of a development, where applicable, and proposals should adhere to streetscene good practice.

# 7 Lighting in Residential & Mixed Use Development

## 7.1 General Requirements

**7.1.1** All public realm lighting for residential and mixed use developments must be planned with reasonable skill, care and diligence, be suitable for task, and planned as an integral part of the development.

**7.1.2** All public realm lighting schemes must be designed and planned to the satisfaction of Stockport Council as Highways Authority.

**7.1.3** Public realm lighting associated with residential and mixed use developments may include, but not exhaustively, lighting to the following; roads, junctions, shared surface spaces, cycle lanes, bus lanes, pedestrian zones, general pathways, parks, public artworks, street furniture etc.

**7.1.4** Public realm lighting schemes must generally be:

- Suitable for integrating with existing schemes, infrastructure and architecture;
- Energy efficient;
- Low maintenance;
- Low light pollution;
- Vandal resistant;
- Planned to promote road user and pedestrian safety;
- Conducive to visual function;
- Conducive to lighting conviviality;
- Conducive to the deterrence of crime against people and property; and
- Electrically and mechanically safe.

**7.1.5** Stockport Council provides a full design and installation service for new developments. Where requests are made to the Council for lighting design, a copy of the layout plan should be submitted, in AutoCAD format, showing the location and type of existing street lights which are located on or adjacent to the site and the proposed electrical main location.

## 7.2 Design

### 7.2.1 Lighting and associated equipment generally

**7.2.1.1** Street lighting shall be designed in accordance with the current edition of BS 5489/BS EN 13201 (or subsequent standards).

**7.2.1.2** All luminaires and associated lighting equipment must generally be chosen on grounds of appearance, optical efficiency, running costs and maintenance characteristics. All luminaires and associated lighting equipment must be in accordance with the general policy requirements of Stockport Council as the Highways Authority as well as complying with BS5489, BS EN 13201 and BS EN 60598 (or subsequent standards).

# 7 Lighting in Residential & Mixed Use Development

**7.2.1.3** Only equipment which is detailed in the Council's "List of Approved Street Lighting and Illuminated Traffic Sign Equipment" will normally be acceptable to the Council. This list is available from the Council on request and will be periodically updated to take account of new materials. The Council will give consideration to requests from developers for the use of alternative materials but no such materials or equipment shall be used until approval is given in writing by the Council's Engineers.

**7.2.1.4** Side entry lanterns with curved tempered glass, giving an asymmetric distribution, are generally preferred to post-top lanterns for the lighting of predominantly linear spaces. In certain circumstances, however, the use of post-top lanterns will be considered.

**7.2.1.5** All luminaires shall be to a minimum I.P. rating of 65 for optical chambers and 54 for gear enclosures and have integral gear.

**7.2.1.6** Lighting Columns shall be to the requirements of the Department of the Environment as set out in Technical Memorandum BE4/72 (revised) 'Street Lighting Columns of Steel construction' and shall comply with BS 1840 and BS 5649 (or subsequent standards).

**7.2.1.7** If columns are required to take any additional features (signs, banners, Christmas decorations etc), the weight and windage must be included for in the column design. No signs or banners will be considered unless written confirmation of this is provided from the manufacturer.

**7.2.1.8** Bracket arms shall be so designed that when assembled with the column shaft the arm and spigot are at an angle of 5 degrees above the horizontal.

**7.2.1.9** Bracket projections, unless otherwise specified, will be:

| | |
|---|---|
| 5m columns (when required)0.3 | 0.5m |
| 6m columns | 0.75m |
| 8m columns | 1m |
| 10m columns | 1.5m |
| 12m columns | 1.5m |

**7.2.1.10** Generally highway lighting columns and brackets are to be painted in accordance with the Authority's painting specification. All highway lighting units are to be vandal resistant.

**7.2.1.11** Highway lighting shall be planned using light sources mounted at a height to suit the individual scheme. Generally these will be 6 metres above ground level for Residential Roads, 8-10 metres above ground level for Secondary Roads and 10-12 metres above ground level for Main Distribution Roads.

**7.2.1.12** In exceptional circumstances columns with a mounting height of less than 6 metres but meeting BS 5489, BS EN 13201 requirements (or subsequently revised standards) and the general requirements of Stockport Council may be considered.

**7.2.1.13** Where required (e.g. under a Section 278 agreement), new lighting is to match or complement any existing lighting at the entrance to a site.

# Lighting in Residential & Mixed Use Development 7

**7.2.1.14** On estates where traffic calming is designed into the scheme, careful consideration must be given to the siting of street furniture to ensure that all features are adequately lit and uniformity of light on the highway is maintained. Reference should be made to the Institution of Lighting Engineers Technical Report No 25 (or subsequent standards).

**7.2.1.15** The use of ornate style street lights is restricted to Conservation Areas. However, such lighting may be considered where the developer can provide special justification. Such cases will be at the discretion of the Council and if granted the developer will be required to pay a Capital Sum equivalent to the additional maintenance costs for a 10 year period. This will include the purchase of at least one additional unit (number to be determined dependant on scheme size).

## 7.2.2 Light sources and control gear

**7.2.2.1** High pressure sodium lamps using modern optical control to utilise most of the light output from the lamp shall generally be used. The use of Ceramic Metal Halide lamps will be considered in some circumstances. In Conservation Areas, consideration may be given to the use of a whiter light source.

**7.2.2.2** All street lighting points shall be individually controlled with electronic photo-electric cells which must be selected from the Council's "List of Approved Street lighting and Illuminated Traffic Sign Equipment". Where practical, a photo-electric cell that eliminates the need of a capacitor will be installed.

**7.2.2.3** Where possible, electronic ballasts shall be used to achieve near Unity Power Factor Correction.

## 7.2.3 Light pollution and glare

**7.2.3.1** Care should be taken in designing a scheme to avoid annoyance being caused by stray light. See Guidance Notes for the Reduction of Lighting Pollution issued by the Institution of Lighting Engineers for acceptable levels

**7.2.3.2** Locating a column in line with a party boundary, combined with use of modern optics, may reduce or prevent nuisance from stray light. Ease of access for maintenance vehicles should be taken into consideration when deciding on column locations.

**7.2.3.3** Luminaires shall be selected with efficient optical control to direct light only onto the surfaces to be lit. Glare control on lanterns shall be achieved with the use of curved tempered glass bowls with a maximum threshold increment of 15%. See Guidance Notes for the Reduction of Lighting Pollution issued by the Institution of Lighting Engineers for acceptable levels.

## 7.2.4 Access to new sites

**7.2.4.1** Where a proposed development is to lie beyond the limits of existing lighting arrangements it may be necessary for the access to the proposed development, as well as the development itself, to be lit at the expense of the developer. Early consultation with the Council's Engineers is essential.

# 7 Lighting in Residential & Mixed Use Development

**7.2.4.2** A new lighting scheme must integrate with the existing, leaving no unlit or dark areas. Existing lighting which is to be removed or re-sited, shall be included in the details of the proposed works.

**7.2.4.3** All street lights shall be fed direct from United Utilities supply cables, with the exception of specific units located on splitter islands, central islands of roundabouts and pedestrian refuge islands. All illuminated signs and bollards are to be electrically sub-fed from the nearest lighting column or feed pillar.

## 7.2.5 Local service, residential roads/streets and shared surface spaces

**7.2.5.1** Lighting to local service, residential roads/streets and shared surface areas shall be planned to cater for a variety of road users as mix of slow-moving vehicles; parked vehicles, cyclists and pedestrians are likely to be present.

**7.2.5.2** Lighting shall generally be planned to promote safe usage, through the provision of functional light levels and patterns, and to reduce the risk of accident, especially for vulnerable road users. Lighting shall generally comply with the recommendations contained in BS5489, BS EN 13201 (or subsequent standards) and the general requirements of Stockport Council.

**7.2.5.3** Lighting shall be planned to contribute to crime prevention and a safe night-time ambience through the provision of functional and convivial light levels and patterns. Lighting shall generally comply with the recommendations contained in BS5489, BS EN 13201 (or subsequent standards) and the general requirements of Stockport Council.

**7.2.5.4** Lighting is an integral element of urban design and contributes to the night-time conviviality and character of a road/street environment. In respect of the lighting ambience created by a lighting installation, consideration should be given to:

- The aesthetics character and integration of luminaries, columns, brackets and other associated equipment that will be visible;
- Light colour;
- The colour rendering capabilities of light sources;
- Light patterns created by lighting schemes.

## 7.2.6 Cycle lanes

**7.2.6.1** Lighting to cycle lanes shall generally permit prompt identification of other path users and thus helps prevent collisions, especially in built up areas. Lighting uniformity should be given special attention as ability to identify other path users is severely impaired by patches of darkness.

**7.2.6.2** Lighting to cycle lanes shall generally make hazards such as potholes and bumps easy to make out to reduce the risk of accidents, especially on fast stretches. Lighting uniformity should be given special attention as ability to identify obstacles is severely impaired by patches of darkness.

# Lighting in Residential & Mixed Use Development 7

**7.2.6.3** Correctly planned road/street lighting can also cater for cycle lanes that flank highways. For cycle paths in parks and gardens, or that are set back from the road network, a separate lighting system will be required.

**7.2.6.4** Lighting to cycle lanes shall generally comply with the recommendations contained in BS5489, BS EN 13201, Institute of Lighting Engineers Technical Report 23 (or subsequent standards) and the general requirements of Stockport Council.

## 7.2.7 Bus lanes

**7.2.7.1** Correctly planned road/street lighting can also cater for bus lanes that flank roadways/ streets. For segregated bus lanes, a separate lighting system is required.

**7.2.7.2** Lighting to bus lanes shall generally comply with the recommendations contained in BS5489, BS EN 13201 (or subsequent standards) and the general requirements of Stockport Council.

## 7.2.8 Pedestrian zones and precincts and squares

**7.2.8.1** Lighting for pedestrian zones, precincts and squares needs to meet decorative criteria as well as functional and safety criteria. Luminaires must harmonise and/or integrate with the surrounding architecture and use light to create a convivial atmosphere/ambience.

**7.2.8.2** Lighting should be conducive to the prevention of accidents and crime and should generally make obstructions and hazards identifiable well in advance.

**7.2.8.3** Light levels, pattern and semi-cylindrical illuminance should all be given key consideration.

**7.2.8.4** Lighting to pedestrian zones, precincts and squares shall generally comply with the recommendations contained in BS5489, BS EN 13201 (or subsequent standards) and the general requirements of Stockport Council.

## 7.2.9 General pathways

**7.2.9.1** Lighting on paths shall be planned to enhance public safety and the night-time ambience on them.

**7.2.9.2** Luminaires should generally be sited along paths to indicate routes.

**7.2.9.3** Light levels, pattern and colour should be conducive to the prevention of crime and the promotion of a safe convivial night-time ambience.

**7.2.9.4** Lighting to general pathways shall generally comply with the recommendations contained in BS5489, BS EN 13201 (or subsequent standards) and the general requirements of Stockport Council.

# 7 Lighting in Residential & Mixed Use Development

## 7.2.10 Parks

**7.2.10.1** Light levels, pattern and colour should be conducive to the prevention of crime and the promotion of a safe convivial night-time ambience.

**7.2.10.2** Luminaires should generally be sited along paths to indicate routes but additional landscape lighting shall be considered.

**7.2.10.3** The day time presence of luminaires should be given key consideration and luminaires shall be selected with their daytime aesthetic impact in mind.

**7.2.10.4** Lighting to parks shall generally comply with the recommendations contained in BS5489, BS EN 13201 (or subsequent standards) and the general requirements of Stockport Council.

## 7.2.11 Public artworks and street furniture etc.

**7.2.11.1** Where required, public artworks and street furniture etc shall be illuminated to the requirements of Stockport Council in line with their promotion of convivial public realm spaces, whilst being mindful of the need for energy efficiency.

## 7.2.12 Lighting arrangement general setting-out

**7.2.12.1** The positions of street lighting columns are to be agreed on site with the Council's Engineer prior to erection. Columns will normally be sited at the back edge of the footway or footpath.

**7.2.12.2** Where there are service strips to access ways or a grass verge exists between the carriageway and the footpath the columns should be sited 1.5 metres from the edge of the carriageway provided there is no restriction to visibility.

**7.2.12.3** Where hinged columns are specified they must be sited so as to enable the column to be raised and lowered for maintenance purposes without encountering obstruction and without entering or overhanging either the carriageway or private land.

**7.2.12.4** Clearance from all overhead cables must be maintained at all times so as not to impose any restrictions during the erection procedure of any equipment or for its future maintenance.

**7.2.12.5** It is usual to design a staggered layout where road geometry allows it, but where a road is curved, lights should be provided on the outside of the bend.

**7.2.12.6** Care must be taken that any buildings and trees do not produce shadows which could give rise to concerns for personal safety.

**7.2.12.7** Columns shall be positioned to minimise the risk of impact by vehicles.

# Lighting in Residential & Mixed Use Development 7

## 7.3 Planning and the adoption of public realm lighting

### 7.3.1 Requirements

**7.3.1.1** It is the requirement of the Council as Highway Authority that all roads that are to be adopted shall be provided with street lighting to the satisfaction of the Council's Engineers.

**7.3.1.2** Where a site lies beyond the limits of an existing lighting scheme it may be necessary for the intervening section to be lit at the expense of the developer. Early consultation with the Council's Engineers is essential.

**7.3.1.3** Subsequent to receiving detailed planning permission, details of the layout and design of a street lighting scheme will need to be approved in respect of roads to be adopted.

**7.3.1.4** Stockport Council provides a full design and installation service for new developments. Where requests are made to the Council for lighting design, a copy of the layout plan should be submitted in AutoCAD format, showing the location and type of existing street lights which are located on or adjacent to the site and the proposed electrical main location.

**7.3.1.5** An application for the approval of a design by others shall include all column positions and a description of the equipment proposed. Full details of the equipment proposed and a copy of the calculations detailing the performance of the lighting system are to accompany the drawings. The details are to include the positioning of new illuminated signs and bollards. Existing lighting on the adjoining roads shall be shown on the drawings. The new lighting scheme is to integrate with the existing, leaving no unlit or dark areas. Existing lighting which is to be removed or re-sited, shall be included in the details of the proposed works.

**7.3.1.6** The developer is to show all lighting, signing, bollards etc., on all construction/layout plans (including sales and legal/conveyancing literature) in order that the prospective residents are aware that there may be street furniture placed adjacent to any given plot. The Council will not be a party to any disagreement between the developer and a prospective resident over the siting of street furniture.

**7.3.1.7** Adoption of lighting as above, and energy payments by the Council, will only take place upon adoption of the scheme.

**7.3.1.8** Unless the installation has been carried out by the Council, the developer will remain responsible for the replacement of any part of the installation found to be defective within 12 months of commissioning.

**7.3.1.9** The developer will also be held responsible for the replacement of damaged/vandalised columns or equipment until final road adoption under the Section 38 procedure takes place.

**7.3.1.10** The Street Lighting Specification for Section 38 Schemes - Works Carried Out by Others, which contains more comprehensive information, is available from the Street Lighting section on request.

# 8 Soft Landscaping

## 8.1 Introduction

**8.1.1** The main UDP policy concerned with soft landscaping is:

### Policy

**DCD1 Design and Character of Development**

The Council will require all development to be designed and landscaped to a high standard in order that it makes a positive contribution to the provision of a sustainable, attractive, safe and accessible built environment.

Good design is of importance throughout the Borough. The council will have particular regard to the special features of the landscape character areas and to the impact of development upon them, including that in built areas which adjoin them. Within the built up area particular attention will be paid to urban design issues in certain strategic locations.

**8.1.2** Other policies are also related to landscaping include:

### Policy

**L1.3 Provision of Recreation and Open Amenity Space in New Developments**

Where appropriate in new developments landscaped amenity areas should be provided which are necessary and fairly and reasonably related in scale and kind to the proposed development.

**8.1.3** In order for a residential development to be attractive and fit well into its surroundings, the use of landscaping is a fundamental factor. A good quality landscape scheme can create an effective and pleasant living environment. An attractive scheme does not have to mean a complicated and expensive layout. Planting can be used to give character and define the space that has the highway within it as a key element. Equally, the highway itself can be made a more pleasant environment to be in by giving attention to planting detail, combined with hard surfacing materials.

**8.1.4** This chapter gives guidance for the use of landscaping within or adjoining the highway in residential developments. It should not be read as a comprehensive guide to landscape design; it is recommended that developers seek the advice of a qualified landscape designer / landscape architect.

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## 8.1.1 Landscaping scheme

**8.1.1.1** Landscape considerations should be discussed with the Council and agreed at the earliest possible stage in the development process, i.e. preferably at the design brief stage.

**8.1.1.2** Any planting within the highway should be an integral part of the overall landscape scheme for the development. This is so that adequate provision for its implementation and maintenance can be arranged, constraints such as service routes can be organised to allow the landscape scheme the fullest possible scope, the interests of all road users can be met, and so that the landscape scheme can be designed alongside the layout design, street furniture, lighting and signage in the development. Where the development is close to an established development, or open countryside, landscaping should integrate the new development within the area, taking advantage of existing contours or features to create new landscape features and by choosing plant material appropriately.

**8.1.1.3** Developers are reminded that the responsibility for creating an acceptable scheme lies with them and not Stockport Council. Approval for a scheme is from Stockport Council. Early discussions are therefore beneficial.

**8.1.1.4** As part of the landscaping scheme, the developer should provide:

- A brief setting down the principles and aims of the scheme, encompassing the whole site rather than using a piecemeal approach;
- Assessment of adjacent development;
- Details of, or changes to, site topography;
- Existing landscaping features with details of how these are to be used or reasons for removal;
- Verge, tree and shrub specifications appropriate to the development, its location, its design and local factors;
- Botanical (Latin) names of all plants to be used on the scheme, showing both the species and the genera, e.g. Cotoneaster dammeri;
- Size of plants, showing evidence of planning for the eventual size and shape of shrubs, hedges and trees;
- Planting density (number of plants per square metre) making sure that adequate growth space is allowed (design stage space allocation to be mature spread);
- Planting materials such as mulching, stakes, canes, shelters and other materials intended to aid establishment;
- A comprehensive soil survey showing relationship to the choice of plants;
- A full schedule of works demonstrating the pre- and post- planting works that will be carried out;
- A viable and detailed maintenance management plan; and
- The highway limit.

# 8 Soft Landscaping

## 8.2 Use of soft landscaping

### 8.2.1 Where to use soft landscaping

**8.2.1.1** The use of landscaping, incorporating a variety of plant forms and species, can be effective for a number purposes in a residential area including providing colour, particularly in autumn and spring, providing focal points, encouraging wildlife, emphasising a route, and providing shade for parking or recreation.

**8.2.1.2** Care should be taken not to obstruct visibility for vehicles and pedestrians either at the time of planting or following reasonable growth of trees or shrubs, and landscaping should be planned alongside other schemes, especially signing and lighting. In particular any hedge or intended hedge should be positioned at least 1 metre to the rear of any junction or forward visibility splay to allow for growth without obstruction of the splay.

**8.2.1.3** Planting outside the adoptable highway margins will not normally be adopted; exceptions to this are where Stockport MBC's Community Services adopt the land or where existing trees close to the carriageway are retained. If tree planting occurs in verges, they will normally be adoptable, even though the combined width of the footway and tree planting will produce a margin in excess of 2m.

**8.2.1.4** Where possible, 'dead' areas should be avoided In the design of residential areas, since they can look unappealing and create maintenance problems. Such areas include space between walls and hard surfacing where they meet at an angle, extended sections of fencing or wall, and areas of grass surrounded by hard surfacing. By using planting effectively where these areas are unavoidable, they can be transformed into positive features of the development. Species should be selected appropriately so that maintenance problems do not occur.

**8.2.1.5** As well as landscaping within or alongside the highway, landscaping should also be effectively used in open spaces within residential developments. In addition to the recreational value of open space, it can greatly enhance the character of any housing development as part of an integrated landscape design. Amenity planting and opportunities for play by young children also help in a local residential environment.

### 8.2.2 Planting

**8.2.2.1** Scale of planting needs to be appropriate to the site and building mass. For example, small shrub beds in large residential areas can be visually ineffective and may be difficult to establish and maintain.

**8.2.2.2** As well as creating a pleasing environment, plants may be used in the design of a residential area to achieve certain aims. These include:

- Providing areas of privacy;
- Softening the visual harshness of new development;
- Hiding unsightly features;
- Guiding pedestrians in suitable directions;
- Separating pedestrians and moving vehicles;

# Soft Landscaping 8

- Preventing access to certain areas if necessary; and
- Improving the visual appearance of areas where cars park.

**8.2.2.3** Important existing features on a new development site should be retained to give the site maturity and maintain continuity with the past. Where the retention of mature trees is required, tree roots should be kept intact across service trenches and no activity should be permitted beneath the crown of any mature tree.

**8.2.2.4** The benefits of planting along roadsides and in urban areas are widely recognised. Planting within the highway can be especially valuable for defining footways, footpaths and cycle paths, enhancing visual amenity in speed management measures, and improving the appearance of visibility zones, with care being taken to prevent routes from being obstructed by overplanting or poorly maintained planting.

**8.2.2.5** Where trees are accommodated alongside a road, the appearance of the area is dramatically improved, but this requires good design and precautionary measures to protect against root encroachment.

**8.2.2.6** A wide range of plant families which promote the use of native British species should be used within the scheme, to create a varied environment and minimise the risks associated with monoculture.

**8.2.2.7** Species that should be avoided include:

- Plants known to cause structural damage;
- Plants known to have health implications;
- Species that bear large amounts of fruit; and
- Species which have poisonous fruits/berries.

**8.2.2.8** Species that should be avoided along carriageways and cycle routes include:

- Trees that are especially attractive to children, for example, Horse Chestnut and Sweet Chestnut;
- Species that are brittle and are liable to shed branches; and
- Species with thorns liable to puncture cycle tyres.

**8.2.2.9** Species that should be avoided near car parking areas include:

- Species that attract aphids, such as Lime and Maple to prevent sticky spots occurring on cars.

**8.2.2.10** A variety of shapes of tree can be used depending on local characteristics as shown in Figure 15 ‘Tree Types’.

# 8 Soft Landscaping

## 8.3 Maintenance and Security

### 8.3.1 Aids to landscape establishment

**8.3.1.1** There are certain aids to help landscape schemes establish themselves and to reduce potential plant damage. In all cases, species should be selected for the particular conditions of the site. There should be good ground preparation, the trees and shrubs should be handled properly prior to planting to prevent damage to roots, and there must be a long-term maintenance plan that can be implemented. Many of the potential causes of damage can be prevented or allowed for in a good design layout.

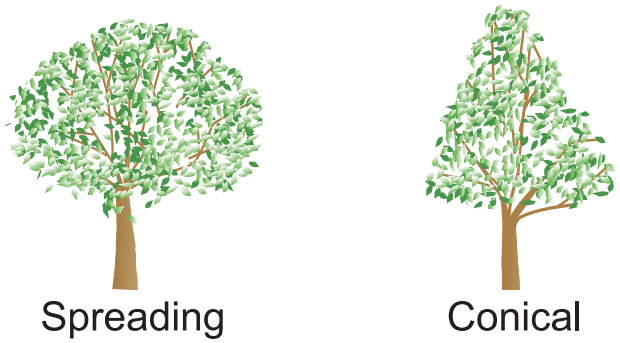


Figure 15 Tree Types

**8.3.1.2** The following should be used where appropriate:

- Tree shelters: where trees are planted as transplants or whips, tree shelters help some slower growing trees establish more quickly;
- Plastic guards: these should be fitted around young trees planted in grass to avoid damage from mowing and strimming;
- Staking/guying: robust methods of staking/guying should be used to avoid damage by vandals;
- Mulch: Using mulch such as bark, woodchips or bitumen helps to reduce weed competition and evaporation from the soil;
- Rabbit guards: where damage from rabbits is likely; and
- Rainwater watering facility: Using rainwater butts together with storm water runoff systems can provide a good watering facility for the planting and also helps water conservation.

**8.3.1.3** Using salt as a de-icing agent is a particular cause of damage to plants and soil alongside roads, footpaths and other pedestrian areas; irreversible harm to soil quality and plant communities can occur. The establishment and colonisation of salt tolerant species, especially herbaceous weeds, results in serious management problems. Selecting plants that are tolerant to salt is important. Grass and evergreen species (conifers, in particular) have the potential for the greatest damage when used as low ground cover adjacent to areas where salt is used.

**8.3.1.4** Even salt tolerant species are affected by long-term use of salt. Measures that could help to reduce damage from salt used on the roads in winter, include:

- Shaping ground surfaces to encourage rapid and efficient run-off into a good drainage system;
- Providing good drainage in footways, footpaths and other pedestrian areas to remove salt laden water efficiently;

# Soft Landscaping 8

- Providing slush disposal zones adjacent to planted areas with efficient drainage to remove salt laden water;
- Keeping salt dumps and bins away from trees and shrub beds;
- Ensuring that soil cover in planting areas is of good quality and free draining; and
- Protecting planting by using raised kerbs.

## 8.3.2 Maintenance

**8.3.2.1** Maintenance is a requirement of any planting or landscaping scheme to ensure that it remains effective and that it survives. The landscape scheme for a development should be designed to keep the cost of future maintenance to a minimum and so that inappropriate planting, which could cause maintenance problems on the highway, does not occur. Careful selection of species and design is very important.

**8.3.2.2** Responsibility for maintenance must be established at the planning application stage and this should be in private ownership wherever possible. Maintenance costs should be carefully calculated bearing in mind that as plants grow, there may be additional costs, and if inappropriate plants are grown in restrictive sites they may require constant pruning or even removal and replanting. For the establishment of trees, provision should be made for five years comprehensive aftercare. A management plan for new planting and a commuted sum or ongoing maintenance regime should be put in place for at least 25 years.

**8.3.2.3** To prevent future maintenance problems, actions that should be avoided at the design stage include:

- Planting unsuitable species in narrow or awkwardly shaped spaces that would be difficult to maintain;
- Ensuring that trees are not planted too close to pavements and underground services, to avoid damaging them;
- Avoiding species with dense foliage that may cause localised leaf fall problems (gutter and drain blockages);
- Avoiding species with invasive surface rooting and/or suckering that can cause damage to highways and highway structures; and
- Avoiding heavily fruiting trees such as crabapple that can attract wasps and make footways unattractive and slippery with squashed rotten fruit.

## 8.3.3 Weeds

**8.3.3.1** Weeds in hedges and shrub beds need to be adequately controlled. Mechanical weeding should be undertaken at least twice yearly. To reduce the cost of weed control after planting, mulch should be used. In addition, the bases of trees in grass areas should always be kept clear for at least 50cm from the trunk of the tree.

## 8.3.4 Services

**8.3.4.1** Service routes in the development must pay respect to the landscape scheme and the presence of existing features. Expert advice should be sought when existing trees may be affected.

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**8.3.4.2** Special consideration should be given to the layout of services near trees. Where services are not properly laid or are installed it is possible for them to be damaged as the trees establish. Equally, where planting is disturbed during excavation for servicing, it may not restore in a satisfactory way.

## 8.3.5 Security

**8.3.5.1** Reducing opportunities for crime should be a major factor in the landscape scheme. Not only can sensible planting avoid creating places where the sense of security is reduced, but planting can also be effectively used to reduce opportunities for crime. High-risk areas of shade or screening should be avoided, and appropriate co-ordination between the landscaping, the street lighting, the alignment of footpaths and cycle routes, and the location of car parking areas can create a sense of security.

**8.3.5.2** Any vegetation adjacent to parking areas, footpaths or highways should be planted and maintained to a maximum height of 1000mm and any foliage to trees should be at a height exceeding 2000mm so as not to create potential hiding places for would-be criminals to exploit or impede natural surveillance.

**8.3.5.3** In a residential development, footpaths should be overlooked wherever possible to improve personal security. Additionally they should be kept direct, short and well lit, with the creation of long, dark alleyways avoided. Planting next to footpaths should be kept low, leaving the taller varieties to grow next to walls and fences.

**8.3.5.4** Certain types and species of mature shrubs form barriers which compromise natural surveillance. This not only creates areas where assailants or intruders can lurk, but may also allow attacks on vehicles to take place with little or no chance of being seen. Overgrown planting heightens the fear of crime, which often exceeds the actual risk. Maintenance of any landscaping scheme is essential to good security.

**8.3.5.5** Developers should be aware of the benefits obtained from the 'Secured by Design' initiative available from the Greater Manchester Police Architectural Liaison Unit, Divisional and Partnership Support Unit, PO Box 22 (S West PDO), Chester House, Boyer Street, Manchester, M16 0RE by e-mailing: architecturalliaisonunit@gmp.police.uk or via www.securedbydesign.com

# Glossary

**AutoCAD**: Automated Computer Aided Design.
AutoCAD is a computer based, draughting tool used to create plans and engineering drawings.

**CABE**: Commission for Architecture and the Built Environment.

**DB 32**: Design Bulletin 32.
DB 32 is a government document - it provides guidance on the main considerations to be taken into account in the design of layouts for residential roads and footpaths and should be read in conjunction with its companion document "Places Streets and Movement." Both documents are available through Her Majesty's Stationary Office (HMSO).

**Design Manual for Roads and Bridges (DMRB)**: These are government manuals specifying the technical design requirements for the design of roads and bridges, with different volumes addressing different aspects of infrastructure via individual technical notes, e.g. DMRB Volume 6 Section 2 covers traffic signal design at junctions and roundabouts.

**DETR**: Department for the Environment, Transport and the Regions - a former government department with its responsibilities now divided between a number of government departments.

**Greater Manchester Authorities, Local Transport Plan (GMLTP)**: A statutory, 5 year plan drawn up jointly by Greater Manchester setting out their transport aims, objectives and policies guiding transport investment across Greater Manchester, and containing their bid for transport capital funding.

**Highways Act 1980 Section 278 Agreement**: A Section 278 Agreement is an agreement made between the Council and a developer, requiring works on the existing highway network which are necessitated by the development to be funded by the developer, or undertaken by the developer to a specific standard. It can be a condition of an improvement and may include a payment in respect of future maintenance costs.

**Highways Act 1990 Section 38 Agreement**: A Section 38 Agreement is an agreement between the Council and a developer in which the developer undertakes to construct a road to approved standards, for adoption after a maintenance period.

**IHIE**: Institute of Highway Incorporated Engineers.

**Public Rights of Way**: Public Rights of Way are statutorily defined footpaths and bridleways over which the public have the right to pass. Rights of Way are not adopted or maintained by the Council as public highways (although the Council maintains a. register of them). The owner of the land over which they run has a duty to maintain them in a safe, passable condition, with the Council being empowered to undertake works themselves on a rechargeable basis in the event of the landowner failing in his duty.

**Town and Country Planning Act 1990 Section 106**: A Section 38 Agreement is an agreement between the Council and a developer, which requires the developer to carry out specific works or

# Glossary

to provide funding for any works considered necessary to overcome any adverse effects of a development on the surrounding community.

**Road User Hierarchy**: The Road User Hierarchy (defined in UDP Policy ST2.3) lists road users in priority order, with the most vulnerable placed at the top of the priority ranking, to reflect the order in which road users should be considered in the development of the highway network. Special consideration is given to people with mobility difficulties in each user category.

**Supplementary Planning Document**: Supplementary Planning Documents give further detail to policies proposals contained in the UDP and, whilst not part of the statutory Plan, will form part of the Local Development Framework and be an important consideration in determining planning applications

**Unitary Development Plan (UDP) Review**: This is a statutory document that sets out the Council's policies to be used to guide development, conservation, regeneration and environmental activity in Stockport. Decisions on planning applications must be made in line with the UDP.

**VISSIM; TRANSYT; LINSIG**: These are computer based models which use digitised data to simulate road traffic conditions. The list is not exhaustive, but is given as indicative of the type of programme that it would be acceptable to use when testing highway designs.