

# **SECTION – A**

## **RESIDENTIAL ROADS, FOOTPATHS AND CYCLEWAY STANDARDS**

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# RESIDENTIAL, INDUSTRIAL & COMMERCIAL ESTATE ROADS

## Introduction

The design guide and standard specification has been updated to reflect the current policy, guidance and legislation such as those highlighted below:-

- (a) Manual for Streets (MfS).
- (b) Manual for Streets 2 (MfS2).
- (c) Technical Advice Note 18 – Transport.
- (d) Rhondda Cynon Taf Local Development Plan 2006-2021 - Supplementary Planning Guidance (SPG) – Delivering Design and Placemaking: Access, Circulation and Parking Requirements.
- (e) Rhondda Cynon Taf Local Development Plan 2006-2021 - Supplementary Planning Guidance (SPG) - Planning Obligations.
- (f) Rhondda Cynon Taf Local Development Plan 2006-2021 - Supplementary Planning Guidance (SPG) - Design and Place Making in Rhondda Cynon Taf.
- (g) Design Manual for Roads and Bridges.
- (h) Guidance on the use of tactile paving surfaces.
- (i) British and European Standards.

The design guide is intended to be read in conjunction with the above documents and the Manual of Contract Documents for Highway Works Volume 1 Specification for Highway Works

<http://www.dft.gov.uk/ha/standards/mchw/vol1/index.htm>

It should also be noted that all technical, regulatory and specification documents used shall be the current version at the time of implementation of the works. The following documents have been referred to in this design guide and are abbreviated as follows and based on the current date of publication.

Manual for Streets (2007)	MfS
Manual for Streets 2 (2010)	MfS2
Technical Advice Note 18 Transport	TAN18
Rhondda Cynon Taf Local Development Plan 2006-2021 - Supplementary Planning Guidance	SPG
Design Manual for Roads and Bridges	DMRB
Local Development Plan	LDP
Regional Transport Plan	RTP
Sewers for Adoption 7 <sup>th</sup> Ed	SfA
All Wales Planning Policy	AW10
Traffic Signs Regulations and General Direction 2002	TSRGD

### **Design, Setting-out, Construction, Completion and Maintenance of the Works:**

The developer shall be responsible for the true and proper design, setting-out, construction and completion of the works.

If at any time during the progress of the works any error or omission shall appear or arise in the design, position, levels, dimensions, or alignment of any part of the works, the Developer on being required so to do by the Engineer shall at his own cost rectify such error or omission to the satisfaction of the Engineer, unless such error or omission is based on incorrect data supplied in writing by the Engineer, in which case the cost of the same shall be borne by the Engineer.

The checking of any design, setting-out or any line or level by the Engineer shall not in any way relieve the Developer of his responsibility to design, construct, complete and maintain the works until the Final Certificate of Completion has been issued and the roadworks adopted accordingly.

### **Pre-Planning Enquiry Advice**

The advice given on pre-planning enquiries is informal and represents the officer's professional opinion only. Such advice will not bind the authority in the event of a submission of a formal planning application.

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# 1 Philosophy and Objectives

- 1.1 The principles and objectives of this design guide are aimed at allowing developers to create layouts which are distinctive and which embrace the principles of MfS by creating a safe, cost effective, attractive environment, with a clear sense of space which meets the needs of all users by embodying the principles of inclusive design. Follow link for MfS. <http://www.dft.gov.uk/pgr/sustainable/manforstreets/pdfmanforstreets.pdf>
- 1.2 It also seeks to achieve design standards, which will achieve safe provision for pedestrians, cyclists and motorists, creating a user hierarchy with pedestrians at the top. It seeks to achieve networks of streets that provide permeability and connectivity to main destinations and a choice of routes whilst designing such residential streets to keep vehicle speeds at or preferably below 20mph, unless there are over-riding reasons for accepting higher speeds.
- 1.3 In this respect developers of new estate layouts will be expected to use the minimum of physical highway design features such as vertical displacements, mini roundabouts, chicanes etc to reduce speeds. This Council prefers layouts which limit traffic speeds by designing roads with frequent bends, changes in materials, shared surfaces and changes in priorities, therefore, speed reductions will be achieved by innovative design rather than bolt-on features on straight roads. It is accepted that such measures may result in developers having to produce greater lengths of road to achieve these aims than was previously the case but such measures are regarded as necessary to secure development in accordance with MfS.
- In this respect developers will be expected to create innovative estate layout designs to maintain low traffic speeds whilst creating the clear sense of space. The Council would give consideration to designs that are creative and use a combination of speed reducing features such as frequent bends, narrow carriageway widths, varying materials, design features, parking areas, junction plateaus, chicanes etc.
- 1.4 The principles and objectives of the design guide are aimed at allowing developers to create layouts which have a distinctive character in their built environment and landscaping, whilst at the same time applying design standards which will achieve a safe provision for pedestrians, cyclists and motor vehicles. These guidelines will permit a more flexible approach by the developer who nevertheless must have regard to the function and role of the various categories of road involved.
- 1.5 The remit of MfS primarily relates to lightly trafficked residential streets and many of the principles in MfS should also be considered for lightly trafficked rural lanes, high streets, and other appropriate environments. Manual for Streets 2 (MfS2), Wider Application of the Principles, should also be considered.

- 1.6 For non-residential streets including lightly trafficked lanes or streets and roads carrying high volumes of traffic, a number of criteria such as speed, character, primary uses, route status etc will be considered in determining highway requirements.
- 1.7 Design Manual for Roads and Bridges (DMRB) is intended for the design of motorways and trunk roads; however it is also used by Local Authorities for the design of by-passes and improvements to strategic highway networks. Any residential, industrial, commercial or mixed-use development affecting such a highway network must be designed in accordance with the criteria set out in MfS2 and DMRB depending on local context. Follow link for DMRB.

<http://www.standardsforhighways.co.uk/dmr/index.htm>

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## 2 Design Factors and Principles

- 2.1 There is a clear need to provide sustainable developments accessible by all modes of transport. In this respect there is a need to create developments with good, convenient alternative forms of access to places of employment, schools and other community facilities, reducing the need to travel by car and thus reducing the reliance on the private car. Therefore good links to public transport systems are essential and the need to make provision for buses to penetrate residential areas is a necessity. It is also important to ensure that the existing bus routes have satisfactory facility to encourage use of public transport.
- 2.2 In accordance with Planning Policy Wales and MfS, Rhondda Cynon Taf County Borough Council supports the need to provide facilities for the mobility and visually impaired members of society, and cyclists and pedestrians generally to secure socially inclusive design layouts for all users.
- 2.3 MfS makes a clear distinction between what is regarded to be a road and what is regarded to be a street. MfS paragraph 2.2 states:
- “A clear distinction can be drawn between streets and roads. Roads are essentially highways whose main function is accommodating the movements of motor traffic. Streets are typically lined with buildings and public spaces, and while movement is still a key function, there are several others, of which the sense of place function is the most important.”*
- 2.4 There are a number of factors to be taken into account in the design process including the needs of pedestrians (able and disabled), cyclists and vehicles. In specific terms these comprise several elements such as carriageway, segregated footway, pedestrian crossing points, cycleway, inter linking footpaths, car parking and garaging, bus routes, traffic generation and potential impact on local and wider highway networks.
- 2.5 These elements inter-relate in many ways and a dominant consideration in that relationship is the potential conflict of pedestrians and vehicles. The design of residential layouts must seek to take account of this relationship and according to circumstances there may be scope for varying degrees of separation of pedestrians and vehicles. The pedestrian network should facilitate journeys from the home to shops, schools, playgrounds, bus stops or railway stations and to other local facilities. The location of uses within the development should also be related to the configuration of the network as for example, in the siting of facilities for the old, the disabled or the very young.
- 2.6 Design of the road geometry must also meet safe operational requirements. The incorporation of physical constraints, frequent bends and changes in materials in the design process will ensure more effective speed control than the use of legislative measures.

- 2.7 Guidance on vehicle parking and garaging is that it shall be predominately off the highway, either inside the curtilage of dwelling, in parking squares or courtyards. The location should be such that there can be natural surveillance of vehicles from the owners' properties, or be secure parking.

A degree of on-street parking would be considered in the form of a widened carriageway or lay-by, but should not affect the two-way flow of traffic. Single way priority working may be considered on estate roads with low traffic flows and over short distances on a site by site basis where other parking provisions would be easily accessible / user friendly and that access for emergency and other service deliveries are not compromised. A road accessing less than 50 dwellings would usually be considered to have low traffic flows.

- 2.8 Cyclists are one of the most vulnerable groups of road users. It would be unreasonable to expect a developer to provide for cyclists on a small development. However on the larger developments, consideration should be given to the provision of facilities so as to encourage such users. Cases may arise where shared pedestrian and cycle facilities will be appropriate. Any mixed-use development shall satisfactorily accommodate the need for cyclists both operational and non-operational. This would usually be in accordance with a Travel Plan.

- 2.9 These guidelines have been prepared so as to permit a flexible approach by the developer whilst ensuring that the designs create safe, convenient, nuisance free and secure surroundings that are socially inclusive, visually attractive and economical to construct and maintain. Whilst the standards contained within the this design guide give details of design arrangements, which will be acceptable to Rhondda Cynon Taff County Borough Council, alternative proposals, which conform to the principles outlined in other documents such as MfS can also be put forward for consideration.

- 2.10 Subject to Rhondda Cynon Taf County Borough Councils approval of the design, specification and construction, the following areas will normally be recommended for adoption:-

- Carriageways and associated general purpose parking bays, which lie between carriageway and footway.
- Footways.
- Footpaths or combined footpath/cycleway linking to adopted roads.
- Road margins/verges.
- Visibility splays and forward visibility zones.
- Roundabouts.
- Embankments and cuttings.
- Highway drainage, attenuation tanks/ponds, soakaways, culverts and the associated inlet/outlet structures.
- Highway structures such as retaining walls, road and footbridges.
- Street lighting.
- Safety barriers and pedestrian guardrails.

- 2.11 Developers should note that the road geometry must be designed to an adoptable standard even when adoption is not intended. The Highway Authority under Sections 219 – 225 Highways act 1980 is required upon the approval of building regulations to serve notice to developers to secure a bond in respect of the street works associated with the new development (see sub-section 3 of Section E).

It would therefore be in all parties (developer, resident & local authority) interests to design build and offer the newly constructed highway for adoption and for the streetworks to be undertaken as part of a Section 38 Agreement.

- 2.12 Developers should note that up to five dwellings may be developed off a private shared access. Further details of the required geometry is included in the standard details.
- 2.13 When considering road categorisation, the likelihood of future development of adjoining land should be taken into account.
- 2.14 At priority junctions the roads should preferably be at an angle of 90°. Deviation to a maximum of 70° would be considered acceptable. In exceptional circumstances and subject to appropriate mitigation measures deviation up to 45° would be considered sympathetically.
- 2.15 When a new junction is established off an existing highway, then all improvements required to the existing road shall be carried out by the developer, under a Section 111 / 278 Agreement to the satisfaction of this Authority.

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## **3 Residential Roads and Streets**

The principles and objectives of the design guide are aimed at allowing developers to create layouts which have a distinctive character in their built environment and landscaping, whilst at the same time applying design standards which will achieve a safe provision for pedestrians, cyclists and motor vehicles. The needs of pedestrians should be considered first. These guidelines will permit a more flexible approach by the developer who nevertheless must have regard to the function and role of the various categories of road involved as follows: -

### **3.1 Link Roads and By-passes**

- 3.1.1 These roads will be provided to cater for the movement of traffic over and above the movement of pedestrians and as such would be likely to require separate pedestrian and cycle facilities. The principles of MfS should be considered, but as they will not have any direct frontal development and are likely to have traffic speeds of 40mph or higher, DMRB should also be considered in conjunction with MfS.
- 3.1.2 It is expected that this category of road will only be constructed as part of very large developments and not very often. Therefore this category of road has not been expanded on in this design guide.

### **3.2 Streets - Bus Route**

- 3.2.1 These streets will penetrate into residential areas and create the basis of the connectivity of the development with its surrounding areas. As the name implies, they will provide for a bus route (or potential bus route) and therefore must be designed to allow for the manoeuvres of a bus whilst at the same time discouraging short cutting by extraneous traffic. Direct frontal access will usually be considered where highway safety will not be compromised. Developers should aim to create shared driveways of up to 5 dwellings complete with turning areas but single accesses with turning facilities to enable access and egress in forward gear will also be considered. Where visitor parking is likely to occur on street and may cause a potential problem for a bus service parking lay-bys will also be considered. (See paragraph 4.1)

### **3.3 Residential Streets**

- 3.3.1 These streets will give direct access to dwellings and cater for access by emergency services as well as service and delivery vehicles. These streets will not need to cater for a bus service. (See paragraph 4.2)

### **3.4 Footways and Footpaths**

- 3.4.1 Footways and footpaths fulfil an important role by ensuring the safe movement of pedestrians and, if properly designed, should facilitate and encourage pedestrian activity. (See sub-section 4.5).

### **3.5 Cycleways**

- 3.5.1 Cycleways are routes, which are intended for use by pedal cyclists with or without rights of way for pedestrians. Cycleways to be offered for adoption must be designed and built to an adoptable standard. Cycle facilities may also be provided by way of on street cycle lanes, however the carriageway will need to be widened to facilitate the cycle lane. (See sub-section 4.6)

### **3.6 Shared Cycle and Footways**

- 3.6.1 Shared cycle and footways would be acceptable and adopted subject to being designed and built to an adoptable standard. The width of shared pedestrian and cycleway should be 3.0 metres when abutting a highway and 2.5 metres when away from highway.

### **3.7 Private Shared Drives**

- 3.7.1 Private shared drives will be considered as a primary means of access for up to 5 dwellings. Such accesses will not be adopted and maintained as public highway.
- 3.7.2 Private shared driveways should be a minimum of 4.1 m wide to enable two vehicles to pass.
- 3.7.3 Private shared driveways must also incorporate a turning area for use by residents and visitors to facilitate access and egress from the shared driveway in forward gear.

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## **4 Design Standards for Residential Streets**

### **4.1 Residential Streets - Bus Routes**

- 4.1.1 Whilst the legal speed limit on such roads/streets will normally be 30 m.p.h, the design standards are intended to ensure speeds of less than 20 m.p.h. The street should normally be designed to cater for the traffic generated by the development. The street will (or may in the future) form part of a through route as well as public and home to school transport. The carriageway shall therefore be designed to cater for the swept path movements of such vehicles.
- 4.1.2 Where a road/street only has single sided development, a continuous 2.0m wide footway on both sides of the carriageway may not be required but at least one footway must be provided. Where a second footway is not provided, a 1.0 metre hard strip shall be provided to facilitate services and the overhang of manoeuvring vehicles. Where footways are provided, they shall measure 2.0 metres in width and 3.0m metres in width outside schools, shops, bus stops or other community facilities where the public may congregate.
- 4.1.3 The desirable minimum centre line radius is 30 metres.
- 4.1.4 Road widths will need to be carefully considered to ensure that two large vehicles can safely pass each other together with widening on bends and at junctions to accommodate swept path movements. The minimum acceptable width is 6.1m.
- 4.1.5 The junction of a residential street serving as a bus route with an inter-urban non-trunk road, or classified road would preferably be a roundabout controlled junction, although consideration would be given to other types of junctions. The design shall comply with the relevant technical guidance.
- 4.1.6 Forward visibility around bends shall be provided commensurate with the minimum stopping sight distance (SSD). Restricted forward visibility must not be used on its own as a means of reducing vehicle approach speed. When features reduce approach speeds first, the forward visibility may be reduced accordingly. For guidance on SSD please refer to MfS Table 7.1. For guidance on constructing a forward visibility envelope, please refer to MfS figure 7.19.
- 4.1.7 In all cases the road alignment shall be designed to restrict vehicle speeds to less than 20 m.p.h. Speed control may be achieved by a variety of measures including:-
- (i) The use of short lengths of road which are either straight or gently curved, interspersed with frequent bends of a severity commensurate with the maintenance of speeds of less than 20 m.p.h.
  - (ii) Roundabout junctions.
  - (iii) Short lengths of localised carriageway narrowing to facilitate design features.

- (iv) Traffic calming features providing a horizontal deflection such as chicanes, however, they need to be carefully designed to allow the safe passage of larger vehicles whilst still reducing the speeds of smaller vehicles.
- (v) Vertical traffic calming features such as junction plateaux may be used but ramp gradients shall be reduced, road humps should be kept to a minimum. Where such features are used they must conform to the relevant standards contained in current legislation.

## **4.2 Residential Streets**

- 4.2.1 The legal speed limit on such roads will be 30 m.p.h., the design standards shall ensure speeds of 20 m.p.h. or less. As the name suggests, such roads will provide direct access for residential development, where the interests of the pedestrian should be dominant to the needs of motor vehicles.
- 4.2.2 The geometry of these streets shall cater for the pedestrian and vehicular traffic that will use the streets. The design will need to cater for the movement of emergency, service and delivery vehicles, and also cater for the movement of vehicles to and from driveways and the provision of visitor car parking. Developers will be required to provide a swept path analysis throughout the streets to ensure that highway safety will not be compromised.
- 4.2.3 Residential streets shall where possible take the form interconnecting streets providing good pedestrian as well as vehicular links. The topography of the land will not always be favourable to the use of interconnecting streets therefore culs-de-sac with turning areas shall be provided. Where culs-de-sac are used pedestrian links should still be provided to ensure connectivity.
- 4.2.4 The type of turning facility will have regard to topographical difficulties encountered and typical layouts are shown in the standard details. Where turning areas are provided it is essential that parking requirements are met and accesses are carefully positioned to limit the likelihood of vehicles parking in the turning area, thus limiting its availability.
- 4.2.5 Footways shall usually be 2.0m wide and be on both sides of the street, unless there is only development on one side, in which case a 1.0m wide margin strip, constructed in permanent material, would be acceptable.
- 4.2.6 The desirable minimum centre line radius of 9 metres, refer to paragraph 4.1.6 for SSD and forward visibility envelopes. In order to achieve low traffic speeds on bends with a 9m centre line radius, the use of a plateau similar to a junction plateau will reduce the required SSD.
- 4.2.7 Speed control will be achieved by a variety of measures such as curvature of carriageway, narrowing of carriageway, entry features, chicanes, junction plateaus and road humps. (Alternative measures may also be considered such as changes in materials etc)

- 4.2.8 Junctions of residential streets with other residential roads or streets shall be of sufficient radii to ensure that the turning manoeuvres of vehicles will not compromise the integrity of the footway and the safety of pedestrians.
- 4.2.9 The spacing of junctions should be based on the stopping sight distance appropriate for the development and the swept path of large vehicle turning movements.

### **4.3 Shared Surface Roads, Mews Courts Serving up to 50 dwellings**

- 4.3.1 Any shared surface roads or Mews Courts must be subject to a maximum gradient of 1 in 12 for block paved roads and footways or 1 in 8 where a bituminous surface course will be provided.
- 4.3.2 The informal atmosphere intended in a Mews Court is to be achieved by introducing appropriate finishes. A 2.0 metre wide footway should be provided along one side of the road and extended around the turning head. A rumble strip should be constructed at the inside tangent point of the junction radii to warn a driver who is entering or leaving a 'special area'. The non-continuing footway shall be terminated 2.0 metres beyond the rumble strip into the shared surface and a 0.5 metre wide hard strip should be provided to cater for overhang of vehicles. See standard details in Section G.
- 4.3.3 The design of these streets shall cater for the pedestrian and vehicular traffic that will use the streets. The design will need to cater for the movement of emergency, service and delivery vehicles, and also cater for the movement of vehicles to and from driveways and the provision of visitor car parking. Statutory Undertakers apparatus should be located within the limits of the footway.
- 4.3.4 Adequate space must be provided at the head of the cul-de-sac to allow for turning vehicles. This space must be able to enclose the outline of one of the turning heads illustrated in the standard details. The limits of the highway adopted by the local authority must be readily identifiable to the public. Where turning areas are provided it is essential that parking requirements are met and accesses are carefully positioned to limit the potential of vehicles parking in the turning area, thus limiting its availability.
- 4.3.5 The desirable minimum centre line radii and means of speed control shall be as per that of residential streets, paragraphs 4.2.6 and 4.2.7.

### **4.4 Private Shared Drives**

- 4.4.1 The vehicular access to private shared drives (primary means of access) and courtyards or communal garages (secondary means of access) shall be of an appropriate geometry to allow for the safe ingress and egress of the type of vehicle expected to use the access. The vision splays at the junctions should ensure safe vehicle and pedestrian movements relevant to the speed limit on the main road. Such provision may require the footway to be widened to incorporate the vision zone.
- 4.4.2 Private shared drives may serve up to 5 dwellings.

- 4.4.3 The Minimum width of a shared driveway will be 4.1m
- 4.4.4 Where a shared access exceeds 45 metres in length it may be necessary to incorporate 5.5m wide passing bays to enable two large vehicles to pass.
- 4.4.5 Adequate turning shall be provided to enable access by emergency services as well as service and delivery vehicles.
- 4.4.6 An adequate space should be provided at a convenient location for the storage and collections of domestic refuse and recycle material. Such provision should not cause obstruction to the driveway or vision splays.

## **4.5 Footways and Footpaths**

- 4.5.1 Footpath links with roads are to be strategically sited to serve bus stops, schools, shopping areas and other community and social centres and developers must ensure that walking distances between such facilities and residential properties are minimised. It is also important to design footpaths to ensure that passive surveillance from nearby properties is optimised. This will encourage use of footpaths by minimising the risk of attacks on pedestrians and vandalism.
- 4.5.2 Footway and footpath gradients will not usually exceed 1 in 12, however, where a development fronts an existing road and a footway is to be provided fronting the development the gradient should not exceed 1 in 8. If there is no alternative a steeper gradient will be considered if a hand rail is to be provided (see section 5.6.8). A commuted sum for future maintenance will be required for the hand rail. (Refer to Section D - Commuted Sums)
- 4.5.3 Where footpaths emerge onto roads other than residential streets, facilities to ensure safe crossing movements (such as pedestrian refuges, footbridges, carriageway narrowing and pedestrian crossings) shall be considered and provided at the discretion of the County Borough Council. Subways may also be considered in exceptional areas, where other measures are impractical. In such circumstances, the footpath will, wherever possible, continue at the same grade whilst the carriageway is elevated above.
- 4.5.4 Where footpaths join a footway at the side of a road and children could run from the footpath onto the carriageway, a suitable length of safety barrier should be erected 450mm from the kerb face across the line of the footpath and extending 1m in both directions. Due regard shall also be taken of the need to provide staggered guardrail within footpaths, to prevent or discourage their misuse by pedal cyclists, motor cyclists and skateboarders.
- 4.5.5 Where a footpath is flanked on both sides by walls or fences more than 900 mm in height the width should be increased to 2.5m. (where no cycleway is to be provided alongside) unless the path is only 10 metres long and open to view from end to end.
- 4.5.6 Steps are permitted on footpaths (not footways) where there is an alternative route for disabled pedestrians. Flights of 6 risers are preferred with a maximum of 10 risers allowed. Landings between flights should be at least 1.5 metres long. A galvanised steel handrail should be provided on one side of

the steps. The base of the vertical lowest support to the handrail should be located on the ground level before the first riser. The base of the vertical highest support should be located at the same level and 0.75 metres away from the edge of the top tread.

Dwarf walls along each side of the steps may be required to prevent the adjoining ground from falling onto the steps, refer to Section G - Standard Details. Tactile paving shall be provided following consultation with the County Borough Council. The Guidance on the use of Tactile Paving Surfaces produced by the Department of the Environment, Transport and the Regions (DETR) is useful reference material and can be found on the Department for Transport web site. Please follow link:-

<http://www.dft.gov.uk/adobepdf/259428/tactilepavement>

The correct installation of tactile paving facilities is very important to mobility impaired people and their respective organisations.

#### **4.6 Cycleways**

4.6.1 The Authority's vision is to encourage the provision of appropriate cycle facilities within new developments in accordance with the Sustrans National Cycle Network – Guidelines and Practical Details to encourage sustainable and healthy means of travel.

<http://www.sustrans.org.uk/resources/technical-guidelines>

4.6.2 Where a shared cycleway / footway is provided it should be a minimum of 2.5 metres wide, have street lighting, and be overlooked by dwellings wherever possible. Sudden changes in direction should be avoided and there should be a minimum radius of 5 metres. Site lines should be such that cyclists have a clear view with a minimum visibility of 20 metres. Where sight lines may be unavoidably obstructed some warning feature may be necessary such as additional tactile paving, cycle signs and road markings.

4.6.3 Segregated facilities should be 3 metres wide (1.5m. footway/footpath, 1.5m. cycle track) with clear division markings to separate each user. Lighting should be provided and the facility should be overlooked by dwellings wherever possible. Physically segregated facilities may be required where flows of cyclists or pedestrians are likely to be high and the needs of the visually impaired should be taken into account by suitable tactile paving in order to make them aware of the various areas. The Authority should be consulted at an early stage as to the specific requirements of cycling facilities for a development.

4.6.4 On carriageway cycle lanes will also be considered, the width of such lanes shall be 1.2 – 1.5m

4.6.5 Where a cycleway is to be provided alongside a carriageway, a 0.5m strip shall be provided between the carriageway and cycleway. The strip shall be in a contrasting colour, usually red block pavements.

- 4.6.6 At all locations where cycle routes emerge onto streets safety barriers will be required to ensure that cyclists stop at the end of cycle track. The minimum spacing between segregated barriers should be 1.2m to allow for electric wheelchairs.
- 4.6.7 Cycle routes whether they are shared, segregated or on the carriageway must have the appropriate signs and road markings provided in consultation with the County Borough Council and in accordance with the TSRGD 2002 or superseding publication.
- 4.6.8 Tactile paving shall be used on both shared and segregated facilities and provided in following consultation with the County Borough Council. The Guidance on the use of Tactile Paving Surfaces produced by the Department of the Environment, Transport and the Regions (DETR) is useful reference material and can be found on the Department for Transport web site.  
<http://www.dft.gov.uk/adobepdf/259428/tactilepavement>
- 4.6.9 Refer to Section G - Standard Details for typical cross sections and further details.

#### **4.7 Visibility Standards**

- 4.7.1 The vision splay requirements are contained in MfS, TAN18 and DMRB. Any deviation should be mitigated and approved by this Council. Please follow the links to these documents.

MfS <http://www.dft.gov.uk/pgr/sustainable/manforstreets/pdfmanforstreets.pdf>

TAN18 <http://wales.gov.uk/topics/planning/policy/tans/tan18/?lang=en>

DMRB <http://www.standardsforhighways.co.uk/dmrb/index.htm>

#### **4.8 Road Gradients and Vertical Alignment**

- 4.8.1 Road gradients will normally lie between limits of 1 in 100 (1.0%) and 1 in 12 (8.3%). In exceptional cases, this can be increased to 1 in 8 (12.5%) in which case grit bins will be required that also require a commuted sum for future maintenance, Refer to Section D – Commuted Sums. Care must be taken to ensure that at steep junctions; at no point is the back of the footway steeper than 1 in 8 (12.5%).
- 4.8.2 At junctions the gradient of the non-priority road should not exceed 1 in 20 (5%) over a distance of 15m.
- 4.8.3 Vertical curves should be provided at all changes in gradient, and forward visibility maintained.
- 4.8.4 Where access is off a strategic inter-urban non-trunk road or roads in rural locations, the design requirements shall be in accordance with MfS or Design Manual for Roads and Bridges in a way that respects local context.

4.8.5 To ensure reasonable standard of comfort at sag curves and to provide appropriate visibility at crests, vertical curves should be the greater of:-

- (a) **L=KA** where
- L** Length of curve in metres
  - A** Algebraic difference in gradients (expressed as a percentage)
  - K** Value selected from Table 1

(b) Vertical curve length shown in the sixth column of Table 1 below.

Design Speed (kph)	Overtaking Crest K Value	Desirable Min. Crest K Value	Absolute Min. Crest K Value	Absolute Min. Sag K Value	Min. Vertical Curve Length (m)
60	142	19	11	20	36
50	100	11	6.5	13.5	30
40	n/a	7	4	10	24
30	n/a	5	3	n/a	18
20	n/a	4	2.5	n/a	12

**TABLE 1**

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## **5 County Borough Policies**

### **5.1 Highways in Conservation Areas**

New development in conservation areas would normally be expected to comply to the standards and requirements set out in this design guide. However, it is recognised that in certain cases the design criteria may be relaxed to facilitate development and mitigate the impact on issues concerning the conservation area.

### **5.2 Tree and Shrub Planting within or close to the Highway**

- 5.2.1 The following information is the County Borough Council's policy statement regarding the conditions for planting trees and shrubs within highway limits by organisation other than the Highway Authority.
- 5.2.2 The types and siting of all trees and shrubs within the highway must be approved by the Council as the Highway Authority responsible for the development and subsequent adoption of the roads.
- 5.2.3 Trees and large shrubs planted outside of the highway limits (usually in private gardens) shall be situated at least 3.5 metres from the edge of the carriageway at locations where a footway exists, or 2.5 metres from the edge of the carriageway at locations where no footway exists. Trees and large shrubs may be considered closer to the carriageway on an individual basis subject to appropriate root barrier measures to protect services. Trees and shrubs must not overhang the carriageway or obstruct the footway.
- 5.2.4 Trees may be situated within footways and parking lay-bys as long as sufficient width is provided to allow a clear unobstructed width of 1.2m over a short distance, and a suitable root barrier is provided to protect services. Trees shall not be located within 3m of any carrier drainage. The species of tree will need to be approved by the Highway Authority.
- 5.2.5 Shrubs would not be permitted within visibility splays or forward visibility splays that are to be adopted as highway due to highway safety implications. In certain circumstances consideration will be given to plantation of shrubs which do not exceed 900mm in height when mature in privately maintained vision splays.
- 5.2.6 Any persons or organisation who wish to carry out planting in highway land, must contact the local offices of all the Statutory Undertakers, to ensure that the landscaping proposals in no way interfere with the Statutory Undertaker's apparatus, and provide the Council with written confirmation to that effect.
- 5.2.7 There will be commuted sums associated with trees within the highway. Refer to Section D – Commuted Sums for further information.

### **5.3 Inclusive Accessibility**

- 5.3.1 Highway Authorities must comply with its Disability Equality Duty under the Disability Discrimination Act 2005. Street design should be inclusive and cater for all people regardless of age or ability. Every care must be taken to design new developments so as to meet as far as possible the needs of elderly and disabled people. Footways and footpaths should have acceptable gradients for wheelchair users and should be located such that all bus stops can be reached without difficulty by those with limited walking ability.
- 5.3.2 Guidance is given within Chapter 6 of Manual for Streets “street users’ needs”. Further advice is given in the following publications:-
- (a) Disability discrimination Act 2005.  
[http://www.opsi.gov.uk/acts/acts2005/ukpga\\_20050013\\_en\\_1](http://www.opsi.gov.uk/acts/acts2005/ukpga_20050013_en_1)
  - (b) Department for Transport 2002 Inclusive Mobility A guide to Best Practice on Access to Pedestrian and Transport Infrastructure.  
<http://www.dft.gov.uk/transportforyou/access/peti/inclusivemobility>
  - (c) Guidance on the use of Tactile Paving Surfaces – The Department of the Environment, Transport and the Regions.  
<http://www.dft.gov.uk/adobepdf/259428/tactilepavement>
  - (d) Supplementary Planning Guidance “Access Parking and Circulation”  
<http://www.rhondda-cynon-taf.gov.uk/stellent/groups/Public/documents/RelatedDocuments/029808.pdf>
  - (e) Design of buildings and their approaches to meet the needs of disabled people – Code of Practice.
  - (f) Relevant British Standards.
- 5.3.3 The desirable vertical gradient of footways and ramps for wheel chair users is 1 in 20. In exceptional circumstances this requirement may be relaxed due to topography, conservation or economical reasons as well as presence of an alternative to such footways.

### **5.4 Street Names and Dwelling Numbering**

- 5.4.1 Visitors commonly have difficulty in finding addresses when layout configurations are complex and maze-like. The requirements for street names and dwelling numbering should be taken into account when planning the configuration of the layout as a whole.
- 5.4.2 The Council has adopted the provisions of s.17 and s.18 Public Health Act 1925.

- 5.4.3 The Street names shall be either Welsh or English. The Councils preferred option is Welsh.
- 5.4.4 Street nameplates must be erected by developers on or before the occupation of the first dwelling on that street, and must be located within the footway close to the back edging.
- 5.4.5 The street names must be approved by the County Borough Council. The developer may therefore submit to the council a list of street names in a priority order for the development for consideration. Upon approval, the developer will be notified of the name chosen.
- 5.4.6 The Developer is responsible for the manufacture, supply and erection of the required number of street name signs in accordance with this Councils Specification. The Developer is also responsible for providing and erecting other signs as may be necessary at other locations as a result of the new development.
- 5.4.7 The house numbering / naming shall be carried out on completion of each plot to enable Royal Mail to issue a post code. As such the developer is responsible for house numbering / naming and liaising with Royal Mail to secure a post code and advise all stakeholders accordingly.
- 5.4.8 The Council is currently providing House Naming and Numbering service free of charge. This is a non-statutory duty and as such, it is subject of review with the view to introduce and implement a charging regime to recover the costs incurred. Developers would be advised at the time of introduction and would have the option of either choosing Council to name and number the dwellings or undertake the task in-house.

## **5.5 Individual Access Points on to Strategic Highway Network**

- 5.5.1 The Council has a general presumption against the creation of new accesses from the strategic highway network. This position is supported by regional policy (specifically HIP2) in the Regional Transport Plan 2008 which states that “*Sewta supports control of accesses to the regional road network in the interests of highway safety and capacity*”.

## **5.6 Transportation**

- 5.6.1 The Local Development Plan (LDP) was developed in accordance with Wales Special Plan, One Wales: Connecting The Nation, The Wales Transport Strategy, One Wales Agreement and The Regional Transport Plan (RTP).

The Council will seek to encourage sustainable development and ways of reducing the need to travel by ensuring that new development promotes accessibility by a number of sustainable travel modes.

Policy AW4 and AW5 seeks to improve sustainable travel modes via contributions towards walking and cycling schemes, travel plan initiatives, public transport facilities and services.

Policies NSA21, NSA22, NSA23, SSA19, SSA20 and SSA21 promote walking and cycling routes, park and ride / park and share facilities, which will encourage sustainable travel modes and help to reduce the need to travel by private car or in a single occupancy vehicle.

Policies CS1, CS2, CS8, AW2, AW4, AW5, AW6, NSA1, NSA2, NSA3, NSA12, SSA1, SSA3, SSA4, SSA6 and SSA13 of the LDP will seek to encourage development at sustainable locations to help promote accessibility by public transport, walking and cycling.

- 5.6.2 The LDP and the Supplementary Planning Guidance relating to Planning Obligations and Delivery Design and Placemaking: Access, Circulation and Parking requirements sets out the Councils policies for compliance with regards to matters including Transport Tariff, Transport Assessments, Travel Plans, Parking and Commuted Sums. To view Supplementary Planning Guidance please follow the links below:-

[http://www.rctcbc.gov.uk/en/relateddocuments/publications/developmentplanning/evidencebase/eb106-planningobligations-adoptedversion\(spg\).pdf](http://www.rctcbc.gov.uk/en/relateddocuments/publications/developmentplanning/evidencebase/eb106-planningobligations-adoptedversion(spg).pdf)

[http://www.rctcbc.gov.uk/en/relateddocuments/publications/developmentplanning/evidencebase/eb107-accesscirculationparking-adoptedversion\(spg\).pdf](http://www.rctcbc.gov.uk/en/relateddocuments/publications/developmentplanning/evidencebase/eb107-accesscirculationparking-adoptedversion(spg).pdf)

### 5.6.3 **Transport Tariff / Community Infrastructure Levy**

A transport tariff or Community Infrastructure Levy, (CIL) will apply to all new developments in accordance with the adopted Supplementary Planning Guidance,(SPG). For further information see the above-mentioned Supplementary Planning Guidance Planning Obligation via the link shown in sub-section 5.6.2 above

### 5.6.4 **Transport Assessments**

The detail of a Transport Assessment should reflect the scale of development and the extent of the transport implications of the proposal. For further information refer to section 4.2 of the SPG Delivering Design and Placemaking: Access, Circulation and Parking via the above link.

### 5.6.5 **Travel Plans**

Travel plans have a significant role to play in achieving a reduction in road traffic by enabling organisations to manage their travel needs and encourage more suitable modes of travel. For further information refer to section 4.3 of the SPG Delivering Design and Placemaking: Access, Circulation and Parking via the above link.

### 5.6.6 **Parking**

Parking standards are described in sections 3.4 and 4.4 of SPG Delivering Design and Placemaking: Access, Circulation and Parking which is based on the 'Wales Parking Standards 2008' produced by the County Surveyors Society.

### 5.6.7 **Grit/Salt bins**

Grit bins shall be provided where the proposed road gradient exceeds 1 in 12. There will be a commuted sum associated with the provision of grit bins, refer to Section D of this design guide.

### 5.6.8 **Pedestrian Hand Rails**

Pedestrian hand rails should be provided where footway gradients exceed 1 in 8. For further information please refer to section 4.5.2. There will be a commuted sum associated with the provision of pedestrian hand rails, refer to Section D of this design guide.

### 5.6.9 **Commuted Sums**

Commuted sums are required to cover future maintenance for a period of 30 years that are over and above that necessary for the safe access and circulation within the development and for structures that are maintained by the Council that would be an increased maintenance cost to that before a development took place. For further information refer to Section D of this guide.

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## **6 Provisions for Public Transport and Associated Infrastructure**

### **6.1 Need for a Bus Service**

- 6.1.1 In the interests of sustainability and social inclusion, developments should be located in areas served by alternative means of transport to the private car. Where this is not possible such facilities must be introduced or improved to encourage use of more sustainable modes of travel.
- 6.1.2 Most households need a bus service, and certain groups of people - the elderly and disabled and mothers with young children - may not be able to walk very far to reach destinations. Moreover the nearer people live to the bus stop the more likely they are to find it attractive to travel by bus. Government guidelines indicate that the walking distance to a bus stop should not exceed 400 metres, equivalent to a five minute walk (where there are steep gradients a reduction of 10 metres in the horizontal distance should be made for every 1 metres difference in level).
- 6.1.3 Bus stop locations will depend on the topography of the area to be served and the local amenities (shops, schools, health centres etc). Developers should consult with local bus operators and the County Borough Council at an early stage in the planning process to establish the opportunities for providing a bus service for the development, the location of bus stops and improvements to the existing public transport infrastructure to encourage sustainable mode of travel.
- 6.1.4 Enhancements to and the provision of public transport services and infrastructure may reduce the level of parking required within a development by providing a sustainable alternative to the private car. To achieve any significant modal shift, it is likely that the service will need to be more frequent than once per hour during the day, along with evening and Sunday services as well as opportunities for interchange with regional services.

### **6.2 Designing for the Bus**

- 6.2.1 The design of estate roads and footpaths should therefore allow buses to pass as close to the residents as possible. Higher density housing should generally be sited closer to bus stops. Housing for the elderly should be as near to a bus stop as possible. Bus stops should also be located adjacent to schools, shops, and other community facilities. The footpaths within the housing estate should link to the proposed bus stops.
- 6.2.2 Bus lay-bys may be appropriate at bus stops to prevent buses from obstructing other traffic. Terminal and turning facilities will need to be provided as appropriate. This may also include the possibility of catering for the phased introduction of a bus service to a staged development.

A turning circle of a minimum 28 metres diameter (or 24 metres for a midibus) will be required, which may need to be provided on a temporary basis.

6.2.3 The potential for extending bus services to feed the possible future development of adjacent land should also be a consideration in determining bus routes and facilities.

The provision of new, extended or diverted services will only be considered where the service is likely to be commercially viable in the longer term and where existing service users are not significantly disadvantaged as a result of any service changes.

6.2.4 Bus stops shall be provided with, or improved to benefit from the following:-

- i. Good pedestrian links
- ii. Increased footway width to 3 metres
- iii. Raised bus boarding kerbs
- iv. Bus stop shelter
- v. Flag pole with service timetable
- vi. Traffic Regulation Order to prevent parking within the bus stop
- vii. Be well lit and enjoy good natural surveillance from buildings
- viii. Carefully designed so any planting minimises opportunity for crime

6.2.5 This Authority has aspirations to introduce 'real time' technology. However, this will need to be rolled out regionally. Once real time technology has been introduced it would be required at each bus stop.

6.2.6 Should a development be proposed where an existing bus service is limited and should be increased for the development, or where a new service is intended to be provided, a payment towards the funding for the service and associated infrastructure including commuted sums for future maintenance will be sought through a Section 106 Agreement.

6.2.7 Where an access is for the provision of Buses only, then the mechanism to facilitate such control shall be via an Automatic Number Plate Recognition (ANPR) system to be approved by this Council.

6.2.8 For further information please see Standard Details in Section G of the Design Guide.

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## 7 Road Construction and Specification

- 7.1 For full details of all elements of highway construction please refer to Standard drawings in Section G of this Design Guide, together with The Highways Agency Specification for Highway Works and The Design Manual for Roads and Bridges where relevant.

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## 8 Highway Drainage

- 8.1 The surface water drainage shall be in compliance with the requirements of the documents listed below, to ensure that flood risk and sustainable drainage system requirements are satisfactorily addressed to mitigate the potential adverse impact of any new development. The developer shall also undertake Hydraulic Impact Assessment (HIA) for the proposed site to ensure that there will be nil detriment upon the existing drainage regime and risk of flooding within the area: -

- i. Mid Glamorgan County Council Act 1987
- ii. Flood Risk Regulations 2009
- iii. Flood and Water Management Act 2010
- iv. Sewers for Adoption 7<sup>th</sup> Edition
- v. Technical Advice Note 15 – Development and Flood Risk
- vi. Planning Policy Wales 2010
- vii. BRE Digest 365
- viii. CIRIA Report C697 (The SUDS Manual)
- ix. CIRIA Report C625 (Model Agreements for SUDS).
- x. BS EN 752
- xi. All Wales Planning Policy AW10
- xii. CIRIA C689 Culvert Design Guide 2010

- 8.2 The design of highway drainage shall be for the following storm return periods:

- |                |   |
|----------------|---|
| 1 in 2 years   | (No surcharge within the system)  |
| 1 in 30 years  | (No flooding from the system)   |
| 1 in 100 years | (Flooding from system temporarily stored on highway or routed to open space, no property shall be flooded). |

- 8.3 The effect of the impact of climate change on the above return periods is to be assessed in accordance with the Supplementary Note to Operating Authorities – Climate Change Impacts, published by DEFRA in October 2006. (See Table 2 below)

1990 – 2025	5%
2025 – 2055	10%
2055 – 2085	20%
2085 – 2115	30%

**TABLE 2**

The percentage additions shown above being applied to the design rainfall intensities for the appropriate timescale.

- 8.4 During extremely wet weather, the capacity of the highway drainage may be inadequate, even when designed in accordance with this Guide. Under such conditions, highway drainage may surcharge and surface water may escape from those manhole covers which lie below the hydraulic gradient. Checks must be made to ensure that an adequate level of protection against the flooding of properties is achieved and the design adjusted where the required flooding protection is not achieved. This is particularly important on undulating or steeply sloping developments.
- 8.5 In designing the highway drainage and site layout Developers will also need to demonstrate flow paths and the potential effects of flooding resulting from storm events exceeding the design criteria. Storage of exceedance flows up to the 1 in 100 year storm event must be accommodated within the site via overland flow routing or temporary surface flooding of areas such as car parks or landscaped areas.
- 8.6 Road gullies must be sited at all valley points. Where a length of road is longer than 200 metres between valley points, two gullies should be provided at the valley point with independent drainage pipes to the main drain. Unless required for a valley point position, gullies should not be sited against the radius kerbs at junctions.
- 8.7 The spacing of gullies should be such that each drains no greater an area than 160 sq. metre of highway (carriageways and footways).
- 8.8 Manholes are required at changes of horizontal and vertical alignment, and spaced at not more than 100 metre intervals.
- 8.9 Drain pipe sizes to be not less than 225 mm. diameter, except for gully connections, which shall be not less than 150 mm.
- 8.10 No carrier drain shall be laid at a lesser gradient than 1 in 120 unless a self-cleansing velocity of 0.75m/s can be achieved. However, where attenuation tanks are provided they shall be laid at such gradients that will not cause flooding of the highway prior to fulfilling its function.
- 8.11 The manhole covers should not be positioned under the wheel tracks.

- 8.12 The sewers laid under carriageway, footway or highway verge should have a minimum cover of 1.2m measured from the top of the pipe barrel to the finished ground level. Where this is not achievable, the sewers shall incorporate 150mm thick ST4 concrete bed and surround which shall be interrupted over its full cross section at each pipe joint by a shaped compressible filler complying with BS EN 120 and BS EN 317.
- 8.13 Connection of surface water drainage from roof, yard, driveways and private shared surfaces should not be connected to the highway drainage system
- 8.14 A combined road/roof surface water drain system can be permitted subject to the agreement of Dŵr Cymru - Welsh Water (DCWW) or successor / agent to adopt the drains. The developer shall enter into negotiation with the relevant organisation for the adoption of any Sustainable Urban Drainage System (SuDS).
- 8.15 Where uncontaminated highway drainage only is discharging into a watercourse, a discharge consent will not be required. However, agreement on the rate of discharge (annual probability or mean annual peak rate of run off) will be required from RCT Land Reclamation and Engineering section in the role of Land Drainage Authority. A Flood Defence Consent (FDC) will be required from Natural Resources Wales, in respect of any outfall structure required that discharges to main river. An ordinary watercourse consent may be required from RCT Land Reclamation and Engineering section in the role of Land Drainage Authority in respect of any outfall structure which discharge to ordinary watercourse. FDC/OWC must be provided prior to the completion of a Section 38 Agreement or adoption of the streetworks.
- 8.16 Highway drainage that requires the flow to be attenuated will require a commuted sum to cover maintenance of the attenuation and flow control mechanism for a period of 30 years. (Refer to the commuted sums, section D of this Design Guide).
- 8.17 Soakaways will be considered where ground conditions are proven to be suitable in accordance with BRE Digest 365 or alternative agreed procedure and without causing any detrimental harm in the vicinity. Highway soakaways will require a commuted sum payment to cover the future maintenance of the soakaway for a period of 30 years. Refer to Section D - Commuted Sums. Approval of the soakaway design will need to be obtained from Land Reclamation & Engineering in the role of Land Drainage Authority.
- 8.18 Where highways drainage systems discharge to soakaways catchpits shall be used throughout the system in lieu of manholes.
- 8.19 Highway drainage systems that are given consent to discharge to an existing highway drain will require the developer to pay a commuted sum towards the increased risk associated with permitting the connection. The commuted sum will contribute towards annual inspections and increased maintenance costs due to the additional loading added to the existing system for a period of 30 years. Refer to Section D - Commuted Sums.

- 8.20 To request a connection of a new highway drainage system to an existing highway drain, developers must in the first instance submit an application in writing to Highway Development Control to include:-
- a) Hydrological assessments and hydraulic calculations of the catchment area for the existing highway drainage to confirm its hydraulic capacity to accept additional discharges.
  - b) A CCTV survey of the existing highway drainage to confirm it's structural and service condition.

There will be a one off fee currently £2,000 (2014) for review of the submitted information relating to the capacity and suitability of the existing highway drainage system in order to provide consent for connecting to an existing highway drainage system. The fee is to be paid in advance of any approval and is not refundable. It should be noted that payment of this fee does not guarantee that consent will be granted.

Following approval a commuted sum will be payable as referred to in Section D - Commuted Sums subsection 2.

A connection charge of £375 must also be paid in advance of any connection being made.

- 8.21 Any diversion or alteration to existing highway drainage or highway culvert will require submission of full details of the proposed changes to Highway Development Control for approval. Works must not commence until written approval has been given.
- 8.22 Any works to open watercourses or culverts including repairs, improvements or diversion may require an Ordinary Watercourse Consent. Further information is available from the Council's website:-

<http://www.rctcbc.gov.uk/en/environmentplanningandwaste/flooding/ordinary-watercourse-consenting/ordinary-watercourse-consenting.aspx>

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## 9 Parking

- 9.1 Parking requirements are assessed according to the traffic generated by the type of development. RCT Supplementary Planning Guidance “Access, Circulation and Parking Requirements” set out the required standards based on the Wales Parking Standards 2008 produced by the County Surveyors Society but developed to be appropriate to RCT. Please see link to view the document.

[http://www.rctcbc.gov.uk/en/relateddocuments/publications/developmentplanning/evidencebase/eb107-accesscirculationparking-adoptedversion\(spg\).pdf](http://www.rctcbc.gov.uk/en/relateddocuments/publications/developmentplanning/evidencebase/eb107-accesscirculationparking-adoptedversion(spg).pdf)

The advice given in these publications will assist developers, consultants and builders in the preparation and submission of planning applications. It will also achieve a common approach to the provision of vehicle parking facilities associated with new developments and change of use applications.

- 9.2 Should a domestic garage be converted at a later date such that the parking space has been lost, then an additional car parking space should be provided within the curtilage of the property. A proper means of access to that new space, from the highway should be provided.
- 9.3 Group car parking bays alongside highways - Each bay should measure 6m x 2.6m. A standard vehicle crossover should be constructed in front of each group of spaces. The front of each group must be set back at least 2.0m from the carriageway edge.
- 9.4 Off-street parking areas should always be sited so that they can be overlooked by residents for security reasons and therefore should not be in secluded locations.
- 9.5 There shall be an adequate space between the edge of the drive and a car parked on it to allow pedestrian access to be gained to the front door of the property.
- 9.6 On street parking bays shall be parallel to the carriageway. In certain instances alternative arrangements will be considered subject to appropriate mitigating measures.
- 9.7 Group or courtyard car parking areas should provide for off street turning so that the vehicles can leave in a forward gear.
- 9.8 The gradient of parking bays at right angles to the carriageway must not exceed 1 in 20 (5%).
- 9.9 When footways or footpaths pass the inner ends of parking bays, vehicles should be prevented from overhanging the pedestrian route by means of rubbing strips.
- 9.10 Gates serving driveways and individual accesses must be fitted so as not to open out over any part of the highway. Consideration must be given to ensure gates can be opened whilst parking spaces are occupied.

- 9.11 Disabled parking spaces shall be marked out in accordance with current guidelines. Refer to Section G - Standard Detail.
- 9.12 Cycle parking may be required to encourage a more sustainable mode of travel, further information can be found in MfS Section 8.2 and RCT Supplementary Planning Guidance “Access, Circulation and Parking”.

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## 10. Traffic Signs and Road Markings

- 10.1 Developers will be required to submit details of traffic signs and road markings for approval. These details must comply with the current Traffic Signs Regulations and General Directions 2002 and the following chapters of the Traffic Signs Manual.

Chapter 1	Introduction
Chapter 3	Regulatory Signs
Chapter 4	Warning Signs
Chapter 5	Road Markings
Chapter 7	The Design of Traffic Signs
Chapter 8	Traffic Safety Measures and Signs for Roadworks and Temporary Situations

**(Note:** - Chapters 2 and 6 are not published to date).

- 10.2 Any traffic signs that need to be relocated should be replaced new for old.
- 10.3 The sign face design of all direction signs shall be submitted for approval, the Council may wish to amend destinations shown or add additional destinations.
- 10.4 The developer shall provide all regulatory and warning signs including street name plates and meet all costs associate with the making of any necessary Traffic Orders.
- 10.5 Where a traffic sign needs to be illuminated in accordance with TSRGD 2002, the developer shall be responsible for lighting units, electrical supply and connection.

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