**Neath Port Talbot County Borough Council Highway Technical Design Guide for Residential, Commercial & Industrial Developments**

**(Based Upon the All Wales Common Standards)**

The New Highway Design Guide is based upon the All Wales Common Standards Guide which has been produced by Welsh Local Authorities, and other key stakeholders including the Home Building Federations. The Common Standards strives to bring consistency to enable highway agreements to be successfully completed allowing the adoption of roads serving new developments.

The focus is very much on the constructional standards and specifications. However the Council are very much committed to sustainable transport and Active Travel design for all developments and advise that these must be considered during the design concept for all highway schemes.

All current and relevant legislation and guidance must have been considered and appropriately complied with during the design and planning process. The aim of this document is to have a set of Common Standards in line with all of the associated separate legislation and guidance, but this is a work in progress. These common standards are a live document and are under review to more fully align to current, new and forthcoming guidance. While this review is taking place, the guidance should also be interpreted alongside:-

* [Planning Policy Wales - Edition 11](https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf)
* [Active Travel (Wales) Act 2013 and accompanying guidance](https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf)
* [SuDS legislation, enforcement and accompanying guidance](https://gov.wales/sites/default/files/publications/2019-06/statutory-guidance.pdf)
* [Emerging Pavement Parking Legislation](https://gov.wales/welsh-government-response-recommendations-made-pavement-parking-task-force-report-html)
* [Emerging 20 mph legislation](https://gov.wales/welsh-government-response-recommendations-made-welsh-20mph-taskforce-group-report)
* [Manual for streets](https://gov.wales/welsh-government-response-recommendations-made-welsh-20mph-taskforce-group-report)
* [Llwybr Newydd: the Wales Transport Strategy](https://gov.wales/llwybr-newydd-wales-transport-strategy-2021)

Specifically, the current version of the guidance was published before Planning Policy Wales - Edition 11 and Llwybr Newydd

As this guidance is under review, it will be noted that any amendments to the common standards will be reviewed by the Council and its scrutiny committee prior to updating the online standards. Please refer back to this website regularly to check for any amendments.

**SECTION – A**

**RESIDENTIAL ROADS, FOOTPATHS AND CYCLEWAY STANDARDS**

**Issue Date: June 2020**

**RESIDENTIAL, INDUSTRIAL & COMMERCIAL ESTATE ROADS**

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**RESIDENTIAL, INDUSTRIAL & COMMERCIAL ESTATE ROADS**

**Introduction**

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

1. Manual for Streets (MfS)
2. Manual for Streets 2 (MfS2)
3. Technical Advice Note 18 – Transport (TAN 18)
4. Planning Policy Wales 10th Edition (PPW10)
5. Design Manual for Roads and Bridges
6. Guidance on the use of tactile paving surfaces
7. Inclusive Mobility
8. Active Travel (Wales) Act 2013
9. Active Travel Act Guidance
10. Equality Act 2010
11. Highways Act 1980
12. Well-being of Future Generations (Wales) Act 2015
13. Traffic Signs Regulations and General Directions (2016)
14. Traffic Signs Manual (2019)
15. Sewers for Adoption
16. Statutory National Standards for Sustainable Drainage (SuDS)
17. CIRIA SuDS Manual (C753)

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

Design Manual for Roads and Bridges DMRB

Traffic Signs Regulations & General Directions (2016) TSRGD

Traffic Signs Manual (2019) TSM

Technical Advice Note 18 (Transport) TAN18

Planning Policy Wales 10th Edition PPW

Active Travel Act Guidance ATAG

Local Development Plan LDP

Regional Transport Plan RTP

Sewers for Adoption (7th Edition) SfA

Flood and Water Management Act (2010) FWMA

Statutory National Standards for Sustainable Drainage

and SuDS Manual (CIRIA C735) (2015) SuDS

**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.

# Philosophy and Objectives

## The principles and objectives of this design guide are aimed at allowing developers to create estate 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>

## 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.

## 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. The aim is to achieve layouts which limit traffic speeds by designing roads with frequent bends, changes in materials 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 a clear sense of space. Consideration should be given to designs that are creative and use a combination of speed reducing features such as frequent bends, narrow carriageway widths, varying materials, design features (such as sustainable drainage elements), parking areas, junction plateaus, chicanes etc.

## The principles and objectives of the common standards 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.

## 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.

## 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., should be considered in determining highway requirements.

## 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/dmrb/index.htm>

## Active Travel Act Guidance July 2021, which was published in 16th July 2021 under the Active Travel Act 2013, provides advice on the planning, design, construction and maintenance of facilities such as Active Travel Routes to enable walking and cycling to places such as work, education shopping and other local amenities or facilities. It is important that Active travel is considered in the design of all new developments. Active Travel Design Guide July 2021 can be found on the following link:

## <https://gov.wales/active-travel-act-guidance>

## From 7 January 2019, it has been a requirement that all new developments in Wales of more than 1 house or where the construction area is 100 square metres or more, require SuDS for surface water. The SuDS must be designed and built in accordance with the statutory SuDS standards published by Welsh Ministers. SuDS schemes must be approved by the local authority acting in its SuDS Approving Body (SAB) role before construction work begins. The Welsh Government SuDS Standards set out the requirements of a suitable SuDS design under the following six standards: -

S1 - Runoff destination

S2 - Hydraulic Control

S3 - Water Quality

S4 - Amenity

S5 - Biodiversity

S6 - Construction, Operation and maintenance

The CIRIA SuDS Manual (C753) provides an additional source of technical guidance on the design of SuDS components.

# Design Factors and Principles

## There is a clear need to provide sustainable developments accessible by all modes of travel. 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 facilities including suitably located bus stops, real-time display board, bus-shelter, flag pole, boarder, etc., to encourage use of public transport.

## It is essential that safe and satisfactory active travel routes for pedestrians and cyclists reach destinations such as work, education, shopping and to access other local amenities and facilities including connectivity to other areas.

## In accordance with Planning Policy Wales, MfS, Active Travel Act, and the Equality Act the Council should support the need to provide facilities for mobility and visually impaired members of society, cyclists and pedestrians to secure socially inclusive design layouts for all users.

## 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.”*

## 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, interlinking footpaths, car parking and garaging, bus routes, traffic generation and potential impact on local and wider highway networks.

## These elements inter-relate in many ways and a dominant consideration in that relationship is the potential conflict of pedestrians, cyclists 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, cyclists and vehicles. The pedestrian and cycle 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.

## 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.

## Guidance on vehicle parking and garaging is that it shall be predominately off the highway, either inside the curtilage of dwelling or 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. Suitability of parking spaces to accommodate charging facilities for electric vehicles should also be considered.

## 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 up to 50 dwellings would usually be considered to have low traffic flows.

## 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 larger developments, and in compliance with the Active Travel Act guidance July 2021, 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 Active Travel both operational and non-operational.

## 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 this design guide give details of design arrangements acceptable to the Local Highway Authority, alternative proposals, which conform to the principles outlined in other documents such as MfS and Active Travel Design Guidance can also be put forward for consideration.

## Subject to Local Highway Authority 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, Surface water drainage and culverted watercourses beneath the highway, together with attenuation tanks/ponds, soakaways, swales, ditches, culverts and the associated inlet/outlet structures only serving highway drainage.
* Highway structures such as retaining walls, road and footbridges.
* Street lighting.
* Safety barriers and pedestrian guardrails.

## The collection and disposal of surface water approved by the Local Authority as the SuDS Approving Body, (SAB), will be a separate process that has to be carried out as set out in the statutory SuDS Standards.

## 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 (Advance Payment Code) of The 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.

## 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 Section 3.6 and standard details within Section F.

## When considering road categorisation, the likelihood of future development of adjoining land should be taken into account.

## At priority junctions the roads should meet at an angle of 90o. Deviation to a maximum of 70o would be considered acceptable. In exceptional circumstances and subject to appropriate mitigation measures deviation up to 45o would be considered sympathetically.

## 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 highway agreement made under Section 111 of the Local Government Act 1972 and/or S278 of the Highways Act 1980 to the satisfaction of the Local Highway Authority.

# 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 and cyclists as set out in Active Travel Act Guidance 2021 and PPW 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: -

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

### 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.

### 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 and if developer is incorporating such roads in their design, then they should liaise with the relevant local highway team to establish their requirements.

## **Streets – Distributor Road and Bus Route**

### 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 manoeuvers of a bus whilst at the same time discouraging short cutting by extraneous traffic. Direct frontal access will usually be considered acceptable where highway safety and free flow of traffic 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 should also be considered.

## **Residential Streets- Approach Road**

### 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.

## **Residential Streets- Cul-De-Sac**

### These streets will give access to dwellings and cater for emergency service and delivery vehicles.

### These streets should serve up to a maximum of 50 dwellings.

## **Residential Street – Shared Surface**

### The footways are replaced with carriageway construction and demarcated as virtual footways by means of contrasting surface course material.

### Careful consideration must be given to the needs of visually impaired pedestrians and compliance with the Equality Act 2010, how vehicles would park on street and how services and drainage will be located within the road.

### These streets serve up to a maximum of 30 dwellings.

## **Private Shared Drives**

### 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.

### Private shared driveways should be a minimum of 4.5 metres wide to enable two vehicles to pass. Where a share drives are fronting on to a classified highway then a minimum width of 5.5 metres will required for the first 12 metres.

### Any gates erected should be set back a minimum distance of 6 metres from the edge of the highway and must open inwards only.

### 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.

### Shared Drives access shall not exceed 25 metres.

3.6.6 For shared drives all bin collection points must be located or provided to allow for kerb side collection adjacent to the adopted highway, whilst maintaining vehicular visibility onto the publically adopted highway.

## **Private Driveways**

### All residential private driveways within the curtilage of a single dwelling will require an allocation of car parking spaces shall be provided with the following dimensions:-

## Single Driveway – 6 metres (length) x 3.6 metres (width)

## Two vehicles parking in parallel (side by side) – 6 metres (length) x 6.2 metres (width) – for 3 vehicles parked parallel the width shall be 8.8 metres.

## Two vehicles in tandem (behind one another) – 3.6 metres (width) x 10.8 metres (length) – for 3 vehicles parked in tandem the length shall be 15.6 metres.

## The above dimensions are too implemented unless otherwise agreed in writing by the Highways Authority. The spaces provided accommodate the free movement of pedestrians around the vehicle parked on the driveway, together with sufficient room to apply electrical charging points.

## ***For further information relating to car parking please refer to item 9.14 & 9.15 within this document.***

## 3.7.2 Unless otherwise agreed with the Highway Authority, all new access points onto a classified highways shall be provided with a vehicular visibility splays in accordance with TAN 18, together with sufficient turning facilities that will allow vehicles to access and egress in a forward gear. This turning facility shall be made independent of any required car parking spaces within the curtilage of the property.

## **Footways and Footpaths**

### 3.8.1 Footways and footpaths fulfil an important role by ensuring the safe movement of pedestrians and, if properly designed, should facilitate and encourage pedestrian activity with a minimum width of 2m for pedestrians or 3m minimum width to accommodate cyclists.

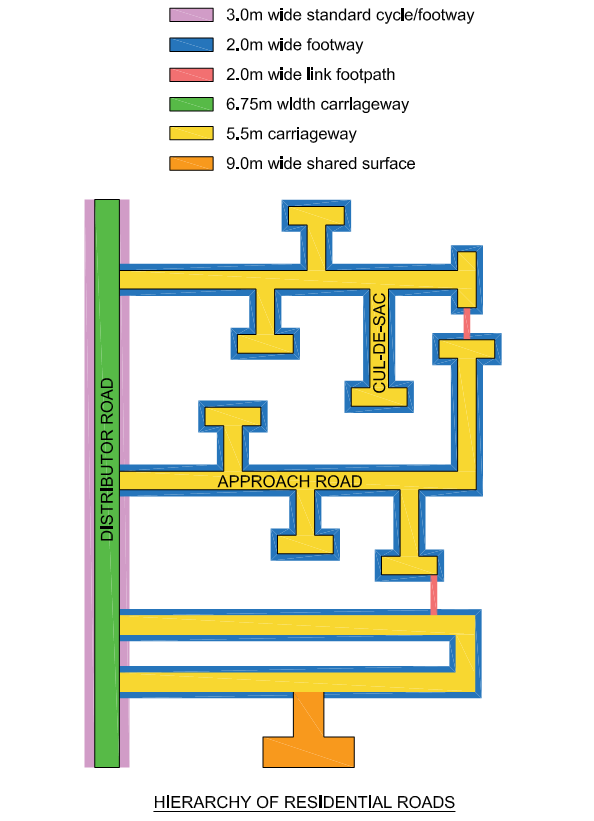
## **Cycleways**

### 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.

## **Shared Cycle and Footways**

### 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 3.0m when abutting a highway and 2.5m when away from highway and comply with the requirements of Active Travel Act Guidance 2021.

The nature and relationship of the above roads are illustrated in figure 1 below: -



# Design Standards for Residential Streets

## **Residential Streets – Distributor Roads and Bus Routes**

### Whilst the legal speed limit on such roads/streets will normally be 30 mph, the design standards are intended to ensure speeds of less than 20 mph. 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 and will need to accommodate public and home to school transport. The carriageway shall therefore be designed to cater for the swept path movements of such vehicles.

### Where a road/street only has single sided development, a continuous 2m wide footway on both sides of the carriageway may not be required but at least one footway must be provided. Where a second footway in not provided, a 1m wide hard strip shall be provided to accommodate services and the overhang of manoeuvring vehicles. Where footways are provided, they shall measure 2m in width generally and 3m in width outside schools, shops, bus stops or other community facilities where the public may congregate.

### The desirable minimum centre line radius is 30 metres.

### 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 6.5m.

### 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.

### 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, refer to MfS figure 7.19.

### In all cases the road alignment shall be designed to restrict vehicle speeds to less than 20 mph. Speed control may be achieved by a variety of measures including: -

1. 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 mph.
2. Roundabout junctions.
3. Short lengths of localised carriageway narrowing to facilitate design features.
4. 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.
5. Vertical traffic calming features such as speed cushions, raised carriageway and junction plateau 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.
6. Throttles / narrowing to provide priority, with a minimum carriageway width of 3.8m for the single-track sections which should be no longer than 6m in length, must incorporate clear intervisibility on both approaches.

### Bus routes must allow large buses to be able to make safe and relatively efficient progress, multiple times per hour in both directions. Such streets are therefore to be designed to give priority to efficient movement rather than place. Bus routes require 6.5m wide carriageway with on street parking provided in dedicated parking bays parallel to the carriageway. Swept path analysis/vehicle tracking must demonstrate adequate geometry to allow 12.5m single deck buses to pass. Generally, the provision of a 25m minimum inside kerb radius would avoid tracking problems along the mainline carriageway.

### Access for buses should be at either end of the development to minimise the circuity and improve journey times and therefore a single point of access should be avoided.

### Where space allows for the provision of verges, vision splays, forward visibility or other vegetated separations, consideration should be given to the use of these areas as part of the sustainable drainage scheme for the development.

## **Residential Streets- Approach Roads and Culs-DeSac**

### The legal speed limit on such roads will be 30 mph, the design standards shall ensure speeds of 20 mph 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.

### 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.

### 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 favorable 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.

### 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.

### Footways shall usually be 2m wide and be on both sides of the street, unless there is only development on one side, in which case a 1 m wide margin strip, constructed in permanent material, would be acceptable.

### The desirable minimum centre line radius of 9 m, 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 / raised carriageway, similar to a junction plateau and will reduce the required SSD.

### 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.)

### 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.

### 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.

### Where development is proposed on one side of the carriageway only the use of Mews Court construction, consisting of a 2m wide footway along one side of the road, a 5.5m wide carriageway and 1.m wide margin strip with block paving surfaces may be appropriate. The 2m wide footway must be extended around the turning head and a rumble strip should be constructed at the inside tangent point of the access junction radii to warn a driver who is entering or leaving a ‘special area’. The non-continuing footway shall be terminated 2.0m beyond the rumble strip into the shared surface and a 0.5m wide hard strip should be provided to cater for overhang of vehicles. See standard details in Section F. The informal atmosphere intended in a Mews Court construction is to be achieved by introducing appropriate finishes.

### Any shared surface roads 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.

### 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.

### 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.

## **Residential Streets – Mews Court and Shared Surface Roads (Serving up to 30 Dwellings)**

### 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.

### The informal atmosphere intended in a Mews Court is to be achieved by introducing appropriate finishes. A 2m 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 2m beyond the rumble strip into the shared surface and a 1m wide hard strip should be provided to cater for overhang of vehicles.

### 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.

### 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.

### 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.

### Shared surfaces serving up to a maximum of 30 dwellings should be designed in accordance with the requirements for Cul-De-Sacs set out in section 4.2 above, however, careful consideration must be given to ensure that the materials proposed provide adequate contrast, sufficient width to accommodate passing vehicles and pedestrians, services and drainage and safely satisfy the needs of all users in compliance with the Equality Act 2010.

## **Private Shared Access**

### The vehicular access to private shared access (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.

### Private shared accesses would be maintained by the owner of the dwelling, which have access off it. Private shared drives may serve up to 5 dwellings.

### The minimum width of a shared access will be 4.5m with passing-bays at suitable locations to enable two large vehicles to pass each other.

### 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.

### Adequate turning shall be provided to enable access by emergency services as well as service and delivery vehicles.

### The requirement for visitor parking must also be considered particularly where the absence of such provision would result in parking within turning heads of the access road.

### An adequate space should be provided at a convenient location close to or adjacent to the adopted highway for the temporary storage of refuse and recycling bins awaiting collection. Such provision should not cause obstruction to the driveway, carriageway, footway or vision splays.

## **Footways and Footpaths**

### 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 optimize to increase pedestrian safety and reduce the incidence of anti-social behavior and vandalism.

### 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 provided. A commuted sum for future maintenance will be required for the hand rail. (Refer to Section D - Commuted Sums)

### 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 Authority. 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.

### 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 measures within footpaths, to prevent or discourage their misuse by pedal cyclists, motorised vehicles, cyclists and skateboarders.

### 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 less than 10m long and open to view from end to end.

### Where the link would provide a more direct route for cyclists the link must meet the appropriate design requirements with a minimum width of 3m and facilities for cyclists to leave and rejoin the carriageway.

### 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 last 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 F - Standard Details. Tactile paving shall be provided as recommended by The Guidance on the use of Tactile Paving Surfaces produced by the Department of the Environment, Transport and the Regions (DETR).

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

### The correct installation of tactile paving is very important to mobility impaired people and to satisfy requirements of the Equality Act 2010.

## **Cycleways and Active Travel Routes**

### Appropriate cycle facilities should be provided within new developments in accordance with the Active Travel Act Guidance July 2021 to encourage walking and cycling to access local amenities and facilities including work, education and shopping, together with the provision of links to the wider local and national Cycle Network. Design of such routes must be in accordance with Active Travel Design Guidance supplemented by applicable Sustrans Guidance documents and DMRB CD 195.

### <https://gov.wales/active-travel-act-guidance>

### <https://www.sustrans.org.uk/for-professionals/infrastructure/sustrans-traffic-free-routes-and-greenways-design-guide/>

* http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol6/section3/CD%20195%20Designing%20for%20cycle%20traffic-web.pdf

### Where a shared cycleway / footway is provided it should be designed in accordance with Active Travel Act Guidance July 2021, 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 5m.

### Sight lines should be such that cyclists have a clear view with a minimum visibility of 20 m. Where sight lines may be unavoidably obstructed some warning feature may be necessary such as additional tactile paving, cycle signs and road markings.

### Segregated facilities should be 3m 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.

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

### 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 paviours.

### At all locations where cycle routes emerge onto streets provision must be made to allow cyclists to rejoin the carriageway and suitable measures provided to ensure that cyclists do not inadvertently cycle into the carriageway. Measures may also need to be taken to prevent access by motorcycles and unauthorized vehicles, however, the need to allow cyclists negotiate such measures without the need to stop or dismount will need to be balanced in terms of risk to safety in the local context.

### 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 2016 or superseding publication.

### 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 via the link below: -

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

### Refer to Section F - Standard Details for typical cross sections and further details.

## **Junction Spacing, Radii and Visibility Standards**

### Junction spacing must be a minimum of 25m.

### Junction radii must be between 6m and 10.5m to accommodate the largest vehicles regularly using the junction.

### The vision splay requirements are contained in MfS, TAN18 and DMRB. Any deviation should be mitigated and approved by Local Highway Authority. These documents may be accessed via the following links : -

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>

## **Road Gradients and Vertical Alignment**

### 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%).

### At junctions the gradient of the non-priority road should not exceed 1 in 20 (5%) over a distance of 15m.

### Vertical curves should be provided at all changes in gradient, and forward visibility maintained.

### 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.

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

1. **L=KA** where **L** Length of curve in metres

**A** Algebraic difference in gradients (expressed as a percentage)

**K** Value selected from Table 1

1. 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

# Policies

## **Highways in Conservation Areas**

### New development in conservation areas would normally be expected to comply with 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.

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

### 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.

### 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 utility services. Trees and shrubs must not overhang the carriageway or obstruct the footway.

### 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 utility services. Trees shall not be located within 3m of any highway carrier drainage. The species of tree will need to be approved by the Highway Authority.

### 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.

### 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.

### There will be commuted sums associated with trees within the highway. Refer to Section D – Commuted Sums for further information.

## **Inclusive Accessibility**

### Highway Authorities must comply with its Disability Equality Duty under the Equality Act 2010. 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.

### Guidance is given within Chapter 6 of Manual for Streets “street users’ needs”. Further advice is given in the following publications: -

1. Equality Act 2010. <http://www.legislation.gov.uk/ukpga/2010/15/contents>
2. 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>
3. 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>
4. BS8300-1:2018 Design of an accessible and inclusive built environment. External Environment. Code of Practice.
5. Relevant British Standards.
6. Local Planning Policy and the Council’s Guidance Documents

### 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 economic reasons as well as presence of an alternative to such footways.

## **Street Names and Dwelling Numbering**

### 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.

### The Councils have adopted the provisions of s.17 and s.18 Public Health Act 1925 and Welsh Language Standards Regulations 2015 for Street Naming.

### The Street names shall be in Welsh or Welsh and English based on the individual Local Authority’s policies and procedures.

### 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.

### The street names must be approved by the relevant Local Authority. The developer may therefore submit to the Local Authority 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.

### The Developer is responsible for the manufacture, supply and erection of the required number of street name signs in accordance with the relevant Local Authority’s Specification and details. 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.

### Failure to formally register with Royal Mail any new dwelling number or name will lead to problems for the owner/occupier as the address will not be recognised by Royal Mail, delivery services, utility companies (Gas, Electricity, Water, BT), Banking, Mobile Phone/internet/TV providers, registration to vote in Local and General Elections and more importantly emergency services (Police, fire, Ambulance) in the event of an emergency.

### 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.

### The Local Authorities are able to carry out house numbering and naming as a non-statutory function, which would be subject of a fee charge as set out in their adopted policies and procedures. Developers have the option of either choosing the relevant Local Authority to name and number the dwellings or undertake the task in-house.

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

### The Highway Authorities have a general presumption against the creation of new accesses from the strategic highway network in the interests of highway safety and capacity.

## **Transportation**

### Councils will seek to encourage sustainable development and ways of reducing reliance on private motor vehicles by ensuring that new development promotes accessibility by a number of sustainable modes of travel.

## **Parking**

### Parking areas and compound areas must be provided in accordance with the Councils’ own Parking Standards SPG [Oct 2016] or policies where applicable.

5.7.2 For residential driveway and rear lane or lane access dimensions please refer to item 3.7, 9.14 & 9.15

## **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.

## **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.

## **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.

# Provisions for Public Transport and Associated Infrastructure

## **Need for a Bus Service**

### 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.

### 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, (inclusive Mobility, DfT,2002), 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).

### 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 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.

### 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.

## **Designing for the Bus**

### 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.

### 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 midi-bus) will be required, which may need to be provided on a temporary basis.

### 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.

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

1. Good pedestrian links
2. Increased footway width to 3 metres
3. Raised bus boarding kerbs
4. Bus stop shelter
5. Flag pole with service timetable
6. Provision for ‘real time’ technology where required
7. Traffic Regulation Order to prevent parking within the bus stop
8. Be well lit and enjoy good natural surveillance from buildings
9. Carefully designed so any planting minimises opportunity for crime

### 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.

### 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 the Council.

### For further information on facilities for buses please see Standard Details in Section F of the Design Guide.

# Road Construction and Specification

## For full details of all elements of highway construction refer to Standard details in Section F of this Design Guide, together with Manual of Contract Documents for Highway Works Volume 1 Specification for Highway Works and The Design Manual for Roads and Bridges where relevant.

# Highway Drainage

## It should be noted that from 7 January 2019 developments of over 100 square metres, which impact on the ability of the ground to absorb rainwater, will require the approval of the surface water drainage system by the SuDS Approving Body (SAB) before construction work can commence. It is expected that most, if not all, proposals being prepared to meet these highway standards will meet that threshold. For those sites which can demonstrate that they have a legitimate exception to the requirement for SAB approval it is recommended that the principles contained in the Statutory SuDS Standards are still followed in the design of the site drainage.

## It should also be noted that the Statutory SuDS Standards, against which SAB applications will be assessed, set out a hierarchy that must be followed in determining the surface water run-off destination (from either the highway or from properties):

* Priority Level 1: Surface water runoff is collected for use;
* Priority Level 2: Surface water runoff is infiltrated to ground;
* Priority Level 3: Surface water runoff is discharged to a surface water body;
* Priority Level 4: Surface water runoff is discharged to a surface water sewer, highway drain, or another drainage system;
* Priority Level 5: Surface water runoff is discharged to a combined sewer.

Where priority levels 1-3 are not appropriate connection to an existing highway drain or surface water drainage system will be the expected route for surface water disposal, unless:

* It is not reasonably practicable to convey the surface runoff to a surface water sewer or highway drainage system;
* It is not possible to discharge the surface water to a surface water sewer or highway drainage system without the use of pumping;
* The discharge would result in an unacceptable increase in the risk of flooding.

There are 6 SuDS Standards including, destination (see above), hydraulic control, water quality, amenity, biodiversity and design; all of which must be complied with as part of the sustainable drainage scheme for the development. For further advice in regard to the overall SuDS scheme please contact the Local Authority SAB team.

## Where discharges are made to a sewer or highway drain, agreement of the discharge limits will need to be made with the owner (Local authority, Water company etc.) as they may require more onerous constraints to be applied.

## Where a SAB application may impact on a road, or an associated drainage system, which the local Highway Authority is responsible for the SAB will consult with the Highway Authority as part of the SuDS approval process.

## 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 in accordance with the requirements of: -

## Flood Risk Regulations 2009

## Flood and Water Management Act 2010

## Sewers for Adoption 7th Edition

## Technical Advice Note 15 – Development and Flood Risk

## Planning Policy Wales 10th Edition

## BRE Digest 365

## BS EN 752:2017 Drain and Sewer Systems Outside Buildings

## CIRIA Report C753 (The SuDS Manual (2015))

## CIRIA Report C786 (Culvert Screen and Outfall Manual (2019))

## 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).

## 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 be 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.

## 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.

## 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.

## Alternatives to the use of road gullies may be considered acceptable by some Local Highway Authorities as part of a sustainable drainage scheme.

## Road gullies or suitable escape points for surface water run-off must be sited at all valley points. Where a length of road is longer than 200 metres between valley points, two gullies, (or adequate alternative surface water drainage routes), should be provided at the valley point with independent outlets to the main drain. Unless required for a valley point position, gullies should not be sited against the radius kerbs at junctions.

## The spacing of any gullies, or surface water escape points to a sustainable drainage system, should be such that each drains no greater an area than 160 sq metre of highway (carriageways and footways).

## Where traditional drainage is used manholes are required at changes of horizontal and vertical alignment, and spaced at not more than 100 metre intervals.

## Drain pipe sizes should not be less than 225 mm. diameter, except for gully connections, which shall be not less than 150 mm.

## No carrier drain shall be laid at a gradient less 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.

## Manhole covers should not be positioned under the wheel tracks or within the path of pedestrians at crossing points.

## 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.

## The Highway Authority will not adopt surface water drainage system, which includes run off from roof, yard, and private shared surfaces. Connection of surface water drainage from roof, yard, driveways and private shared surfaces should not be connected to an existing highway drainage system, without the approval of the highway authority.

## Where highway drainage only is intended to discharge 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 the 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 the 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.

## 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).

## 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.

## Where highways drainage systems discharge to soakaways, catchpits shall be used throughout the system in lieu of manholes.

## 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.

## 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: -

## Hydrological assessments and hydraulic calculations of the catchment area for the existing highway drainage to confirm its hydraulic capacity to accept additional discharges.

## A CCTV survey of the existing highway drainage to confirm it’s structural and service condition.

## Local Highway Authorities may require payment of a fee 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.

## A connection charge may also be required to cover staff time / inspection of the connection to the highway drainage system and where required must be paid in advance of any connection being made.

## 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.

## Any works to open watercourses or culverts including repairs, improvements or diversion may require an Ordinary Watercourse Consent, (OWC).

# Parking

## Parking requirements are assessed according to the traffic generated by the type of development and the parking requirements set out in the Wales Parking Standards [SPG Oct 2016], produced by the County Surveyors Society Wales, or the Councils own parking policy or specification, as directed by the Authority.

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

## 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. Unless otherwise agreed in writing by the Highways Authority. Also proper means of access to that new space, from the highway should be provided.

## Group car parking bays alongside adoptable 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.

## 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 and consideration must be given to future provision of charging facilities for electric vehicles.

## 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.

## On street parking bays shall be parallel to the carriageway. In certain instances, alternative arrangements will be considered subject to appropriate mitigating measures.

## Group or courtyard car parking areas should provide for off street turning so that the vehicles can leave in a forward gear.

## The gradient of parking bays at right angles to the carriageway must not exceed 1 in 20 (5%).

## 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, wheel stops, bollards, planters or similar features.

## 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.

## Disabled parking spaces shall be marked out in accordance with current guidelines. Refer to Section F - Standard Details.

## Cycle and motorcycle parking may be required to encourage a more sustainable mode of travel; further information can be found in MfS Section 8.2.

## Aisle/lane width to accommodate access and egress (reversing or driving off-set distance) to a 2.6m wide by 4.8m length parking bay perpendicular to the aisle/lane must be 6m. Where the aisle width is less than 6m the parking bays must be altered as shown in Table 3 below:

|  |  |  |
| --- | --- | --- |
| **Aisle /lane Width** | **Parking space width** | **Parking space length** |
| **m** | **m** | **m** |
| 6.00 | 2.60 | 4.80 |
| 5.50 | 2.60 | 4.80 |
| 5.30 | 2.60 | 5.00 |
| 5.00 | 2.60 | 5.30 |
| 4.80 | 2.60 | 5.50 |
| 4.50 | 2.60 | 5.80 |
| 4.00 | 2.60 | 6.30 |
| 3.50 | 2.60 | 6.80 |

## **TABLE 3**

## The above table must only be used when designing car parking within a rear lane or lane access that is not fronting on to an adopted footway and/or carriageway, unless otherwise agreed with the Highways Authority.

## **Driveway dimensions**

## Single driveway = 6m length by 3.6m wide (where footpath is available alongside the driveway, we can use 2.6m wide)

# Double driveway (side by side arrangement) = 6m x 6.2m

# Triple driveway (side by side arrangement) = 6m x 8.8m

# Double drive (tandem arrangement) = 10.8m x 3.6m

# Triple drive (tandem arrangement) = 15.6m x 3.6m

***NOTE:*** *The above is to be implemented on all new developments, however retrofitting new driveways on existing dwellings must apply the above dimension unless other wised agreed in writing by the Highways Authority.*

# Traffic Signs and Road Markings

## 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 2016 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).

## The Traffic Signs Manual (2019) may be accessed vis the following link: -<https://tsrgd.co.uk/documents/traffic-signs-manual>

## Any traffic signs that need to be relocated should be replaced new for old and where necessary incorporate bilingual text.

## 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.

## The developer shall provide all regulatory and warning signs including street name plates and meet all costs associated with the making of any necessary Traffic Orders.

## Where a traffic sign needs to be illuminated in accordance with TSRGD 2016, the developer shall be responsible for lighting units, electrical supply and connection.