Highways Design Guide

Find out more online:
www.worcestershire.gov.uk/LTP3

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1. Design Policies

1.1 Introduction, Aims and Objectives

1.1.1 Worcestershire County Council has produced this Design Guide to aid Developers, Designers and other professionals in preparing transport infrastructure related to new developments. It sets out the Council's requirements for compliance with legislation regarding: Health and Safety, Environment, Public Protection and Mobility Impaired users. It explains the Design Philosophies and Criteria and the Council's Policies and sets out the procedures for application and processes to be followed for adoption of the infrastructure.

1.1.2 Throughout the text, various web links will appear to direct the user to sites containing relevant information and further reading, these are shown in blue.

1.1.3 The Design Guide aims to reflect Government's most recent planning policy and guidance, PPS3, and its companion guide 'Better places to live by design and the Manual for Streets'. It introduces the key issues of sustainability in transport (public transport, cycling and walking), and planning policies as contained in Planning Policy Guidance for Transport (PPG13).

- ***www.communities.gov.uk***
- ***www.theihe.org.uk***

1.1.4 Worcestershire as Highway Authority has powers and duties to ensure that the highway network is: accessible to all, well maintained, has minimal congestion and is kept in a safe state. In addition it has duties to minimize and control the impact on the environment and rationalize the strategic development of the network. The Council sets out its policies in the Worcestershire Local Transportation Plan (LTP). Worcestershire is a two tier authority and therefore is only the Planning Authority for waste and Mineral Extraction for which they produce a Local Development Framework (LDF). There are six, second tier authorities who each produce their own LDF's. This Design Guide has incorporated maximum flexibility to encompass the main direction of each LDF and the LTP.

1.1.5 The aim is to achieve better development, better transport and improve the environment for all.

- ***www.manualforstreets.org.uk***

Development Policy statements can be found within the Local Development Frameworks (LDF) and the Local Transport Plan (LTP) at the following web sites:

www.worcestershire.gov.uk
www.bromsgrove.gov.uk
www.malvernhills.gov.uk
www.redditchbc.gov.uk
www.worcester.gov.uk
www.wyreforestdc.gov.uk
www.wychavon.gov.uk

1.2 Local Development Frameworks (LDF's)

1.2.1 The Local Development Frameworks (LDF) outline the policy framework guiding development in the County, covering issues ranging from the provision of new houses, jobs and facilities and rural regeneration, whilst also ensuring the enhancement and conservation of the towns and countryside. New development must be considered against, and satisfy the relevant policies and overall aims of the LDF.

1.2.2 The LDF's have been developed by the Borough, City and District Authorities in partnership with Worcestershire County Council, following full consultation with groups, individuals, businesses and communities.

1.3 User Hierarchy

1.3.1 Worcestershire County Council recommends that the design of schemes should follow the user hierarchy below.

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

1.4 Highway Hierarchy (Existing Road Network)

1.4.1 The Council's Highway Maintenance Plan defines the following hierarchy of existing roads in the County.

Worcestershire County Council – Road Hierarchy		
Strategic Route	Principal roads between Primary Destination.	Routes for fast moving long distance traffic with little frontage access or pedestrian traffic. Speed limits are usually in excess of 40mph and there are few junctions. Pedestrian crossings are either segregated or controlled and parked vehicles are generally prohibited.
Main	Major Urban Network and	Routes between Strategic Routes and linking urban centres to the strategic network with limited frontage

Distributor	Inter-Primary Links. Short - medium distance traffic	access. In urban areas speed limits are usually 40mph or less, parking is restricted at peak times and there are positive measures for pedestrian safety.
Secondary Distributor	Classified road and unclassified urban bus routes carrying local traffic with frontage access and frequent junctions.	In rural areas these roads link the larger villages and HGV generators to the Strategic and Main Distributor Network. In built up areas these roads have 30mph speed limits and very high levels of pedestrian activity with some crossing facilities including zebra crossings. On street parking is generally unrestricted except for safety reasons.
Link Road	Roads linking between the Main and Secondary Distributor Network with frontage access and frequent junctions.	In rural areas these roads link the smaller villages to the distributor roads. They are capable of varying width and not always capable of carrying two-way traffic. In urban areas they are residential or industrial interconnecting roads with 30mph speed limits, random pedestrian movements and uncontrolled parking.
Local Access Road	Roads serving limited numbers of properties carrying only access traffic.	In rural areas these roads serve small settlements and provide access to individual properties and land. They are often unsuitable for HGV. In urban areas they are often residential loop roads or cul-de-sac.
Rural Lanes	Partially un-metalled roads serving occasional rural properties and providing access to the countryside carrying only access traffic.	

1.5 Development and the Existing Road Network

Access to the Existing Road Network

1.5.1 The County policy on access to the existing highway network is to take account of the function of the roads within the hierarchy. Access to strategic roads and main distributors will not normally be permitted.

1.5.2 Accesses to the lower categories of road and infill developments will be considered in relation to the function of the road, the less the road functions as a traffic route, the less stringent will be the access and design requirements.

1.5.3 Many existing roads within urban areas serve multiple uses and there are many cases where direct access from private residences is obtained to Strategic Routes or other high categories of road. Any development that proposes new private accesses to a Secondary Distributor or higher category of road will only be considered where an improvement to an existing unsatisfactory situation is achieved.

1.5.4 Accesses that will have a significant effect upon the existing highway network will normally trigger the need for upgrading under a Section 278 Agreement, whilst minor works attached to the development may form part of the works covered by a Section 38 Agreement.

1.5.5 The requirements of TD 41/95 and 42/95 will be taken into account when deciding the most appropriate form of junction with the existing highway network. It may be more appropriate in certain circumstances to consider the provision of a roundabout, which would have the effect of reducing the speeds of through traffic.

1.5.6 Where the Highway Authority considers it to be appropriate based on the individual merits of the site the criteria for visibility requirements contained within Manual for Streets will apply.

1.5.7 County Council policy only permits one point of combined pedestrian and vehicular access to a singular residential curtilage.

Through Traffic

1.5.8 The design and layout of the development should be such as to discourage the through movement of traffic unconnected with the site, except in circumstances where the site is seen as an opportunity to achieve an improvement to an existing substandard road or junction.

Development in Rural Areas

1.5.9 In rural areas where development proposals abut two or more existing roads, then direct access to the higher category of road will be resisted and access will be required from a lower category of road. However, sympathetic consideration will be given in the case of listed or unused buildings for which re-use is considered appropriate, or industrial developments generating Heavy Goods Vehicle movements for which a better access direct from a higher category of road can be achieved, rather than on an unsuitable side road.

1.5.10 Where a development is remote from higher categories of road, and is served by a number of substandard width rural roads, consideration must be given to the improvement of the existing roads, such as the provision of passing bays. Consideration should also be given to setting back the front boundary of the development to provide a local passing bay. All identified improvements will be funded by the developer.

Access from Private Streets

1.5.11 The development of multiple properties which it is proposed to take access from an existing Private Street will be resisted unless the developer can demonstrate they have the legal right to make up the existing street to an adoptable standard, in accordance with the requirements of this guide. This will necessitate the use of the Private Street Works Code.

1.6 Sustainable Development

1.6.1 The latest Government guidance places sustainability in development, transport and drainage at the core of design practice. Provision for the car shall take second place compared to peoples' and communities' needs for a pleasant and safe living environment. Worcestershire County Council through its Local Transport Plan is committed to developing an integrated, sustainable transport system for Worcestershire, as a means to reduce traffic congestion, pollution and promote healthier forms of travel.

1.6.2 An Integrated Passenger Transport Strategy has been specifically developed in Worcestershire. This strategy aims to meet all journey needs, including work, education, health and leisure within Worcestershire.

1.6.3 Public Transport should adequately support all developments and where none exists, contributions will be sought from developers for its provision.

1.6.4 Permeability is the key to successful sustainable transport and essentially means the ease with which pedestrians and cyclists can move through the built environment and take the shortest and most pleasant routes to their destination.

1.6.5 It must be ensured that adjacent roads have similar levels of access for all users with safe footways and cycleways, crossing points, low traffic speeds and easily reached quality bus stops allowing permeability for non-motorised traffic through the development. In designing cycle facilities initial consideration should be given to making links with the strategic network of routes defined by the Council. It is considered appropriate for cyclists to share a network of streets where the 85%ile speed of vehicles does not exceed 20mph.

1.6.6 Most development proposals will trigger the need for extra facilities for the needs of the development (e.g. public transport links, pedestrian crossings etc) or to mitigate the impact of development upon existing community facilities. These facilities, either developer funded and/or provided shall be secured by agreement under Section 106 of the Town and Country Planning Act 1990.

1.6.7 Worcestershire County Council will pursue Sustainable Urban Drainage Systems (SUDS) as required and in compliance with the Floods and Water Management Act 2010.

1.7 Speed Restraint and Traffic Calming

1.7.1 Speed restraint and traffic calming should be based around the concept of safety by design and the layout should be such that high speeds are impossible to achieve.

1.7.2 All speed restraint shall be incorporated in the initial stages of road construction to ensure potential residents are fully aware of the nature and scope of the measures. Furthermore the features should be shown on any of the plans, illustrations or models used in the marketing of the development to reinforce the approach. Traffic calming, as a blanket approach, should be unnecessary if the roads have been designed correctly.

Consideration for Cyclists

1.7.3 Traffic calming can benefit cyclists by reducing the speed of traffic, however it must be of a cycle friendly design. Wherever possible, the introduction of pinch points that 'squeeze' cyclists, e.g. providing central refuges should be avoided, if installed cycle by-passes should be provided, or shared use cycle/footways. At 30mph the minimum width beside a refuge that allows safe overtaking without intimidation is 4.5m (CTC Report). Only below 20mph should narrower widths be considered. The Transport Research laboratory has identified optimum widths for pinch points and the Developer should consult this research prior to undertaking any detailed design.

- ***www.sustrans.co.uk***
- ***www.trl.co.uk***

1.8 Designing for Security and Crime Reduction

1.8.1 Natural surveillance of public areas is considered to be one of the best ways of increasing security. The concept is simply that people can overlook their surrounding areas and strangers will feel uncomfortably conspicuous. Further guidance can be found on the Secured by Design website and through the Crime Reduction Officer at West Mercia Police.

- ***www.securedbydesign.com***

1.8.2 As part of the Government's and Worcestershire County Council's commitment to reducing crime it is important that places are designed to be secure and safe, and also feel safe. 'Secured by Design' is the initiative by the Association of Chief Police Officers to get the design of places right, from the concept right through to completion and operation. They have design guides which the Developer should refer to; they are available on the Secured by Design website; as detailed above.

1.8.3 Locally the Crime Risk Manager will advise on and approve designs especially if a Secured by Design award is being sought. The idea of a communal feel to the environment and use of highway and other spaces for multiple purposes go hand in hand with natural surveillance.

1.8.4 Off highway cycle tracks and footways (apart from links to public transport and other amenities) are not usually needed because of low speeds and shared use. This helps to eliminate the security problems associated with these facilities where they run across open space, which is not overlooked or well used. The design should endeavour to create small clusters of dwellings that encourage neighbourliness and natural surveillance of communal and, to a certain extent, private areas. Side or rear gardens, which adjoin land with unrestricted access, should be strongly fenced or walled. The planting of thorny species can prevent access to the boundaries for vandalism and loitering along with eliminating opportunities for climbing the boundary via strong-limbed plants.

1.8.5 Footpath links should be short, direct and well lit with no opportunities for hiding places. Gateway design that provides for significant narrowing of the highway, gate pillars or walls and a change of surface will be self explanatory to both vehicles and strangers.

1.8.6 Car parking should be open to natural surveillance at all times and laid out to ensure that the cars do not obstruct sight lines for surveillance. Remote car parking, which is not secured in some way, leaves vehicles and owners at risk and will not get used once crime problems develop. To prevent these vehicles migrating to unregulated on-street parking it is vital that remote car and cycle parking is secure with owner only access via secure gated accesses and private access direct to the dwellings.

1.8.7 Car parking should be well lit whether in communal areas or secured private areas. Any planting should be kept to low maturing species and it may be helpful to look at guidance in Secured Car Parks standards for the design of private areas.

1.8.8 Cycle parking should benefit from natural surveillance or if this cannot be done enclosed cycle lockers may be a solution. In either case, to promote use, the parking should give protection against the elements, and be conveniently close to the entrance of the building that it serves.

1.8.9 Areas that comply with these design points may make access difficult for service, and particularly refuse vehicles. It is important to consider communal refuse areas to make the operation of the site easier and prevent unnecessary clutter from numerous wheelie bins and loose rubbish bags. This should be decided in consultation with the Council and its waste management teams. Structures and features generally should be designed to avoid encouraging or supporting crime and anti-social behaviour.

1.8.10 Underpasses, bridges, areas of landscaping associated with road development, drainage chambers and manholes, and water management features such as culverts are all liable to misuse and should be robustly and securely detailed.

1.8.11 Careful design can eliminate many of the chances for vandalism, graffiti and for untoward danger to younger people through misadventure while also minimising future maintenance costs.

1.9 Parking Policy

1.9.1 The Central Government publications which include varying degrees of comment on parking are particularly relevant (type of parking wholly or predominantly covered shown in brackets):

- *Manual for Streets (Residential Parking)*
- *Planning Policy Guidance 13: Transport (Non-Residential Parking)*
- *Planning Policy Statement 3: Housing (Residential Parking) – supersedes PPG3*
- *Planning Policy Statement 4: Planning for Prosperous Economies (Non-Residential Parking)*

1.9.2 These publications encourage a reduction in the number and length of motorised journeys and a move away from reliance on private cars towards more sustainable modes of transport such as walking, cycling and public transport. Worcestershire County Council fully endorses these principles.

1.9.3 It is then a delicate balance between setting parking standards that encourage less use of private cars whilst maintaining realistic levels of car parking capacity for the vitality and viability of any given development and the adjacent locale.

1.9.4 Worcestershire County Council Parking Standards are scheduled in Appendix A covering cars, disabled spaces, cycles, motor cycles, lorries, coaches and ambulances.

1.9.5 To a degree, marginal variations around these parking standards are negotiable in acceptance of the numerous factors that may apply such as location, public transport provision, walking and cycling facilities, type of residential occupants, the existing land use, public parking provision and so on.

1.9.6 When through negotiation or existing car parking constraint policies, car parking numbers are provided below the maximum standards set out in Appendix A, parking provision for disabled spaces, cycles, motor cycles, lorries, coaches and ambulances are to be provided based upon the theoretical maximum number of spaces required by the development proposals.

1.9.7 Parking for disabled people should be additional to the maximum parking standards. Development proposals should provide adequate parking for disabled motorists in terms of numbers and design (see traffic Advice Leaflet 5/95, Parking for Disable People)

1.9.8 However, the provision of car parking is invariably an emotive issue and Worcestershire County Council considers there should be a clear distinction in thinking between:

- *Car ownership*
- *Car usage*
- *Residential parking provision*
- *Non-residential parking provision*

1.9.9 Following on from these initial distinctions, appropriate "combinations" have then been considered.

Car Ownership and Residential Parking Provision

1.9.10 No numerical guidance on residential parking capacity is given in MfS, PPG13, PPS3, or PPS4, i.e. all Central Government publications listed earlier.

1.9.11 However, MfS in particular recognises that apparent attempts to restrict parking capacity on residential developments as a device to reduce car ownership, is unrealistic. MfS also recognises that the majority of garages provided on residential developments are **not** used for car parking.

1.9.12 In general therefore, Worcestershire County Council will seek residential parking capacity as set out in Appendix A, as a minimum in the context of car ownership, and will discount any garage capacity (although genuine car ports can be counted). It will also seek such residential parking capacity off-street, via individual in-curtilage facilities and/or grouped/communal parking areas.

1.9.13 Generally parking standards project a level of provision for visitors of about one space for every five homes, or 20%. The provision of visitor parking will be unallocated and can be provided either within the limits of the highway or within shared courtyard parking areas.

Car Usage and Non-Residential Parking Provision

1.9.14 Unlike residential parking provision, PPG13 does provide numerical guidance on non-residential parking standards (although it is the only one of the five Central Government publications to do so). This numerical guidance is reflected in Appendix A but with substantially more planning use classes added.

1.9.15 Again, unlike residential parking provision, Non-Residential parking provision scheduled in Appendix A will be sought and a maximum, in the context of discouraging car usage.

1.9.16 Worcestershire County Council considers that there is no contradiction in separating the issues of car ownership and car usage, and then combining these issues with residential parking provision and non-residential parking provision respectively.

1.9.17 For mixed use developments the gross floor area given to each planning class use should be used to calculate the overall maximum parking figure.

1.9.18 Given that policies and initiatives on sustainable transport modes will continue to reduce car usage, whilst accepting that realistically, current and future car ownership levels are unlikely to fall, there is arguably greater need for adequate off-street parking provision in residential areas as more and more people leave their cars at home and use other transport modes.

Notes:

In the specific case of Worcester City, the parking standards that should be used are set out in the current Worcester City Local Plan. Some parking standards differ slightly from those detailed in Appendix A and in the case

of Non-Residential Parking; the Local Plan also details a positive and quantified car parking restraint policy which does not currently apply to the remainder of Worcestershire County.

Where a developer can demonstrate that reduced residential car parking provision may be appropriate, such as in Town Centre locations where there are accessible local facilities and good public transport access, the provisions stated in Appendix A could be negotiable. In certain circumstances where exceptionally strong public transport is available, car free developments may be considered. It will be the responsibility of the Developer to demonstrate a justification for any reductions based upon a submitted Transport Assessment and Travel Plan.

2. Design Criteria

2.1 New Development Highway Types

2.1.1 Design criteria for the following categories of new roads are specifically dealt with in this section of the guide.

2.1.2 The following hierarchy applies;

- *Footways* *(adoptable)*
- *Cycle Tracks* *(adoptable)*
- *Single Private Drives* *(not adoptable)*
- *Shared Private Drives and Courtyard* *(not adoptable)*
- *Mews and Lanes* *(adoptable)*
- *Secondary Streets* *(adoptable)*
- *Primary Streets* *(adoptable)*
- *Distributor Roads* *(adoptable)*
- *Industrial and Commercial Access Roads* *(adoptable)*

2.2 Footways

2.2.1 The layout and design of footways should aim to provide safe, reasonably direct, secure and visually attractive routes for pedestrians. The provision of convenient and easy to use car parking facilities will be a significant factor in discouraging indiscriminate parking on pedestrian routes.

2.2.2 Whenever footways interconnect with carriageways at pedestrian crossing points, dropped crossing kerbs should be installed to assist wheelchair users and those with prams or pushchairs. The gradient should be no more than 1:12 and the kerb should be flush with the carriageway. Tactile paving should be provided at dropped kerbs to assist blind and partially sighted people. **www.dft.gov.uk**

2.2.3 Footways should be designed to take account of:

- *The type and function of adjacent carriageways*
- *The location of apparatus for statutory and other services*
- *The number of pedestrian movements*
- *In the vicinity of schools, shops or other community buildings there may be a need for variations in design compared to those adjacent to dwellings.*

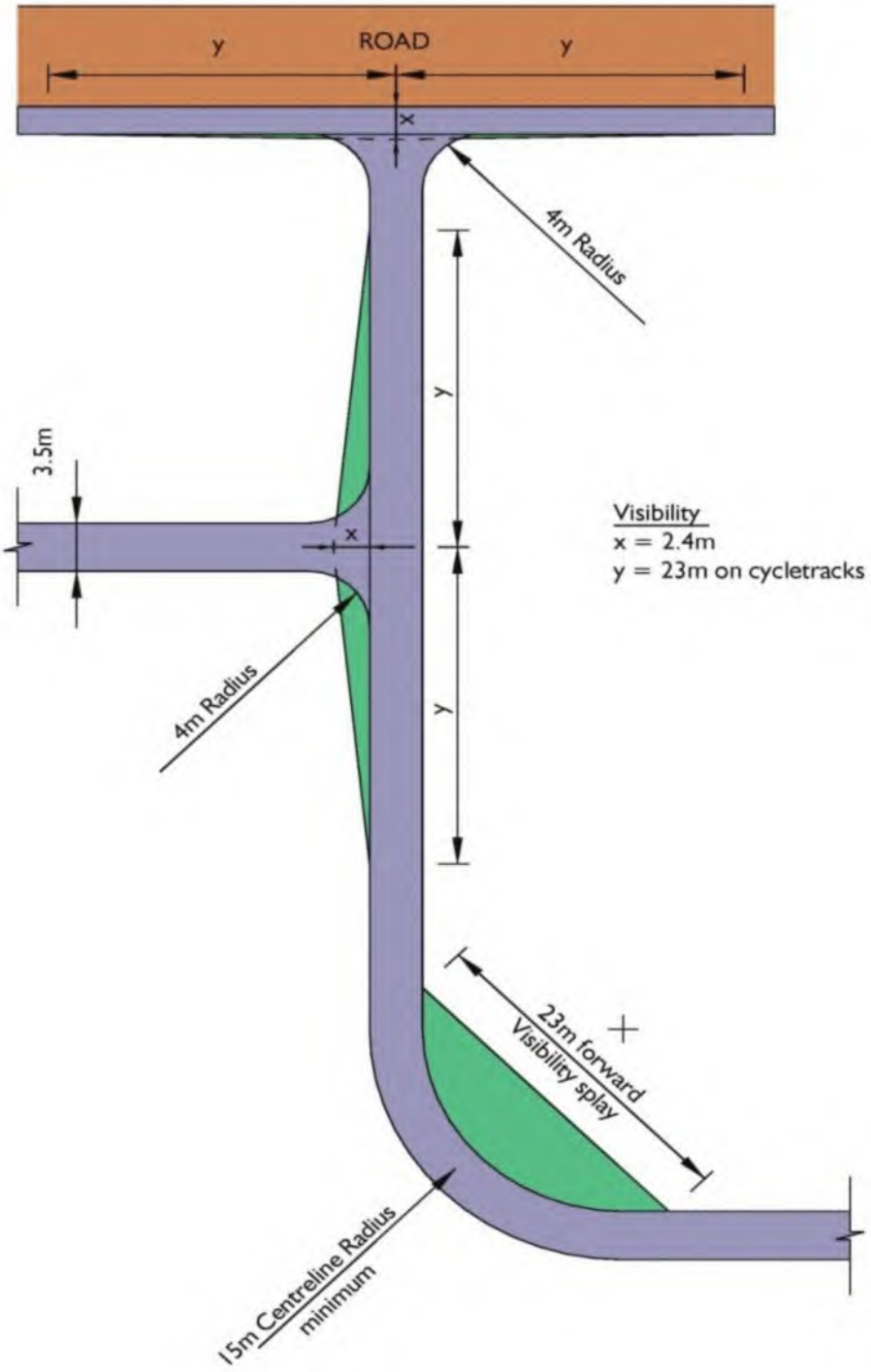
- *Requirements of pedestrians where the nature of the development includes a high portion of the very young or people with disabilities.*
- *The space occupied by street furniture such as street lighting columns, traffic signs etc*
- *The provision of access to dwellings for the emergency services*
- *Methods for reducing the damage to footways resulting from over running or parking of vehicles, particularly at junctions.*

2.2.4 Footways should always be provided where the use of shared surfaces would not be appropriate. Footway widths should normally be 2m, shared footway/cycleway surfaces should be 3.5m plus.

2.2.5 Linking footways between cul-de-sacs will need to be carefully designed so that the security of the users and adjacent dwellings is not adversely affected. The designer will also need to include design features such as lighting that may reduce nuisance to the adjoining householders from inconsiderate users of this type of footway.

2.3 Cycletracks

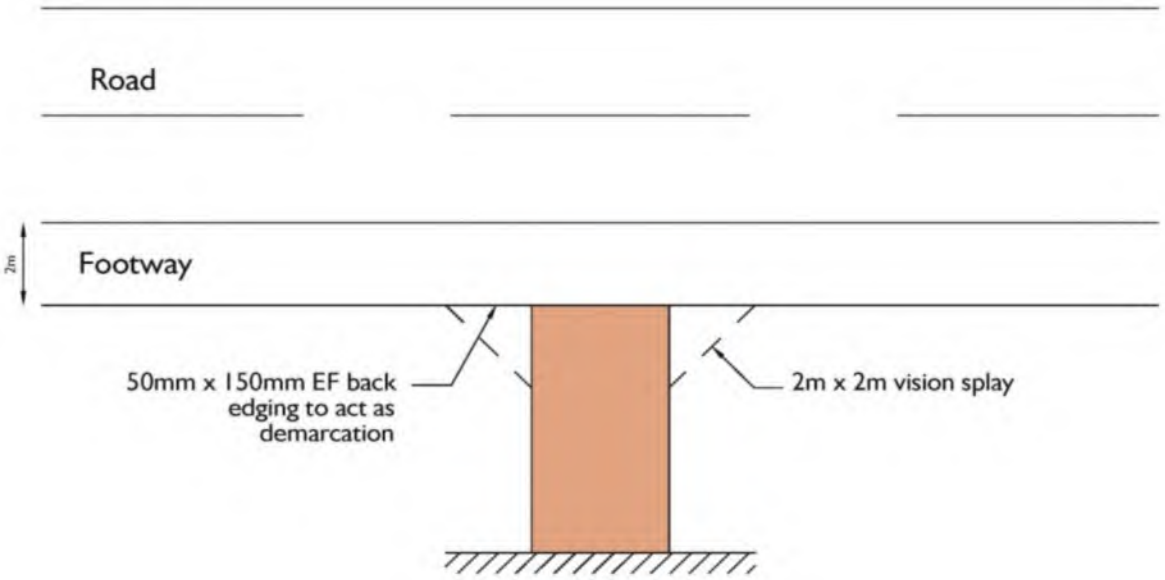
- *Design speed - 15mph*
- *3.5m wide for shared facility with pedestrians*
- *2.5m wide for segregated facility with additional 1.5m for pedestrians*
- *Visibility at junctions with roads - refer to section 2.13*
- *Signs and lines to be provided in accordance with the current TSRGD*
- *Residential roads may form part of local cycle advisory routes and networks*



Y and forward visibility distance to 15m (Not 23, MfS)– No planting within 1m of cycleways.

2.4 Single Private Drives

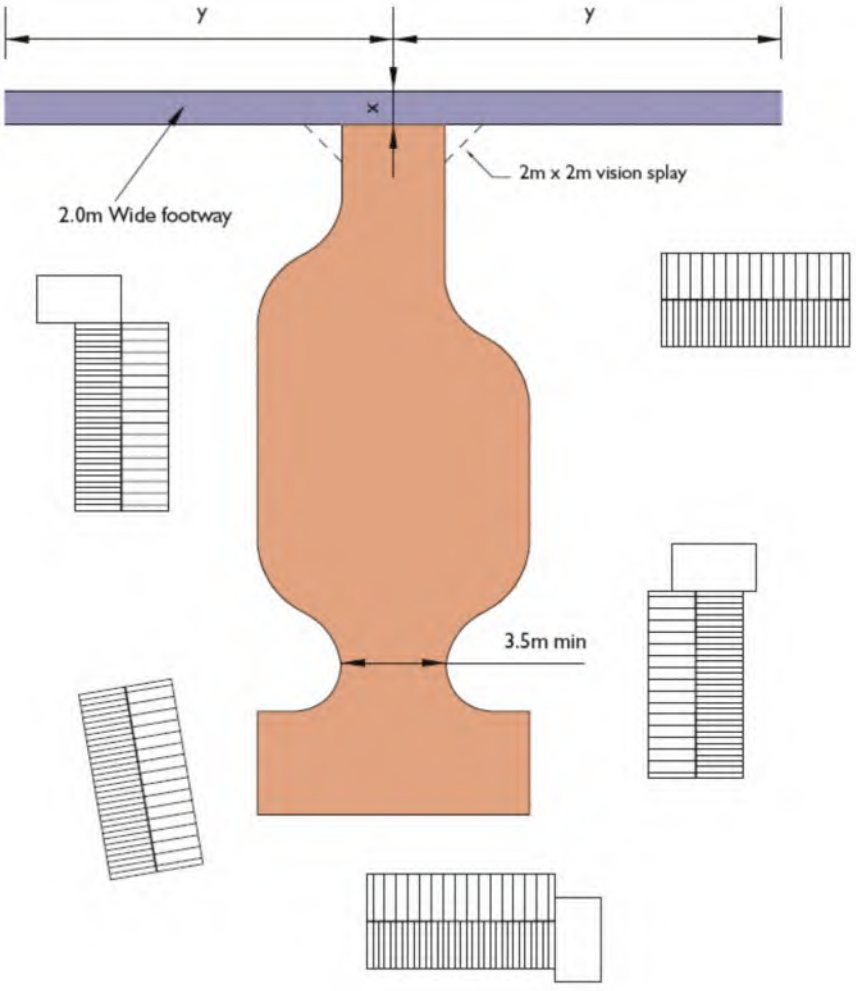
- *Will not be adopted as public highway*
- *Water from driveways must not be allowed to discharge onto the highway*
- *Driveway to be surfaced with bound materials for the first 5m from the back of footway (loose material not allowed)*
- *The connection to the priority road shall be laid out as a dropped crossing in accordance with Section 184 of The Highways Act 1980, where applicable*
- *To be set out at 90 degrees to road where possible*
- *Installed gates must be set back 5m from the highway boundary and open inwards unless otherwise agreed,*
- *Turning Area to be provided where deemed necessary by the Highway Authority*
- *Visibility splays in accordance with section 2.13*
- *County Council policy only permits one point of combined pedestrian and vehicular access to a singular residential curtilage*



Driveway width	3.2m min
Driveway length	6.0m min
Longitudinal fall to driveway	Max 1:12 towards the carriageway, 1:8 in exceptional circumstances. Max 1:15 away from the carriageway

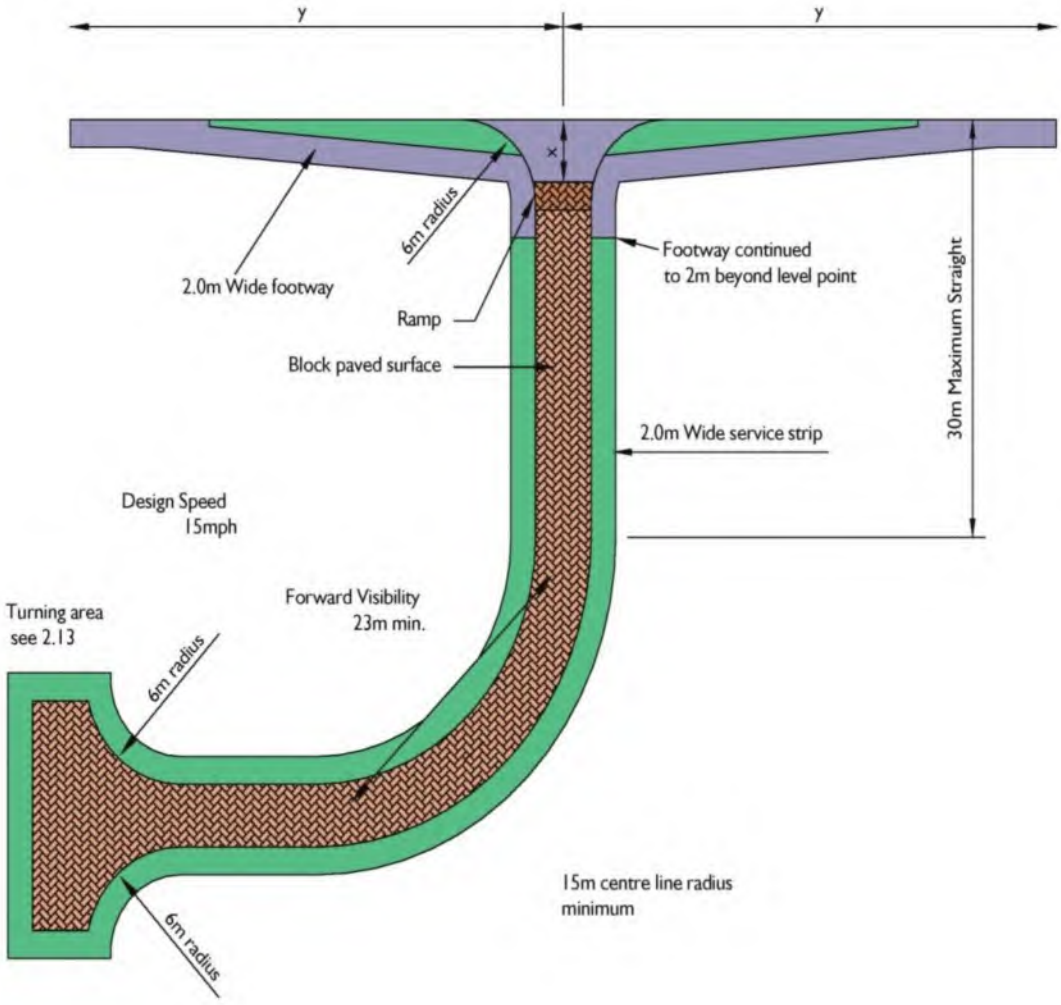
2.5 Shared Private Drives and Courtyard

- *A shared surface which forms a cul-de-sac or courtyard serving a maximum of 6 houses*
- *Will not be adopted as public highway*
- *Design speed 10mph*
- *Turning area to be provided for cars where the Highway Authority deems it necessary.*
- *Refuse collection points should be provided within 25m of the highway.*
- *2m x 2m vision splays to be provided at the rear of the footway*
- *Minimum width of 3.5m, with passing bays as required where the length exceeds 25m.*
- *The connection to the priority road is to be laid out as a dropped crossing in accordance with Section 184 of The Highways Act 1980, where applicable*
- *To be set out at 90 degrees to the road where possible*
- *Refer to visibility section 2.13 for junction visibility splay requirements*
- *Max gradient 1:12 towards the carriageway, (1:8 in exceptional circumstances)and Max 1:15 away from the carriageway.*



2.6 Mews and Lanes

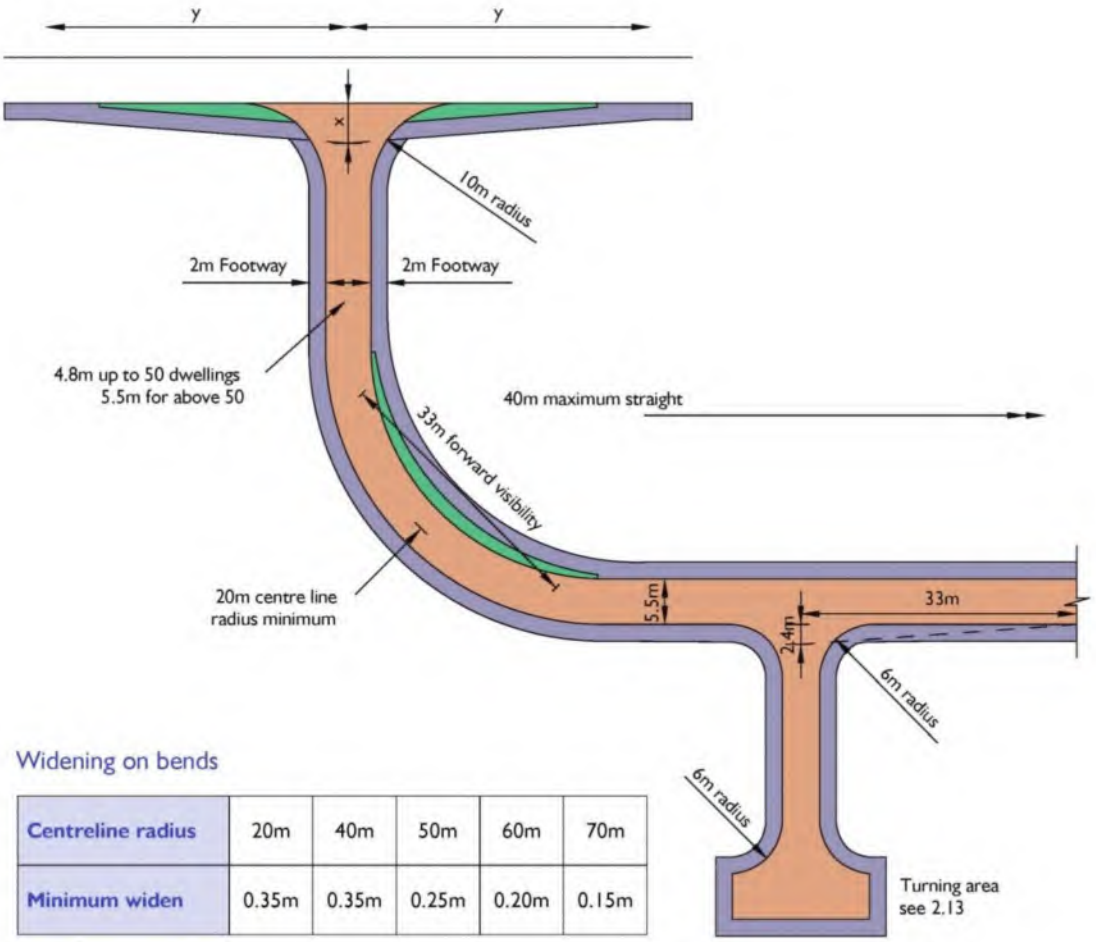
- *Serving up to 25 dwellings (max 50 dwellings with two access points to higher category roads)*
- *Design speed 15mph*
- *Minimum constant carriageway width 4.5m, width can vary between 3.65m and 6m to achieve design speeds.*
- *Footways not required beyond entrance ramp*
- *Turning areas in accordance with section 2.14*
- *Visibility splays in accordance with section 2.13*
- *A single hard surface for use by pedestrians and vehicles without segregation*
- *Service strip 2m wide where provided*
- *Surface to be block paved*
- *Verge to be removed and reinstated with block or similar to carriageway material.*
- *Forward Vis Splay to match MfS*



Entry Radii		Junction Spacing	
Minor access road	6m minimum	Same Side	Not restricted
Major access road	6m minimum	Opposite side	Not restricted

2.7 Secondary Street

- *Serving up to 100 dwellings*
- *Design speed 20mph*
- *Standard carriageway width 5.5m, may be reduced to 4.8m where less than 50 houses are served*
- *2m wide footways to be provided on each side where dwellings have direct access*
- *Turning areas in accordance with section 2.14*
- *Visibility splays in accordance with section 2.13*
- *Where the road will not serve a bus route the junction radii will be 6m*



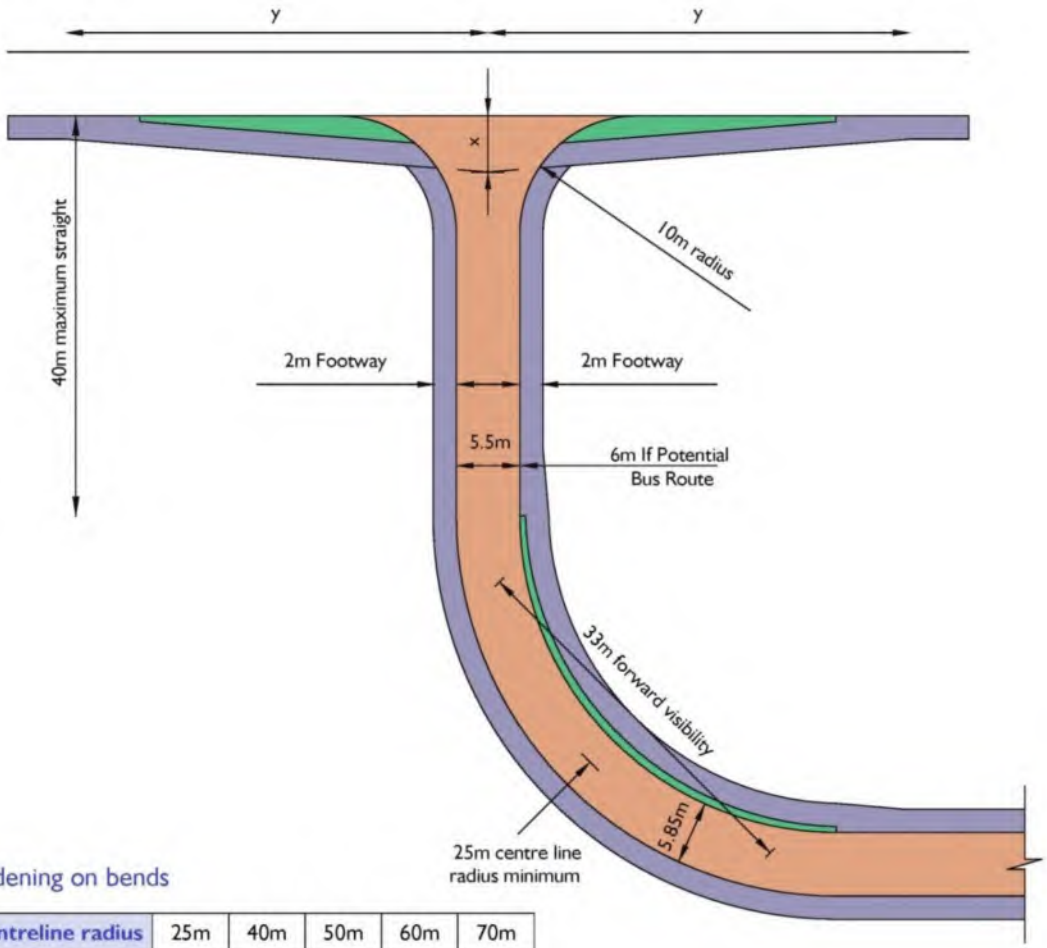
Widening on bends

Centreline radius	20m	40m	50m	60m	70m
Minimum widen	0.35m	0.35m	0.25m	0.20m	0.15m

Entry Radii		Junction Spacing	
With major access road	6m minimum	Same Side	Not restricted
With higher category road	10m minimum	Opposite side	Not restricted

2.8 Primary Street

- *Serving between 101 and 300 dwellings not normally be cul-de-sac*
- *Where a cul-de-sac development will be restricted to 200 dwellings and an emergency link of minimum width of 3.5m be provided*
- *Design speed 20mph*
- *5.5m wide carriageway, 6m if possible bus route*
- *2m wide footways on both sides*
- *Turning areas in accordance with section 2.14*
- *Visibility splays in accordance with section 2.13*



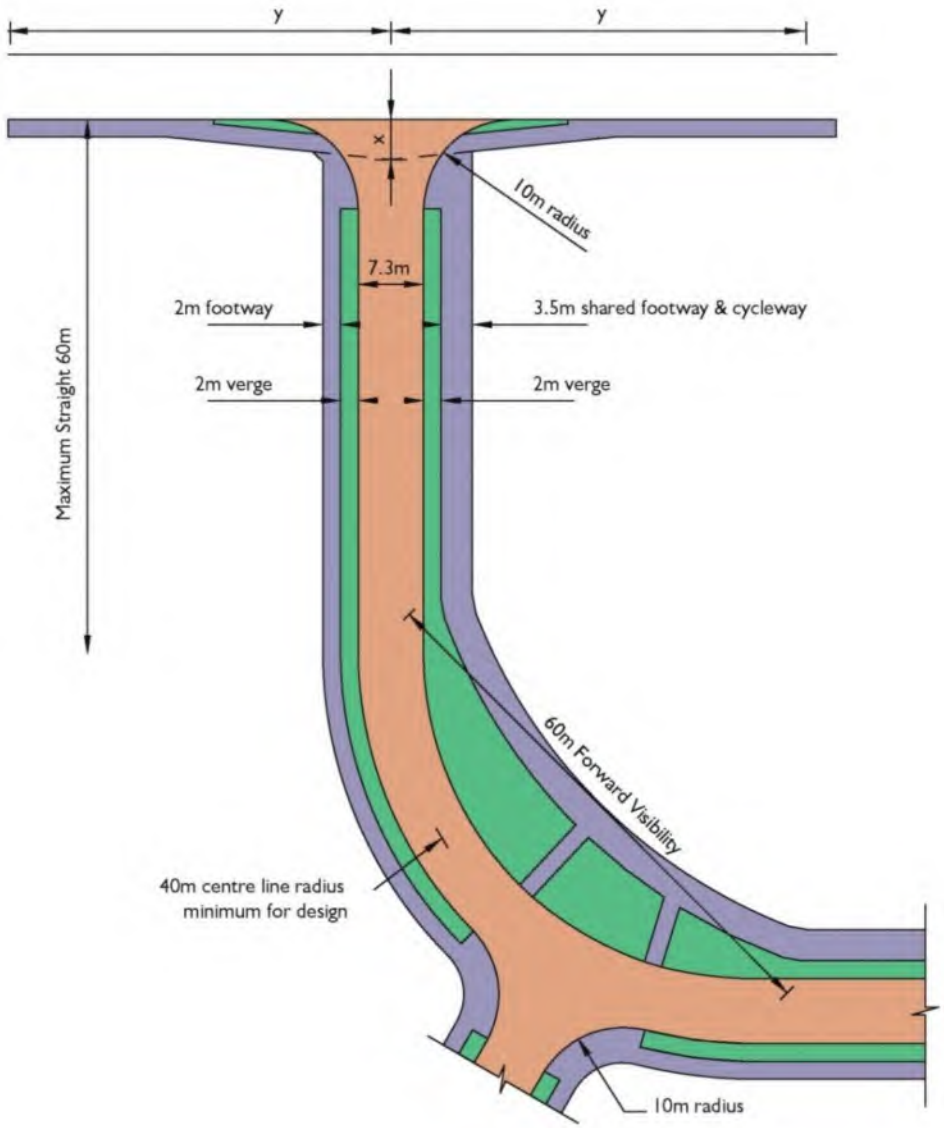
Widening on bends

Centreline radius	25m	40m	50m	60m	70m
Minimum widen	0.35m	0.35m	0.25m	0.20m	0.15m

Entry Radii		Junction Spacing	
With higher category road	10m minimum	Same Side	30m
		Opposite side	15m

2.9 Distributor Road

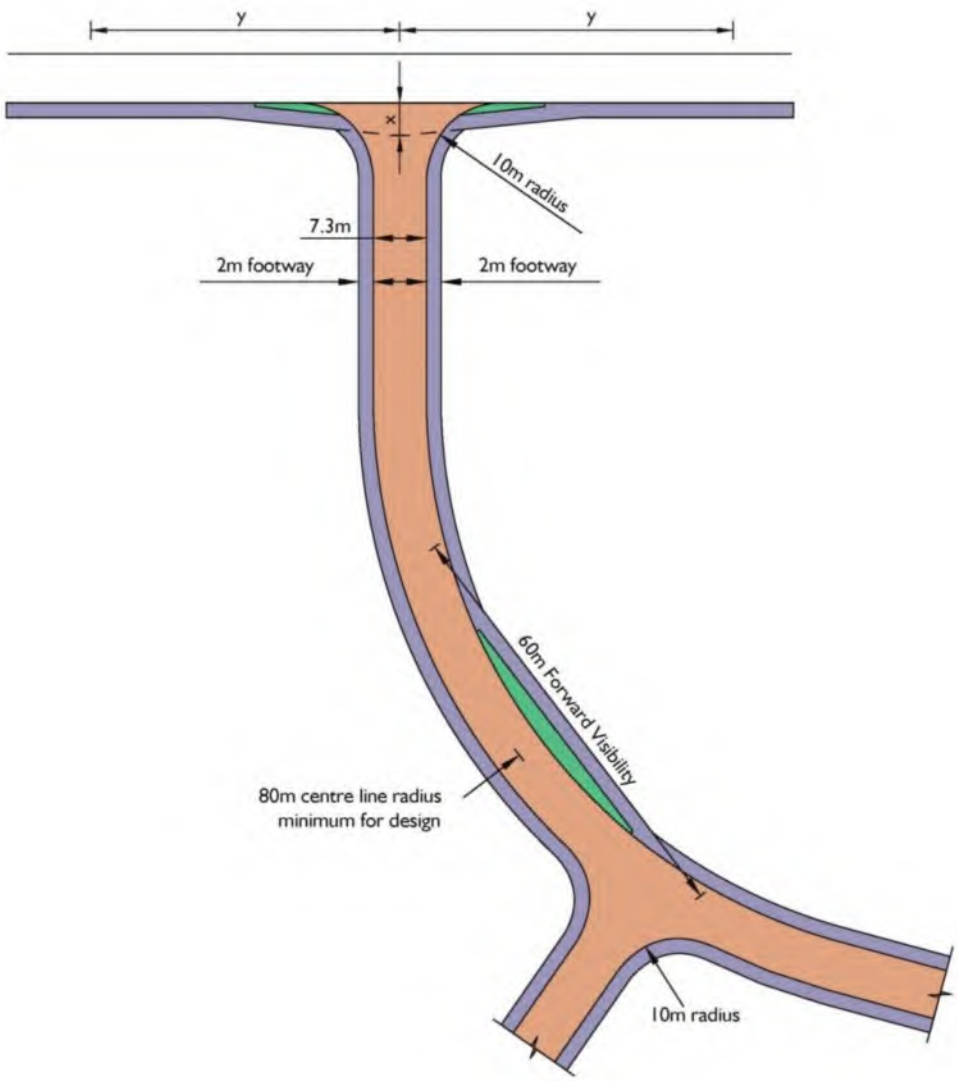
- *Design speed 30mph*
- *Road Width 7.3m*
- *Minimum centre line radius 40m*
- *Minimum of two access to existing highway network*
- *Visibility in accordance with section 2.13*



Entry Radii		Junction Spacing	
With higher category road	Designed in Accordance with HA TD 42/95	Same Side	100m
		Opposite side	50m

2.10 Industrial and Commercial Access Roads

- *Design speed 30mph*
- *Carriageway width 6.7m, increased to 7.3m if large no. of HGV's served*
- *2m wide footways on both sides*
- *Turning areas in accordance with Section 2.14*
- *Visibility splays in accordance with Section 2.13*



Entry Radii		Junction Spacing	
With higher category road	Designed in Accordance with HA TD 42/95	Within the industrial estate	30m on same side
			15m on opposite side
		With higher category of road	100m on same side

2.11 Vertical Alignment

2.11.1 The Developer must consider the following when designing vertical curves on new developments. Generally, the maximum and minimum gradients allowable on new developments will be as detailed within the table below:

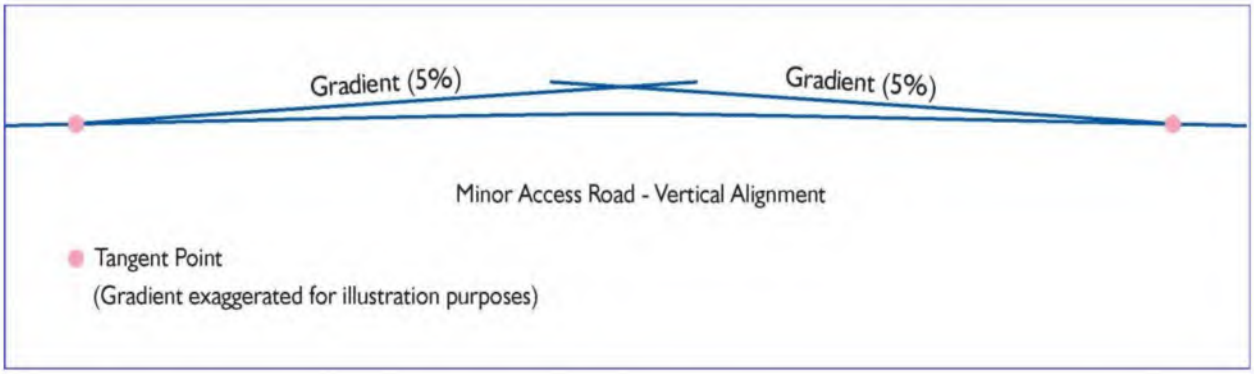
Category	Maximum Gradient	Minimum Gradient
All road categories	1:20 (5%) desirable but consideration may be given to gradients up to 1:12	1:100
Cycle tracks and footways	1:20 (5%)	1:100

2.11.2 Additionally, the Developer must consider the curvature of the new highway. The design curve length will be a function of the algebraic change of gradient, expressed as a percentage, multiplied by the 'K' value. 'K' values are provided in the table below:

Category	Minimum 'K' value
Major access and above	6
Minor access and below	2
Cycle track	2

Example, Minor Access Road - Vertical Alignment

2.11.3 The example below has been included to assist developers in designing vertical curves.



2.11.4 The Developer should note that side road gradients into junctions should be set at a maximum of 1:20 (5%) for the first 10m. Additionally, the minimum vertical curve length of any section of road should be not less than 20m.

2.11.5 In the above example, assuming it is a Minor Access Road, and the curve length will be 20m

The 'K' Value is given by:

Design curve length / Algebraic change of gradient

= 20m /10

= 2

2.11.6 Therefore the above example falls within the design criteria and would be acceptable.

2.11.7 The developer should note that where gradients exceed 5% there may be a requirement for a grit bin. In such instances, the developer will need to ensure the design provides an adequate location and that a suitable grit bin is provided.

2.12 Headroom

2.12.1 Additionally, the Developer must also consider in the design that the minimum allowable headroom for all new highways intended for adoption shall be as follows:

Category	Minimum Headroom
All Roads	5.3m
Cycleway	2.7m
Footway	2.7m

2.13 Visibility

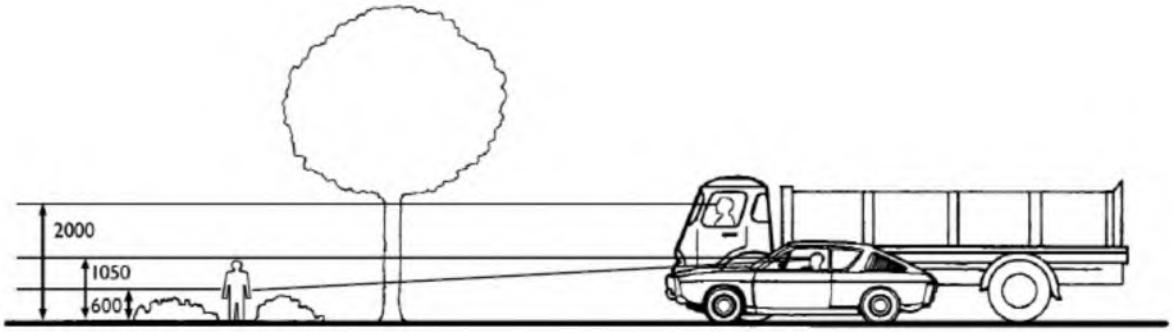
Sightlines

2.13.1 These are required to enable drivers to see a potential hazard in time to slow down or stop comfortably before reaching it. It is necessary to consider the driver's line of vision, in both vertical and horizontal planes, and the stopping distance of the vehicle.

2.13.2 This section draws together the advice from Manual for Streets and TD 41/95. The guidance given here needs to be assessed in the circumstances of each case. Sightlines should never be reduced to a dangerous level.

Vertical Visibility Envelope

2.13.3 The required vertical visibility envelope is defined below:



2.13.4 To enable drivers to see a potential hazard in time to slow down or stop comfortably before reaching it, it is necessary to consider the driver's line of vision, in both the vertical and horizontal planes, and the stopping distance of the vehicle.

2.13.5 As general guidance, it is suggested that a height of 600mm be taken as the point above which unobstructed visibility should be provided wherever the potential exists for conflicts between motorists and young children. This will apply along all sections of residential roads and is especially important where shared surface roads are used.

Junction and Forward Visibility

2.13.6 To ensure that drivers preparing to exit a minor road can see and be seen by traffic proceeding along the major road, clear visibility is required to both sides of the major road as shown below. Any junction must be constructed and maintained so that nothing is placed, installed or planted that will obstruct the visibility splay. Where possible, visibility splays should be defined with footways to the rear of the splay to clearly define the splay and to prevent misuse.

2.13.7 Manual for Streets (MfS) published in 2007 provides technical guidance for Stopping Site Distances (SSDs) and Visibility requirements for suitable development layouts on the understanding that driver behaviour can be influenced by the environment and recommends revised key geometric design criteria for design of streets as places in their own right while still ensuring that road safety is maintained.

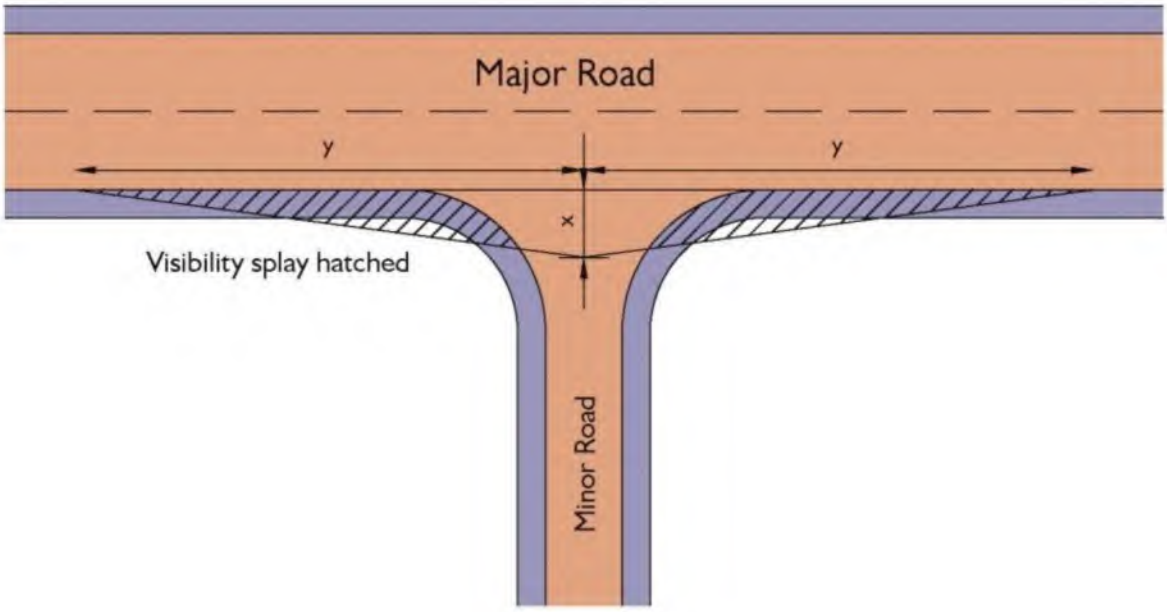
2.13.8 MfS recommends that an X distance of 2.4m will normally be used in most built-up situations, as this represents a reasonable maximum distance between the front of the car and the driver's eye. In some circumstances where it is considered necessary to increase junction capacity for the minor arm an X distance of 4.5m may be stipulated.Where in the case of lightly used accesses and the site conditions are particularly difficult then a reduced X distance of 2.0m can be used.

2.13.9 MfS recommends a Y distance should be based on values for SSD as table below:

Speed	Kilometres per hour	16	20	24	25	30	32	40	45	48	50	60
	Miles per hour	10	12	15	16	19	20	25	28	30	31	37
SSD adjusted for bonnet length *		11	14	17	18	23	25	33	39	43	45	59
Additional features will be needed to achieve low speeds												

** The SSD figure relates to the position of the driver. However, the distance between the driver and the front of the vehicle is typically up to 2.4m, which is a significant proportion of shorter stopping distances. It is therefore recommended that an allowance is made by adding 2.4m to the SSD.*

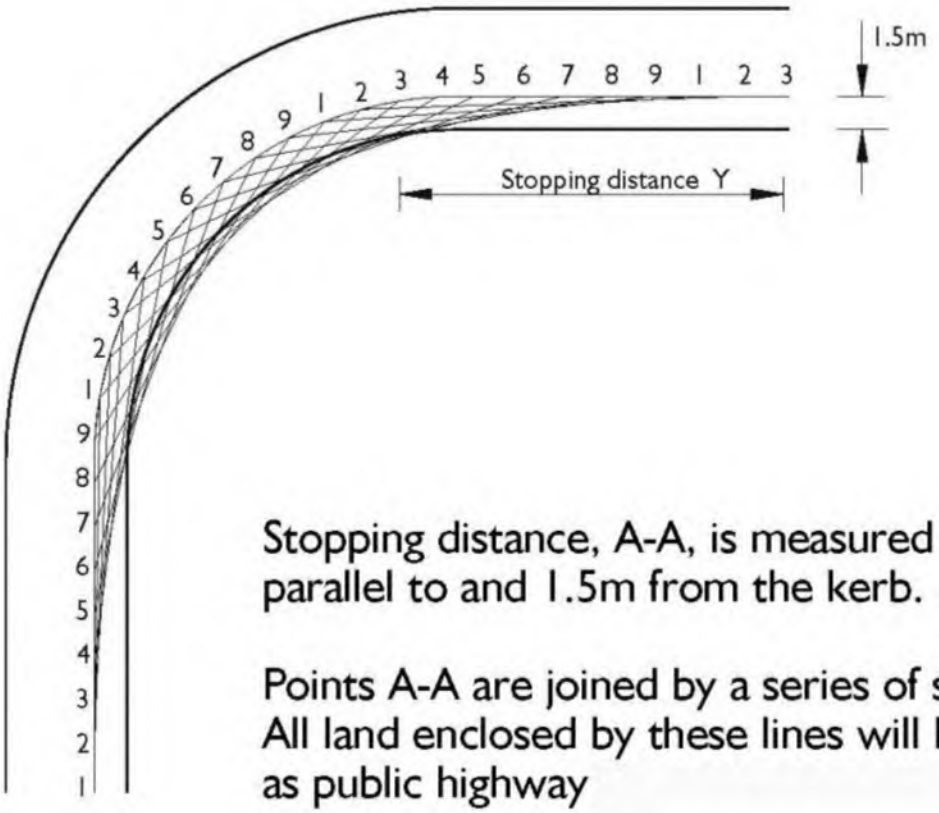
2.13.10 MfS indicates that for streets where 85th percentile speeds are above 60 km/h the recommended SSDs in the *Design Manual for Roads and Bridges* (DMRB) may be more appropriate.



Forward Visibility

2.13.11 Stopping distances and forward visibility requirements:

- *Required on bends as specified below;*
- *Note that the stopping distance Y is measured along the driven line rather than along a straight line between points;*
- *The area required for forward visibility should be defined by positioning the footway to the rear of the visibility splay.*



Stopping distance, A-A, is measured along a line parallel to and 1.5m from the kerb.

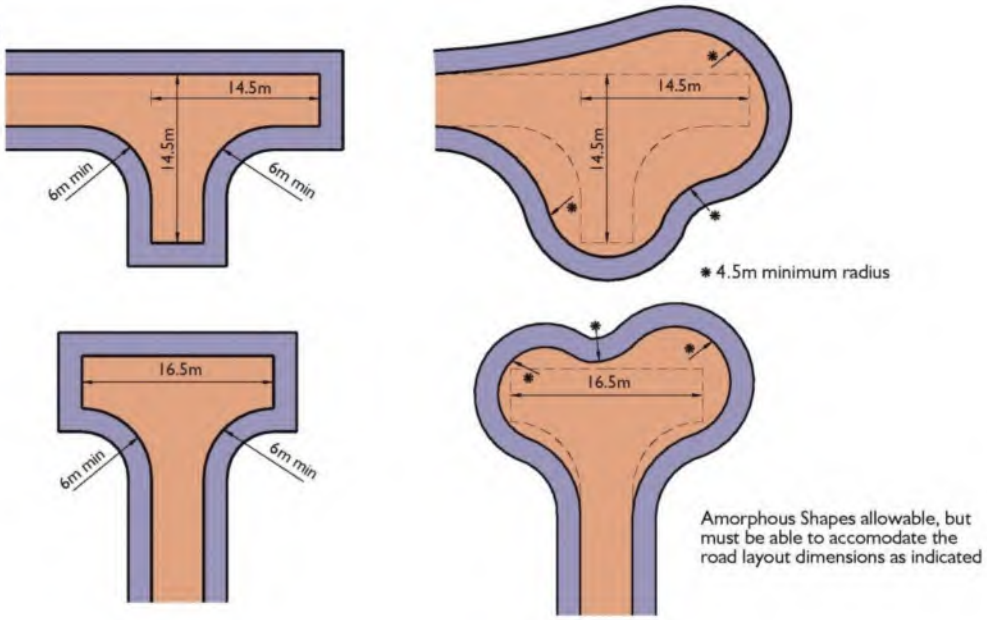
Points A-A are joined by a series of straight lines. All land enclosed by these lines will be adopted as public highway

2.14 Turning Heads

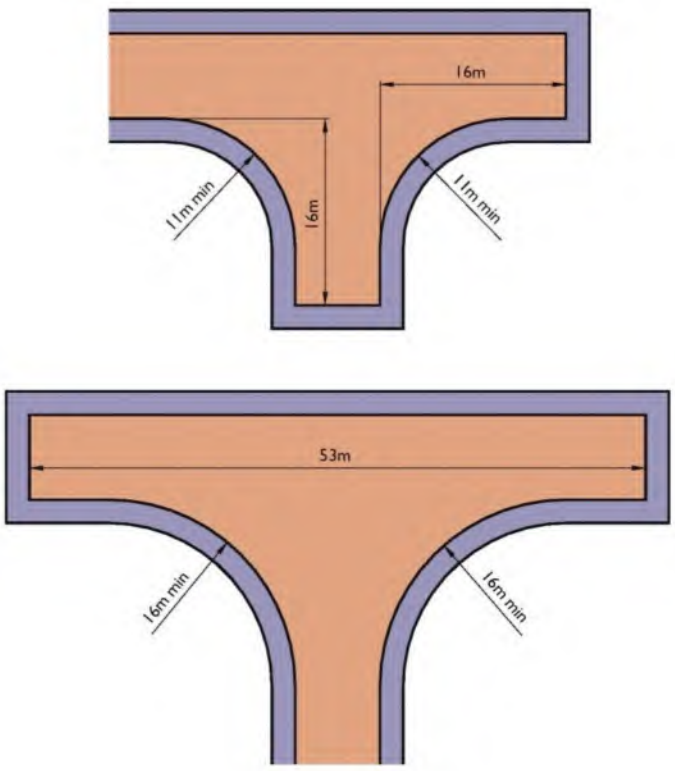
2.14.1 The layout of turning spaces should be designed to:

- *Allow for all refuse vehicles to turn around using 3 manoeuvres*
- *Provide an area that will be easily maintained by a mechanical sweeper.*

Residential Roads:



Industrial Roads:



Note: Variations to these turning areas will be allowed at the engineers discretion.

2.15 Landscaping

2.15.1 The retention of existing landscape features of value must be taken into account and therefore the preliminary design of residential access roads, cycleways and footpaths to serve the development should as far as possible be sympathetic to the Authority's wishes. So, for example, if a tree of value was situated within the visibility splay, all attempts should be made to reposition the access if this can be done safely.

2.15.2 In residential areas the Highway Authority will normally only adopt the paved surfaces and verges which are critical to the functioning of the highway.

2.15.3 Small areas of grass should be avoided, as they are likely to produce future maintenance problems.

2.15.4 Trees must not be planted near structures or services.

2.15.5 Existing trees, which will become maintainable at public expense, shall be the subject of condition survey to ascertain their health and may be subject to commuted sum payments to cover their future maintenance costs.

2.15.6 New highway trees should be of slender girth and modest canopy. The trunk should be maintained free of side shoots and branches to a height of 2.1m. Tree grids, planting details and root barriers are shown in Appendix E of the Specification. The developer may be required to pay commuted sums for the future maintenance of highway trees.

2.15.7 Highway landscape features should be maintained by the developer for a period of 5 years.

2.15.8 Thorny species shall not be accepted immediately adjacent to footways and cycle tracks. If existing hedges contain thorny species, cycle tracks shall be positioned at least 3 metres from the extremities of the hedge to prevent problems with hedge-cutting debris. Existing hedges adjacent to the existing highway shall be transferred to frontagers for maintenance.

2.15.9 Any new carriageway should be outside the canopy (or reduced canopy if reduction is deemed suitable) of any existing tree to prevent damage to the new construction by the tree roots. Any work under the canopy of deciduous trees or within a radius of half of the height of coniferous species shall comply with BS 5837: 1991.

2.16 Street Lighting

2.16.1 The aim of the Worcestershire Street Lighting service is to:

- *Create a safer and more secure night-time environment, by providing an energy efficient and cost effective system of street lighting and illuminated signs. The objectives for new developments are to:*
- *Reduce crime and the fear of crime;*
- *Minimise environmental impact;*
- *Implement Best Practice in systems and operations*

2.16.2 All highway lighting, illuminated sign and illuminated bollards must be designed, specified and installed to Worcestershire County Council (WCC) requirements. There are 2 methods for developers to achieve the above requirements as detailed in Worcestershire's Highway's Specification for New Developments.

2.17 Drainage

General Requirements

2.17.1 In general, drainage systems shall be designed in accordance with the current edition of Sewers for Adoption and with the Specification accompanying this Design Guide.

2.17.2 All pipes that only carry surface water from the adoptable highway are prospectively maintainable by the Highway Authority. Their design and construction shall comply with the standards required in this document.

2.17.3 Pipes that carry surface water from the adoptable highway as well as other areas such as roofs, private drives etc must be adopted by the water authority and must comply with their requirements.

2.17.4 Lateral connections into public sewers will remain private but shall be designed and constructed to adoptable standards. All such connections shall run approximately at right angles to the centreline of the road to minimise their length.

Adoption Requirements

2.17.5 Where foul or surface water sewers are to be laid under the adoptable highway or where the highway drainage is to be connected into a surface water sewer, written assurance must be obtained beforehand that the water authority will adopt the sewers, subject to compliance with their adoption procedure.

2.17.6 The Highway Authority will normally decline to adopt any highway covered by a Section 38 agreement until the water authority has confirmed the adoption of all sewers within the highway. This also includes any other sewers not within the adoptable highway but which carry water from it.

2.17.7 All drains that are intended to be adopted as highway drains shall discharge to a pipe or watercourse at a point approved by the Highway Authority. Evidence will be required that the developer has right to discharge, free of any liability which may be binding upon the Highway Authority when the drain is adopted.

2.17.8 Private drains will not normally be permitted within the adoptable highway.

2.17.9 All prospectively maintainable highway drains shall be located within land that is to be adopted by the Highway Authority. Only in exceptional circumstances will they be permitted in land that is to remain private. Where such circumstances do arise the land owner at the time of completing a Section 38 Agreement will be required to give a grant of easement keeping 3m each side of the pipe clear of all obstructions, which will be binding on successors in title. The developer is strongly advised not to sell any land that will contain a highway drain before completion of such an Agreement. The Highway Authority will not accept any different form of undertaking, which dilutes the rights conferred on it.

Outfalls and Watercourses

2.17.10 Where the outfall is into a ditch or watercourse the approval of the Environment Agency must be obtained in writing.

2.17.11 Where the outfall is proposed to be through an existing highway drain the developer will be required to prove its capacity and condition before approval for the connection can be given. This will include a CCTV survey of the drain and the carrying out of any improvement works found to be necessary.

2.17.12 Where the highway drain discharges into a watercourse, calculations shall take into account the possibility that the watercourse may be flooded.

Drainage Design

2.17.13 Gully spacing shall be determined using the recommendations of HA 102/00, Spacing of Road Gullies. Gullies will be required immediately upstream of block paviours, pedestrian crossing points and road junctions but shall never be located on a crossing point. It is the developer's responsibility to demonstrate and ensure that the number and positioning of gullies is adequate to drain the highway.

2.17.14 The parameters to be used during the drainage design are as listed below:

Rainfall average return period	2 Years
Rainfall average return period (risk of flooding)	120 Years
Time of entry	4 Minutes
Design flow velocities	0.75m/s (Min), 7.5m/s (Max)
Minimum gradient	1:225
Design maximum rainfall	50mm/hour
Minimum pipe diameter	225mm

2.17.15 The Council may consider the use of combined kerb and drainage systems depending on the situation and design submitted for approval.

2.17.16 In certain cases the Council may require the provision of a larger capacity drain than would normally be needed in order to accommodate the drainage of adjoining land and/or future development.

Soakaways

2.17.17 Where soakaways are to be considered it will be at the discretion and approval of the Director of Environmental Services and will be considered as a last resort only (refer to Specification, Section 13). The Developer is to note that a commuted sum may be charged for each soakaway installed. The minimum diameter shall be 1500mm.

2.17.18 If more than one soakaway is planned, they are to be linked by a 225mm diameter pipe. The soakaways are to be surrounded by Terram or similar, laid between the chamber and the filter material. The appropriate filter material to be used will vary according to prevalent ground conditions. Where possible, the soakaway is to incorporate an overflow link (minimum diameter 225mm) to an existing highway drain/outfall system.

2.18 Sustainable Urban Drainage (SUDS)

2.18.1 PPS 25 makes clear the need for measures to control surface water run-off and to prevent flooding. While issues exist as to the acceptance of SUDS by various bodies, Worcestershire County Council expects developers to incorporate storage, attenuation and filtration measures in accordance with 'SUDS- A Guide for Developers' by the Environment Agency and 'SUDS - A Design Manual for England and Wales' by CIRIA.

2.18.2 Worcestershire County Council will examine all proposals for SUDS and judge them on their merits. Permeability tests and hydrology surveys will be required to verify the suitability of the designs and commuted sums will be required for ongoing maintenance of the systems. The amount of the commuted sums will be calculated by the Council and will reflect the special maintenance requirements of the proposed system.

2.18.3 The SUDS proposals for a development shall be submitted along with geology and hydrology information, at planning application stage. Any proposals for outfalls into existing watercourses or ponds shall be accompanied by an environmental impact report and obviously such outfalls will need Consent to Discharge from the Environment Agency. Private SUDS drainage shall drain into the water authority surface water sewers and any infiltration will be into private land. SUDS for the highway shall drain into the highway drain network and any infiltration will be within highway/public areas.

2.19 Structures

2.19.1 Structures that are considered to 'potentially affect' the safety of the highway, whether to be adopted or not and permanent or temporary, where Worcestershire County Council are the highway authority are to follow technical approval procedures as set out in the 'Technical Approval of Highway Structures' BD2 of the Design Manual for Roads and Bridges volume 1 section 1. After April 1st 2010 and unless agreed with the TAA Eurocodes must be used for the design and modification of existing highway structures (including geotechnical works)

2.19.2 Where Worcestershire County Council is the highway authority for the purposes of this guide references to the Technical Approval Authority (TAA) in BD2 means Worcestershire County Council.

2.19.3 All structures shall be designed in accordance with the Design Manual for Roads and Bridges [DMRB], and constructed in accordance with the Specification for Highway Works [SHW]. BD2/05 'Technical Approval of Highway Structures' although based on previous design standards, many of which are now withdrawn, remains current at the time of writing. There are standards within the DMRB which have not been withdrawn but conflict with the Eurocodes. Where there is conflict between standards within the DMRB, including BD2, and the Eurocodes the requirements of the Eurocodes take precedence.

2.19.4 The Director of Environmental Services or their appointed representative will advise developers of the determined category for any proposed structures. All structures except for category 0 will require an AIP to be submitted and accepted prior to any design work [only completed versions of the forms in appendix C of this guide will be accepted – word versions available on request]. Currently there is no guidance within the public domain covering the required changes to either the AIP or design and check certificates. Until the DMRB is updated for the application of Eurocodes guidance should be sought from the TAA on this matter

2.19.5 Any design work completed prior to the acceptance of the AIP will be at the developers' risk, whether or not the work completed is compliant with the DMRB.

2.19.6 The Highway Authority reserves the right to alter the design standards as it considers necessary and this will be communicated before and where necessary during the submission of the AIP. Early consultation for structural requirements is strongly advised.

2.19.7 All structures covered by BD2 will require Design and Check Certificates, and Construction Compliance Certificates [only completed versions of the forms in appendix C of this guide will be accepted – word versions available on request].

2.19.8 The AIP, or in the case of category 0 structures submitted with the Design and Check certificate, must contain evidence of consultation and discussions with statutory undertakers, planning authorities, the Environment Agency and any other relevant body statutory or otherwise.

2.19.9 The AIP must contain relevant extracts from the geotechnical ground investigation including all relevant testing for the proposed design.

2.19.10 A list of structures to be subject of technical approval is as follows:

- *All bridges over or under the highway*

- *All culverts pipes crossing under the highway greater than 0.9m span*
- *Pipes or culverted streams or other structures greater than 0.9m span or diameter along the highway either maintained privately or by statutory undertakers.*
- *Any structures which are not pipes less than 0.9m span/diameter*
- *Retaining walls greater than 4 feet in height and within 4 yards of the highway boundary as described in section 167 of The Highways Act 1980.*
- *Any retaining wall within 4 yards of the highway retaining sloping ground.*
- *Any retaining wall supporting the highway regardless of height.*
- *Any private cellar or basement under or adjacent to the highway*
- *Reinforced earth structures with or without hard facings, includes gabion and crib lock walls.*
- *High masts and lighting columns compliant with the standard for the design of minor structures BD94/07 will be category 0 unless notified otherwise.*
- *High masts and lighting columns not compliant with the standard for the design of minor structures BD94/07 will be category 1 unless notified otherwise.*
- *Any part of a building structure overhanging the highway*
- *Highway sign posts greater than 7m in height.*
- *Any temporary works which are described as above.*
- *Structures required to be assessed by the highway authority whether or not maintained by them.*

***NOTE**: This list may not be exhaustive and developers are urged to consult with the Highway Authority at the earliest possible stage.*

Where developers combine various structural components, each with different designers, to be incorporated into one structure they will undertake to provide one Design and Check Certificate[s] from the principal designer that takes responsibility for the whole structure [and includes reference to and copies of the design and check certificates of the component parts]. Examples of this might include:

- *a bridge that comprises of insitu cast abutments with pre-cast concrete deck beams, or*
- *cast insitu or driven piles on which insitu abutments / piers are constructed, and*
- *temporary works*

Adoption of Structures by the Council

2.19.11 The Council may adopt certain structures adjacent to, under or over the highway. In normal circumstances, the only structures that will be considered for adoption are those upon which the Highway relies for support and are constructed on Highway land.

2.19.12 All structures to be adopted should have received Structural approval in accordance with the procedures shown as follows:

SCENARIO 1 - All new structures under an existing highway, or prospectively adoptable highway:

- *These will be subject to the requirements of BD2*
- *Where any part of the structure [including approach embankments, etc] extends beyond the limits of the current highway the land not currently designated as public highway shall be dedicated to public highway so as to give the Highway Authority full control over the land upon which the structure and it component parts rest. This includes all land within the 'footprint' of the structure.*
- *An additional 2m margin 'halo' around all structural elements [including buried elements such as foundations, soil nailing, and reinforced earth] shall be dedicated to highway so as to protect the structure from interference and to provide for future un-inhibited inspection and maintenance access by the Highway Authority.*
- *These additional areas shall be finished in low maintenance materials agreeable to the Highway Authority, and which may vary from development to development. The area so dedicated shall be fenced off as agreed with the Highway Authority.*
- *Commuted sums shall be paid to the Highway Authority by the developer to cover future maintenance, and / or reconstruction.*

SCENARIO 2 - All new structures over an existing highway where it is intended that the structure will carry a prospectively adoptable highway:

- *These will be subject to the requirements of BD2*
- *Where any part of the structure [including approach embankments, etc] extends beyond the limits of the current highway the land not currently designated as highway shall be dedicated as public highway so as to give the Highway Authority full control over the land upon which the structure and it component parts rest. This includes all land within the 'footprint' of the structure.*
- *An additional 2m margin 'halo' around all structural elements [including buried elements such as foundations, soil nailing, and reinforced earth] shall be dedicated to highway so as to protect the structure from interference and to provide for future un-inhibited inspection and maintenance access by the Highway Authority*
- *These additional areas shall be finished in low maintenance materials agreeable to the Highway Authority, and which may vary from development to development. The area so dedicated shall be fenced off as agreed with the Highway Authority.*
- *Commuted sums shall be paid to the Highway Authority by the developer to cover future maintenance, and / or reconstruction.*

SCENARIO 3 - Structures supporting the highway [e.g. retaining walls] adjacent to private housing developments:

- *These will be subject to the requirements of BD2*

- *Where any part of the structure extends beyond the limits of the current highway the land not currently designated as public highway shall be dedicated as public highway so as to give the Highway Authority full control over the land upon which the structure and it component parts rest.*
- *An additional 2m margin 'halo' around all structural elements [including buried elements such as foundations, soil nailing, and reinforced earth] shall be dedicated to highway so as to protect the structure from interference and to provide for future un-inhibited inspection and maintenance access by the Highway Authority. These additional areas shall be finished in low maintenance materials acceptable to the Highway Authority, and which may vary from development to development. The area so dedicated shall be fenced off as agreed with the Highway Authority.*
- *Commuted sums shall be paid to the Highway Authority by the developer to cover future maintenance, and / or reconstruction.*

SCENARIO 4 - Structures supporting land above the highway [e.g. retaining walls] adjacent to private housing developments:

- *These will be subject to the requirements of BD2*
- *Land not currently designated as public highway shall be dedicated as public highway so as to give the Highway Authority full control over the land upon which the structure and it component parts rest.*
- *An additional 2m margin 'halo' around all structural elements [including buried elements such as foundations, soil nailing, and reinforced earth] shall be dedicated to highway so as to protect the structure from interference and to provide for future un-inhibited inspection and maintenance access by the Highway Authority. These additional areas shall be finished in low maintenance materials acceptable to the Highway Authority, and which may vary from development to development. The area so dedicated shall be fenced off as agreed with the Highway Authority.*
- *Commuted sums shall be paid to the Highway Authority by the developer to cover future maintenance, and / or reconstruction.*

Approval of Structures Not to be Adopted by the Council

2.19.13 The following structures although not necessarily to be adopted by the Council require Structural Approval. These will be subject to the requirements of BD2:

- *Any wall or basement constructed on private land by an individual or developer that affects the support of the highway;*
- *Bridges crossing the Highway where there is no public access to the bridge;*
- *[Requires licence s176 of Highways Act 1980. Requires condition to pay for removal or alterations required by highway authority]*

- *Retaining walls where any part of the retaining wall is 1.20m above the boundary of the highway nearest that point; and*
- *Buried structures over 0.9m span/diameter carrying services or plant*

2.19.14 S330 Highways Act 1980 requires SU to gain approval from the highway authority. Therefore any structure should be considered but general access chambers using precast units should not need approval. Longitudinal structures which use bespoke parts including pipe and PC box sections should be subject to TA.

SCENARIO 5 - All new structures under an existing highway, or prospectively adoptable highway provided by or for Statutory Undertakings [e.g. flood attenuation, storm overflows]. These will be subject to the requirements of BD2:

- *Structures should ideally be located away from the carriageway, or in public open space, if this cannot be achieved then they should be so positioned and agreed with the Highway Authority so as not to prohibit the future use of the highway during:*
- *Cyclic cleansing*
- *Maintenance of the structure*

SCENARIO 6 - Structures supporting the highway [e.g. retaining walls]: adjacent to ongoing commercial developments. These will be subject to the requirements of BD2:

- *The developer will be required to commit to the Code of Practice for the Management of Highway Structures complying with the inspections and maintenance requirements in all respects and provide evidence to the Highway Authority that this has been done at each cycle specified within the code. Evidence shall include: copies of inspection reports, maintenance works and structural assessment calculations.*
- *The developer will carry annual insurance, and / or indemnify the Highway Authority against all such claims arising from the construction, presence, use, and maintenance of the structure. Written evidence shall be provided on an annual basis that such indemnity is provided.*
- *The above requirements shall be included in property deed transfers to ensure future owners of the land are kept aware of their liabilities. The Highway Authority shall be provided with a copy of the deeds after each transfer of the land.*

SCENARIO 7 - Structures supporting land above the highway [e.g. retaining walls] adjacent to ongoing commercial developments. These will be subject to the requirements of BD2:

- *The developer will be required to commit to the Code of Practice for the Management of Highway Structures complying with the inspections and maintenance requirements in all respects and provide evidence to the Highway Authority that this has been done at each*

cycle specified within the code. Evidence shall include: copies of inspection reports, maintenance works and structural assessment calculations.

- *The developer will carry annual insurance, and / or indemnify the Highway Authority against all such claims arising from the construction, presence, use, and maintenance of the structure. Written evidence shall be provided on an annual basis that such indemnity is provided.*
- *The above requirements shall be included in property deed transfers to ensure future owners of the land are kept aware of their liabilities. The Highway Authority shall be provided with a copy of the deeds after each transfer of the land.*

SCENARIO 8 - All new and to be modified structures over an existing highway where the use is to remain private [service and access]. These will be subject to the requirements of BD2:

- *Wherever possible these should be constructed such that all supporting components are located within land to remain private.*
- *In particular every attempt should be made to prevent, in use, objects from falling on to the public highway beneath.*
- *The developer will be required to commit to the Code of Practice for the Management of Highway Structures complying with the inspections and maintenance requirements in all respects and provide evidence to the Highway Authority that this has been done. Evidence shall include: copies of inspection reports, maintenance works and structural assessment calculations.*
- *The developer will carry annual insurance, and / or indemnify the Highway Authority against all such claims arising from the construction, presence, use, and maintenance of the structure. Written evidence shall be provided on an annual basis that such indemnity is provided.*

2.19.15 The above requirements shall be included in property deed transfers to ensure future owners of the land are kept aware of their liabilities. The Highway Authority shall be provided with a copy of the deeds after each transfer of the land.

Assessment of Existing Structures

2.19.16 Eurocodes are not to be used for the assessment of existing structures. Assessments will be undertaken in accordance with BD21 and the associated standards within the DMRB. Where structures are modified using Eurocodes, as stated above, there is the potential for a conflict due to differences in the effect of actions. In these cases the TAA is to be consulted for guidance.

2.19.17 Any existing structure which may be considered to potentially affect highway safety may be required to be assessed in accordance with BD2. All structures that are to be modified for the purposes of the development or to be subjected to increased magnitude or frequency of loading shall be assessed according to BD21. This will be undertaken as part of the Design and Check Process in BD2.

Approval Submissions

2.19.18 The Technical Approval Process shall consist for all structures whether adoptable or not an AIP where appropriate, Design and Check Certificates and Construction Compliance certificates.

2.19.19 The AIP will include the following:

- ***General arrangement drawing*** *showing location and extent of all structures and in the case of walls detailing lengths to be adopted and/or over 1.20m high if applicable;*
- *Sufficient to determine wall heights, giving ground levels, behind and in front of wall and any features affecting loadings such as cover to culverts;*
- *Clearances to deck soffit and piers/abutments shall be submitted for bridges*
- *Cross section drawings for retaining walls annotated with proposed and existing ground levels*
- ***Designers Risk Assessment;*** *This is to include risks for design, construction, maintenance and operation, and demolition*
- ***Site investigation details and geotechnical assumptions*** *on which the design has been based. Appropriate sections of the geotechnical report should be included. This must be given in sufficient detail on the drawing to allow the designers assumptions to be compared with the conditions actually found on site by those responsible for construction;*
- *Construction details and material specifications;*
- *Agreed departures from standard.*

2.19.20 For Category 0 structures the design and check certificate must be accompanied by the design calculations with full reference to the design standards used; and for structures that are to be adopted or for structures upon which the Highway relies for support: Design and Construction Certificates and it will be a condition of the approval that developers submit As-Built drawings for the CDM Heath and Safety File.

2.19.21 For reference to the required standards, Developers are requested to review the Technical Approval Schedule as listed in the current version of BD2. In addition to the standards in the Design manual for Roads and Bridges developers may be required to comply with interim advice notes published by the Highways Agency. WCC will advise developers on a scheme basis during the technical approval process.

Departures from Standard

2.19.22 Departures from standards applicable to Eurocodes will only be accepted where the principle or concept is not covered therein or is a proposed alteration to the national annex which does not conflict with the Eurocode. It is a requirement that designers comply with the principles of the Eurocodes these clauses are denoted with a letter P. It is permissible to use alternative design rules different from the Application Rules given in EN 1990 for works, provided that it is shown that the alternative rules accord with the relevant Principles and are at least equivalent with regard to the structural safety, serviceability and durability which would be expected when using the Eurocodes.

2.19.23 There may be instances where due to site constraints or nature of the development that it is not possible to design works in accordance with the appropriate highway standard. In these cases the developer can apply for a departure from the standards. Departures will only be granted when the site constraints prevent the implementation of the standard. A request for a departure should contain the following:

- *Proposed departure*
- *Reasons for departure*
- *Consequences of the departure, particularly any increases in risks or hazards.*
- *A risk assessment for complying with the standard and one for the departure.*

2.19.24 Normally all departures are to be agreed prior to the acceptance of the AIP and shall be included in the AIP.

Bridge Maintenance Manual/Health and Safety File

2.19.25 On completion of the work the Developer must provide a Bridge Maintenance Manual containing:

- *Details of the materials used in construction and the supplier;*
- *Requirements for future maintenance;*
- *Any survey and geotechnical details undertaken on the site of the Structure;*
- *Details of problems encountered during construction that may have a long-term effect on the structure;*
- *Any access arrangements for future maintenance;*
- *As built drawings as electronic TIF, DXF or AutoCAD files;*
- *Design calculations; and Special arrangements required for demolition.*

2.19.26 The above information will comprise the documentation you have to legally provide under the CDM Regulations. In addition to contents listed, the following must be included:

- *All relevant documentation from the technical approval process*
- *Approval in Principle*
- *Design and Check certificates*

- *Construction Compliance Certificate*

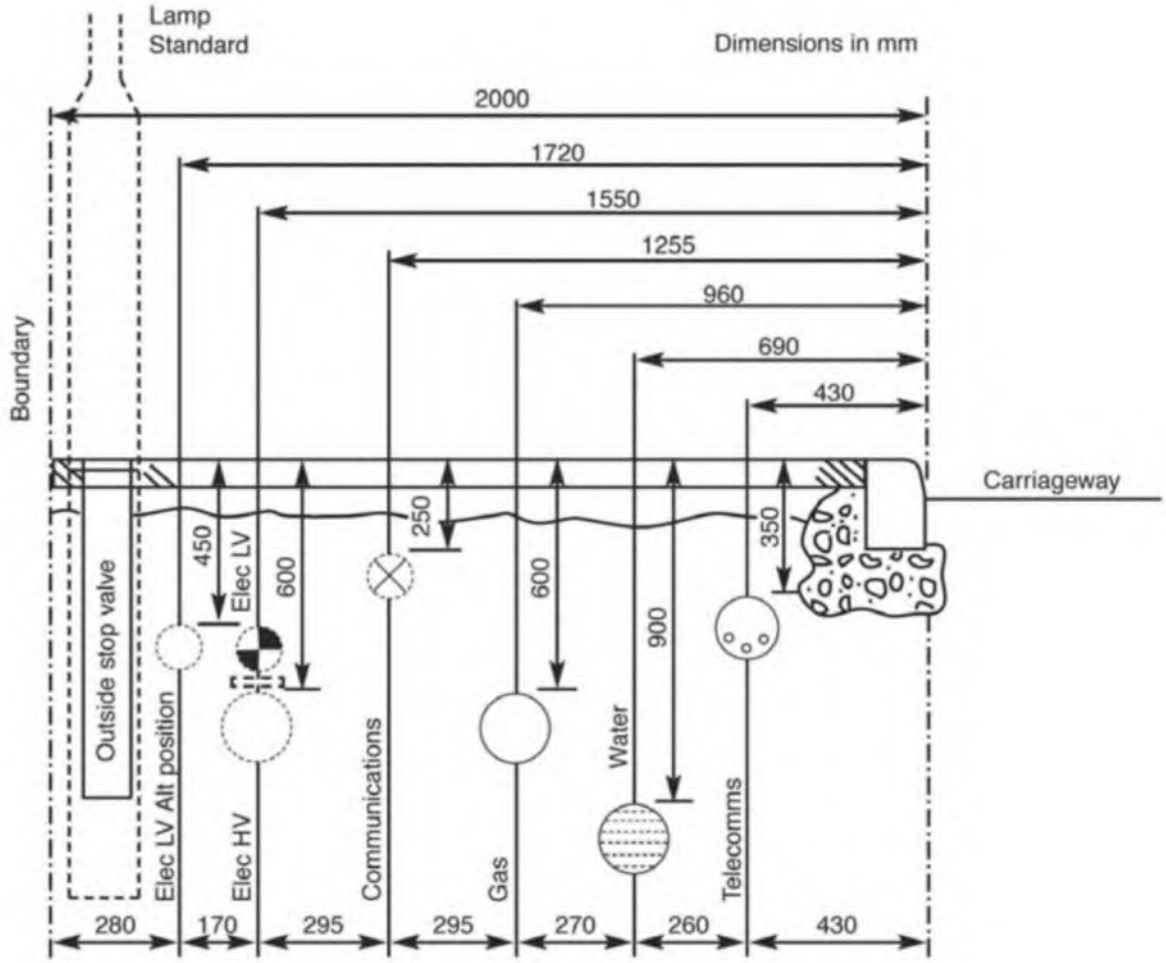
2.19.27 These are to be copies of the accepted certificate by the TAA:

- *Appropriate certification of components, VRS systems, quality assurance certification for reinforcement and concrete suppliers, waterproofing and other materials.*
- *Certificates for any material or integrity testing undertaken, i.e. concrete cube results or integrity testing of piles*
- *Any residual risks or hazards within the structure, similar confined space, hazardous materials used in construction or hazards found within the original ground.*

2.19.28 Worcestershire County Council has a standard format for Health and Safety Files, a copy of which is available on request.

2.20 Statutory and Other Services

2.20.1 New estate roads should be designed to accommodate services and liaison with all statutory undertakers and communications providers should be done at the earliest stage possible to ensure that their equipment is installed in an efficient manner and as much as possible to comply with the recommendations of the National Joint Utilities Group.



2.20.2 Although this idea is not always possible it is important to ensure that services do not conflict.

2.20.3 All categories of estate road should have either footways or service strips in which services will be located. The Highway Authority will not adopt land the sole purpose of which is to contain services. Any land must have a justifiable connection with the highway and be clearly adoptable as highway.

2.20.4 The laying of apparatus within the carriageway will not generally be permitted although at junctions and in the case of public sewers exceptions are clearly unavoidable.

2.20.5 The Developer shall ensure that service strips are clear of trees, walls and hedges. Any trees shall be located so that their root systems when mature will neither damage apparatus, nor be damaged during the laying and maintenance of apparatus. Root deflection barriers should be used. Developers should consult the Local Planning Authority regarding any Tree Preservation Orders and should act in accordance with BS 5837: 1991 during construction works.

2.20.6 Service strips shall be delineated from private property by Highway Boundary concrete marker blocks.

2.20.7 When selecting routes for services, dual mains installations should be the norm to prevent carriageway crossings weakening the road structure and preventing the need to dig up the carriageway.

2.20.8 Where services are to be laid within the extent of the highway, ideally, the appropriate utility company should lay the required service. Where services are not laid or subsequently adopted by the appropriate utility company, they should not be laid within the extent of the highway.

2.20.9 In exceptional circumstances, where unadopted services cannot be avoided within the limit of the highway, a section 50 license will be required before the highway can be adopted.

2.21 Parking Criteria

2.21.1 In considering what level of parking provision is required Worcestershire County Council has deemed it is most important to evaluate the accessibility of alternative modes of transport. Walking and cycling is a viable alternative only in the larger villages, market towns and Worcester City. Access to public transport varies across the county with the highest levels of accessibility concentrated in Worcester, Kidderminster and Redditch the Market Towns have a reasonable level of access to buses and rail.

2.21.2 Worcestershire County Council has deemed that parking standards need to allow for significantly lower levels of off street parking provision, particularly for developments:

2.21.3 In locations, such as town centres, where services are readily accessible by walking, cycling or public transport;

2.21.4 Which provide housing for elderly people, students and single people where the demand for car parking is likely to be less than for family housing; and

2.21.5 Involving the conversion of housing or non residential buildings where off street parking is less likely to be successfully designed into the scheme.

2.21.6 Where access to public transport or local facilities is poor, increased residential parking spaces can be provided.

2.21.7 For developments at or above the PPG 13 Annex D thresholds the maximum parking standards would apply. However the Council would support applications with lower levels of parking providing there would be no detrimental impact on highway safety or local amenity.

Disabled Parking

2.21.8 For all types of non-residential development, except where specified otherwise in the following standards tables, the provision for disabled users parking should be 5% of all spaces with a minimum of 1 space per development.

2.21.9 Consideration should also be made for mobility scooters for residential spaces; storage space should be provided within covered storage areas, with a dedicated power supply provided.

Notes on applying the Standards

2.21.10 The standards apply to new developments or extensions and to changes of use.

2.21.11 The standards apply to the Gross Floor Area (GFA)

2.21.12 The design of parking areas and service areas should avoid the need for vehicles to reverse onto the highway and in the case of service vehicles, manoeuvre or wait on the highway.

2.21.13 Where parking spaces are orientated at an angle of less than 90° the aisle should indicate one-way flow through the car park or alternatively turning areas will be required to avoid excessive manoeuvring.

2.21.14 Mixed uses will be assessed as a sum of the parking requirement of the individual elements of the scheme based on the standards. However, if for example a building used for commercial purposes has facilities for a recreational function used only by the incumbent workforce, the standards necessary for the commercial use only need be applied.

Motorcycle Parking

2.21.15 Motorcycle parking should be designed in accordance with IHIE Guidelines for Motorcycling (April 2005).

Dimensions and Location of Parking Spaces

2.21.16 The average car parking space measures 4.8m long and 2.4m wide with a 6m aisle when parking is at right angles. Alternative ways of arranging parking are shown in section 2.21.

2.21.17 The provision for disabled spaces is given in the parking standards and complies with the recommendations of BS 8300:2001; in grouped residential parking with less than 20 standard spaces there should be 1 space per group. Above this there should be one space for every 10 standard spaces. For disabled users car spaces should be 4.8m long and 3.6m wide but spaces of 2.4m width can be used where a shared space of 1.2m is demarked between the spaces.

2.21.18 For aesthetic reasons parking areas should be located behind the building line although sheltered on-street parking can be used as a speed restraint measure.

2.21.19 Communal visitors' spaces may be provided by widening the carriageway to accommodate a row of cars parallel to, at right angles to or at an angle to the kerb. Areas should be limited in size and numbers of spaces, and should form part of a landscaping and urban design proposal and again should serve the additional purpose of restraining vehicle speed. Groupings should be spread around the road to reduce visual impact. In the case of angled parking, the footway should be widened by 800mm to allow for vehicle overhangs.

2.21.20 Although residents' spaces and garages may be located on or near the frontage they should not dominate the street scene. Residents' spaces may also be located at the rear of dwellings and accessed from a separate road or drive. The parking should have natural surveillance as mentioned in Section 1.8 and the parking should be as convenient as possible to prevent resident on-street parking.

Garages

2.21.21 Garages should have internal dimensions to accommodate a cycle which can exit without removal of the car. Minimum internal dimensions of 4.8m x 2.4m are only acceptable where covered and secure cycle parking is provided elsewhere on the plot. Garage doors must not open over the adopted highway and visibility splays apply as for the parking spaces above.

2.21.22 Garages are not considered to be part of the car parking allocation.

Cycle Parking

2.21.23 The standards in the tables set out Worcestershire County Council's minimum requirements in terms of cycle parking for new developments and changes in use. In addition to the application of these standards, new developments will have to comply with the following principles:

2.21.24 Cycle racks or stands should conform to the design and dimensions as set out under Cycle Stand Design below;

2.21.25 For residential purposes, cycle parking should be within a covered, lockable enclosure. For individual houses this could be in the form of a shed or garage. For flats or student accommodation either individual lockers or cycle stands within a lockable, covered enclosure are required;

2.21.26 Cycle parking for employees should be, wherever practical, covered and in a convenient, secure location;

2.21.27 Short stay cycle parking, e.g. for visitors or shoppers, should be located as near as possible to the main entrance of buildings and covered by natural surveillance or CCTV. For large developments the cycle parking facility should be covered;

2.21.28 Reference to staff should be taken to mean the peak number of staff expected to be on site at any one time;

2.21.29 All cycle parking should minimise conflicts between cycles and motor vehicles; and

2.21.30 Some flexibility will be applied to applications where it can be demonstrated that strict adherence to the standards, e.g. for a multi-purpose site, is likely to result in a duplication of provision.

Cycle Stand Design

2.21.31 A Sheffield Stand is preferred as it provides support and a suitable means of locking both wheels and frames for security. The Rounded design provides additional support, particularly for smaller bicycles.

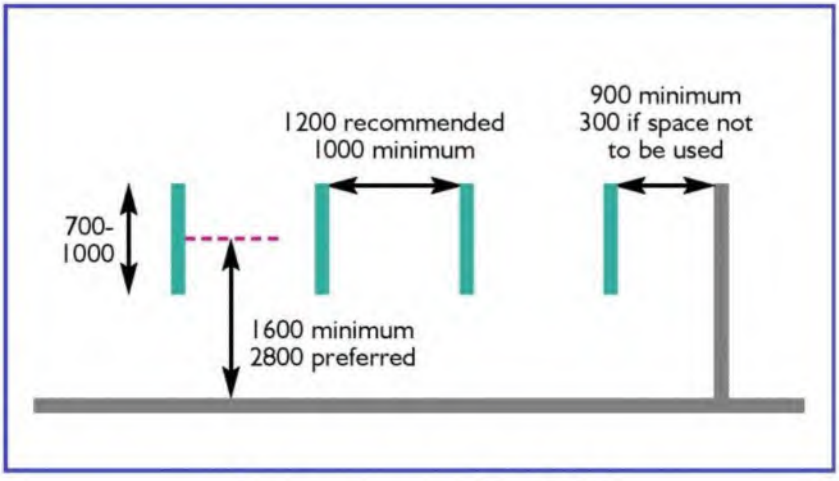
Sheffield Stand

2.21.32 These are simple, provide a convenient way to secure both a bike's frame and wheels, and accommodate different size bikes easily. If stands are spaced as recommended, they will accommodate two bikes per stand, offering a very economical solution.

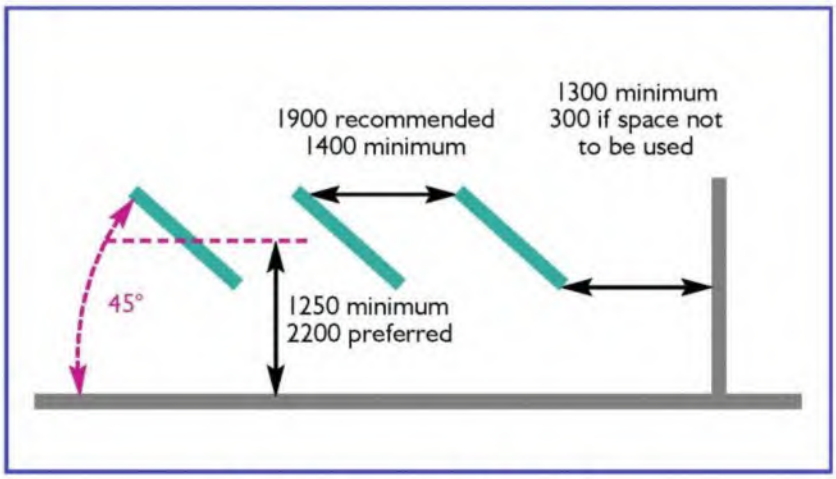
2.21.33 We do not recommend 'butterfly' type racks or variations such as wheel slots in the ground, as they do not offer proper security and will lead to damaged wheels if the bike is knocked over. It may be possible to attach robust rings or bars to walls to provide securing points for parking parallel to walls, where space is at a premium.

2.22 Cycle Parking Layout

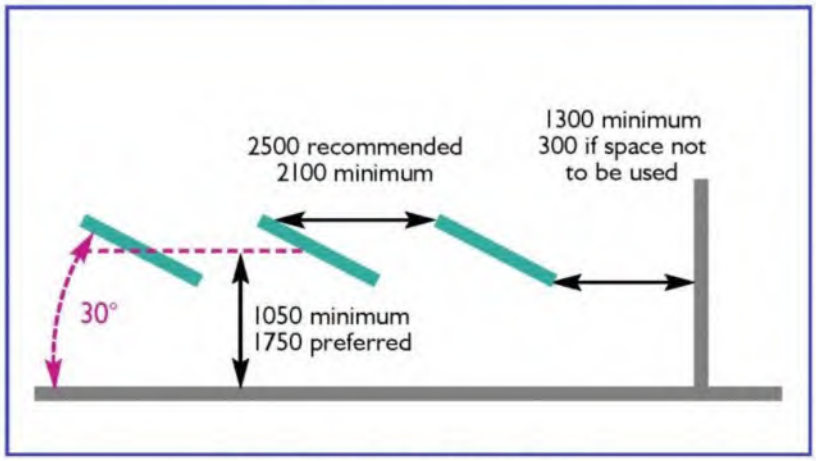
2.22.1 The diagram below shows the spacing required for cycle stands. There should be at least 1000mm gap between double rows of stands. All measurements shown are in millimetres.



Arrangement at 90° to Wall



Arrangement at 45° to Wall



Arrangement at 30° to Wall

Cycle Parking Lockers

2.22.2 Longer-term parking might be usefully provided by cycle lockers, which provide convenient space for storing helmets and clothing, whilst also offering greater protection against vandalism or theft of accessories such as lights and saddles.

2.22.3 Rather than prescribe specific styles of parking stand or locker, it's more practical to specify a basic envelope of 0.9m x 2.0m, which can store 1 or 2 bikes and even tricycles. This envelope can be part of but not included in the garage allowance for a motor car or else provided as a further internal or external space, with an access route at least 0.8m wide 2.0m high - the store itself can be lower e.g. 1.4m.

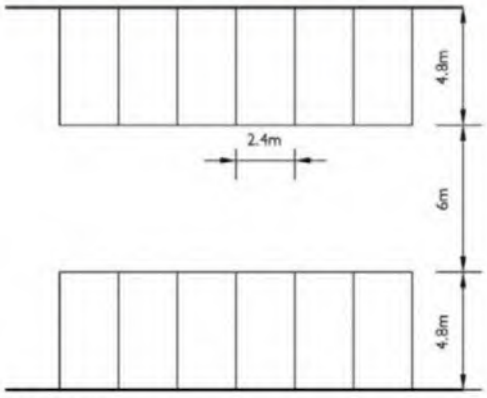
Standards

2.22.4 The car parking standards shown in Appendix A are the maximum requirements to be applied throughout Worcestershire, however Worcester City currently operate their own parking standard and other Planning Authorities may adopt a specific parking standard in the future.

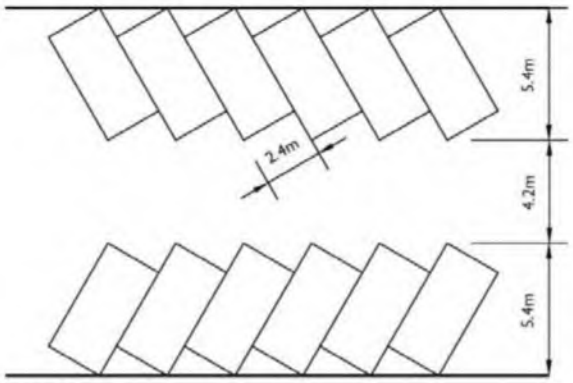
2.22.5 Cycle Parking, Disabled Parking and Motorcycle Parking provision is based on the maximum parking standard and shall be provided over and above the required site provision.

Car Parking Layout

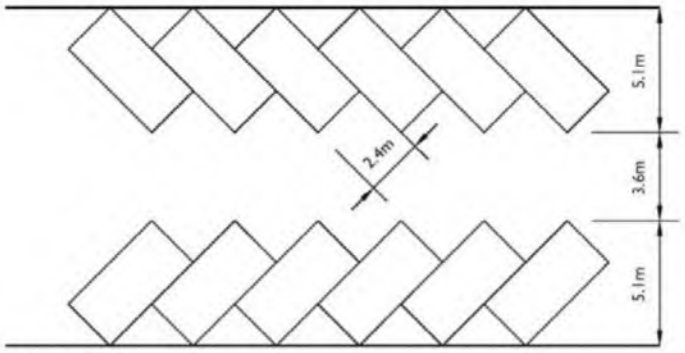
Alternative Ways of Arranging 12 Car Parking Spaces



90°PARKING



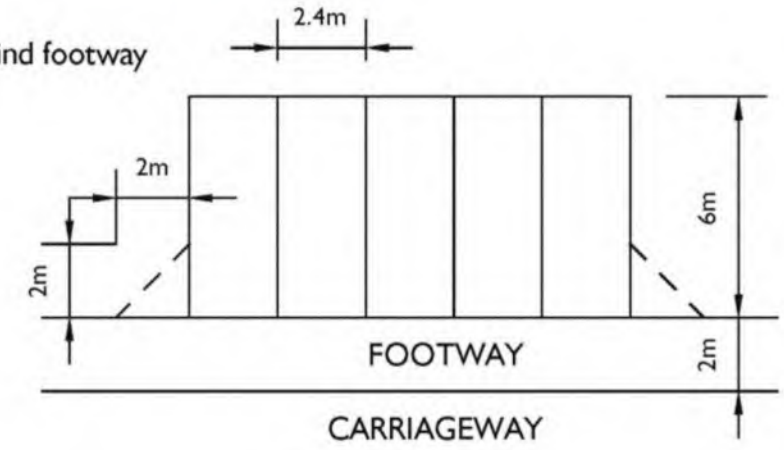
60°PARKING



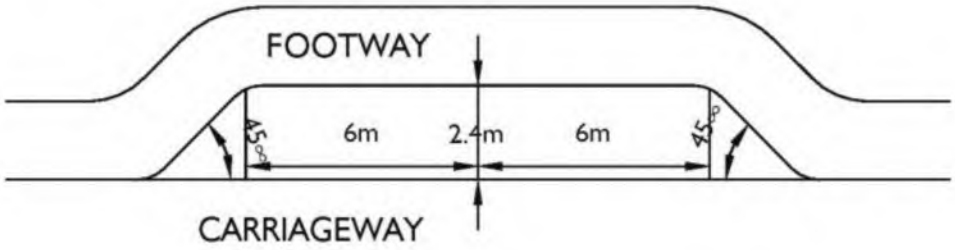
45°PARKING

Grouped Car Parking
With direct access to highway up to maximum of 5 bays

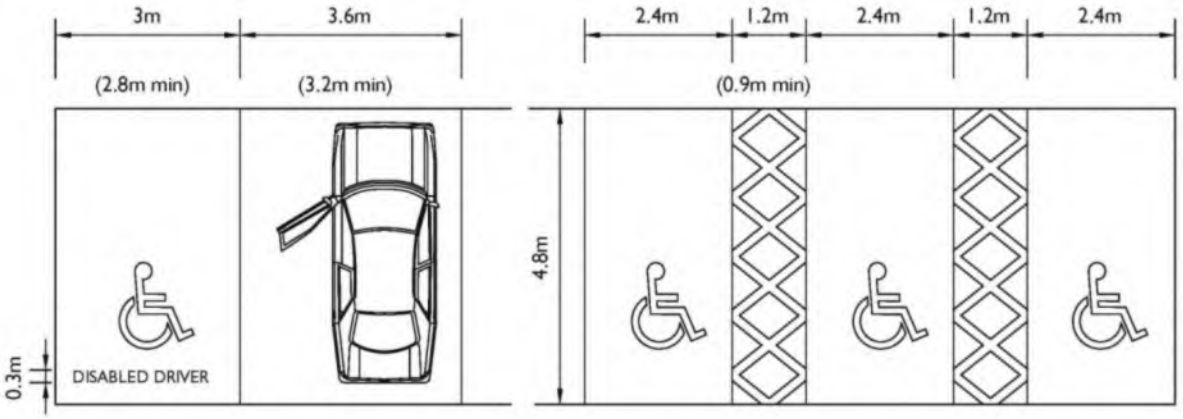
Layout (a) behind footway



Layout (c) parallel parking



Parking for the Disabled

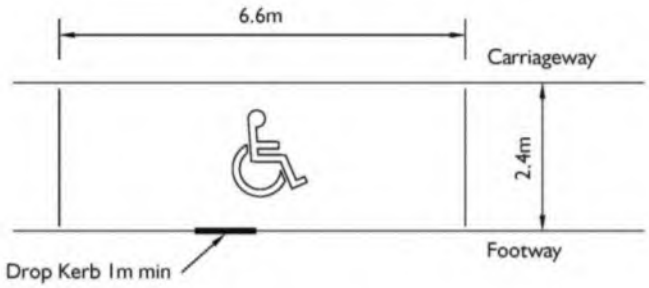


Ambulant disabled user - only where space is limited full width for wheelchair user preferred particularly in public car parks

Wheelchair user

Marked out shared space between 2 standard bays

Standard end bay with long side open for access



Parking side-on to kerb

Disabled detail S/S 1m tailgate provision

3. Process Guidance

3.1 Transport Assessments (TA)

3.1.1 The following thresholds are normally applied for initiating a Transport Assessment. Developments below these thresholds still have an impact on the local transport network and may be required to provide a Transport Statement. Developers are advised to check at an early stage with Worcestershire County Council to establish what level of information is required. We actively encourage pre application meetings in order to address any potential issues at an early stage.

Ref	Land Use	Size	Threshold
1	Food retail (A1)	GFA	> 800 sq. m
2	Non-food retail (A1)	GFA	> 1500 sq. m
3	A2 Financial and Professional Services	GFA	> 2500 sq. m
4	A3 Restaurants and Cafes	GFA	> 2500 sq. m
5	A4 Drinking establishments	GFA	> 600 sq. m
6	A5 Hot food takeaway	GFA	> 500 sq. m
7	B1 Business	GFA	> 2500 sq. m
8	B2 General industrial	GFA	> 4000 sq. m
9	B8 Storage of distribution	GFA	> 5000 sq. m
10	C1 Hotels	Bedroom	> 100 bedrooms
11	C2 Residential institutions – hospitals, nursing homes	Beds	> 50 beds
12	C2 Residential institutions – residential education	Student	> 150 students
13	C2 Residential institutions – institutional hostels	Resident	> 400 residents
14	C3 Dwelling Houses	Dwelling Unit	> 80 units
15	D1 Non-residential institutions	GFA	> 1000 sq. m
16	D2 Assembly and leisure	GFA	> 1500 sq. m

3.1.2 Scoping Reports shall be provided and be agreed in writing by Worcestershire County Council prior to the undertaking of the TA Report.

3.1.3 Worcestershire County Council has produced guidance to assist developers undertaking TA's. This is located here: www.worcestershire.gov.uk/LTP3

3.2 Section 106 Planning Obligations

3.2.1 New developments have a direct and indirect impact on the transport system in the County and should contribute towards the cost of all, or that part of additional infrastructure provision that would not have been necessary, but for their development. We have already developed a good track record in securing appropriate contributions for transport improvements from a range of development types including residential, retail and other commercial uses.

3.2.2 Worcestershire County Council is currently developing a Supplementary Planning Guidance (SPG) on Developer Contributions, in order to provide details of the financial contributions required from all developments towards transport infrastructure and sustainable travel initiatives.

3.2.3 This SPG will provide a quantitative indication of the level of contribution which we are likely to seek through planning obligation towards the provision of infrastructure for the improvement of access relating to a proposed development. It is important that the formula links closely with the improvement of the transport network and improved accessibility set out in Policies within our Local Transport Plan. The formula will enable us to provide developers with an early indication of the level of contributions we are likely to require towards:

- *sustainable transport infrastructure improvements;*
- *support for travel plans required as a result of a development proposal;*
- *contributions to public transport services and demand responsive and community transport services;*
- *highway infrastructure improvements and*
- *future maintenance*

3.2.4 It is hoped this supplementary guidance will be available in Spring 2011.

3.3 Travel Plans

3.3.1 Every TA must be accompanied by a Travel Plan. Travel Plans are typically a package of practical measures to encourage employees and users to choose alternatives to single occupancy car use and even reduce the need to travel at all for their work. Travel Plans should be site specific and should offer a range of measures that will make a positive impact at that site. Typical examples of measures include: car sharing schemes, flexible working schemes, offering good cycle facilities and cycle mileage allowances, negotiating for improved public transport facilities with providers, restricting or charging for car parking, and setting up video conferencing to reduce business travel.

3.3.2 The Department of Transport has published the report 'Making Residential Travel Plans Work: Guidelines for New Development' which gives further advice on this subject.

3.3.3 Further information may be obtained from:

Worcestershire County Council – Smarter Choices Team

travelplans@worcestershire.gov.uk (01905) 765765

3.4 Advance Payments Code (APC)

3.4.1 Under part XI of the Highways Act 1980, the Advance Payments Code requires that anyone proposing to erect a building served by a private street must pay or secure sufficient funds with the Highway Authority or its agent to cover the eventual cost of making up the street to adoptable standard.

3.4.2 This aims to relieve house buyers of road charge liabilities under the private street works code if the Developer defaults. New roads are considered private streets for the purposes of the act.

3.4.3 The Highway Authority or its agent will serve the appropriate Notice setting out the sum required under Section 219/220 of the Highways Act 1980 within six weeks of Building Regulations Approval being granted, either by the Council or notified by an approved private agency.

3.4.4 It is an offence to start constructing the building before depositing funds or completing an Agreement under S.38 of the Highways Act 1980.

3.4.5 The sealing of a S.38 Agreement secures exemption from the need to provide surety for the roadwork's in advance of building operations in accordance with the APC. However if the Developer wishes to construct dwellings before a S.38 Agreement is signed, it is necessary for the required APC security to be made for the appropriate site. This surety (together with accrued interest where cash deposits are made) will be returned to the Developer upon signing the S. 38 Agreement, or used as part of the required bond and/or supervision fees.

3.4.6 There are certain exemptions to the obligations of the Advance Payments Code, details of which are given in Section 219(4) of the Highways Act 1980.

3.4.7 It is possible for streets to remain private but a properly constituted body with defined legal responsibilities will need to be established to maintain the streets to the common benefit of the residents. The Highway Authority will require legal certainty of the streets is going to be properly constructed, lit, drained and maintained in perpetuity by these private arrangements.

3.5 Section 38 and Section 38/278 Highways Act 1980 Agreements

3.5.1 Section 38 of the Highways Act 1980 ("Section 38") allows Worcestershire County Council ("WCC") as highway authority to enter into a legal agreement with a Developer to adopt highways for future maintenance at the public expense, provided that they are constructed to WCC's approved conditions and specifications ("a Section 38 Agreement"). The agreement may also contain further necessary provisions for the construction and dedication of the road as WCC considers appropriate.

3.5.2 Where schemes require alterations or improvements to the existing public highway, Section 278 of the Highways Act 1980 ("Section 278") allows for WCC to enter into a legal agreement with a Developer in order to enable the Developer to make alterations or improvements to the public highway.

3.5.3 Section 38 Agreements will often be combined with a Section 278 Agreement if works in the existing highway are involved and Section 278 Agreements may also include a 'Section 38 Agreement element' if land is required to be adopted.

3.5.4 Prior to submitting an application to enter into a Section 38/ or Section 38/278 Agreement a developer must: -

3.5.5 Obtain full planning permission from the relevant planning authority;

3.5.6 Prove absolute title to all of the land to be dedicated as public highway within the Section 38 Agreement or 'Section 38 Agreement element'

3.5.7 Please Note: Title to any land to be dedicated must remain in the ownership of the Developer(s)/ Freeholder(s) entering into the Section 38 Agreement until adoption of the land by WCC

3.5.8 In order to commence the Section 38/Section 278) adoption procedure, the following should be submitted to WCC upon receiving Planning Permission:

3.5.9 A non-refundable payment of £1,000 to cover initial costs of a Section 38/Section 278 design check and approval of the submitted scheme and to cover costs of WCC works carried out on aborted schemes This amount will be deducted from the Management and Inspection fees (see below) should the Section 38 Agreement proceed;

- *A non-refundable deposit payment of £500 to cover the legal costs and disbursements in connection with the preparation, completion and registration of the Section 38/Section 278 Agreement. This amount will be deducted from the final legal costs incurred should the Section 38/ 278 Agreement proceed;*
- *A copy of the planning permission;*
- *2 copies of a 1:2500 scale A4 location plan showing the planning application site boundary edged red;*

- *2 copies of plans indicating the areas to be offered for adoption. The plans must be drawn to scale and based on the latest published edition of the large scale Ordnance Survey Map and be of the standard required by the Land Registry (see Land Registry Practice Guide 10);*
- *2 copies of the full engineering layout plan to 1:500 scale on a detailed survey base indicating the position of all proposed carriageways, footways, cyclepaths, kerbing, verges, service strips, all drainage (including private drainage), visibility splays, traffic calming features, traffic signs, road markings, chainages, etc (the "Section 38 Works") together with any proposed works relating to the improvement, alteration and/or connection to the existing publicly maintainable highway (the "Section 278 Works") indicating the position of all existing carriageways, footways, cyclepaths, kerbing, verges, service strips, all drainage (including private drainage), visibility splays, traffic calming features, traffic signs, road markings, chainages, affected etc; The Developer is responsible for identifying and instructing WCC of any departures from Standards in Section 278 proposals. This will avoid delays at a later stage in the design check and approval process.*
- *2 copies of longitudinal section drawings showing the following:*
  - *Chainages*
  - *Existing centreline levels*
  - *Proposed centreline levels*
  - *Storm water and foul drainage*
  - *Proposed gradients/vertical curve details, including K values;*
  - *Relevant standard details drawings and construction tables;*
  - *Drainage details including calculations of surface water run-off;*
- *Full details and drawings of any proposed structures, including completed Approval In Principle and Design Certificate forms, together with an estimate of the total cost of the structure; and*
- *A geotechnical report including CBR test results at formation*

3.5.10 All drawings and plans referred to above must be drafted by a competent highway consultant appointed by the Developer who must have experience in highway design and construction.

3.5.11 Note - The Developer will be required to enter into a formal agreement with the Local Water Authority in respect of sewers and pumping stations in accordance with Section 104 Water Industry Act 1991 and provide written assurance that the Water Authority will adopt sewers within the Section 38 Works. Private sewers within the Section 38 Works are not accepted by WCC and will not be adopted. Adoption of the Section 38 Works will not be take place until proof of the adoption of the private sewers etc by the Local Water Authority has been provided to WCC.

Fees

WCC will charge a Management and Inspection Fee, based upon a percentage of the WCC's estimate of the total cost of the works, currently 7.5%. This fee will cover the following in respect of the proposed Section 38/ Section 278 Works:

- *Basic technical approval;*
- *Calculation of Bond Fees:*
- *Administration;*
- *Site inspections during construction and for provisional and final certificates (see 3.5.2 below); and*
- *Inspections of highways, adoptable highway drainage and street lighting inspections*

The Developer will also be responsible for payment of all additional fees incurred by WCC for WCC consultancy design checks and audits as considered appropriate for each Section 38/278 proposal which may include:

- *Street lighting design;*
- *Major junction design;*
- *Structures design and inspection*

All fees are payable before the Agreement is signed.

Site Inspections

3.5.12 The Developer is responsible for the day-to-day supervision and setting out of the Section 38/Section 278 Works up to the date of issue of the Final Certificate of Completion for the works (see below). A Worcestershire CC Inspector will be responsible for ensuring the works comply with Worcestershire CC's Specification and the Developer must allow Worcestershire CC's representative access to every part of the Section 38/Section 278 Works at all times for the purpose of inspecting the Section 38/ Section 278 Works and all materials used or intended to be used therein. It is the responsibility of the Developer to ensure the works are constructed in accordance with the approved drawings/specification submitted to and approved by Worcestershire CC. The Developer is responsible for the testing of materials using an approved laboratory as specified and/or requested by Worcestershire CC.

3.5.13 Non-compliance with the approved drawings/specification will result in the Developer being required to reconstruct defective area(s) of the Section 38/Section 278 Works ("a Defective Works Requirement"). Each and every additional inspection to check compliance with a Defective Works Requirement will be charged at £250 per visit.

Completing the Legal Requirements

3.5.14 Once technical approval has been granted, the Developer must provide 23 coloured copies of the Section 38/Section 278 layout drawing to be included in the agreement and 12 uncoloured copies of all other plans.

3.5.15 The drawings must be coloured as follows:

Highway Feature	Colour Code
Carriageway	Grey
Footpath, footways, cycleways and other hard surfaced areas	Yellow
Shared Surface roads	Brown
Traffic calmed features	Brown
Verges	Green
Adoptable highway drainage	Blue
Adoptable highway structures and Vehicle Restraint Systems (VRS)	Purple
Adoptable highway drainage under private land (with easements)	red line
Easement areas for structures and highway drainage	hatched orange
Street lighting within Section 38 Works	red dot
Section 278 works to be undertaken	bounded blue
Street lighting in existing highway	Blue dot
Street lighting in existing highway to be moved	Green dot

Surety

3.5.16 The Developer will be required to provide a financial security in order to ensure that there is adequate provision to allow the Section 38/Section 278 Works to be completed in default of the Developer's obligations under the Section 38/Section 278 Agreement. This may include unfinished or defective works. The amount to be secured must be equal to the total cost of the Section 38/ Section 278 Works as determined by Worcestershire CC. The security may be in the form of:

- *A bond in Worcestershire CC's agreed format with a reputable financial institution (Bank/Insurance company) approved by Worcestershire CC*
- *a deposit of the equivalent sum deposited with Worcestershire CC until issue of the final certificate of completion of the Section 38/Section 278 works*

- *NB in the case of a Section 278 Agreement where a bond is provided, the surety may be a party to the Agreement*

3.5.17 Other Information to be provided by the Developer at this stage:

- *Name and address of Developer*
- *Name and address of Surety (where this is not the Developer)*
- *Name and address of Developers Solicitor*
- *Name and address of Freeholder(s) of any land to be dedicated under Section 38, together with land ownership details including Land Registry office copy entries and title plans evidencing ownership. Details of any other parties with an interest in that land will also be required*
- *Name and address of Freeholders' Solicitor*
- *Proof of whether Water Company willingness into a Section 104 Agreement and of landowner's commitment to enter into any relevant deeds of easement*

Constructing the works

3.5.18 Where works are being carried out under a Section 38/Section278 Agreement, the Developer must not commence any works on the site until:

- *The Section 38/Section 278 Agreement has been completed;*
- *An acceptable form of the financial security has been provided;*
- *All fees have been paid;*
- *Written notification has been provided of the Developer's intention to commence construction giving at least 3 months notice (to comply with the requirements of the Traffic Management Act 2004;*
- *Details of the appointed contractor in order for Worcestershire CC to validate its suitability to carry out the Section 38/Section 278 Works*

Note: Any anomalies/amendments encountered whilst construction is ongoing and before the issue of the Provisional Certificate/Final Certificate of Completion will require a formal amendment to the plans appended to the Section 38/Section 278 Agreement, which will require the completion of a supplemental agreement. The Developer will be responsible for any costs associated with the drafting and completion of the supplemental agreement and any additional supervision fees that may be required.

Timescale for Completing the Works

3.5.19 Once works have commenced on site they must be completed to Worcestershire CC's satisfaction within a reasonable time period, either within 3 months of all buildings on site being completed, or within 3 years of the date of signing the Section 38/ Section 278 Agreement. If this timescale is not adhered to WCC may refer the matter to their Legal Services and take action as set out in 'Defects and Default Lists' below.

Issuing a Provisional Certificate of Completion

3.5.20 A Provisional Certificate of Completion (the "Provisional Certificate") will only be issued and the 12-month maintenance period commence, once the Section 38/Section 278 Works have been completed in accordance with the approved drawings (including compliance with any Defective Works Requirements) and to the satisfaction of Worcestershire CC's Engineer.

3.5.21 The Provisional Certificate must be formally requested in writing by the Developer from Worcestershire CC's Engineer.

Inspection Process following request for a Provisional Certificate

- *A) As soon as is reasonably practicable WCC's Engineer will undertake an inspection of the Section 38/Section 278 Works and produce and supply a defects list ("Defects List") to the Developer.*
- *B) The Developer will within 3 months from the date of receipt (or such other period of time as notified in writing by the Engineer) complete the works as identified on the Defects List ("the Defect Works").*
- *C) When WCC's Engineer is satisfied all works identified have been carried out in accordance with the Section 38/Section 278 Agreement and WCC's specification or as otherwise directed by the Engineer above, WCC's Engineer will then issue the Provisional Certificate in order to commence the 12 month maintenance period. The bond supporting the Agreement will then normally be reduced to 50% of its original value. The Developer will remain fully responsible for maintaining the works for a minimum period of 12 months until a Final Certificate of Completion is issued.*

Note – The issue of the Provisional Certificate of Completion will constitute the road being 'first open' to the public traffic for the purposes of Section 1(9) of the Land Compensation Act 1973. The Section 38/Section 278 Agreement will make provision for the Developer to indemnify WCC from any claims relating to the works including those made under the Land Compensation Act 1973.

3.5.22 Even though a road is 'open to public traffic' it will not, in respect of the Section 38 Works, constitute the road(s) becoming highway maintainable at the public expense until the Final Certificate of Completion is issued.

3.5.23 Similarly, in respect of any Section 278 Works carried out, the works will not be deemed to form part of the publicly maintainable highway until the issue of the Final Certificate of Completion.

Defects, Default Works and Notice to Surety

3.5.24 If the Defect Works or Defective Works Requirements ("the Default Works") have not been completed as set out above, the Engineer will consider, with advice from Worcestershire CC's Legal Services, the legal options for ensuring the works are completed.

3.5.25 Worcestershire CC may without prejudice to any other right claim or remedy under the Section 38/Section 278 Agreement:

3.5.26 In respect of an Agreement supported by a Bond or Surety, send to the Surety a Notice in writing ("the Default Notice") specifying the works required to be carried out, containing an estimate by Worcestershire CC's Engineer or Agent of the cost of carrying out the outstanding works and of the cost of administration, supervision, execution, completion and maintenance of the works for a period of 12 months prior to the street(s) and way(s) becoming (or in the case of existing highway maintainable at the public expense forming part of) a highway maintainable at the public expense ("the Default Costs")); [the Surety or the County Council to apply the sum to carry out the work as appropriate]; or

3.5.27 In the case of the financial security being in the form of a cash deposit lodged with WCC, send to the Developer Notice in writing ("the Default Notice") specifying the work to be carried out, containing an estimate by Worcestershire CC's Engineer or Agent of the cost of carrying out the outstanding works and of the cost of administration, supervision, execution, completion and maintenance of the works for a period of 12 months prior to the street(s) and way(s) becoming (or in the case of existing highway maintainable at the public expense forming part of) a highway maintainable at the public expense ("the Default Costs")) and without further notice to the Developer apply the sum held upon deposit in the execution of carrying out the Default Works

Issuing a Final Certificate of Completion

3.5.28 At the end of the 12 month maintenance period the Developer must request the Final Certificate of Completion (the "Final Certificate") from the Worcestershire CC's Engineer in writing. Copies of as built drawings will also need to be supplied at the time the request is made.

Inspection Process following the request for a Final Certificate

3.5.29 The inspection process for the issuing of the Final Certificate will follow that of Paragraphs A and B of the Provisional Certificate inspection process above.

3.5.30 If Worcestershire CC's Engineer is satisfied that all works identified have been carried out in accordance with the Section 38/Section 278 Agreement and WCC's specification or as otherwise directed by the Engineer, then Worcestershire CC's Engineer will issue the Final Certificate.

3.5.31 The issuing of the Final Certificate signifies (amongst other things) Worcestershire CC's adoption of the Section 38/Section 278 Works. Any roads open to public traffic forming part of the Section 38 Works will at this point become highway(s) maintainable at the public expense. The Bond or deposit provided in support of the Agreement may now be cancelled/refunded.

3.5.32 Should the Developer not have carried out the Default Works, nor requested the Final Certificate of Completion within 18 months of the date of issue of the Provisional Certificate, WCC will apply the remedies set out in the section entitled 'Defects, Default Works and Notice to Surety' above.

Health and Safety

3.5.33 Prior to formal adoption, the Developer will be required to submit a copy of the completed Health and Safety File in accordance with the Construction, Design and Management 2007 Regulations.

3.6 Section 184 Highways Act 1980

Vehicle Crossings over footways and Verges (Dropped Kerbs)

3.6.1 The Highways Act 1980, Section 184, makes it an offence to drive a vehicle across a footway or verge where there is no proper vehicle crossover provided. Any person who drives a motor vehicle across the footway or verge without an authorised and properly constructed carriageway crossing could cause damage to the surface and kerb and any underground service cables. The person responsible for causing the damage would be liable for the cost of any repairs.

3.6.2 Planning Permission is required for all vehicle crossings onto classified roads (class A, B and C roads) within the County and sometimes on unclassified roads, for example within a Conservation area.

3.6.3 Vehicular crossings must only be constructed by one of the County Council's approved contractors. A non-refundable fee of £100 will be payable. This fee covers the cost of any site inspections and the licence only.

3.6.4 Full details of how to apply for a licence are contained on our Web site:

www.worcestershire.gov.uk/cms/transport-and-streets/streets/dropped-kerbs.aspx

3.7 Audits

Vulnerable Road User Audits

3.7.1 Vulnerable Road User Audits will be required on all developments that make physical improvements to the existing public highway to be undertaken as part of the development. They may also be requested on the following developments:

- *On large developments;*
- *Developments containing major junctions;*
- *Developments with impacts on existing footways, cycleways or footpaths; and*
- *Developments which are considered to have an impact on highway safety.*

3.7.2 The Transportation Section of the council will decide if Vulnerable Road User Audits are required for any particular development.

3.7.3 The Vulnerable Road User Audits will be undertaken in accordance with the IHT Cycle Audit Guidelines as amended.

3.7.4 Attention is drawn to the timing of these audits and their likely duration that may have programme implications for the development.

3.8 Road Safety Audits

3.8.1 Road Safety Audits will be required on all developments that make significant physical alterations to the existing public highway.

3.8.2 The Network Control Unit will decide if Road Safety Audits are required.

3.8.3 Attention is drawn to the timing of these audits and their likely duration that may have programme implications for the development.

3.9 Public Rights of Way and Development

3.9.1 There is an extensive network of public rights of way (PROW) across Worcestershire in both the urban and rural areas.

3.9.2 There are different types of public Rights of Ways as detailed below:

- *Footpath - May only be used for walking;*
- *Bridleway - May be used for walking, horse riding and cycling; and*
- *Byway open to all traffic - Walking, horse riding and cycling, plus use of any kind of wheeled vehicle, including motor cars and horse drawn vehicles.*

3.9.3 Public Rights of Way are recorded on a 'Definitive Map and Statement', which are kept by Worcestershire County Council. The public may view the map and statement together with any changes that have been made. If a Right of Way is shown on the definitive map and/or described in the statement then it is conclusive evidence, in law, that the public has those rights.

3.9.4 When considering a development proposal, the Council is required to take into account the impact on any development on a Public Right of Way. It is important therefore that the existence of any Public Right of Way should be considered in the preparation of the development proposal. Generally, the most suitable arrangement is for the Development to avoid impacting on the Public Right of Way.

3.9.5 If development is likely to affect the Right of Way, it is possible to apply for either a Temporary Closure order (enabling works to be carried out close to a Right of Way without endangering the Public), or a Public Path order (permanently diverting or extinguishing the Right of Way). Extinguishing a PROW should not be considered as an option unless there are no other alternatives.

3.9.6 Developments that affect a Public Right of Way should not be started and the Right of Way should be kept open and available to the public until the necessary order has come into effect. If the Development is carried out prior to the Order being made it may not be possible to complete the Diversion Order and the Developer may incur serious legal and financial consequences. It should not be assumed that because a Planning Permission has been granted an order would invariably be made or confirmed.

3.9.7 Where the Public Right of Way cannot be avoided the aim should be to maintain the Public Right of Way on its existing alignment. If this is not safe or practical then an alternative route should be indicated. In the case of housing estate Development this alternative should avoid the use of the estate road(s) and should be through open space or landscaped areas.

3.9.8 The Public Rights of Way Service has their own design guides in terms of furniture, widths of paths, surfacing and improvements. It is important developers contact the rights of way service at an early stage if the development impacts a Right of Way.

3.9.9 Further information may be obtained from:

Worcestershire County Council - Countryside Service (Public Rights of Way)

countryside@worcestershire.gov.uk (01905) 768214

Appendix A - WORCESTERSHIRE COUNTY COUNCIL PARKING STANDARDS

Town & Country Planning Act (Use Classes) (Amendment) Order 2006

Maximum Standards unless Specified PPG3 (52)

Land Use Class	Car Parking	Disabled Parking (Minimum standard)	Cycle Parking	Motorcycle Parking	Lorry / Coach Parking	Notes
A1 Retail (<1000sq m. GFA)	1 space per 25sq.m. GFA	1 space minimum 2 spaces if exceeds 500sq.m. GFA	6 spaces minimum	1 space minimum	1 lorry space	Possible allowance for shared use if located within larger development
A1 Food Retail (>1000sq.m. GFA)	1 space per 25sq.m for first 1000sq.m, thereafter 1 space per 14sq.m. GFA	1 space per 20 car parking spaces	1 space per 10 car parking spaces 6 spaces minimum	1 space per 20 car parking spaces	1 lorry space per 1000sq.m. GFA Maximum 3 lorry spaces (unless specific case made for additional spaces)	Dependant on end user space for delivery vehicles to load / unload off the highway should be provided.
A1 Non-Food Retail	1 space per 20sq.m. GFA	1 space per 20 car parking spaces	1 space per 10 car parking spaces 6 spaces minimum	1 space per 20 car parking spaces	1 lorry space per 1000sq.m.GFA Maximum 3 lorry spaces (unless specific case made for additional spaces) Coach parking may be required depending on type of retail outlets	TRICS database for parking demand – sub-divide into town centre, suburban & out of town. Check multi-modal sites for cycle parking demand.
A1 Mixed Use Retail Park	Apply food and non-food retail standards as set out above to relevant mix of development	1 space per 20 car parking spaces	1 space per 10 car parking spaces 6 spaces minimum	1 space per 20 car parking spaces	1 lorry space per 1000 sq.m. GFA Maximum 3 lorry spaces (unless specific case made for additional spaces) Coach parking may be required depending on type of retail outlet.	Allowance may be made for shared trips between food & non-food retail.

Land Use Class	Car Parking	Disabled Parking (Minimum standard)	Cycle Parking	Motorcycle Parking	Lorry / Coach Parking	Notes
A2 Financial & Professional Services	1 space per 25 sq.m. GFA	1 space minimum 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space	May require specific additional provision if ATM machine is present
A3 Restaurants, Cafes and Snack Bars	1 space per 5sq.m. GFA. Plus appropriate standard for dwelling accommodation.	1 space minimum 1 space per 20 car parking spaces	1 space per six staff or 1 space per 50sq.m. GFA, whichever the greater.	1 space minimum 1 space per 20 car parking spaces	1 lorry space per unit (if more than one outlet located together)	Provision for shared trips where facility located within town centre or another land use type
A4 Drinking Establishments (excluding Night Clubs)	1 space per 5sq.m. GFA. Plus appropriate standard for dwelling accommodation.	1 space minimum 1 space per 20 car parking spaces	1 space per six staff or 1 space per 50sq.m. GFA, whichever the greater.	1 space minimum 1 space per 20 car parking spaces	1 lorry space per unit (if more than one outlet located together)	Provision for shared trips where facility located within town centre or another land use type
A5 Hot Food Takeaways	1 space per 10 sq.m. GFA	1 space minimum 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space per unit (if more than one outlet located together) 1 coach parking space if development likely to cater for functions or coach parties	Provision for shared trips where facility located within town centre or another land use type
B1 Business (<2500sq.m. GFA)	1 space per 25sq.m. GFA	1 space minimum 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space	

Land Use Class	Car Parking	Disabled Parking (Minimum standard)	Cycle Parking	Motorcycle Parking	Lorry / Coach Parking	Notes
B1 Business (>2500sq.m. GFA)	1 space per 25sq.m for first 2500sq.m thereafter 1 space per 30sq.m. GFA	1 space per 20 car parking spaces	1 space per 10 car parking spaces	1 space per 20 car parking spaces	1 lorry space per 2500 sq.m. GFA	
B2 General Industry (<250sq.m. GFA)	1 space per 35sq.m. GFA	1 space minimum	6 spaces minimum	1 space minimum	1 lorry space	
B2 General Industry (>250sq.m. GFA)	1 space per 35sq.m for first 250sq.m thereafter 1 space per 50sq.m. GFA	1 space per 20 car parking spaces	1 space per 10 car parking spaces	1 space per 20 car parking spaces	1 lorry space per 250sq.m. GFA (depending on type of activity)	
B3 – B7 Industry						As for B2, but subject to specific consideration depending on type of activity.
B8 Storage & Distribution	1 space per 250sq.m. GFA	1 space per 20 car parking spaces	1 space per 10 car parking spaces	1 space per 20 car parking spaces	(depending on whether an operational base requiring overnight parking, and on details of activity)	Sufficient operational space to be provided within confines of site in order to prevent vehicles waiting on the Highway
C1 Hotel / Motel	1 space per bedroom	1 space minimum. 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space 1 coach space per 50 bedrooms	Public bars / restaurants, conference facilities, function rooms and leisure facilities to be assessed separately

Land Use Class	Car Parking	Disabled Parking (Minimum standard)	Cycle Parking	Motorcycle Parking	Lorry / Coach Parking	Notes
C2 **Hospital**	1 space per bed	1 space per 10 car parking spaces (higher requirement due to nature of development)	1 space per 10 car parking spaces	1 space per 20 car parking spaces	1 lorry space per 100 beds 1 ambulance space minimum, with extra as required.	Requirement for taxi parking and short-stay parking / set down area at public entrance Consulting rooms, clinics, and other facilities dealing with outpatients to be assessed separately.
C2 **Nursing Home**	1 space per 4 residents 1 space per staff member	1 space minimum 1 space per 10 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space 1 ambulance space	
C2 **Residential School**	1 space per 2 staff plus 1 space per 15 students 1 space per bed for residential staff	1 space minimum 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space 1 minibus space (minimum)	
C2 **Residential Homes for the Active Elderly**	1 space per unit	None	2 secure spaces per unit	None	1 lorry space	
C2 **Sheltered Accommodation**	1 space per 3 units 1 space per staff	1 space minimum	1 space per 10 car parking spaces	1 space per 20 car parking spaces	1 lorry space 1 ambulance space	

Land Use Class	Car Parking	Disabled Parking (Minimum standard)	Cycle Parking	Motorcycle Parking	Lorry / Coach Parking	Notes
	member					
C2A Secure Residential Institution						Dependant upon Category of Prison.
C3 Residential 1 & 2 bedroom dwellings	1 space per unit	None	2 secure spaces per unit	None	None	Non-allocated visitor parking to be provided at a rate of 20% of overall site parking provision
C3 Residential 3 & 4 bedroom dwellings	2 spaces per unit	None	4 secure spaces per unit	None	None	Non-allocated visitor parking to be provided at a rate of 20% of overall site parking provision
C3 Residential 5+ bedrooms	3 spaces per unit plus 1 spaces per bedroom in excess of 5 bedrooms	None	6 secure spaces per unit	None	None	Non-allocated visitor parking to be provided at a rate of 20% of overall site parking provision
C3 Residential Caravans	1 space per unit (2 spaces per unit if 3+ bedrooms)	None	2 secure spaces per unit	None	None	
C3 Transit / Static Holiday Homes	1 space per unit	None	None	None	None	
D1 Surgery / Health Facilities / Dentist	4 spaces per consulting room	1 space minimum 1 space per 10 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space 1 ambulance space	May be reduced if consultations likely to take more than 1 hour each.

Land Use Class	Car Parking	Disabled Parking (Minimum standard)	Cycle Parking	Motorcycle Parking	Lorry / Coach Parking	Notes
D1 **Schools**	1 space per member of staff	Minimum 1 space 1 space per 20 car parking spaces	1 space per 10 pupils	1 space minimum 1 space per 20 car parking spaces	1 lorry space 1 minibus space minimum 1 coach parking space per 100 pupils (subject to discussion on School Travel Plan)	School facilities open to community use when school is operational will require separate consideration e.g. sports hall.
D1 **Further Education**	1 space per 2 members of staff 1 space per 15 students	Minimum 1 space 1 space per 20 car parking spaces	1 space per 10 students	1 space minimum 1 space per 10 car parking spaces	1 lorry space 1 minibus space minimum 1 coach parking space per 100 students (subject to discussion on Travel Plan)	The standard for students relates to the total number of students attending an educational establishment, rather than full-time figures.
D1 **Art Gallery / Library / Museum**	1 space per 30sq.m. GFA	1 space minimum 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space 1+ coach parking space (depending on likely demand for coach parties)	
D1 **Places of Worship / Public Halls**	1 space per 22sq.m. GFA	1 space minimum 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space 1 coach parking space (depending on likely demand for coach parties)	
D2 **Cinema**	1 space per 5 seats	1 space per 20 car parking spaces	1 space per 10 car parking spaces	1 space per 20 car parking spaces	1 lorry space	
D2 **Conference Facility**	1 space per 5 seats	1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space per 20 car parking spaces	1 lorry space 1 coach space per 50 seats	To be considered separately from other activities, although shared parking may be considered

Land Use Class	Car Parking	Disabled Parking (Minimum standard)	Cycle Parking	Motorcycle Parking	Lorry / Coach Parking	Notes
D2 Concert Hall / Bingo / Nightclub / Dance Hall	1 space per 22sq.m. GFA	1 space minimum 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 10 car parking spaces	1 lorry space 1 coach parking space minimum (may be more depending on likely demand	
D2 Public Parks / Country Parks	1 space per 4 hectares 1 space per 22sq.m. GFA of visitor centre (if applicable)	1 space minimum 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space (for maintenance vehicles) 1 coach parking space (may be more depending on likely number of coach parties)	
D2 Swimming Pool	1 space per 5sq.m. Pool area	1 space minimum 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space 1 coach space	
D2 Team Game Areas	1 space per 2 team members	1 space minimum 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space 1 coach space per team	
D2 Golf Course / Driving Range	2 spaces per hole 2 spaces per bay for driving range	1 space minimum 1 space per 20 car parking spaces	1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space 1 coach space	Clubhouse to be assessed separately.
D2 Leisure Centre / Sports Centre	1 space per 22sq.m. GFA	1 space minimum 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space 1 coach space	

Land Use Class	Car Parking	Disabled Parking (Minimum standard)	Cycle Parking	Motorcycle Parking	Lorry / Coach Parking	Notes
D2 Stadia	1 space per 15 spectators (based on certified capacity of facility)	1 space minimum 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space Sufficient coach parking should be provided to satisfaction of LA and treated separately from car parking. Coach parking should be designed and managed so that it will not be used for car parking.	Certified spectator capacity rather than number of seats to be used as basis for calculation
D2 Creche	1 space per staff member 1 space per 10 children	1 space minimum 1 space per 20 car parking spaces	1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	None	
D2 Marina / Canal Basin	1 space per mooring	None	2 spaces per mooring	1 space minimum 1 space per 20 car parking spaces	None	Associated facilities to be assessed separately
D2 Fishing Lake	1 space per peg	None	None	1 space minimum	None	
D2 Allotments	10 spaces per hectare	None	1 space per 10 car parking spaces	1 space per 20 car parking spaces	None	
D2 Kennels / Catteries	1 space per 4 pens	None	None	None	None	

Land Use Class	Car Parking	Disabled Parking (Minimum standard)	Cycle Parking	Motorcycle Parking	Lorry / Coach Parking	Notes
D2 **Garden Centre**	1 space per 25sq.m. GFA indoor sales area 1 space per 250sq.m. GFA outdoor sales area	1 space minimum 1 space per 20 car parking spaces	6 spaces minimum 1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space	
SUI GENERIS Garage / Car Showroom						Add standards for individual elements as listed below
Workshop	4 spaces per bay	None	None	None	1 Lorry space If HGV Repairs, then 2 additional lorry spaces per bay	
M.O.T.Workshop	4 spaces per bay	None	None	None	1 Lorry space	
Spare Parts Retail	1 space per 25sq.m. GFA (up to 1000sq.m. GFA) 1 space per 20sq.m. GFA (>1000sq.m. GFA)	1 space minimum. 2 spaces if >500sq.m. GFA 1 space per 20 car parking spaces if >1000sq.m. GFA	1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces	1 lorry space	
Car Sales	1 space per 25 sq.m. GFA office space 1 space per 50 sq.m. GFA of sales area	1 space minimum 1 space per 20 car parking spaces	1 space per 10 car parking spaces	1 space minimum 1 space per 20 car parking spaces Greater requirement for motorcycle dealers	1 lorry space for car transporter	Car parking requirement excludes provision for display vehicles. GFA refers to internal and external sales area.

Land Use Class	Car Parking	Disabled Parking (Minimum standard)	Cycle Parking	Motorcycle Parking	Lorry / Coach Parking	Notes
Petrol Filling Station	1 space per pump, plus 1 space for waiting vehicles per row of pumps 1 space per air pump	None	None	None	1 lorry space for tanker delivering fuel 1 lorry space per diesel pump where HGV traffic will be catered for, plus 1 lorry space for waiting vehicles per row of HGV Diesel pumps	
Sales Kiosk (>100sq.m. GFA)	1 space per 25sq.m. GFA	1 space minimum	6 spaces minimum	1 space minimum	1 lorry space (may be allowed for with other elements of garage)	Where sales kiosk exceeds 1000sq.m. GFA standards for food retail > 1000sq.m. GFA will apply.
Car Wash	3 spaces for waiting vehicles	None	None	None	None	
Tyre & Exhaust Centre	4 spaces per bay	None	None	None	1 lorry space 2 lorry spaces per bay where HGV traffic specifically catered for	

NOTES:

1. Parking for disable people should be additional to the maximum parking standards. Development proposals should provide adequate parking for disable motorists, in terms of numbers and design (see Traffic Advice Leaflet 5/95, Parking for Disable People).
1. For mixed use development, the gross floor space given over to each use should be used to calculate the overall total maximum parking figure.

1. Introduction

As well as providing the appropriate level of car parking, it is incumbent upon the Developer to incorporate good design for the layout, landscaping and lighting of the parking area. The layout should be user friendly and not interfere with the public highway or accesses adjacent to the parking area.

1.1 Planning for Pedestrians

The needs of pedestrians should be taken into account when designing the layout of car parks. This includes both those who have parked their vehicle as well as those accessing the development on foot. Pedestrian access to the development should be considered and the desire lines identified. Pedestrian access along these desire lines should then be provided without relying on the vehicle access routes to fulfil this roll.

Within the design of the car parking area provision must be made to enable pedestrians to walk through it easily and in safety. The provision of raised footways through the car park and the provision of crossing points across main vehicle routes will help to alleviate any conflict.

A tactile distinction should be made between pedestrian and vehicle areas in such a manner as persons with a visual impairment can distinguish between the two. The provision of tactile paving blocks at all pedestrian crossing points within the car park is required.

1.2 Parking Bay Dimensions

The minimum parking bay size for cars is 4.8 metres in length by 2.4 metres in width. Parking bays can be made larger than this but on no account will they be allowed to be smaller than the dimensions above.

The most economical layout in terms of land usage is 90 degree parking with parallel aisles which is best provided in conjunction with a one-way system. Where a two way system is chosen then the isle widths must be increased to accommodate this.

1.3 Disabled Parking Provision

Disabled parking spaces must be at least 6.0 metres in length and 3.3 metres in width in order to allow the driver and any passenger to get in or out of the vehicle safely and to provide adequate access to the rear of the vehicle to allow for loading or unloading of wheelchairs etc.

Where the parking bay is located immediately adjacent to a footway either to the side or the rear then the dimensions can be reduced to 2.8 or 5.0 metres respectively.

1.4 Layout for Parking of Powered Two Wheeled Vehicles (Motorcycles Etc.)

The minimum bay size to allow for the parking of a Powered Two Wheeled Vehicle is 2.5 metres in length by 1.5 metres in width. Additionally there must be an aisle width of at least 1.0 metre between each bay.

Facilities must be provided by which the PTW can be made secure and this will require some type of fixing anchored in the ground to which the vehicle can be attached. There are a number of manufacturers of this type of equipment and the method chosen may vary with the location.

1.5 Layout of Cycle Parking Facilities

Cycle parking within developments must be conveniently located near to the entrance of the relevant building, the area must be adequately lit, well signed and not hidden out of sight.

Fully secure, weather protected cycle parking is required for all employee cycle parking and for any residential cycle parking. Some weather protection may also be required for customer parking.

Generally the acceptable type of stand for "ad-hoc" cycle parking is the known as a "Sheffield" stand or "toast rack".

Sheffield stands can accommodate 2 cycles provided that the stands are placed at least 1.0 metre apart and at least 500 millimetres from any wall or other obstruction. Stands that grip only the front wheel (butterfly type) are not acceptable as they do not provide adequate support or security.

Appendix B – Design and Construction Certificates

DESIGN CERTIFICATE

To be submitted to the Design Engineer before construction commences. More than one certificate may be submitted if parts of the structure have separate designers.

We certify that reasonable professional skill and care has been used in the design of:

_____ (Name of structure) with a view to securing that:

i) It has been designed in accordance with the Worcestershire Highways Design Guide documents. The live loads are as follows:

ii) The design has accurate been translated into contract drawings. The unique numbers of these drawings (copies of which are attached) are:

iii) Departures from standards and additional criteria which have been approved by Worcestershire County Council are listed in Schedule B* attached.

SIGNED: **DATE:**

NAME:

POSITION HELD:**

SIGNED: **DATE:**

NAME:

POSITION HELD:**

Notes:

*1) The Council should be consulted to ensure appropriate documents are used. Notes for guidance are available to cover simple structures.

**2) The position, qualification and employing organisation of each person signing the certificate shall be stated.

CONSTRUCTION CERTIFICATE

To be submitted by the developer when construction is complete, before adoption of this structure.

1. We certify that:

   _____ (Name of structure) has been constructed* in accordance with the 'As Built' drawings, (copies attached) the unique numbers of which are as follows:

2. It has been designed in accordance with the Worcestershire Highways Design Guide documents. The live loads are as follows:

1. Departures from drawings submitted with the design certificate have been approved by Worcestershire County Council and are listed in Schedule C attached.

SIGNED: **DATE:**

NAME:

POSITION HELD:**

Notes:

*1) This undertaking does not absolve the developer or contractor from the need to notify the Council of progress on site sufficient to enable inspection of all critical stages.

**2) The position, qualification and employing organisation of each person signing the certificate shall be stated.

Name of Project:

Name of Bridge or Structure:

Structure Reference Number:

1. Highway Details

1.1 Type of Highway
1.2 Permitted Traffic Speed
1.3 Existing Weight Restrictions

2. Site Details

2.1 Obstacles Crossed

3. Proposed Structure

3.1 Description of Structure
3.2 Structural Type
3.3 Foundation Type
3.4 Span Arrangements
3.5 Articulation Arrangements
3.6 Road Restraint System Type
3.7 Proposed Arrangements for Maintenance and Inspection / Inspection for Assessment
  3.7.1 Traffic Management
  3.7.2 Access
  3.7.3 Intrusive or further investigation proposed
3.8 Materials and finishes/Material strengths assumed and basis of assumption
3.9 Risks and hazards considered
3.10 Estimated cost of proposed structure, together with other structural forms considered and the reasons for their rejection, including comparative whole life costs with dates of estimates.
3.11 Proposed arrangements for construction
  3.11.1 Traffic Management
  3.11.2 Service Diversions
  3.11.3 Interface with Existing Structures
3.12 Year of Construction
3.13 Reason for assessment
3.14 Part of structure to be assessed

4. Design/Assessment Criteria

4.1 Live Loading, Headroom
  4.1.1 Loading relating to normal traffic under AW regulations and C&U regulations
  4.1.2 Loading relating to General Order Traffic under STGO regulations
  4.1.3 Footway or footbridge live loading
  4.1.4 Loading relation to Special Order Traffic, provision for exceptional abnormal indivisible loads including location of vehicle track on deck cross section
  4.1.5 Any special loading not covered above
  4.1.6 Heavy or high load route requirements and arrangements being made to preserve the route, including any provision for future heavier loads or future widening
  4.1.7 Minimum headroom provided
  4.1.8 Authorities consulted and any special conditions required
4.2 List of relevant documents from the TAS
  4.2.1 Additional Relevant Standards
4.3 Proposed Departures from Standards given in 4.2 and 4.2.1
4.4 Proposed methods for dealing with aspects not covered by Standards in 4.2 and 4.2.1.

5. **Structural Analysis**
   - 5.1 Methods of analysis proposed for superstructure, substructure and foundations
   - 5.2 Description and diagram of idealised structure to be used for analysis
   - 5.3 Assumptions intended for calaculation of structural element stiffness
   - 5.4 Proposed earth pressure coefficients (ka, ko or kp) to be used in the design/assessment of earth retaining elements

6. **Geotechnical Conditions**
   - 6.1 Acceptance of recommendations of Section 8 of the Geotechnical Report to be used in the design/assessment and reasons for any proposed changes.
   - 6.2 Geotechnical Report Highway Structure Summary Information (Form C)
   - 6.3 Differential settlement to be allowed for in the design/assessment of the structure
   - 6.4 If the Geotechnical Report is not yet available, state when the results are expected and list the sources of information used to justify the preliminary choice of foundations.

7. **Checking**
   - 7.1 Proposed Category
   - 7.2 If Category 3, name of proposed independent Checker
   - 7.3 Erection proposals or temporary works for which an independent check will be required, listing parts of the structure affected with reasons for recommending independent check

8. Drawings and Documents
   - 8.1 List of drawings (including numbers) and documents accompanying the Submission
   - 8.2 List of construction and record drawings (including numbers) to be used in the assessment
   - 8.3 List of pile driving or other construction records
   - 8.4 List of previous inspection or assessment reports

9. The above is submitted for acceptance:

   SIGNED: NAME:

   ENGINEERING QUALIFICATIONS: DATE:

10. The above is REJECTED / AGREED subject to the amendments / conditions shown below.

SIGNED: **NAME:**

ENGINEERING QUALIFICATIONS: **TECHNICAL APPROVED AUTHORITY:**

DATE: **POSITION**

SIGNED FOR CLIENT PROJECT MANAGEMENT:

APPROVAL IN PRINCIPLE (Bridges and other Highway Structures)	worcestershire countycouncil
Annex A1 - based on BD2 v August 2005	Sheet 1 of

Form of Approval in Principle for the design/assessment[1] of bridges and other highway structures		
Name of Project:		
Name of Bridge or Structure:		
Structure Ref No:		
1.	HIGHWAY DETAILS	
1.1	Type of highway	
1.2	Permitted traffic speed [2]	
1.3	Existing restrictions [3]	
2.	SITE DETAILS	
2.1	Obstacles crossed	
3.	PROPOSED STRUCTURE	
3.1	Description of structure	
3.2	Structural type	

3.3	**Foundation type**	
3.4	**Span arrangements**	
3.5	**Articulation arrangements**	
3.6	**Types of road restraint systems**	
3.7	**Proposed arrangements for maintenance and inspection/Inspection for Assessment[1]**	
3.7.1	**Traffic management**	
3.7.2	**Access**	
3.7.3A	**Intrusive or further investigations proposed**	
3.8	**Sustainability issues considered. Materials and finishes/Materials strengths assumed and basis of assumptions [1, 4]**	
3.9	**Risks and hazards considered [5]**	
3.10D	**Estimated cost of proposed structure together with other structural forms considered, including where appropriate proprietary manufactured structure, and the reasons for their rejection including comparative whole life costs with dates of estimates**	
3.11D	**Proposed arrangements for construction**	
3.11.1	**Traffic management**	
3.11.2	**Service diversions**	
3.11.3	**Interface with existing structures**	

3.10A	Year of construction	
3.11A	Reason for assessment	
3.12A	Part of structure to be assessed	
4.	**DESIGN /ASSESSMENT[1] CRITERIA**	
4.1	Live loading, Headroom	
4.1.1	Loading relating to normal traffic under AW regulations and C&U regulations [6]	
4.1.2	Loading relating to General Order traffic under STGO regulations [7]	
4.1.3	Footway or footbridge live loading	
4.1.4	Loading relating to Special Order Traffic, provision for exceptional abnormal loads indivisible loads including location of vehicle track on deck cross-section [8]	
4.1.5	Any special loading not covered above	
4.1.6	Heavy or high load route requirements and arrangements being made to preserve the route, including any provision for future heavier loads or future widening	
4.1.7	Minimum headroom provided	m
4.1.8	Authorities consulted and any special conditions required	
4.2	List of relevant documents from the TAS	
4.2.1	Additional relevant standards	
4.3	Proposed departures from Standards given in 4.2 and 4.2.1	

4.4	Proposed methods for dealing with aspects not covered by Standards in 4.2 and 4.2.1	
5.	**STRUCTURAL ANALYSIS**	
5.1	Methods of analysis proposed for superstructure, substructure and foundations	
5.2	Description and diagram of idealised structure to be used for analysis	
5.3	Assumptions intended for calculation of structural element stiffness	
5.4	Proposed earth pressure coefficients (k_a, k_0, or k_p) to be used in the design/assessment[1] of earth retaining elements	
6	**GEOTECHNICAL CONDITIONS**	
6.1	Acceptance of recommendations of the Section 8 of the Geotechnical Report to be used in the design/assessment[1] and reasons for any proposed changes	
6.2	Geotechnical Report Highway Structure Summary Information (Form C)[9]	
6.3	Differential settlement to be allowed for in the design/assessment[1] of the structure	
6.4D	If the Geotechnical Report is not yet available, state when the results are expected and list the sources of information used to justify the preliminary choice of foundations [10]	
7.	**CHECKING**	
7.1	Proposed Category	
7.2	If Category 3, name of proposed Independent Checker	
7.3D	Erection proposals or temporary works for which an independent check will be required, listing parts of the structure affected with reasons for recommending an independent check	
8.	**DRAWINGS AND DOCUMENTS**	

8.1	**List of drawings (including numbers) and documents accompanying the submission** [11]	
8.2A	**List of construction and record drawings (including numbers) to be used in the assessment**	
8.3A	**List of pile driving or other construction records** [12]	
8.4A	**List of previous inspection and assessment reports**	
9 .	**THE ABOVE IS SUBMITTED FOR ACCEPTANCE**	
	Signed	
	Name	
	Design/Assessment Team Leader	
	Engineering Qualifications[13]	
	Name of organisation	
	Date	

10 .	**FOLLOWING A REVIEW OF THIS AIP IT IS RECOMMENDED FOR REJECTION / ACCEPTANCE**[1]	
	Reasons for Rejection, or Acceptance with the following conditions	
	Signed	
	Name	
	Engineering Qualifications[13]	

	Position Held	
	Date	
	Name of organisation	**Halcrow Group Limited**

11.	**THE ABOVE IS REJECTED / AGREED SUBJECT TO THE AMENDMENTS AND CONDITIONS SHOWN BELOW** [1, 14]	
	Amendments and Conditions, or reason for rejection:	
	Signed	
	Name	
	Engineering Qualifications	
	TAA	
	Date	
	Name of Organisation	
	Position held	

Notes

D. Indicates clauses to be used in Design AIP only

A. Indicates clauses to be used in Assessment AIP only

1. ***Delete as appropriate***
2. ***For a bridge, give over and/or under***
3. ***Include weight, width and any environmental restrictions at or adjacent to the bridge***
4. ***From record drawings or intrusive investigation***
5. ***e.g. Risks and Hazards required to be considered under CDM such as construction methods, future demolition, jacking for bearing replacement***

6. *e.g. HA Loading*
7. *e.g. HB or SV Loading*
8. *Include the following as applicable:*
    - *a) Gross weight of the vehicle in tonnes and vehicle No*
    - *b) Axle load and spacing (longitudinally and transversely)*
    - *c) Air cushion in tonnes over area applied in m x m*
    - *d) Single or twin tyres and wheel contact areas*
9. *Include the Geotechnical Report Highway Structure Summary Information Form C listing relevant design/assessment parameters*
10. *When the results of the ground investigation become available, an addendum to the AIP, covering section 6, shall be submitted to the TAA. The addendum shall have its own sections 8, 9 and 10 to provide a list of drawings, documents and signatures*
11. *Include, without limitation:*
    - *a) Technical Approval Schedule (TAS)*
    - *b) General Arrangement Drawing*
    - *c) Relevant extracts from the Geotechnical Report (Section 8), Inspection Report, Intrusive Investigation Report, Previous Assessment Report (or reference for Report)*
    - *d) Departures from Standards*
    - *e) Methods of dealing with aspects not covered by Standards*
    - *f) Relevant correspondence and documents from consultations*
12. *Include details of previous structural maintenance and/or strengthening works*
13. *CEng, MICE, MIStructE or equivalent*
14. *AIP is valid for three years after the date of agreement by the TAA. If the construction has not yet commenced within this period, the AIP shall be re-submitted to the TAA for review*

ONLY COMPLETED COPIES OF THIS FORM WILL BE ACCEPTED

COPIES ARE AVAILABLE IN WORD [.DOC] FORMAT UPON REQUEST, OR ON THE WEBSITE

DESIGN / ASSESSMENT AND / OR CHECK CERTIFICATE (Bridges and other Highway Structures)

worcestershire countycouncil

Annex C1 - based on BD2 v August 2005

Sheet 1 of .....

Model form of certificate for the design/assessment[1] and/or check[1] of Highway Structures, including Road and Service Tunnels

1. Delete as appropriate

Name of Project:			
Name of Bridge or Structure:			
Structure Ref No:			
1.	We certify that reasonable professional skill and care has been used in the preparation of the design/ assessment[1] and /.or check[1] of *[Name of Structure]* with a view to securing that: [2]	*Insert list of standards for Category 0 or Any departures for all other categories*	
	i. It has been designed/assessed[1] and/or checked[1] in accordance with The following Standards; or [3] The Approval in Principle dated (date) including the following: [4, 5, 6, 7]		
	ii. It has been checked for compliance with the relevant standards in i; or [8] The assessed capacity of the structure is as follows[9]	*Insert nothing for design, or Capacity for assessment.*	
	iii. It has been accurately translated into construction drawings and bar bending schedules (all of which have been checked)[10]. The unique numbers of these	*List Drawings for design, or Leave blank for assessment*	
		Drawing Number	*Description*

	drawings and schedules are:		
	Signed		
	Name **Design/Assessing/Checking[1] Team Leader**		
	Engineering Qualifications[11]		
	Signed		
	Name		
	Position Held[12]		
	Name of organisation		
	Date		

10 .	**FOLLOWING A REVIEW OF THIS DESIGN AND CHECK CERTIFICATE IT IS RECOMMENDED FOR REJECTION / ACCEPTANCE[1]**	
	Signed	
	Name	
	Engineering Qualifications[11]	

	Date	
	Name of organisation	**Halcrow Group Limited**
	Position Held	

2.	**The departures from Standards and additional criteria given in paragraph 1 are agreed**	
3.	**The certificate is accepted by the TAA** [1, 14]	
	Signed	
	Name	
	Position held	
	Engineering Qualifications[13]	
	TAA	
	Date	

Notes

1. ***Delete if not required***
2. ***Where several Category 0 or 1 structures occur in a project, they may be listed on one certificate***
3. ***Used for Category 0 only. Insert relevant current Standards including amendments to date. This certificate will be accompanied by a General Arrangement drawing***
4. ***Not required for Category 0. Insert date of agreement of the AIP by the TAA including the dates of any addenda. Note the AIP is valid for three years after the date of agreement by the TAA. If the construction has not yet commenced within this period, the AIP should be re-submitted to the TAA for review***
5. ***List any Departures and additional methods or criteria***
6. ***For the certification of M&E functions for Highway Structures, include here the reference number and date of the relevant Safety Consultation Document***
7. ***Delete if not required. Note: not permitted for Categories 0 or 1 unless the TAA considers that the Departure has little or no structural implication***
8. ***Delete for Categories 2 and 3, which require a separate check certificate***
9. ***Used for assessments only. Assessed capacity is to be recorded in the Overseeing Organisation's management system for structures***

10. *Applicable for Categories 0 and 1 design certificate only*
11. *CEng, MICE, MIStructE or equivalent, but this qualification can be relaxed for Categories 0 and 1 with the agreement of TAA*
12. *A Principal of the organisation responsible for the design or assessment*
13. *Engineer with appropriate qualification and experience for Categories 0 and 1, and with CEng, MICE, MIStructE or equivalent for Categories 2 and 3*

CONSTRUCTION COMPLIANCE CERTIFICATE
(Bridges and other Highway Structures)

worcestershire countycouncil

Annex C6 - based on BD2 v August 2005

Sheet 1 of

Form of certificate of construction compliance

1. Delete as appropriate

Name of Project:					
Name of Bridge or Structure:					
Structure Ref No:					
1.	**We certify that Name of Structure:**				
i.	**Has been constructed, commissioned and tested[1] in accordance with:** **a. The following Standards[1]; or Approval in Principle dated**	**Date**	***Insert a list of Standards for category 0, or Date for all other categories***		
	b. The Design/Check Certificates dated (date) or The construction drawings and bar bending schedules listed within the Design and Check Certificates (dated)[2]	**Date**			
	c. The Specification for Highway Works (edition, date)	**Edition**		**Date**	
ii.	**The construction of the works has been accurately translated into As Constructed drawings.** **The unique numbers of these drawings and schedules are:** **.....**	**List:**			
		Drawing Number	**Description**		

	Signed				
	Name [Contractors representative]				
	Engineering Qualifications[3]				
	Signed				
	Name				
	Position Held[4]				
	Name of organisation				
	Date				
2.	**We certify reasonable professional skill and care has been used in examining the construction of *[Name of Structure]* and that:**				
i.	**It has been constructed, commissioned and tested1 in accordance with:** **a. The Approval in Principle dated (date)**	**Date**			
	b. The Design/Check Certificates dated .....(date)[2]	**Date**			
	c. The Specification for Highway Works (version, date)	**Version**		**Date**	
ii.	**The construction of the works has been accurately translated into As Constructed drawings scheduled in 1.ii.**				
	Signed				
	Name				

	Position Held[5]	
	Name of Organisation	
	Date	

3.	**FOLLOWING A REVIEW OF THIS CONSTRUCTION COMPLIANCE CERTIFICATE IT IS RECOMMENDED FOR REJECTION / ACCEPTANCE**[1]	
	Signed	
	Name	
	Engineering Qualifications[3]	
	Date	
	Name of organisation	**Halcrow Group Limited**
	Position Held	

4.	**THIS CERTIFICATE IS ACCEPTED BY THE TAA**	
	Signed	
	Name	
	Position held	
	Engineering Qualifications[3]	

	TAA	
	Date	

Notes:

1. ***Used for Category 0 only***
2. ***Applies where the contractor is not part of the design organisation***
3. ***CEng, MICE, MIStructE or equivalent***
4. ***A Principal of the Contractor or organisation responsible for the construction***
5. ***5. A Principal of the Works Examiner***

For further information please contact:

By telephone:
01905 765765

By post:
Worcestershire County Council, County Hall, Spetchley Road, Worcester WR5 2NP

By email:
worcestershirehub@worcestershire.gov.uk

Online:
www.worcestershire.gov.uk/LTP3

This document can be made available in other formats (large print, audio tape, computer disk and Braille) on request from the Worcestershire Hub using the contact details above.

To the best of our knowledge all information was correct at the time of printing: March 2011.

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