



**Geometric Design Guidance for**

**Residential Accesses on to  
Classified Roads**

**And**

**Commercial Accesses on to  
Adopted Roads**

**Version 2, January 2011  
(Draft)**

# Section 1

## Introduction

- 1.1 This document is intended for Developers and their advisers to help achieve high standards of highway design, so as not to compromise highway safety, when access to developments is required from classified roads within Reading Borough.
- 1.2 In March 2007, the Department for Transport launched “The Manual for Streets”, which provides the latest design guidance for lightly trafficked roads within Urban Areas and Reading Borough Council endorses its recommendations for lightly trafficked roads. In September 2010, The Chartered Institute of Highways and Transportation, published “Manual for Streets 2, Wider Application of the Principles”, however it should be noted that while endorsed by the Department of Transport, this 2<sup>nd</sup> document has not been subject to formal Government consultation and subsequently has not been adopted as formal Government guidance or policy.
- 1.3 The established Design Manual for Roads and Bridges (DMRB) is the national design document for all new highway improvements on the Motorway and Trunk Road network within England. Within Section 1 of Volume 0 of the DMRB it states that the document while providing best advice to Local Highway Authorities, advises that they establish formal procedures with regards its implementation on roads within their areas.
- 1.4 It is the policy of Reading Borough Council that for accesses and junction improvements to main transport corridors from residential developments and to the entire road network from commercial developments the requirements of the DMRB are adhered to. This document therefore details the standards required for access roads within Reading Borough.
- 1.5 Manual for Streets indicated that its use was for lightly trafficked roads but it indicates that its principles can be used on the wider road network, and recommends that direct frontage access on roads with up to 10,000 vehicles a day is acceptable. Inspectors have accepted that on classified roads with low flows under 10,000 then the recommendations of Manual for Streets are preferred to those contained within DMRB. Therefore the classified roads have been classified as either main transport corridors where their main purpose is the efficient movement of traffic, have a strategic function and carry more than 10,000 vehicles per day or local transport corridors which provide a local function. However with the local transport corridors these have been divided in those local transport corridors which carry a large proportion of Buses (more than 8 buses an hour) and or Heavy Goods vehicles (25% of flow), which are the same criteria used to classify Traffic Sensitive Streets within the New Roads and Street Works Act. This approach more reflects the function the road plays in the road hierarchy when determining design standards than totally basing requirements on classification alone.
- 1.6 With regards to visibility splays on main transport corridors, the requirements of DMRB will still apply for 30mph roads. While Manual for Streets states that its principles can be applied to all 30 mph roads, the research document into Manual for Streets, TRL Report 662 details that the research in to visibility splays were undertaken on roads with very low flows. In the guidance

document Manual for Streets 2, it should be noted that the research in to accidents at sites with reduced visibility, which supports the introduction of lower visibility splays, did not take into account the volume or speed of traffic on the main roads. Given this and to ensure safety is maintained on the main transport corridors the use of the reduced standards in Manual for Streets 1 & 2 are not supported.

- 1.7 All the classified roads are detailed within Appendix A. and there designation as main and local transport corridors are detailed within Appendix B.

## Section 2

### Junction Design - General Considerations

- 2.1 Reading Borough Council attaches great importance to ensuring that the safety and efficiency of the classified road network is maintained and enhanced by the design for access to new development.
- 2.2 On classified roads the requirement to keep traffic flowing at reasonable average speeds take precedence over the need of access. The council will resist any new access on to a classified road if alternative access is available on to a non classified road or if it is possible for the development to share another existing access on the classified road network. Where a direct access is unavoidable the proposed junction will be assessed with particular care to ensure good design standards are achieved, especially with the respect to layout and visibility, adequacy of junction spacing and the effect of increase movements. If any of these factors are in doubt it is likely that Borough Council will object to the proposed access arrangements.
- 2.3 Where proposals for development give rise to opportunities to reduce the number of direct accesses on the classified road network, then the Borough Council will expect these opportunities to be taken.
- 2.4 For new developments, which will generate an Annual Average Daily Traffic Flow (AADT) of 500 vehicles or under a simple priority junction will be required. For developments generating an AADT of over 500 vehicles the junction will have to be designed so that right turning traffic does not impinge on the flow of traffic on the classified road, which may necessitate the construction of a right turn lane.
- 2.5 For developments generating very high flows then alternative access arrangements such as roundabouts or traffic signals may be considered. If these junctions are being considered the Transport Development Control section should be approached as early as possible to discuss the specific standards required.
- 2.6 However whatever junction design is chosen, any application will have to be submitted with a Transport Assessment, undertaken in accordance with the Department for Transport, Guidance on Transport Assessments published in March 2007. The developer will have been expected to have assessed the junction design proposed in accordance with the relevant computer program for junction simulation, ARCADY (Roundabouts), PICADY (Junctions), LINSIG (Traffic Signals). Any proposals which will have a detrimental affect on the free flow of traffic or capacity of the network will be resisted.

## Section 3

### Residential Junction Design Standards

- 3.0 This section details the required parameters required for junctions on to the classified road network providing access to Residential developments. All developer’s proposals will be assessed against these requirements.
- 3.1 The width of new access roads should comply with the requirements of Table 1 below. These widths only apply for the set back distance shown, (i.e. distance from edge of the classified road) from which after this distance the requirements of the Manual for Streets apply. The Borough Council will expect to adopt the carriageway required for the set back distance to ensure the Highway Authority has control over the road and therefore is able to manage the junction.

Number of Dwellings	Road width	Main Transport Corridors set back distance	Local Transport Corridors set back distance
5 and under	4.8 metres	10 metres	10 metres
6-25	4.8 metres	20 metres	15 metres
26- 50	4.8 metres	30 metres	20 metres
51-300	5.5 metres	50 metres	50 metres
Over 300	6.5 metres	100 metres	100 metres

**Table 1  
Road Widths and Set Back Distances for Residential Developments**

Note: The set back distances may be reduced on some “C” class roads with lower traffic flows for developments under 25 dwellings to 10 metres following discussions with the Boroughs Transport Development Control Team.

On local transport corridors for proposals of 5 dwellings and under, the road width can be reduced to 4.1 metres.

- 3.2 Junction radii for new access points on to classified roads should comply with the requirements of Table 2.

Number of Dwellings	Main Transport Corridors	Junction radii	
		Local Transport Corridors (High Bus / HGV Flows)	Local Transport Corridors
Under 25	6 metres	6 metres	4 metres
25- 50	10 metres	6 metres	6 metres
50-300	10 metres	10 metres	6 metres
Over 300	15 metres	10 metres	10 metres

**Table 2  
Junction Radii for Residential Developments**

Note: Radii on very small developments onto “C” roads with lower traffic flows may be reduced to 2 metres depending on site conditions and following discussions with the Boroughs Transport Development Control Team

- 3.3 The visibility requirements for new junctions onto classified roads are shown in Tables 3 and 4. The “X” distance is the minor road distance and is measured along the centre line of the new access road, back from the major roads carriageway edge. The “Y” distance is the major road distance measured along the nearside carriageway edge of the major road from the centre of the new junction in both directions. The area between “X” and “Y” distance should have unobstructed visibility. The visibility requirements as shown in Tables 3 & 4 and are based on visibility requirements detailed within TD 42/95 for Main Transport Corridors and Local Transport Corridors with High Bus / HGV flows and Manual for Streets for Local Transport Corridors.
- 3.4 In some exceptional circumstances it may be unlikely that vehicles approaching from the left on the major road will cross the centre line of the major road as opposing flows may be physically segregated at that point (I.E. the presence of a Traffic Island) and in these circumstances the visibility splay to the left can be measured to the centre line of the road.

Number of Dwellings	Main Transport Corridors	Local Transport Corridors
Under 300	2.4 metres	2.4 metres
Over 300	4.5 metres	2.4 metres

**Table 3**  
**“X” Distances for Residential Developments**

Speed Limit	40 mph	30 mph	20 mph
Major Road Distance Main Transport Corridors	120 metres	90 metres	45 metres
Major road distance Local Transport Corridors (High Bus / HGV Flows)	120 metres	70 metres	45 metres
Major Road Distance Local Transport Corridors	90 metres	To be determined following a speed survey (See note below)	To be determined following a speed survey (See Note below)

**Table 4**  
**“Y” Distances for Residential Developments**

Note: For 30 / 20 mph limit roads on Local Transport corridors without High Bus / HGV flows, the “y” distance shall be calculated using the formula  $y = (vt + (V^2/2d)) + 2.4$

metres where  $V$  = speed (m/s),  $t$ =driver perception reaction time of 1.5 seconds and  $d$ =deceleration of  $4.41 \text{ m/s}^2$

- 3.5 The maximum gradient on new access roads shall be 10%, however the first 10 metres on approach to a classified road (15 metres on approach to a main transport corridor), the dwell area, shall be 4%. However for single dwellings this dwell area can be reduced to 5 metres for all classified roads. These requirements are designed to prevent vehicles stalling on a mild hill start when attempting to pull in to traffic or inadvertently rolling out on to the classified road.
- 3.6 It is important that sufficient junction spacing is provided along classified roads in the interests of road safety, as the position of several junctions in close proximity can lead to driver confusion. Junctions should be spaced at regular intervals and the minimum spacing should equate to the stopping sight distance required for the major road. The required junction spacing are shown in Table 5 and are based on the stopping sight distances detailed within TD 9/93 for Main Transport Corridors and Local Transport Corridors with High Bus / HGV flows and Manual for Streets for Local Transport Corridors.

Speed Limit	40 mph	30 mph	20 mph
Major Road Distance Main Transport Corridors	90 metres	50 metres	30 metres
Major road distance Local Transport Corridors (High Bus / HGV Flows)	70 metres	40 metres	20 metres
Major road distance Local Transport Corridors	50 metres	30 metres	15 metres

**Table 5  
Junction Spacing for Residential Developments**

Where a residential road joins a main transport corridor no junctions with other roads or accesses to driveways should be provided along the first 20 metres of the residential road to help ensure that parking does not occur on the non priority road carriageway close to the junction. For Local Transport Corridors this is reduced to 10 metres.

- 3.7 All new developments accessed from a classified road, will be required to be provided with an adequate turning area to enable service vehicles including refuse vehicles the ability to enter and leave the site in a forward gear. If such an area is not provided, it is likely that an objection to the proposals will be forthcoming. For two or single dwellings each case will be determined on its individual merits taking in account the existing site conditions.

- 3.8 Regardless of the design, adequate provision shall be provided for pedestrians and cyclists using the existing classified road and new access road. All junctions shall be provided with tactile crossing points for both pedestrians and cyclists. It is expected that all new access roads are provided with a 1.8 metre wide footway for a length equating to the set back distances detailed within Table 1.
- 3.9 Gates will not be permitted on access roads serving more than 5 dwellings from classified roads. Gates prevent the free flow of traffic to and from the classified road and can cause severe delays. For small developments gates will be permitted, subject to planning permission, as long as they are set back at least 10 metres from the carriageway edge and open inwards.



## Section 4

### Commercial Junction Design Standards

- 4.0 This section details the required parameters required for junctions on to the entire road network providing access to commercial developments. All developer’s proposals will be assessed against these requirements.
- 4.1 The width of new access roads should comply with the requirements of Table 6 below. The Borough Council will expect to adopt the carriageway required for the set back distance.

Annual Average Daily Traffic Flow	Road width	Main Transport Corridors set back distance	Local Transport Corridors set back distance
Under 500	6.0 metres	20 metres	15 metres
Over 500	7.3 metres	30 metres	20 metres

**Table 6  
Road Widths and Set Back Distances for commercial developments**

Note: The set back distances may be reduced in exceptional circumstances and following discussions with the Boroughs Transport Development Control Team.

- 4.2 Junction radii for new access points serving commercial developments should comply with the requirements of Table 7.

Annual Average Daily Traffic Flow of development	Main Transport Corridors minimum junction radii	Junction radii
		Local Transport Corridors minimum junction radii
Under 500	15 metres	12.5 metres
Over 500	20 metres	15 metres

Note: Radii on very small developments onto local transport corridors with lower traffic flows may be reduced to 10 metres depending on site condition and following discussions with the Boroughs Transport Development Control Team

**Table 7  
Junction Radii for commercial developments**

- 4.3 The visibility requirements for new junctions for commercial developments are shown in Tables 8 and 9. The “X” distance is the minor road distance and is measured along the centre line of the new access road, back from the major roads carriageway edge. The “Y” distance is the major road distance measured along the nearside carriageway edge of the major road from the

centre of the new junction in both directions. The area between “X” and “Y” distance should have unobstructed visibility.

- 4.4 In some exceptional circumstances it may be unlikely that vehicles approaching from the left on the major road will cross the centre line of the major road as opposing flows may be physically segregated at that point (I.E. the present of a Traffic Island) and in these circumstances the visibility splay to the left can be measured to the centre line of the road

Annual Average Daily Traffic Flow of development	Main Transport Corridors	Local Transport Corridors
Under 500	2.4 metres	2.4 metres
Over 500	4.5 metres	2.4 metres

**Table 8**  
**“X” Distances for commercial developments**

Speed Limit	40 mph	30 mph	20 mph
Major Road Distance, Main Transport Corridors	120 metres	90 metres	45 metres
Major road distance, Local Transport Corridors (High Bus / HGV Flows)	120 metres	70 metres	45 metres
Major Road Distance, All Other Adopted Roads	90 metres	60 metres	33 metres

**Table 9**  
**“Y” Distances for commercial developments**

Note The “y” sight distances used within Table 9 are greater than those within Table 5 for local transport corridors for residential development as the number of relaxations used are lower given the type of vehicles that use commercial developments.

- 4.5 The maximum gradient on new access roads serving commercial development shall be 7%, however the first 10 metres on approach to a classified road (15 metres on approach to and “A” road), the dwell area shall be 4%. These requirements are designed to prevent vehicles stalling on a mild hill start when attempting to pull in to traffic or inadvertently rolling out on to the classified road.
- 4.6 It is important that sufficient junction spacing is provided along roads in the interests of road safety, as the position of several junctions in close proximity can lead to driver confusion. Junctions should be spaced at regular intervals

and the minimum spacing should equate to the stopping sight distance required for the major road. The required junction spacing for commercial accesses are shown Table 10 and are based on the desirable stopping sight distances within TD 9/93 for Main Transport Corridors and Manual for Streets for Local Transport Corridors.

Speed Limit	40 mph	30 mph	20 mph
Major Road Distance Main Transport Corridors	90 metres	50 metres	30 metres
Major road distance Local Transport Corridors (High Bus / HGV Flows)	70 metres	45 metres	25 metres
Major Road Distance, All Other Adopted Roads	50 metres	30 metres	25 metres

**Table 10  
Junction Spacing for Commercial Developments**

Note The stopping sight distances used within Table 9 are greater than those within Table 5 for residential development as the number of relaxations used are lower given the type of vehicles that use commercial developments.

- 4.7 Where a commercial access road joins a classified road no junctions with other roads or accesses to parking areas should be provided along the first 20 metres of the access road to help ensure that parking does not occur on the non priority road carriageway close to the junction.
- 4.8 All new commercial developments accessed from an adopted road, will be required to be provided with an adequate turning area to enable service vehicles including refuge vehicles and articulated vehicles the ability to enter and leave the site in a forward gear. If such an area is not provided it is likely that an objection to the proposals will be forthcoming.
- 4.9 Regardless of the design, adequate provision shall be provided for pedestrians and cyclists using the existing road network and new access road. All junctions shall be provided with tactile crossing points for both pedestrians and cyclists. It is expected that all new access roads are provided with a 1.8 metre wide footway for a length equating to the set back distances detailed within Table 1.

## Section 5 - Contacts and References

- 5.1 Any queries regarding this document should be made to the Transport Development Control Team. The contact details are as follows.

Transport Development Control  
Civic Centre  
Reading  
RG1 7TD

Phone 0118 939 9949  
Email [chris.saunders@reading.gov.uk](mailto:chris.saunders@reading.gov.uk)

- 5.2 References

Design Manual for Roads and Bridges (DMRB) specifically

[TD 42/95](#) Geometric Design of Major/Minor Priority Junctions

[TD 41/95](#) Vehicular Access to All-Purpose Trunk Roads

[TD 9/93](#) Highway Link Design

[TA 85/01](#) Guidance on Minor Improvements to Existing Roads

[Manual for Streets \(5 Mb\)](#) Manual for Streets (DfT)

[Planning Policy Guidance 13: Transport](#) Planning Policy Guidance 13 - Transport (DCLG)

## **Appendix A**

### **Classified Roads within Reading Borough**

## Classified "C" Roads.

### North Reading (Caversham)

**C100** - Hemdean Road (Church Street to Oakley Road), Rotherfield Way, Southdown Road, Evesham Road (between Buckingham Drive and Grove Road), Grove Road

**C101** - Priest Hill, The Mount (between Priest Hill and Kidmore Road), Kidmore Road, Shepards Lane.

**C102** - The Mount (between The Mount and Albert Road), Albert Road, Conisboro Avenue (between Richmond Road and Uplands Road), Uplands Road

**C103** - Caversham Park Road (Entire Length)

**C104** - Lowfield Road (Entire Length)

**C105** - Gosbrook Road, between Church Street and George Street.

**C106** - Westfield Road

**C107** - Kidmore End Road

### East Reading

**C200** - Whiteknights Road, Eastern Avenue (Whiteknights Road to Erleigh Road), Erleigh Road, Eldon Road.

**C201** - Redlands Road, Sidmouth Street

**C202** - Craven Road

**C203** - Kendrick Road

**C204** - Pepper Lane

**C205** - Addington Road

**C206** - Alexandra Road (between Addington Road and Upper Redlands Road), Upper Redlands Road (between Alexandra Road and Whiteknights Road)

### South Reading

**C300** - Christchurch Gardens, Northumberland Avenue

**C301** - Rose Kiln Lane (Between A33 RR and B3031 Basingstoke Road), Buckland Road and Cressingham Road.

**C302** - Hartland Road

**C303** - Whitley Wood Road

**C304** - Whitley Wood Lane (between B3270 and Basingstoke Road), Imperial Way

**C305** - Bennet Road

### **West Reading**

**C400** - Coley Avenue, Tilehurst Road, The Meadway, Mayfair

**C401** - Norcot Road, Wigmore Lane (between Oxford Road and Portman Road), Portman Road, Cow Lane, Richfield Avenue

**C402** - Park Lane, School Road, Kentwood Hill

**C403** - Circuit Lane (Southcote Lane to Bath Road), Liebenrood Road, Water Road, Grovelands Road

**C404** - Dee Road

**C405** - Honey End Lane, Burghfield Road

**C406** - Southcote Lane

**C407** - Chapel Hill (School Road to Lower Elmstone Drive), Lower Elmstone Drive (section within Borough), Overdown Road

**C408** - Western Elms Avenue , Beresford Road

**C409** - Pierces Hill, Westwood Road (Pierces Hill to School Road)

**C410** - Russell Street

**C411** - St Saviours Road (Berkeley Avenue to Holybrook Road), Holybrook Road, Wensley Road (Holybrook Road to Rembrandt Way)

### **Central Area**

**C500** - Kings Road (IDR to Town Centre), King Street

**C501** - Castle Street, Bridge Street

**C502** - Oxford Road (Bedford Road to West Street)

**C503** - Minster Street, Gun Street, St Mary's Butts, West Street, Friar Street, Blagrove Street, Forbury Road (IDR to Blagrove Street) Valpy Street, The Forbury, Market Place, High Street (inner bus loop), Duke Street,

**C504** - Greyfriars Road, Tudor Road

## Appendix B

### Main and Local Transport Corridors.



## Main Transport Corridors

- A4** -Entire length within the Borough (London Road, Pell Street, Crown Street, Berkeley Avenue, Bath Road)
- A33** -Entire length from Junction 11 of the M4 to Inner Distribution Road, including length of Rose Kiln Lane between A33 Relief Road and A4 Berkeley Avenue
- A329** -Entire length within the Borough( Wokingham Road, Kings Road, Inner Distribution Road (including Forbury Road, Vastern Road, Queens Road), Chatham Street, Bedford Road (between Chatham Street and Oxford Road), Oxford Road (between Chatham Street and Borough Boundary)
- A327** -Entire length within the Borough (Shinfield Road, Christchurch Road, Southampton Street, London Street, Silver Street, Mount Pleasant, Whitley Street)
- A4074** - Entire Length within the Borough ( St Peters Hill, Woodcote Road, Upper Woodcote Road)
- A4155** -Entire length within the Borough (Bath Road (between Berkeley Avenue and Russell Street), Castle Hill, Caversham Road, Bridge Street, Church Street, Prospect Street, Henley Road).
- B481** - Entire length within the Borough (Peppard Road, Buckingham Drive)
- B3345** - Gosbrook Road, George Street and Reading Bridge.
- B3031** - Basingstoke Road (from A33 to A327 Whitley Street)
- B3270** - Whitley Outer Peripheral Road
- B3350** - Elm Road
- C105** - Gosbrook Road, between Church Street and George Street
- C201** - Redlands Road, Sidmouth Street
- C204** - Pepper Lane
- C301** - Rose Kiln Lane (Between A33 RR and B3031 Basingstoke Road)
- C303** - Whitley Wood Road (Between Hartland Road and A327 Shinfield Road)
- C304** - Whitley Wood Lane (between B3270 and Basingstoke Road), Imperial Way
- C400** - Tilehurst Road, The Meadway, Mayfair
- C402** - School Road, Park Lane
- C403** - Liebenrood Road, Water Road, Grovelands Road
- C401** - Norcot Road, Wigmore Lane (between Oxford Road and Portman Road), Portman Road, Cow Lane, Richfield Avenue
- C405** - Burghfield Road

## **Local Transport Corridors (High Bus / HGV Flows)**

**C202** - Craven Road

**C203** - Kendrick Road

**C205** - Addington Road (Redlands Road to Alexandra Road)

**C300** - Christchurch Gardens, Northumberland Avenue

**C305** - Bennet Road

**C406** - Southcote Lane

**C410** - Russell Street

**C500** - Kings Road (IDR to Town Centre), King Street

**C501** - Castle Street, Bridge Street

**C502** - Oxford Road (Bedford Road to West Street)

**C503** - Minster Street, Gun Street, St Mary's Butts, West Street, Friar Street, Blagrove Street, Forbury Road (IDR to Blagrove Street) Valpy Street, The Forbury, Market Place, High Street (inner bus loop), Duke Street,

**C504** - Greyfriars Road, Tudor Road

## Local Transport Corridors

**C100** - Hemdean Road (Church Street to Oakley Road), Rotherfield Way, Southdown Road, Evesham Road (between Buckingham Drive and Grove Road), Grove Road

**C101** - Priest Hill, The Mount (between Priest Hill and Kidmore Road), Kidmore Road, Shepards Lane.

**C102** - The Mount (between The Mount and Albert Road), Albert Road, Conisboro Avenue (between Richmond Road and Uplands Road), Uplands Road

**C103** - Caversham Park Road (Entire Length)

**C104** - Lowfield Road (Entire Length)

**C106** - Westfield Road

**C107** - Kidmore End Road

**C200** - Whiteknights Road, Eastern Avenue (Whiteknights Road to Erleigh Road), Erleigh Road, Eldon Road.

**C205** - Addington Road (Alexandra Road to Erleigh Road)

**C206** - Alexandra Road (between Addington Road and Upper Redlands Road), Upper Redlands Road (between Alexandra Road and Whiteknights Road)

**C301** - Rose Kiln Lane (Between A33 RR and B3031 Basingstoke Road), Buckland Road and Cressingham Road.

**C302** - Hartland Road

**C303** - Whitley Wood Road (Between Hartland Road and Whitley Wood Lane)

**C305** - Buckland Road and Cressingham Road

**C400** - Coley Avenue (Castle Hill to Berkeley Avenue)

**C403** - Circuit Lane (Southcote Lane to Bath Road),

**C404** - Dee Road

**C407** - Chapel Hill (School Road to Lower Elmstone Drive), Lower Elmstone Drive (section within Borough), Overdown Road

**C408** - Western Elms Avenue , Beresford Road

**C409** - Pierces Hill, Westwood Road (Pierces Hill to School Road)

**C411** - St Saviours Road (Berkeley Avenue to Holybrook Road), Holybrook Road, Wensley Road (Holybrook Road to Rembrandt Way)