



Guide to
ROAD DESIGN & ROAD SAFETY ISSUES
In Planning Control



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FOREWORD

This document is intended for the guidance of private developers, architects and consultants, in the design of housing and other mixed use developments.

The document sets out recommended standards and design guidelines in relation to Road Design, which should generally be acceptable to Cavan County Council.

The document deals largely with issues of estate layout. It is the objective of the Road Design Department to encourage and promote layouts which seek to ensure low traffic speeds and greater priority for pedestrians and cyclists within housing areas.



PART I

DESIGN DETAILS REQUIRED WITH RESPECT TO PLANNING APPLICATIONS



THE FOLLOWING DETAILS ARE REQUIRED AS PART OF ANY PLANNING APPLICATION TO ALLOW THAT APPLICATION BE ASSESSED FROM A ROAD DESIGN PERSPECTIVE:

- ✓ Traffic and Transport Assessment, formally Traffic Impact Assessment (TTA / TIA) at appropriate level scoped with Road Design
- ✓ Scale of Site Layout Plan to be at 1:500
- ✓ A Site Layout drawing indicating gradients of service roads
- ✓ All levels shall be to Ordinance Datum
- ✓ Longitudinal Sections of *all* roads within development
- ✓ Typical cross section of road
- ✓ Cross section of road and house access where differing from typical
- ✓ Where the following details are requested by Cavan Local Authority, they shall be undertaken by specialist Road Design Engineers:
 - Full Traffic & Transport Assessments
 - Road Safety Audits
 - Roundabout Design

Cavan County Council require the CVs of designers



PART II

DESIGN GUIDELINE



NOTE: THIS DOCUMENT DOES NOT CONTAIN STANDARDS OR TECHNICAL SPECIFICATIONS FOR ROAD CONSTRUCTION. DESIGNERS ARE ADVISED TO REFER TO “RECOMMENDATIONS FOR SITE DEVELOPMENT WORKS FOR HOUSING AREAS” AND IRL, “DMRB” FOR GUIDANCE IN RELATION TO SAME.



TRAFFIC AND TRANSPORT ASSESSMENTS & ROAD SAFETY AUDITS

REASONS FOR ASSESSMENTS

“1.1.1 All new developments will generate trips on the existing transport network, either by car, commercial vehicle, cycling, walking or public transport. Many of these proposed developments are of a size or type that would generate significant additional levels of trip-making on adjoining transport infrastructure. In certain circumstances this additional demand may necessitate changes to be made to the road layout.

1.1.2 It is essential that the developer or promoter should provide a full and detailed assessment of how the trips to and from the development might affect the road transport network.

1.1.3 A Traffic and Transport Assessment should be an impartial description of the impacts of the proposed development and should outline both its positive and negative aspects. The assessment should not be a promotional exercise undertaken on behalf of the scheme promoter.” (Traffic and Transport Assessment Guidelines, National Roads Authority)

PURPOSE OF ASSESSMENTS FOR CAVAN COUNTY COUNCIL

There are 3 Levels of TIA / TTA depending on extent of development (see thresholds) namely CTTS 1, CTTS 2 and full TTAs. These are used to determine:-

- The capability of the roads network to accommodate the proposed development and to determine if the development is acceptable in travel / traffic terms.
- The need for lighting, footpaths, widening, Right Turning Lanes, Junction Improvement, Road Strengthening.
- Apportionment of contribution warranted for infrastructure to service the proposed development.

FURTHER INFORMATION ON ASSESSMENTS

For detailed descriptions of use, scope, purpose, process and implementation of traffic impact assessments and transport assessments see:

Traffic and Transport Assessment Guidelines, National Roads Authority

Guide to Transport Assessment in Scotland, The Scottish Executive.

Transport Assessment Guidelines for Development Proposals in Northern Ireland

Traffic Impact Assessment Guidelines, Institution of Highways and Transportation (IHT)



THRESHOLDS

This section considers the thresholds at which there should be a requirement for carrying out traffic and transport assessments in relation to planning applications.

TRAFFIC AND TRANSPORT STATEMENT (CTTS 1)

All planning applications must be accompanied by a Transport and Traffic Statement (CTTS 1) giving essential details of the development and its transport requirements.

ADDITIONAL INFORMATION (CTTS 2)

In some cases the impact of traffic volumes may not be significant, and the thresholds for a full TTA may not be exceeded. However the type and volume of generated traffic may be of a nature to raise concerns about effects on Road Safety and road structure.

If any of the following criteria are met then additional information to that given in CTTS 1 should be submitted in the form of CTTS 2 and the Local Authority on the basis of information received shall then consider the need to request a full Traffic and Transport Assessment (TTA).

CTTS 1 and CTTS 2 are contained in the appendices at the back of the document.

Table 2.1 Thresholds for additional information to CTTS 1 (from NRA’s Traffic and Transport Assessment Guidelines)

| | | |
|----------------------|--|--|
| Size | Retail | 250m ² Gross Floor Area |
| | Business | 750m ² Gross Floor Area |
| | Industry | 750m ² Gross Floor Area |
| | Distribution & warehousing | 750m ² Gross Floor Area |
| | Housing | 20 dwellings 10 dwellings on local secondary or tertiary roads in rural areas |
| Location | The site is not consistent with national guidance or local plan policy or accessibility criteria contained in the Development Plan. These sites are likely to be those only easily accessible by car, generally located on the edges of urban areas, in relatively inaccessible rural areas. | |
| Vehicle Movements | 100 trips in / out combined per day. | |
| | 10 HCV trips in / out combined per day | |
| Other Considerations | <ul style="list-style-type: none"> ● The development is part of incremental development. ● The development may generate traffic at peak times in a congested area or near a junction with a main traffic route. ● The development may generate traffic, particularly heavy vehicles, late at night in a residential area. ● There is significant concern over road safety. ● The development is in sensitive tourist areas. ● The development may generate traffic at peak times in a congested area or near a junction with a main traffic route. | |



COMPLETE TRAFFIC AND TRANSPORT ASSESSMENT

Applications that exceed any of the following thresholds will be required to produce full TTAs, in addition to completing the CTTS 2 form. The CTTS 2 should summarise the findings of the TTA and describe the mitigating measures proposed by the developer or agent.

Table 2.2 Thresholds for full Traffic and Transport Assessments (from NRA's Traffic and Transport Assessment Guidelines)

| | | |
|--------------------------|--|---------------------------------------|
| Size | Retail | 1,000m ² Gross Floor Area |
| | Cinemas and other leisure facilities | 1,000m ² Gross Floor Area |
| | Business | 2,500m ² Gross Floor Area |
| | Industry | 5,000m ² Gross Floor Area |
| | Distribution and warehousing | 10,000m ² Gross Floor Area |
| | Hospitals and education facilities | 2,500m ² Gross Floor Area |
| | Stadia | 1,500 person capacity |
| | Housing | 50 dwellings. |
| Vehicle Movements | 100 trips in / out combined in the peak hour | |
| | Development traffic exceeds 10% of two-way traffic flow on adjoining road | |
| | Development traffic exceeds 5% of two-way traffic flow on adjoining road if congested or sensitive | |
| Parking Provided | 100 on-site parking spaces | |

SCOPING OF TRAFFIC AND TRANSPORT ASSESSMENT

A scoping study should be carried out prior to the preparation of a TTA. The agent or developer should liaise with Cavan County Council, Road Design Department so as to:

- Agree the approach to and extent of the TTA.
- Gather background information.
- Agree the main problems / issues to be addressed in the TTA.

CONTENTS OF THE SCOPING STUDY INCLUDE:

- Size and description of development
- Description of existing land use
- Details of extra data to be collected – particularly traffic surveys
- Sources of information for travel / traffic generation (including modal split)
- Geographic area of analysis (extent)
- Proposed years of assessment
- Key junctions and links accesses to be investigated – requires traffic modelling
- Sustainable transport / development plan issues
- Summary of discussion between applicant and Road Design Office / Planning Authority
- Main issues to tackle.



ROAD SAFETY AUDITS

WHAT IS A ROAD SAFETY AUDIT

A Road Safety Audit is a process for checking the safety of new schemes on roads. Audits are carried out:-

- Systematically
- based on sound safety principles
- from the road users' point of view

AIMS OF ROAD SAFETY AUDIT

- To ensure all highway schemes operate as safely as practicable
- To minimize accident numbers and severity
- To consider the safety of all road users – particularly vulnerable road users
- To improve the awareness of safe design practices by design, construction and maintenance staff.

WHAT TO AUDIT

- Road Safety Audits are mandatory for all planning applications on National Roads (HD19/00)
- On Local Roads Safety Audits are recommended as good practice for all planning applications and are mandatory for applications in excess of 50 dwellings or other developments of similar traffic types and/or volumes or as deemed necessary by Cavan County Council in the interests of traffic safety.

WHEN TO AUDIT

- Feasibility stage – may include a comparative assessment of options
- Stage 1 – completion of preliminary design
- Stage 2 – completion of detailed design
- Stage 1/2 combined for minor schemes
- Stage 3 – completion of construction / prior to opening to traffic
- Monitoring after 1 and 3 years



WHO SHOULD CARRY OUT AUDITS?

- Members of the Road Safety Audit team shall be NRA approved and the Audit Team shall be approved by Cavan County Council – training and experience required
- Safety engineering expertise needed
- Independent of the design team
- At least two people – three people on large schemes

WHAT IS LOOKED FOR?

- Mistakes – checklists
- How all road users cope at all times and in all conditions – road user role play
- Interaction between design elements
- Departures from standards
- Opportunities to include accident-reducing elements

FORMAT OF SAFETY AUDIT REPORT

- List audit team members and others involved
- List safety issues – problem followed by recommendation stating the safety problem as clearly as possible
- List all plans and other information examined
- Sign and date the report



JUNCTIONS

JUNCTION TYPES:-

- STOP
- YIELD
- ROUNDABOUT
- TRAFFIC LIGHTS

Within developments junctions should normally be designed as uncontrolled intersections, to the requirements of the National Roads Authority “Road Geometry Handbook”.

JUNCTION ISSUES:-

- SIGHTLINES
- KERB RADII
- GRADIENTS
- PEDESTRIAN/CYCLE FACILITIES



JUNCTION SIGHTLINES

- SIGHTLINES TO STANDARDS SET OUT IN DMRB IN ACCORDANCE WITH NRA TD 42/95 FOR MAJOR/MINOR PRIORITY JUNCTIONS. (SEE FIGURES FOR MINIMUM REQUIREMENTS TAKEN FROM ABOVE NAMED PUBLICATION.)
 - Required sight distances may differ for each individual road.
Sightlines shall be calculated on the basis of the speed limit of the road except in circumstances where the 85th Percentile Speed of vehicles on the stretch of road appears to be in excess of that speed limit.
 - Local Authority to require speed measurements in places where actual speeds are considered high – at Further Information stage developer will be requested to carry out study using an automated device for speed measurement.
 - In these circumstances the sightline shall cover the equivalent distance for the 85th Percentile Speed. If sightlines are not achieved the applicant will be requested to acquire land to provide at F.I. stage or alternatively will be required to submit a Road Safety Audit of the junction to be carried out by an NRA approved Road Safety Auditor. The recommendations of the audit shall be implemented in full by the developer.
 - Note: Where the 85th percentile speed on lightly trafficked local roads is significantly below the speed limit, reduced sight lines proportionate to the 85th percentile speed may be considered.



Figure 1 - Clear Sight Triangle

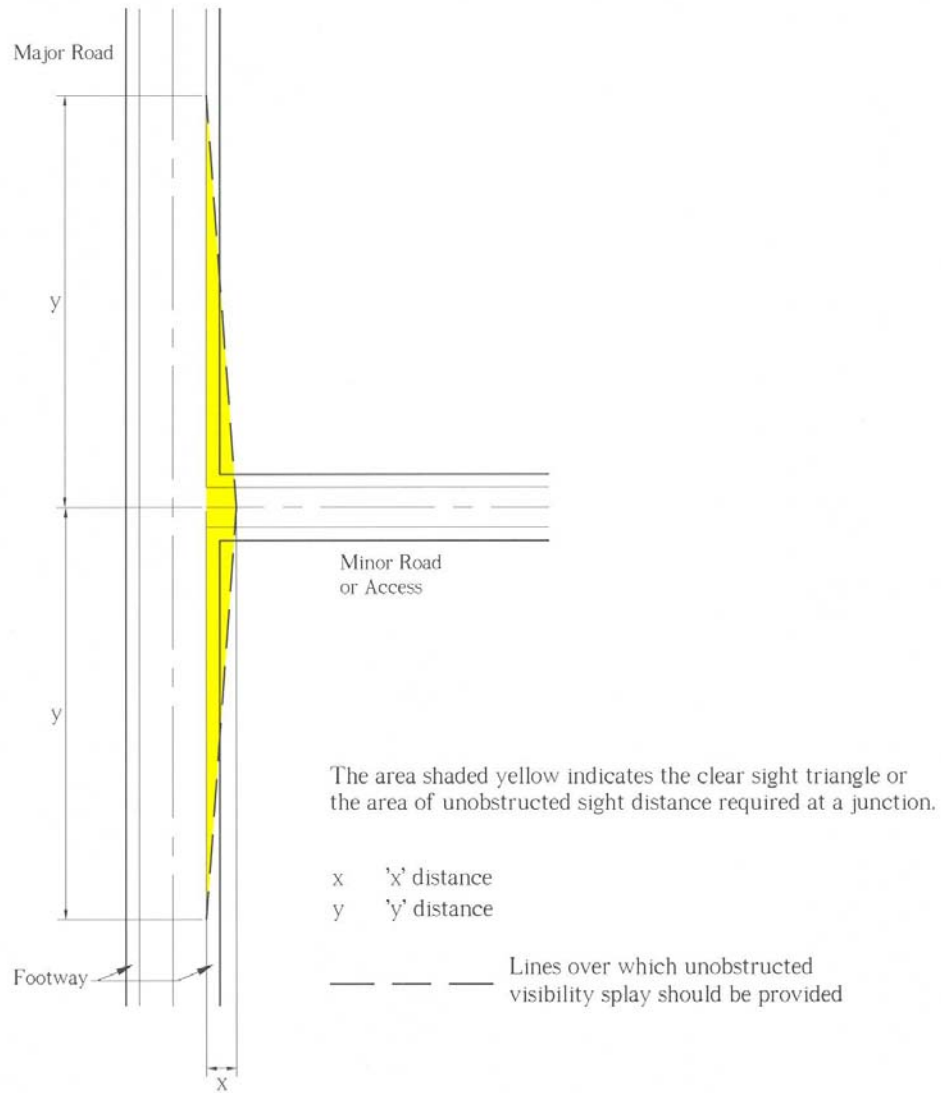


Table 1 - Junction sightline requirements (Visibility Distances from the Minor /Access Road)

| Speed Limit/ 85th Percentile Speed (kph) | 'y' Distance (m) |
|--|------------------|
| 50 | 70 |
| 60 | 90 |
| 70 | 120 |
| 85 | 160 |
| 100 | 215 |
| 120 | 295 |

For further guidance on junction requirements see the NRA's Road Geometry Handbook, Geometric Design of Major/Minor Priority junctions (TD 42/95)



CLEAR SIGHT TRIANGLE

- The “Clear Sight Triangle” is the term used for the area of unobstructed sight distance required at a junction. This is measured from a driver eye height of 1.05m to an object height of 1.15m. (All of the triangle must provide view)
- ‘x’ Distance:
 - Local Roads – Line of sight is from a distance of 3m back from the road edge to the near side edge of the Local Road.
 - Regional and National Roads – Line of sight taken from a distance of 4.5m back from the road edge to the nearside edge of the Priority Road.
- **DMRB sight lines are measured to the nearside edge of the public road – Roads Authority to request that applicant achieve recommended unobstructed sight lines to *far edge* of public road in circumstances where the horizontal alignment of the public road dictates.**

OTHER JUNCTION SIGHTLINE REQUIREMENTS

- Clear sight lines are required at the junction for all road users. Drivers turning right into a development must have clear unobstructed sight lines towards oncoming traffic on the public road.
- Road users approaching a development entrance must have appropriate unobstructed forward stopping sight distances towards vehicles stopped or slowing down to make a left or right turn into that development.
- Sight distance requirements are set out in the table overleaf.



Table: Design Speed Related Parameters:

| DESIGN SPEED (km/h) | 120 | 100 | 85 | 70 | 60 | 50 | V ² /R |
|--|------|------|------|------|-----|-----|-------------------|
| STOPPING SIGHT DISTANCE m | | | | | | | |
| Desirable Minimum Stopping Sight Distance | 295 | 215 | 160 | 120 | 90 | 70 | |
| One Step below Desirable Minimum | 215 | 160 | 120 | 90 | 70 | 50 | |
| Two Steps below Desirable Minimum | 160 | 120 | 90 | 70 | 50 | 50 | |
| HORIZONTAL CURVATURE m | | | | | | | |
| Minimum R* without elimination of Adverse Camber and Transitions | 2880 | 2040 | 1440 | 1020 | 720 | 510 | 5 |
| Minimum R* with Superelevation of 2.5% | 2040 | 1440 | 1020 | 720 | 510 | 360 | 7.07 |
| Minimum R with Superelevation of 3.5% | 1440 | 1020 | 720 | 510 | 360 | 255 | 10 |
| Desirable Minimum R with Superelevation of 5% | 1020 | 720 | 510 | 360 | 255 | 180 | 14.14 |
| One Step below Desirable Min R with Superelevation of 7% | 720 | 510 | 360 | 255 | 180 | 127 | 20 |
| Two Steps below Desirable Min R with Superelevation of 7% | 510 | 360 | 255 | 180 | 127 | 90 | 28.28 |
| VERTICAL CURVATURE – CREST | | | | | | | |
| Desirable Minimum Crest K Value | 182 | 100 | 55 | 30 | 17 | 10 | |
| One Step below Desirable Min Crest K Value | 100 | 55 | 30 | 17 | 10 | 6.5 | |
| Two Steps below Desirable Min Crest K Value | 55 | 30 | 17 | 10 | 6.5 | 6.5 | |
| VERTICAL CURVATURE – SAG | | | | | | | |
| Desirable Minimum Sag K Value | 53 | 37 | 26 | 20 | 13 | 9 | |
| One Step below Desirable Min Sag K Value | 37 | 26 | 20 | 13 | 9 | 6.5 | |
| Two Steps below Desirable Min Sag K Value | 26 | 20 | 13 | 9 | 6.5 | 6.5 | |
| OVERTAKING SIGHT DISTANCES | | | | | | | |
| Full Overtaking Sight Distance FOSD m. | N/A | 580 | 490 | 410 | 345 | 290 | |
| FOSD Overtaking Crest K Value | N/A | 400 | 285 | 200 | 142 | 100 | |

Table from Volume 6, Section 1, Part 1, NRA TD 9/05 of Design Manual for Roads and Bridges



JUNCTION KERB RADII

- Kerb radii will be determined by the type of the development i.e. Residential or Industrial.
- For residential developments kerb radii should be designed to accommodate car traffic. Keeping entrance and exit kerb radii to a minimum will slow down the traffic entering and leaving the estate. Typically residential kerb radii should be 6m. (Furniture removal lorries and refuse trucks are occasional traffic and should not drive the design).
- For other developments radii at junctions should typically be:-
 - 10.5m exit onto Regional, National & other Major roads
 - 10.5m entrance from Regional, National & other Major roads

JUNCTION GRADIENTS

- At junctions, the gradients of the proposed service road should not be greater than 2% (1 in 50) for a distance of 7m and not greater than 5% (1 in 20) for the remainder of the first 20m.



PEDESTRIAN / CYCLE FACILITIES

- The layout and design of junctions should always take into consideration the safety of pedestrians crossing the junction as well as the requirements for cyclists negotiating the junction.

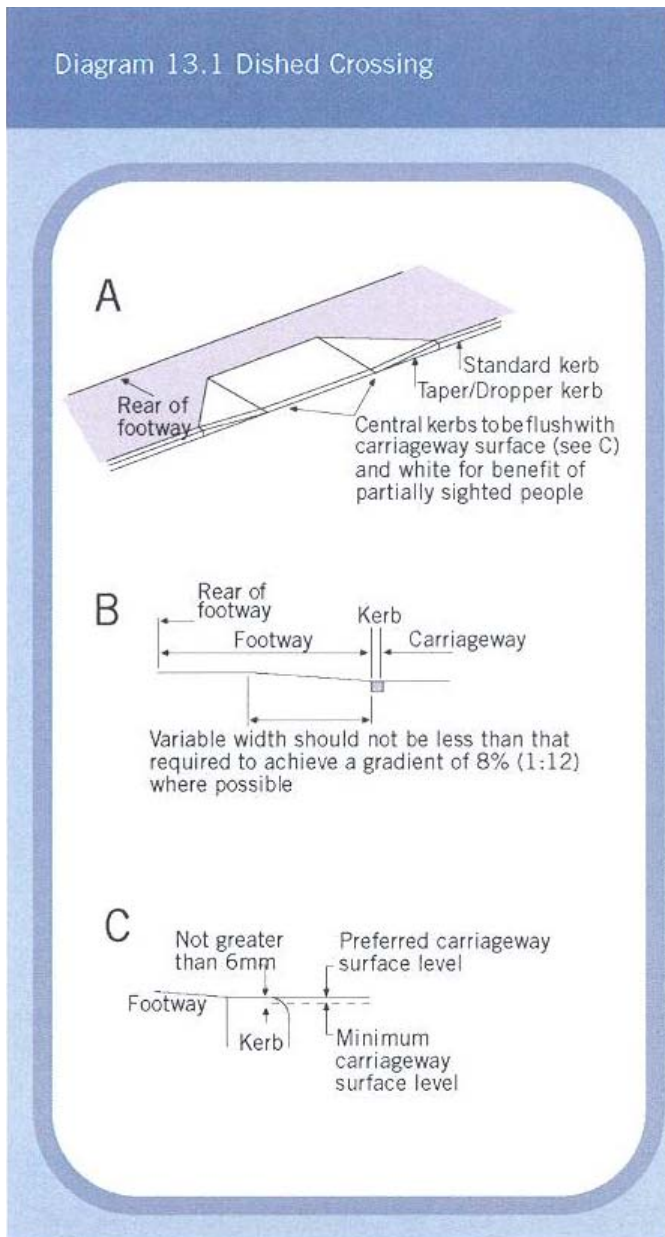
- **Footpaths and Public Lighting are always essential.**
 - Lighting shall be designed to standard and must be provided on all footpaths.
 - In an urban environment footpaths should be on both sides of the public road.
 - On Distributor, Major Access and Strategic Link Roads footpaths to be 2.5m – 3.0m wide.
 - Other Roads:
 - 2.0m wide standard
 - 1.5m may be acceptable for short sections as agreed with RDO.
 - 1.2m minimum width (at pinch points)



DROPPED CROSSINGS & TACTILE PAVING

- **Dropped Kerbs** – Kerbs should be dropped at junctions between footpaths and carriageways to assist wheelchair users and the mobility impaired. Likewise kerbs should be dropped between cycle tracks and carriageways to facilitate the smooth transition for cyclists. Alternatively carriageways may be raised by means of a flat topped hump.

Dished Crossing Detail:



Detail taken from Chapter 13 of Traffic Management Guidelines



- **Tactile Paving** –
 - Where footways are being constructed, repaired or renewed, consideration should be given to the provision of appropriate tactile paving surfaces particularly at junctions and crossing locations along pedestrian desire lines to provide information to visually impaired.
 - Tactile paving should be laid so as the blisters direct the pedestrians.
 - Controlled crossings – red tactile paving shall be used and shall be laid in an “L” shape. For Inset Controlled Crossings the stem of the L shall extend back to the building line. (For details see “Guidance on the use of tactile paving surfaces”)
 - Uncontrolled crossings – buff / grey coloured tactile paving shall be used and shall be laid with no “stems”

Table 13.1 below is taken from the “Traffic Management Guidelines” DoT, DOELG, DTO

| TABLE 13.1 DETAILS OF TACTILE LAYOUTS AT CROSSING POINTS | | | |
|--|--------------|--------------------|---|
| Use | Colour | Shape | Width of blister paving |
| Controlled crossing facility | Red | Varies (see below) | |
| 1. On footways at either side of road | | L shape | Stem 1200mm wide kerbside 800mm/ 1200mm at inset ^a or 1200mm at in-line ^b |
| 2. On central islands (refuges) | | Kerbside | 800mm wide at each side if greater than 2m wide or full width if less than 2m wide |
| Uncontrolled crossing point | Grey or Buff | Varies (see below) | |
| 3. On footways at either side of road | | Kerbside | 800mm wide at inset ^a crossing point 1200mm wide at in-line ^b crossing point |
| 4. On central islands (refuges) | | Kerbside | 800mm wide at each side if greater than 2m wide or full width if less than 2m wide |

^a Inset crossing is away from a junction

^b In-line crossing is at junctions in line with direct pedestrian movement

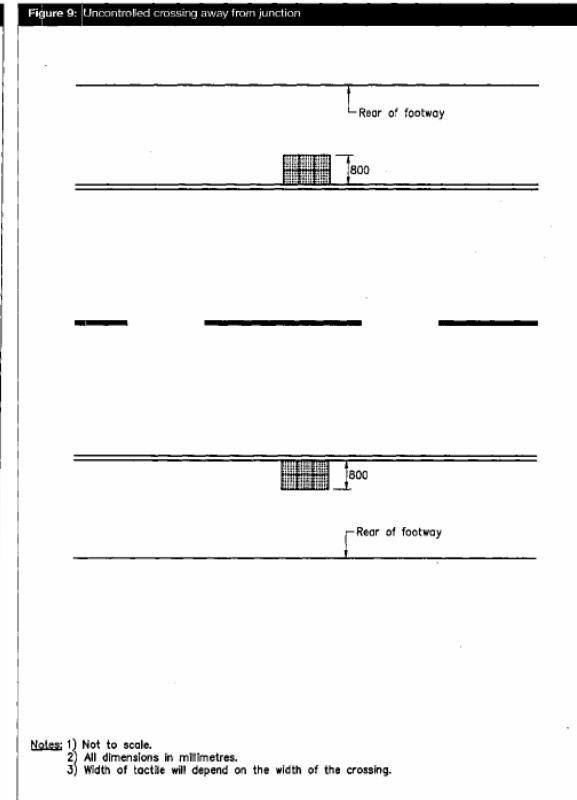
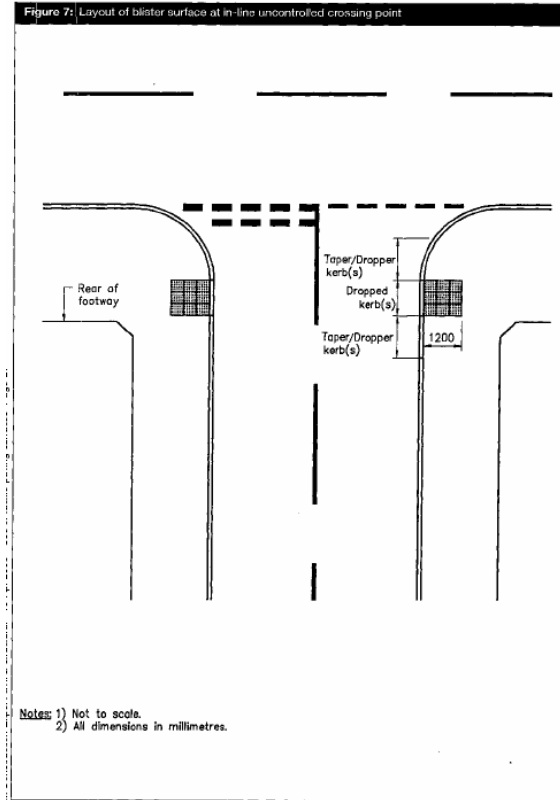
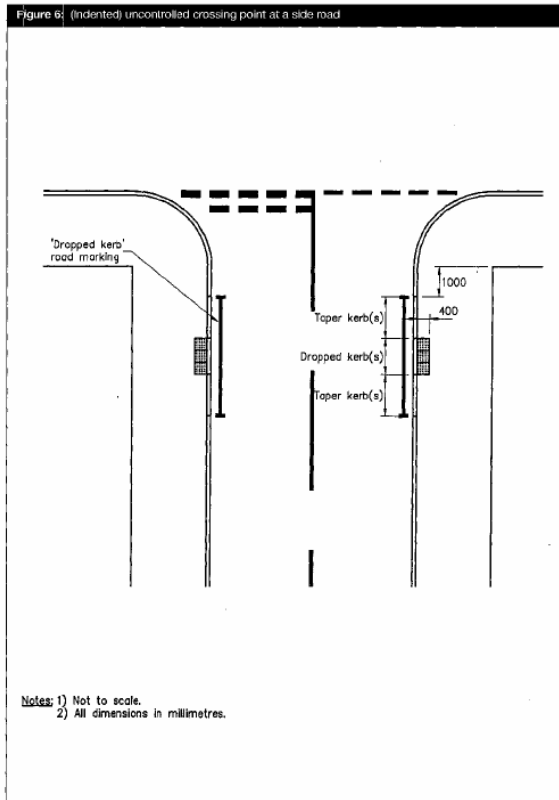
Examples of dropped kerbing and tactile paving are shown on the following pages.

For further information on tactile paving see:

“Guidance on the Use of Tactile Paving Surfaces.”, DFT

“Traffic Management Guidelines”, Department Of Transport

“Inclusive Mobility”, The Department for Transport



Indented uncontrolled crossing point at a side road

Layout at in-line uncontrolled crossing

Uncontrolled crossing away from junction

Figures take from "Guidance on the Use of Tactile Paving Surfaces.", DFT



Diagram 13.4 Layout at traffic island 2m wide or less

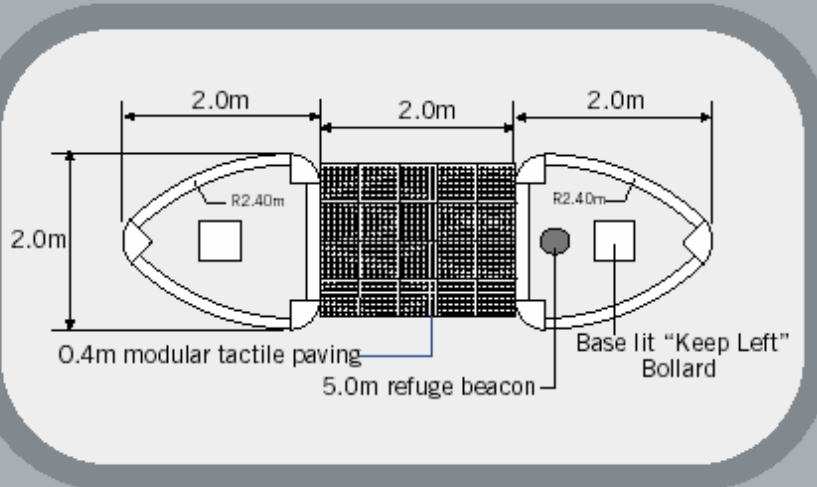


Diagram 13.5 Layout at traffic island greater than 2m wide

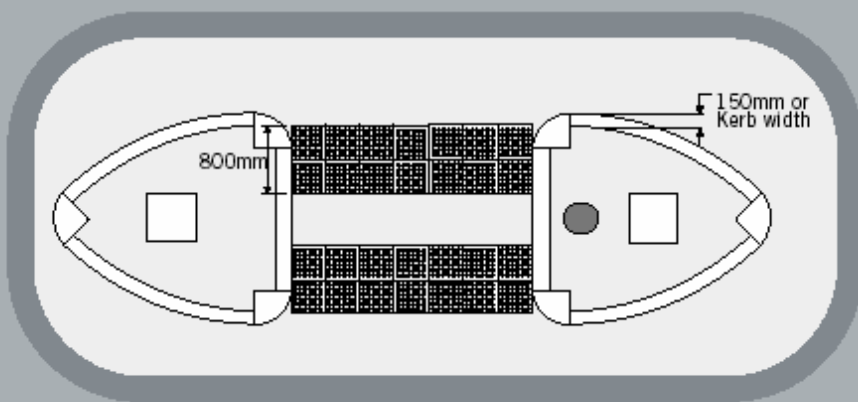
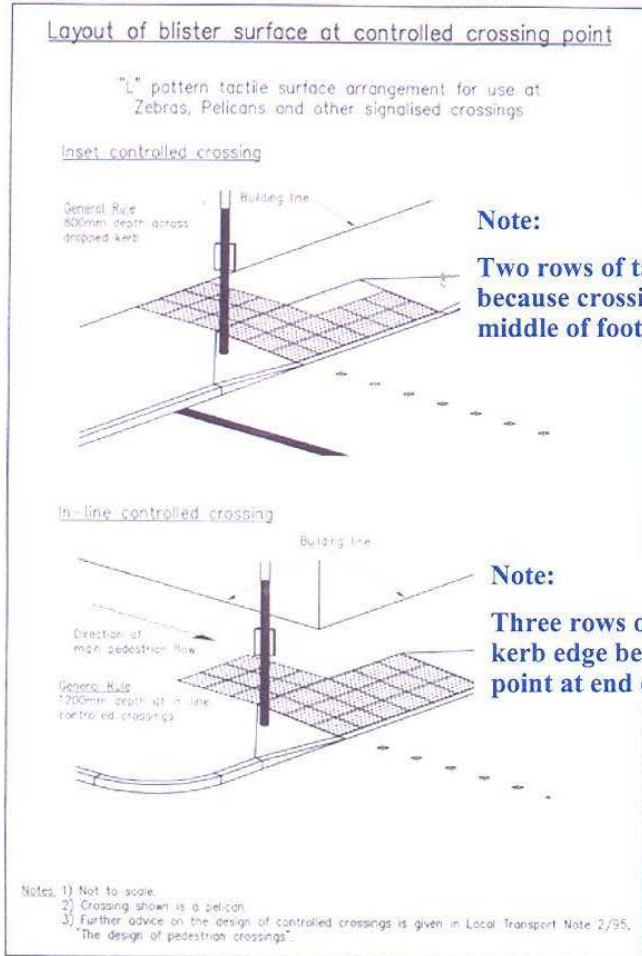


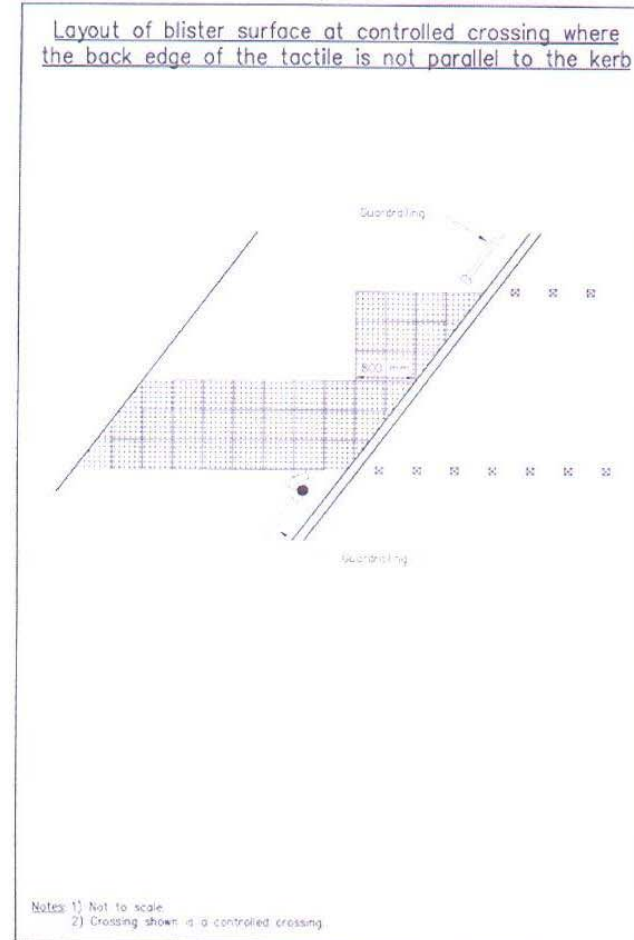
Figure take from “Traffic Management Guidelines”, Department Of Transport



Tactile Paving Crossing Detail:



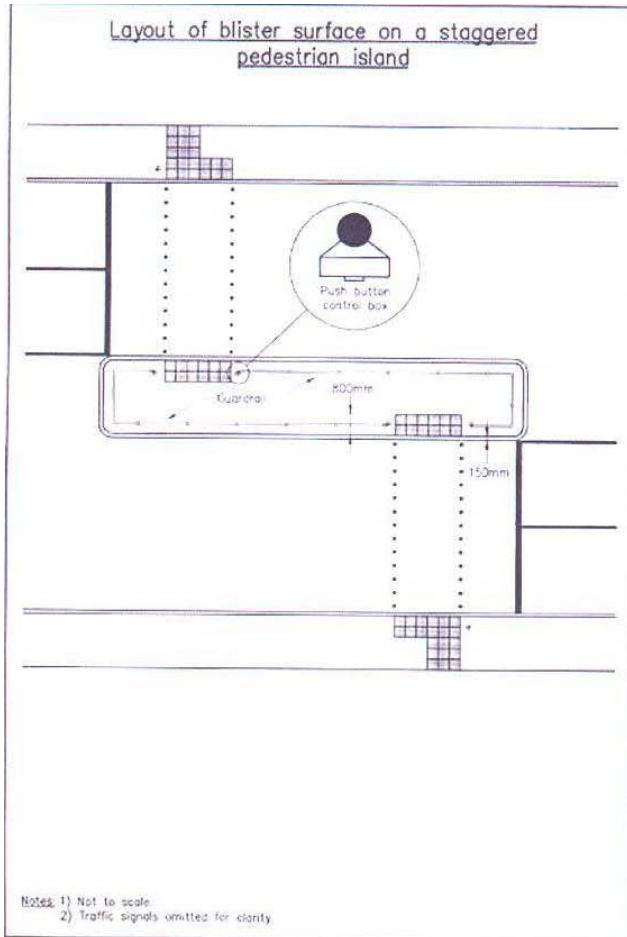
Layout of Blister Surface at Controlled crossing points



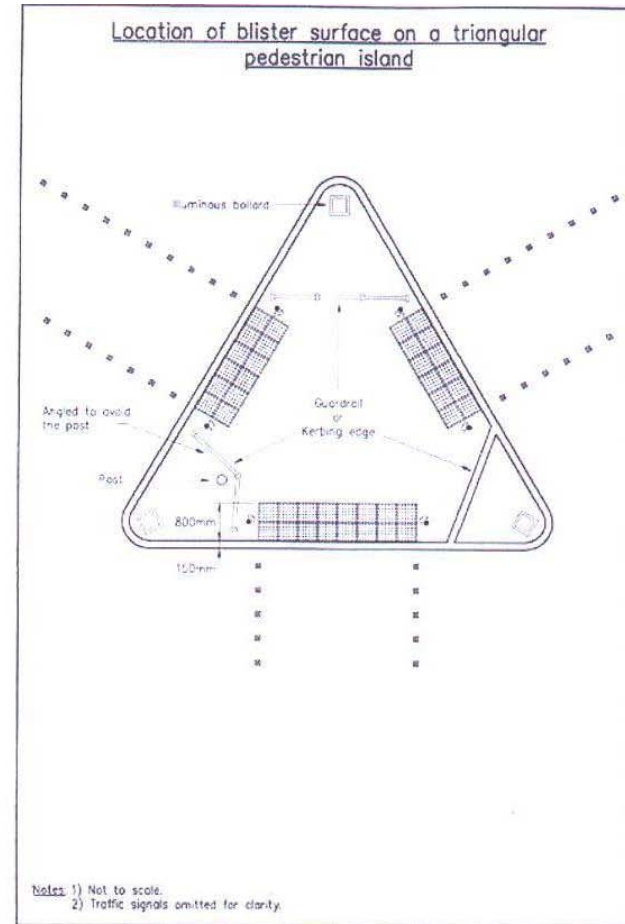
Where back edge of the tactile paving is not parallel to the Kerb



Tactile Paving Crossing Detail:



Blister surface on a staggered pedestrian island



Blister surface on a triangular pedestrian island



BUILDING LINES

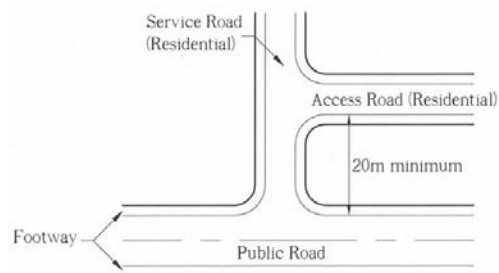
- Ensure building lines are the correct distance from the public road.

Building lines from the centre line of public road:-

- National Road 40m
- Regional Roads 30m
- Other Roads 20m

FURTHER INFORMATION ON JUNCTION REQUIREMENTS

- Type of junction and level of Access Design required (i.e. Need for Right Turning Lane, Roundabout, Road Widening etc.) will be driven in many cases by the results of the TTA data.
- Stop junction to be taken as default unless otherwise indicated.
- Yield junctions will be acceptable at locations within developments where traffic volumes and speeds are low.
- When analysing junctions all possible movements must be considered.
Where vehicles turning into a development come from both directions there are at least 6 possible impacts at the junction.
- No internal access road junction shall be closer than 20m to the service road junction with the public road. See diagram below. Note: This distance may increase depending on the traffic volumes using the internal access road.



- Driveway accesses shall not be located at the bellmouth of a junction, nor shall they be located within twice the kerb radius on minor arms of a junction.



ESTATE ROAD LAYOUT DESIGN

APPROPRIATE ESTATE ROAD LAYOUT DESIGN SHOULD AIM TO:-

- Create a safe, secure and pleasant environment for people to live in.
- Minimize conflict between road users.
- Minimise the intrusion of vehicle traffic.
- Keep vehicle speeds low.
- Ensure ease of access for the emergency services.
- Encourage walking, cycling and sustainability.

AREAS OF CONSIDERATION

ROAD CATEGORIES - 50KPH roads, 30kph roads, Cul de Sacs

(Access roads within developments should be designed so as to restrain vehicle speeds to a 30kph target maximum speed or lower.)

DESIGN DETAILS – Speed Control & Calming Details, Gradients, Max/Min Kerb Radii, Stopping Sight Distance, Lengths of Straights, Turning Heads, Loops, Footpaths & Pedestrian facilities.

PARKING PROVISION – On-Site, Lay-bys, Pedestrian Areas.



ROAD CATEGORIES

(50KPH ROADS, 30KPH ROADS, CUL DE SACS.)

There are 2 main categories of Housing Estate Roads:-

- **30 Kph** – will be the most predominant service road type. These roads must be appropriately designed and traffic calmed. (Access roads within developments should be designed so as to restrain vehicle speeds to a 30kph target maximum speed or lower.)
- **50 kph** – may be appropriate for some spine roads which have minimal dwelling accesses onto the stretch of road being considered.

CARRIAGEWAY WIDTHS

- Shall be designed to take into account expected volumes and speeds of vehicular traffic
- Wide enough to ensure ease of access for all emergency service vehicles with expected parking.
- Narrow enough to encourage slow speeds.
- Service roads shall generally be a minimum of 6m wide with 2 no. 2m wide footpaths, assuming there is adequate provision for off-street parking.
- Where Lay-bys, indented or off-street parking is provided kerb to kerb road widths may be reduced to 5.0 metres where there a small number of dwellings being served by the stretch of road being considered. (Designs incorporating road widths narrower than 6m shall be agreed with Road Design)
- The minimum width for a shared surface is 6m. All details relating to the design of shared surfaces shall be agreed with Road Design.



DESIGN DETAILS

The design of new residential layouts should avoid features that promote speed and safety problems such as:

- Wide Roads
- Straights or long sweeping curves
- Unnecessarily large junction corner radii
- Large visibility splays

SPEED CONTROL WITHIN DEVELOPMENTS

- Access roads within developments should be designed so as to restrain vehicle speeds to a 30kph target maximum speed or lower.
- The preferred method of speed restraint is through the appropriate horizontal alignment design of the service road. The design of new residential roads should be such that there is no necessity for the retrofitting of vertical traffic calming at a later stage.
- In certain circumstances it may be acceptable to use vertical measures to restrain vehicle speeds but these will be the exception and details of any vertical calming proposals shall be agreed with Road Design and will be in accordance with the “Traffic Management Guidelines”.

LENGTHS OF STRAIGHTS

- Lengths of straights should be only so long that the vehicle user has a maximum sight distance of 70m
- Buildings should be used to reinforce the impression of low speed i.e. sited in the drivers line of sight at the change of direction
- Twisting alignments and tighter kerb radii will reduce visibility and thus reduce speeds.



GRADIENTS

- Desirable gradients for footpaths and service roads within residential developments should lie between 0.5% (1 in 200) and 5% (1 in 20). Extreme gradients of 8.3% (1 in 12) may be acceptable, but should be used moderately and for short lengths. They should be integrated into the design and there should be no sharp changes in gradient.
- Exceptions may be considered only in situations where the design includes adequate provision for pedestrians and cyclists (Road & Social?)

LOOPS

- Loops – Service road loops are not desirable within housing developments where there is a danger of creating a “racing circuit” effect. The service road should terminate with a turning area that complies with “Recommendations for site development works for Housing Areas”
- A Dual Access is acceptable and is encouraged for larger developments and where the layout is appropriate. It is also dependant on the volume of generated traffic generated by the development. (**N.B.** It is essential that the provision of a second access does not create a layout which may be conducive to rat running - need for a dual access must be agreed with Road Design)

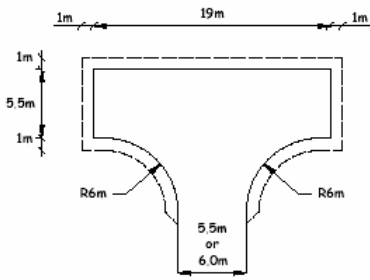
TURNING AREAS

- No turning area is required if the distance from a junction or alternative turning facility is less than 30m i.e. Cul de Sacs off 30kph roads.
- ALTERNATIVELY:–
 - 6m radius circle or equivalent from 30 kph road off an estate road.
 - 9m radius circle or equivalent from other roads.
 - Alternative turning areas to comply with “Recommendations for Site Development Works for Housing Areas”

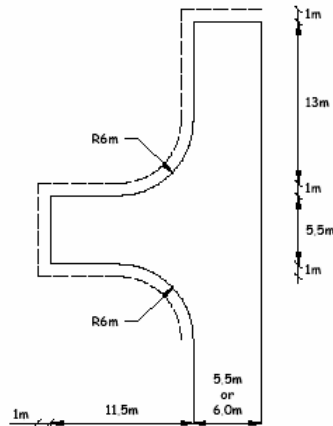


Residential Turning Bays

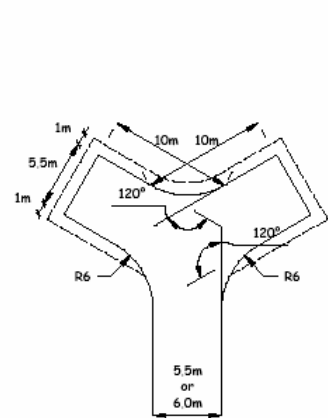
Type (i)



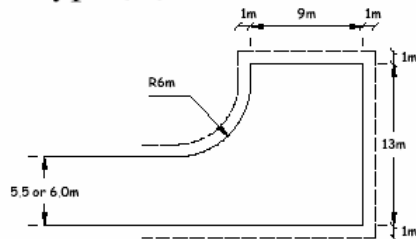
Type (ii)



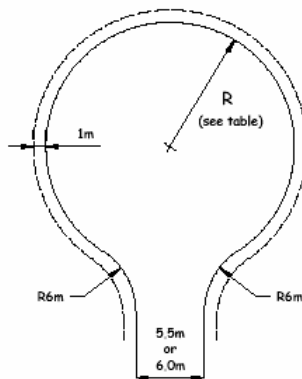
Type (iii)



Type (iv)



Type (v)



| Value of R which permits turning without reversing | |
|--|----------|
| Vehicle Type | R metres |
| Private Car | 6 |
| Fire Engine | 9 |
| Refuse Vehicle | 10 |
| Furniture Removal | 11 |
| 1m clearance for vehicle overhang shown dashed | |
| NOTE: DRAWINGS NOT TO SCALE | |



FOOTPATHS & PUBLIC LIGHTING

- Footpaths and Public Lighting are **always** essential.
 - Lighting to be designed to standard and must be provided on **all** footpaths.
 - In an urban environment footpaths should be on both sides of the public road.
 - On Distributor, Major Access and Ring Roads footpaths to be 2.5m – 3.0m wide.
 - Other Roads:
 - 2.0m wide standard
 - 1.5m acceptable for short sections
 - 1.2m minimum width (at pinch points)

WITHIN RESIDENTIAL DEVELOPMENTS:

- Residential layouts must give priority to pedestrians and residents over motor vehicles and hence precedence should be given to pedestrians across all entrances/driveways. Footpaths within developments should be continuous with dropped kerbs at entrances.
- Footpaths shall, in general, be provided along both sides of service roads.
- Where appropriate one footway may be sufficient for single sided development – however dropped kerbs and pedestrian crossing points will be required at junctions and other pedestrian desire lines.
- Footpaths may be required across open spaces to enhance convenience for pedestrians particularly where they would create a significantly shorter route than those provided by other footpaths.
- Pedestrian links are also encouraged between cul-de-sacs and other estate roads. Layouts should be designed to create the shortest practicable link.



CRÈCHES

- Shall be located as near to the development's entrance as practicable to avoid the additional traffic that it will generate travelling through the estate.
- A drop off area shall be provided on the crèche site.
- Appropriate staff parking shall be provided i.e. 1 parking space per staff member
- Vehicular entrance shall be a maximum width of 6m with 6m radii curves.



ACCESS TO DEVELOPMENTS

- ACCESS TO DEVELOPMENTS FROM EXISTING PUBLIC ROADS
 - If the development is contingent on works to public road a specific development charge may be appropriate.
 - The findings of the TTA will indicate proportionality.

- ROAD WIDENING - MINIMUM WIDTHS OF PUBLIC ROAD:
 - In general the minimum carriageway width for the public road shall be 6.0m.
 - Where the potential exists for further development along the public road the applicant must consult with Road Design.
The existing developed width may be taken into account.

- RIGHT TURNING LANES
 - In general the need will be determined by TTA.

- JUNCTION IMPROVEMENT
 - In general the need will be determined by TTA.

- ROAD STRENGTHENING
 - As required (Developer to provide design (FWD etc))

**FOOTPATH, PUBLIC LIGHTING AND SITE ENTRANCE CONDITIONS TO BE COMPLIED
WITH PRIOR TO COMMENCEMENT OF SUBSTANTIVE SITE DEVELOPMENT**



PARKING PROVISION

Any development site must be capable of accommodating the parking needs generated by that development. Exceptions may be considered only in situations where:

- Public car parks are available or can be made available to accommodate the additional needs or,
- Existing kerbside parking can accommodate the excess demand without causing traffic obstruction.

Furthermore, the question of operational carparking demands will be assessed as will service vehicle requirements in the context of the sites capability. Where on-site parking cannot be accommodated, and where public car parks are available or a programme of works is in place to make a public carpark available in the area, a carparking contribution will be levied by the Planning Authority on the developer to assist in defraying costs incurred by the Authority in providing the carpark which will facilitate the development.

Where multi storey or underground carparking is proposed the applicant shall refer to the Institute of Structural Engineers “Design recommendations for multi-storey and underground car parks” for design guidance.



PARKING RECOMMENDATIONS FOR RESIDENTIAL DEVELOPMENTS

- A minimum of 2 parking spaces are required within each site boundary or communal designed parking areas allowing for manoeuvrability and easy access. Communal parking spaces shall be close to and within sight of the dwellings they are intended to serve.
- A minimum of 1 parking space per 4 dwellings shall be provided within the development for visitor parking. Parking areas shall allow for manoeuvrability and easy access.
- Driveways shall be designed so not to encourage overspill parking onto the footpath.
- Parking (both parallel & perpendicular for 30kph designed roads) is acceptable at open spaces however the applicant must provide safe crossing locations for pedestrians.
- For apartment developments a minimum of 1.5 parking spaces are required per apartment.



County Car Parking Requirements

| Type Development | Car Parking Standard | Cycle Parking Standard |
|---|--|---------------------------------|
| Residential | 2 spaces within boundaries of dwelling | To be agreed |
| Apartments | 1 per unit | 1 per 10 units |
| Mobile Home | 1 per unit | 1 per 10 units |
| Student Accommodation | 1 per 6 beds | 1 per unit |
| Shop/Retail Units | 1 per 20sqm retail floorspace | 1 per 100sqm retail floor space |
| Shopping Centres >1,000sqm | Individually assessed | Individually assessed |
| Supermarkets | 1 per 20sqm retail floorspace | 1 per 100sqm retail floorspace |
| Retail Warehousing/Cash and Carry | 1 per 40sqm floorspace | 1 per 150sqm floorspace |
| Garden Centres | 1 per 30sqm floorspace | 1 per 150sqm floorspace |
| Car Showrooms | 1 per 150sqm gross floorspace | N/A |
| Factory Retail | 1 per 40sqm floorspace | 1 per 150sqm floorspace |
| Public Houses | 1 per 5sqm public floorspace | 1 per 150sqm floorspace |
| Restaurants | 1 per 10sqm dining space | 1 per 100sqm floorspace |
| Café | 1 per 7sqm dining space | 1 per 100sqm |
| Take Aways | 3 per take away | 1 per 100sqm floorspace |
| Offices, Financial and Professional Services (including banks, other agencies, betting shops) | 1 per 25sqm gross floorspace | 1 per 100sqm gross floorspace |
| Manufacturing, Industrial/Light Industrial | 1 per 40sqm working floorspace | 1 per 500sqm gross floorspace |
| Garage (service) | 1 per 300sqm working space | N/A |
| Warehouse | 1 per 75sqm gross floorspace | 1 per 500sqm gross floorspace |
| Conference Centres | 1 per 50sqm public area | To be agreed |
| Surgeries, Clinics and Group Medical Practices | 2 spaces per Public Consulting Room | 1 per Consulting Room |
| Guesthouses/Hotels | 1 per Bedroom | 1 per 20 beds |
| Hostels | 1 per 2 bedrooms | 1 per 10 beds |



| | | |
|---|--|---|
| Cinemas, Theatres, Stadia | 1 per 15 seats | 1 per 20 seats |
| Swimming Pools, Ice Rinks etc | 1 space per 20sqm of pool/rink plus 1 per 3 staff | 1space per 20sqm pf pool/rink plus 1 per 3 staff |
| Bowling Alleys, | 4 spaces per lane | 2 per lane |
| Amuse/Entertainment | 1 per 30sqm gross floorspace | 1 per 50sqm gross floorspace |
| Community Centre | 1 per 10sqm public floorspace | 1 per 75sqm public floorspace |
| Places of Worship, Assembly Hall | 1 per 10 seats | 1 per 10 seats |
| Crèches | 1 per staff, 1 accessible space and 1 drop off area | 1 per 6 staff |
| Gymnasium | 1 per 30sqm public floorspace | 1 per 150sqm public floorspace |
| Sports Clubs, grounds | 1 space per 15sqm and 6 spaces per each pitch, 2 spaces per court | 1 space per 15sqm and 6 spaces per each pitch, 2 spaces per court |
| Hospitals, Nursing Homes, Convalescent Home | 1 per bed and staff parking | 1 per 10 staff on duty |
| Library | 1 per 30sqm gross floorspace | 1 per 50sqm gross floorspace |
| Funeral Home | 25 spaces | N/A |
| Primary Schools | 1 per classroom and drop off area and bus stop | 1 per 5 students |
| Secondary Schools | 1 per classroom and drop off area and bus stop | 1 per 5 students |
| Post Second Level | 1 per classroom and 1 per 10 students and 1 drop off area and bus stop | 1 per 3 students |



APPENDICES

Appendix A – CTTS 1 Form

Appendix B – CTTS 2 Form





| | |
|--|--|
| CTTS 1 | TRAFFIC AND TRANSPORT STATEMENT |
| To be completed for all planning applications | |

| | | | |
|-------------------------------|--|-------|--|
| Planning Reference No. | | | |
| 1 Applicant Details: | | | |
| Name | | Phone | |
| Address | | Fax | |
| | | Email | |

| | | | |
|--|-----------------------------|--|--|
| 2 | Development Details: | | |
| Description of proposed development | | | |
| On which road(s) does site have frontage? (Provide road no.) | N / R / L | | |

| | | | |
|---|------------------------------|--|--|
| 3 | Single Dwelling House | | |
| Is the proposed development only a single dwelling house construction or extension? | Yes / No | | |

Complete Section 4 if answer to section 3 is “No”.

| | | | | | |
|--|--------------------------------------|------------|--|--------------|-----------------|
| 4 | Traffic and Transport Impacts | | | | |
| What is the size of the proposed development? (m ² or no. of units) | | | | | |
| How many trips will be made per day to the site? | | | | | |
| Car driver | | Pedestrian | | Bus / Tram | |
| Car passenger | | Cyclist | | Rail | |
| HGV(indicate type / size) | | Taxi | | Total | |
| Will traffic to / from the development be more than 10% of existing traffic on the adjoining road (5% in the case of an already congested road)? | | | | | Yes / No |
| Is a new or modified access to the site needed to join the existing road network? | | | | | Yes / No |
| What changes to the existing roads layout are required as a result of this development? | | | | | |
| Is there existing public transport access to the site? Describe. | | | | | |
| What specific public transport provision is to be made as part of the development e.g. school minibus? | | | | | |
| What specific provision is to be made for pedestrians / cyclists as part of the development? | | | | | |



| | |
|--|---|
| CTTS2 | ADDITIONAL INFORMATION TRAFFIC AND TRANSPORT STATEMENT |
| To be completed where any of the thresholds described in table 2.1 of NRA Guidelines for Traffic and Transport Assessment are reached | |

| 1 Details of Development | | | |
|---|------|-------------------------------|-----------------|
| Description of proposed development | | | |
| Size of proposed development (m2 or no. of units) | | No. of parking spaces on site | |
| Existing use of site, with size | | | |
| Is development part of phased or incremental development? (If so, give details) | | | |
| | Cars | Heavy Vehs | Peds / Cyclists |
| Location of existing site access(es) Provide road no. | | | |
| Location of existing site access(es) Provide road no. | | | |

| 2 Details of Traffic and Transport Impacts | | | | | |
|--|--|-----------------------|--------------------|-----|-----|
| | | Total Vehicles | Time Period | | |
| Existing flow on adjacent roads (total vehicles) | Peak hourly flow (peak period for adjacent road) | | | | |
| | Activity Peak hourly flow (peak period for site) | | | | |
| | AADT (Annual Average Daily Traffic) | | | | |
| | Source of this data. | | | | |
| Existing flow to / from the site | | Cars | | HCV | |
| | | In | Out | In | Out |
| | Peak hourly flow | | | | |
| | Activity Peak hourly flow | | | | |
| | AADT | | | | |
| Source of this data. | | | | | |
| Projected traffic flow to / from the site on completion | | Cars | | HCV | |
| | | | | | |
| | Peak hourly flow | | | | |
| | Activity Peak hourly flow | | | | |
| | AADT | | | | |
| Source of this data. | | | | | |
| If there is more than one access to the site, How are the above flows split? | | | | | |



| | |
|---|------------------------------|
| Describe briefly any changes to existing roads layout required as a result of this development. | |
| Explain briefly how the proposed measures will accommodate existing and proposed traffic. | |
| Can the necessary consents and agreements to implement the above measures be obtained, including all the access requirements? | Yes / No Describe: |
| Have any public transport providers been consulted in relation to this development? | Yes / No Describe: |

Note a):- Where any of the thresholds in **Table 2.2 of the Transport and Traffic Assessment Guidelines** are met, a full TTA shall be completed and this statement shall be a summary of the findings of the report.

Note b):- Where any of the thresholds in **Table 2.1 of the Transport and Traffic Assessment Guidelines** are met, the developer or agent shall seek advice from the Local Authority planning representative as to the requirement for a full TTA.



REFERENCES & FURTHER READING

IRL DMRB, Irish Design Manual for Roads and Bridges, NRA.

Traffic Calming Guidelines, Traffic Calming Guidelines for Towns and Villages on National Roads

Traffic Management Guidelines, DoT, DOELG, DTO.

Inclusive Mobility, The Department for Transport.

Creating Places, achieving quality in residential developments, DOE, NI.

<http://www.mobility-unit.dft.gov.uk/tactile/>, Guidance on the Use of Tactile Paving Surfaces.

Recommendations for Site Development Works for Housing Areas, DOELG.

County Cavan Development Plan 2003-2009, Cavan County Council.

Design recommendations for multi-storey and underground car parks, Institute of Structural Engineers