milton keynes council

A Highway Guide for Milton Keynes

A guide for developers

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This document has been prepared by
Milton Keynes Council

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Foreword

Transport is important for all of us whether the trips are for school, work, leisure or shopping. It is vital that we try and make these trips as easy and efficient as possible. To help with this, our transport systems need to be well designed and constructed.

A key part of the design of our transport system and to help manage demand is at the planning application stage for new development. If we can get the design right at this stage then this will assist greatly in helping people get to where they need to in as sustainable, efficient and safe way as possible.

This guide has been produced to assist developers with their planning applications.

The guide is an important document that will, no doubt, help to support growth and jobs in Milton Keynes as well as helping us move around Milton Keynes in more sustainable ways.

Contents

Purpose of this document

This document sets out the design considerations and minimum standards for new highways and associated infrastructure in Milton Keynes. It has been produced primarily to assist designers of new development proposals.

However, some aspects of the document will also assist in the design of other proposals such as highway improvements and regeneration schemes.

In 2007 the Department for Transport and the Department for Communities and Local Government published 'Manual for Streets' (MfS). Manual for Streets is a national design and good practice document; however, it has given a context into which local guidance can be set. Paragraph 1.4.5 of MfS states that:

"Although MfS provides guidance on technical matters, local standards and design guidance are important tools for designing in accordance with the local context".

This Highway Guide builds on the guidance contained within MfS (and its companion guide Manual for Streets 2). It also clarifies where MfS applies, where the Design Manual for Roads and Bridges (DMRB) applies and where local standards apply.

In addition to providing advice on design and setting minimum standards, this guide also provides some background to the Highways Development Management function and the policies and procedures associated with it.

Guidance is also provided on the requirements for and preparation of, Travel Plans, Transport Statements and Transport Assessments.

The Council also produces a Specification for Highway Works, which sets out the detailed construction requirements for works on existing or proposed Highway. These works will be covered by processes under Section 38 (adoption of new roads) and Section 278 (works within the public highway) of the Highways Act 1980. Guidance on the process can be found in the Specification document.

This document is divided into four main sections:

Highways Development Management

This section provides an explanation of the Highways Development Management function and a summary of the policies and principles that form the framework for the guidance in the subsequent sections. It also contains advice on the preparation of documents that assess the transport implications of development proposals.

Design for People and Movement

Advice on the main considerations to be taken into account when designing new or improved transport infrastructure is contained in this section. Guidance is also given on the circumstances where MfS, DMRB or local standards apply.

The Layout in Detail

This section builds on the previous one by providing more detailed guidance and minimum standards that proposals should comply with. Whilst minimum standards are shown these are not intended as templates; innovative proposals that can be shown to meet or exceed the relevant principles are welcomed.

Parking

Guidance on the provision of cycle, powered two-wheeler, goods vehicle and car parking is given in this section. Advice on the sizes and layouts of parking spaces and the design of parking areas is also provided.

SECTION 1
HIGHWAYS DEVELOPMENT MANAGEMENT

1. Introduction

Highways development management deals primarily with the highway and transportation aspects of the planning process. Good highways development management will assist in the successful delivery of high quality, safe and accessible transport infrastructure within new developments.

There are many factors that influence the provision of highway and transport infrastructure within new developments. Some of these factors have relatively minor impacts; however, some have a major impact. The major influences include:

- Local context and site constraints;
- Designing streets for people;
- Car parking provision;
- The need to make more efficient use of land;
- Promoting travel choice including public transport.

The highway and transport infrastructure in new developments, especially the pattern and types of streets provided, has a defining influence on the overall layout and feel of new developments. This infrastructure can often have the most significant impact on the day-to-day experiences of the users of that built environment.

This relationship between the highway infrastructure, the development and the user means that it is essential to have integrated highway design input at the earliest possible stage of the development process. The Council's Highways Development Management officers are able to provide advice to all parties involved in the planning of new development, through all stages of that process.

Both this Highway Guide and the Council's Highways Development Management officers should be consulted during the preparation of all master-planning documents such as Development Briefs and Design Codes. Officers will also provide advice and input for all transport-related documents submitted as part of the planning process including:

- Design & Access Statements;
- Transport Statements;
- Transport Assessments;
- Travel Plans.

Reproduction of relevant parts of this guide within any of the documents mentioned above is encouraged.

1.1. Transport Vision and Strategy

The Council's vision, aims and objectives for transport are set out in several local policy and strategy documents. These local documents sit within the national context, such as the National Planning Policy framework (Ministry of Housing, Communities and Local Government, 2018).

The key local documents setting out the Council's transport vision for Milton Keynes are:

- The Milton Keynes Local Plan (2005);
- Transport Vision and Strategy for Milton Keynes (2011)
- The Milton Keynes Core Strategy (2013);
- MK Futures 2050 (2016)
- Emerging Plan:mk (when adopted will replace the Core Strategy and Local Plan;
- Milton Keynes Mobility Strategy (2018)

Transport Vision and strategy for Milton Keynes (2011) – Vision statement

"By 2031, Milton Keynes will have the most sustainable transport system in the country, increasing its attractiveness as a place to live, work, visit, and do business. There will be a real transport choice to satisfy individual preferences and encourage more sustainable travel behaviour. The transport system will provide fast and efficient movement of people and goods, and will be accessible for all. Everyone will have access to key services and amenities, including employment, health, education, retail and leisure.

Transport networks, including the unique grid road and Redway networks, will be expanded and fully integrated into new developments and regeneration areas to support more sustainable communities. Connectivity to local towns, major cities, and international transport gateways and networks will be first class; and Milton Keynes will embrace new technology, being an exemplar for the latest developments in information technology, fuel technology, and new forms of transport.

The council will work in partnership with all sectors and the wider community to deliver the transport vision and strategy."

Objectives

The objectives for the implementation of the strategy are:

1. Provide real and attractive transport choices to encourage more sustainable travel behaviour as Milton Keynes grows.
2. Support the economic growth of the borough through the fast, efficient and reliable movement of people and goods.

3. Reduce transport based CO2 emissions to help tackle climate change.
4. Provide access for all to key services and amenities in Milton Keynes, including employment, education, health, retail, and leisure.
5. Improve safety, security and health.
6. Contribute to quality of life for all Milton Keynes residents, strengthening linkages between communities.
7. Establish a development framework that embraces technological change, in which Milton Keynes can continue to grow, pioneer and develop.

Milton Keynes Mobility Strategy (2018) – objectives and outcomes

Support Growth and provide mobility for all – support the growth ambition of Milton Keynes and provide good connectivity throughout the Borough and beyond.

Outcomes

a) *Reliable journey times* are essential to support accurate, consistent travel planning
b) *A transport system to support growth*
c) *Modern regulatory system* – work to improve the way transport regulations support improvements in our transport system.

Provide an effective network –provide a transport network that is well maintained, free flowing, and operating efficiently at all times.

Outcomes

a) *An integrated traffic management system (UTMC)* to allow swift journeys where conditions allow and selective prioritisation of traffic during peak travel periods.
b) *A well maintained transport system* –where repairs are completed quickly and to standard to support reliable journey times.
c) *A transport system that is available, well maintained accessible and safe for all users*

Maximise Travel Choices – maximise the use of technology and innovation to both inform the traveller and to provide travel options.

Outcomes

a) *Integrated journey planning available on smartphone devices* –so that travellers stay connected on the move.
b) *Making the most of autonomous vehicles* - to significantly reduce the cost of travel while increasing frequency and availability of services.
c) *Increasing Mobility as a Service (MaaS*) – enabling transport to be provided as a service reducing the need for car ownership.

d. *Seamless integrated travel* – with single payment ticketing options.

Protect transport users and the environment – the safety of all transport users is a key part of this strategy as is the need to reduce transport pollution and CO2 emissions, protect the natural environment and promote improved public health and wellbeing.

Outcomes

d) *Supporting and encouraging use of active modes which deliver health & wellbeing benefits.*
e) *Supporting and encouraging travel patterns which minimise CO2 and other pollutant emissions*
f) *Ensuring the safety of all travellers* is an essential outcome for all parts of the transport process and has proven benefits to the wider health, wellbeing and economic aspects of society.

1.2. Highways Development Management Policy Context

The Core Strategy is a key part of the Development Plan that replaces the strategic policies in the 2005 Local Plan. It sets out the Council's Development Management policy framework and provides the strategy and objectives for development in Milton Keynes. Specifically the Core Strategy replaces the following strategic policies in the Local Plan (2005): S1 – S5, S7-S9, T6, EA4, EA4A, H3, TC1, CC3, PO1 and PO2.

Within the LDF and beneath the Core Strategy a series of Development Plan Documents (DPDs) will be produced such as the Site Allocations Plan (2018).

Plan:MK, once adopted, will replace the Core Strategy and Local Plan (2005).

Neighbourhood Plans

Neighbourhood Planning is a key part of the Localism Act. It gives greater powers to local communities to shape the development of their area by preparing planning policies at a local level. Milton Keynes currently has 24 designated neighbourhood areas. For details of neighbourhood plans refer to:

https://www.milton-keynes.gov.uk/planning-and-building/planning-policy/neighbourhood-planning

Local Plan

Relevant local plan policies
T1 – The transport user hierarchy
T2 – Access for those with impaired mobility

T3 & T4 – Pedestrians and cyclists
T5 - Public Transport
T6 – transport interchanges
T7 – Park and Ride
T8 – Rail and canal freight
T9 – Road Hierarchy
T10 – Traffic
T11 – Transport assessments and travel plans
T12 – Major transport schemes
T13 – Transport reservations
T14 – Roadside services
T15 – Parking provision
T16 – Lorry parks
T17 – Traffic calming

D1 – Impact of development proposals on locality
D2A – Urban design aspects of new development

H10 – Subdivision of dwellings and houses in multiple occupation (HIMOS)

Table T1 in the Local Plan also sets out the local road hierarchy and describes the main functions of each category of road.

TABLE T1: THE ROAD HIERARCHY

POLICY REQUIREMENTS	PRIMARY DISTRIBUTOR	DISTRICT DISTRIBUTOR	LOCAL DISTRIBUTOR	ACCESS ROAD
Encourage through traffic	✓			
Discourage through traffic		✓		
Discourage through and non-local motor traffic			✓	
Discourage all non-essential motor traffic				✓
Ensure safety and convenience of pedestrians and cyclists, or provide safe and convenient alternative routes for these users	✓	✓		
Give priority to the needs of pedestrians and cyclists			✓	✓
Give priority to the needs of public transport	✓	✓	✓	
Restrict the number of turning and crossing movements	✓	✓		
Stop the provision of new frontage accesses and seek a reduction in the existing number of vehicle access points	✓	✓		
Discourage the provision of new accesses and seek a reduction in the existing number of vehicle access points			✓	
Restrict or prohibit on street parking	✓	✓	✓	
Reduce the environmental impact created by traffic	✓	✓		
Introduce traffic calming measures			✓	✓

A description of the road hierarchy is set out more fully in section 1.3 of this guide. Figure 1 in section 1.4 shows the Milton Keynes route hierarchy and the classification of the higher route categories.

1.3. Highways Development Management Policies and Principles

Policies

The policies listed below will be taken into account when considering the highway implications of development proposals.

Development proposals should comply with these policies or, where a departure is sought, full and detailed justification should be provided within supporting documentation.

Location

HL1 Development proposals for community, employment, retail and leisure uses should be located within the communities that they serve and close to public transport routes.

Proposals that generate significant travel demand, in terms of the combined length and number of journeys, will be resisted if they are proposed in locations that are remote, have poor public transport links or are difficult to access by non-car modes.

HL2 Proposals for non-residential uses in rural areas, which generate significant travel demand in terms of the combined length and number of journeys, will normally be resisted unless a specific local need can be demonstrated and adequate access by non-car modes can be achieved.

Access

HA1 New accesses for development proposals will not be permitted from Primary Distributors and will normally be resisted from District Distributors.

Wherever possible, access shall be taken from the lowest category of road appropriate to the development.

HA2 New vehicular accesses will not normally be permitted on sections of road that are subject to the national speed limit.

Proposals that result in an increased use of existing accesses in such locations will also normally be resisted.

HA3 On classified roads, additional vehicular accesses to the public highway, from sites that have an existing access point, will not normally be permitted.

Design

HD1 The layout of the movement and parking infrastructure within development proposals should comply with the Council's Highway Guide and Residential Design Guide.

HD2 All new estate roads, footpaths and cycleways in Milton Keynes should be constructed in accordance with the Council's 'Specification for Highway and Construction Work'.

The Council will normally seek to adopt as public highway the frontage access to groups of six or more dwellings.

Principles

The principles listed below should be followed when preparing development proposals. Supporting documentation should refer to these principles as appropriate and demonstrate how the proposals comply with each.

HP1 Development proposals should contribute towards an improved transport network, both for users of the new development and for the existing users of adjoining transport infrastructure. Every development proposal should be able to demonstrate, as a minimum, a 'nil-detriment' outcome post-development.

HP2 The impact of the development on the operational and environmental capacity of the local transport network must be fully considered. Major development proposals (those requiring a 'major' planning application) should be accompanied by a Transport Statement* (TS) or Transport Assessment* (TA) and a Travel Plan*.

HP3 All development proposals including infill sites must accommodate the needs of people with disabilities, pedestrians, cyclists and horse-riders. Proposals should also include adequate provision for satisfactory parking, servicing and movement within the site.

HP4 The provision of facilities for bus routes, stops and shelters should be incorporated into all new major developments proposals (those requiring a 'major' planning application).

HP5 Where appropriate the developer will be expected to provide, or contribute towards, improvements to local transport infrastructure. Proposals should also contribute to the improvement of road safety and incorporate appropriate speed restraint measures.

HP6 Proposals should not generate traffic of excessive volume, size or weight on unsuitable roads (including rural lanes, residential streets and conservation areas).

* see Section 1.5

1.4. The Highway Network

The road network in this country has developed over many years and takes the form of a hierarchical system. This system encourages the use of appropriate roads, by assisting through traffic on major routes and giving more priority to non-motorised traffic and providing access on more minor routes.

At the top of the hierarchy is the Motorway network, which (together with Trunk Roads) the Highways England defines as a strategic network of roads to move people and freight around the country.

The Primary Route Network (PRN) comprises all Trunk Roads and many non-Trunk A Class roads; it can be distinguished by the presence of direction signs with green backgrounds. The function of the PRN is to carry inter-urban and long-distance traffic between primary destinations.

Alongside the PRN is a system of Principal Roads, often locally or regionally defined as strategic for a variety of reasons, such as their traffic function or the destinations they connect or serve.

Collectively these routes form the group referred to in this guide as Primary Distributors. These roads receive the highest level of protection from development impacts and new accesses due to their strategic traffic-carrying function.

- Primary Distributors = Motorways, Trunk Roads, Primary Routes, Principal Roads.

Beneath the network of Primary Distributors is a system of more local Roads and Streets which are categorized according to their primary functions. In Milton Keynes these categories are:

- District Distributors = B Roads, Grid Roads, Other locally strategic routes;
- Local Distributors = Collector routes within local areas or grid squares;
- Industrial Roads = Non-residential roads;
- Streets = all remaining routes.

Roads

Roads include Primary, District and Local Distributors as well as Industrial Access Roads. They are defined by the fact that they normally carry traffic between destinations and they cater for all, or most, traffic types. They generally provide priority for vehicular traffic. In the case of Industrial Access Roads they typically carry high levels of HGV/LGV traffic.

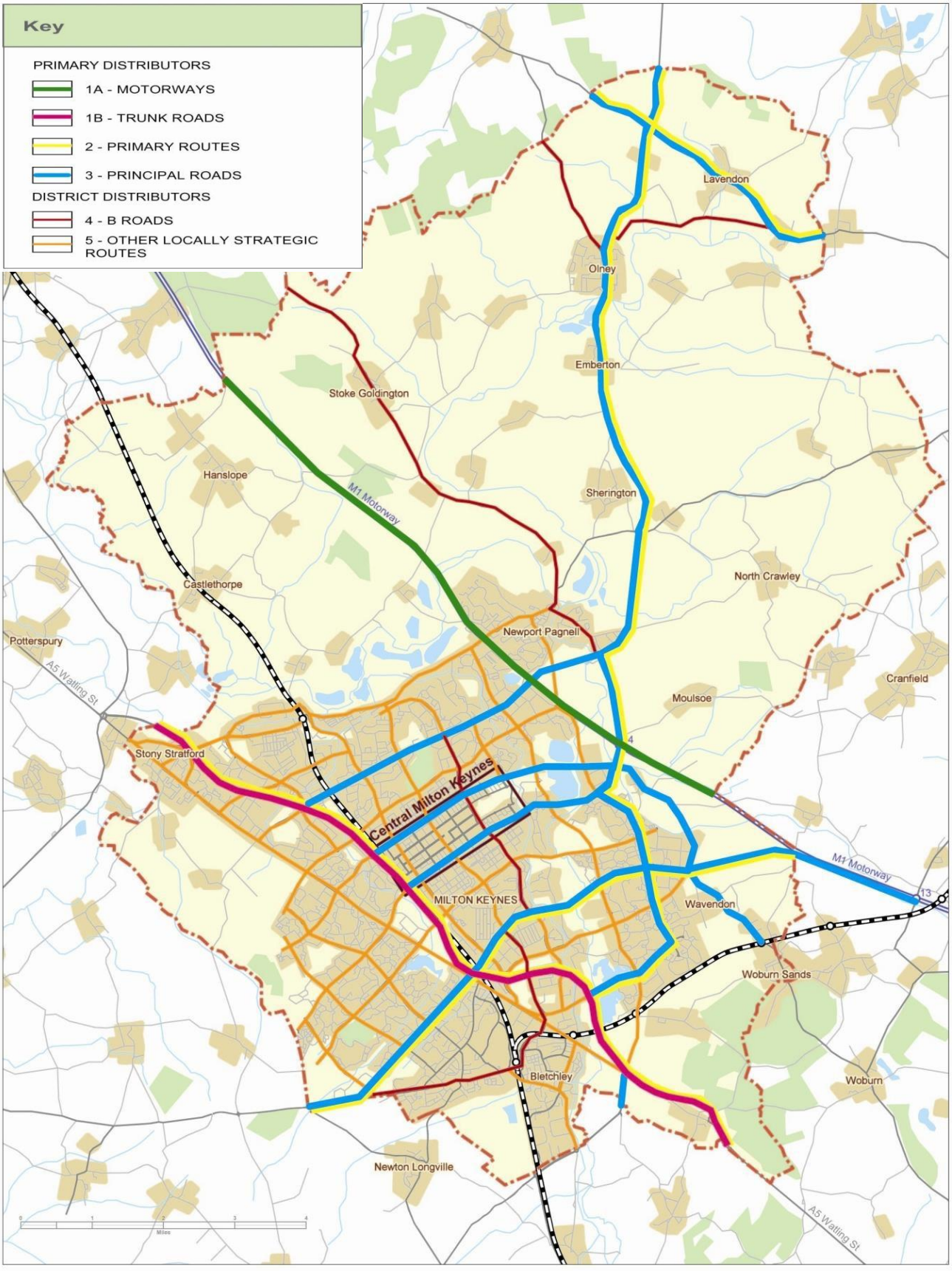
All Roads in Milton Keynes should be designed in accordance with the standards and requirements set out in the Design Manual for Roads and Bridges (DMRB) and the Design Table for Roads and Streets in Milton Keynes (Section 3).

Streets

Streets provide access to buildings and uses. They give equal or higher priority to non-vehicular users and do not normally carry through traffic. Streets typically serve residential developments and carry very low levels of LGV/HGV traffic.

All Streets within Milton Keynes should be designed in accordance with the Design Table for Roads and Streets in Milton Keynes (Section 3) and Manual for Streets.

Figure 1 – Highway Network Plan



1.5. Transport Assessments and Travel Plans

The identification and assessment of transport impacts, as well as the mitigation of negative impacts and enhancement of positive ones is an essential part of the planning of any major development proposal.

Transport Assessments and Transport Statements

A formal Transport Assessment (TA) or Transport Statement (TS) should be produced as part of the suite of documents associated with all significant development proposals. Such documents will not only identify potential impacts and issues for the developer, but will also assist consultees and decision makers in the planning process.

Travel Plans

A Travel Plan (TP) will sit alongside a TA (and sometimes a TS) and will assist in the mitigation of transport impacts. The role of a good TP goes far beyond just mitigation however, and includes the promotion of more sustainable and healthier travel choices.

Guidance

The remainder of this section sets out the Council's requirements for these three types of document, including what they should contain and the development thresholds over which they should be prepared (Table 1).

Table 1 – Thresholds for assessment

USE	Transport Statement Threshold	Transport Assessment and Travel Plan Threshold
A1 Retail (Food)	250-800m^2	>800m^2
A1 Retail (Non Food)	800-1,500m^2	>1,500m^2
A2 Professional services	1,000-2,500m^2	>2,500m^2
A3 Café, Restaurant	300-2,500m^2	>2,500m^2
A4 Drinking establishment	300-600m^2	>600m^2
A5 Hot-food take-away	250-500m^2	>500m^2
B1 Business	1,500-2,500m^2	>2,500m^2
B2 Industry	2,500-4,000m^2	>4,000m^2
B8 Storage & Distribution	3,000-5,000m^2	>5,000m^2
C1 Hotels	75-100 rooms	>100 rooms
C2 Hospitals, Homes	30-50 beds	>50 beds
C2 Education	50-150 students	>150 students
C2 Hostels	250-400 residents	>400 residents
C3 Housing	10-40* (50-80) dwellings	>40* (80) dwellings
D1 Non-residential institutions	500-1,000m^2	>1,000m^2
D2 Assembly, Leisure	500-1,500m^2	>1,500m^2
Other	Will be considered individually	

*Where an ES is required for the proposal a TA should be prepared.

Table 2 – Thresholds based on other considerations

	Development Threshold	TS	TA	TA/TP
1	Any development that is not in conformity with the adopted development plan.			✓
2	Any development generating 30 or more two-way vehicle movements in any hour.		✓	
3	Any development generating 100 or more two-way vehicle movements per day.		✓	
4	Any development proposing 100 or more parking spaces.		✓	
5	Any development that is likely to increase accidents or conflicts among motorised users and non-motorised users, particularly vulnerable road users such as children, disabled and elderly people.			✓
6	Any development generating significant freight or HGV movements per day or significant abnormal loads per year.		✓	
7	Any development proposed in a location where the local transport infrastructure is inadequate – for example, substandard roads, poor pedestrian/cyclist facilities and inadequate public transport provisions.		✓	
8	Any development proposed in a location within or adjacent to an Air Quality Management Area (AQMA).		✓	

TS = Transport Statement; TA = Transport Assessment; TP = Travel Plan

1.5.1. Transport Statements

A Transport Statement will need to be prepared for most development proposals that have moderate transport impacts. Only very minor developments will avoid the need to produce a formal Transport Statement, but even these developments will benefit from proper consideration of transport and access issues.

Where a TS is not required, it will often still be necessary to deal with some transport- related issues as part of the planning process. Early consideration of these issues will help to avoid problems and they can often be dealt with as part of the Design & Access Statement.

A TS need not be a lengthy or highly technical document. It should set out the existing conditions of the site and the transport network (prior to the development) and should provide details of the development itself.

Prior to the preparation of a TS it would be extremely advantageous for the person or organisation preparing the report to discuss its scope with the Highway Development Management team. In particular they will be able to advice on any special circumstances or requirements relating to the site or the local area.

Transport Statement Contents

A description of the existing site conditions should include the following:

- Site description and location plan (including descriptions of any notable physical features);
- Existing site use (and any permitted uses);
- Site context (surrounding land uses, adjacent planning consents, conservation areas, listed buildings, archaeological information.);
- Site access and parking (for all modes, but including details of HGV and abnormal load use);
- Environmental factors (e.g., Air Quality Management Areas).

A description of the existing transport conditions should include the following:

- Qualitative descriptions of non-motorised transport routes (footpaths, cycleways, ROW, leisure routes);
- Audit of current public transport routes and facilities;
- A description of the road network leading to the site (including relevant traffic flow and accident data).

A description of the proposed development should include the following:

- Details of the land use and amount of development proposed;
- Site layout plan showing access routes for all modes;
- The number of person trips generated by the development (including a breakdown by mode and time of day);
- Description of enhancements to non-car modes;
- Mitigation for vehicular traffic;
- Mitigation for accidents;
- Strategies for parking, servicing (for all modes, but including HGV access and manoeuvring) and refuse collections (tracking diagrams required).
- Construction traffic proposals.

The lists above are only intended to set out the minimum information required and to indicate the scope of a TS. Additional and/or more detailed information may also be required dependent upon the characteristics of the site and the nature of the development.

Transport Statements need only assess impacts of the development at the year of opening, or the year of substantial completion (typically 85% occupation).

1.5.2. Transport Assessments

The preparation of a Transport Assessment is a more technical exercise than the preparation of a TS and it should be carried out by suitably qualified professionals. The DfT guidance document referred to above provides detailed advice on the process for preparing a TA and the information that a TA should contain.

The preparation of a TA is a significant undertaking and in order to avoid potentially abortive and unnecessary work it is essential that contact is made with the Highway Development Management team before any work is carried out.

Scoping Report

The first step in the preparation of a TA is the production of a Scoping Report. This report should be submitted to and agreed by the Council prior to the completion of any survey work and the preparation of the TA itself.

The Scoping Report should include sufficient details for the Council to be able to make a decision as to whether the overall methodology is acceptable. Information that should be included in the scoping report includes:

- A description of the site and a location plan;
- A description of the proposed development;
- Public transport, walking and cycling Issues;
- The proposed trip assessment and assignment methodology;
- Relevant data sources and data gaps;
- Assessment years;
- Geographic scope.

Clearly this list is not exhaustive and the Highway Development Management team can advise on the contents of the scoping report in more detail. Any unusual characteristics of the site or the development should be identified in the Scoping Report and agreement should be reached on how to deal with them. It is recommended that developers also consult with Highways England regarding the scope of TAs regarding potential impacts on the Strategic Road Network

In addition to the information listed above the Scoping Report (and the TA) will need to give consideration to how the development has been planned to avoid the need to travel and to minimise the amount of trips generated – by any mode. The Scoping Report and

subsequent TA should highlight how the location, design and characteristics of the development will achieve this.

The Scoping Report and the Council's response to it should be appended to the Transport Assessment when it is submitted. Once the scoping stage has been satisfactorily completed, the outstanding data can be collected and the full TA can be prepared.

Transport Assessment Contents

A description of the existing site conditions should include the following:

- Site description and location plan (including descriptions of any notable physical features);
- Existing site use (and any extant planning permissions or other permitted uses);
- Site context (surrounding land uses, nearby planning consents, conservation areas, listed buildings, archaeological information);
- Site access and parking (for all modes, but including details of HGV and abnormal load use);
- Environmental factors (e.g. Air Quality Management Areas).
- A description of the existing transport conditions should include the following:
- Qualitative descriptions of non-motorised transport routes (footpaths, cycleways, Rights of Way, leisure routes);
- Audit of current public transport routes and facilities;
- A description of the road network leading to the site (including relevant traffic flow and accident data);
- A description of the link between the site and the Primary Route Network and/or the Trunk Road / Motorway network;
- Identification of the peak hours of travel.

A description of the proposed development should include the following:

- Consideration of how the need to travel has been minimised by site location and design as well as other factors such as IT infrastructure provision;
- Details of the land use(s) and amount of development proposed;
- Site layout plan showing access routes for all modes;
- The number of person trips generated by the development (including a breakdown by mode and time of day);
- Description of provision for and enhancements to non-car modes (public transport services and facilities, Redways, crossing facilities);
- Description of facilities provided for non-motorised users (including cycle shelters, shower/changing facilities) and for Powered Two Wheeler Users;
- Mitigation for vehicular traffic;

- Mitigation for accidents;
- Strategies for parking and servicing (for all modes, but including HGV access and manoeuvring) and refuse collections (including tracking diagrams).
- Proposals for construction traffic, site clearance and site compounds.

As with Transport Statements, this list is not intended to be exhaustive and any other relevant information should be provided. The Scoping Report should identify any unusual site or travel characteristics that need to be covered in the TA. The Highways Development Management team will also advise on any additional information that they require.

The GTA referred to above provides very detailed guidance on how this information should be used to prepare a TA. That document should be referred to and the methodology it outlines should be followed.

Transport Assessments for developments within Milton Keynes should provide a minimum of two assessment years; year of opening (completion) and year of opening + 5 years. The +5 year assessment may be substituted by a +10 year assessment (or end of Local Plan period whichever is greater) when such an assessment is required by Highways England, but this should be agreed with the Highway Development Management team and Highways England.

1.5.3. Travel Plans

What is a Travel Plan?

A Travel Plan is a long term working document which explains how to reduce the reliance on single occupancy car vehicle journeys within an organisation or for an individual. A travel plan highlights a package of practical measures and initiatives to encourage sustainable travel and/ or reduce the need to travel.

Travel Plans should set out the current position, the desired position and the method(s) by which the desired position will be reached. Travel Plans should be reviewed on a regular basis.

When should a Travel Plan be produced?

A Travel Plan should be produced for all new developments that have the potential to generate significant levels of travel, either by virtue of the lengths or numbers of journeys involved. The minimum thresholds for the preparation of Travel Plans are given in Table 1 above; however, house builders, developers and occupiers are encouraged to consider providing Travel Plans for all developments.

The advice given here applies equally well to voluntary Travel Plans and seeks to maximise the benefits to all parties.

Extensions

It is difficult to apply rigid thresholds where an extension is proposed for an existing use; however, proposals that meet the conditions below should include a TP in the submission for planning permission:

- Extensions that add an additional 25% or more of floor space but remain below the thresholds in Table 1 above;
- Extensions that add an additional 20% or more of floor space and take the total floor space over the thresholds in Table 1 above;
- Extensions that add an additional 15% or more of floor space for premises that already exceed the thresholds in Table 1 above.

Some businesses develop 'incrementally' through extensions to existing premises or by developing on physically separate sites. Over time the transport impacts of the original use can change substantially. In these circumstances the introduction of a Travel Plan may allow organisations to re-asses the costs and benefits of their existing travel patterns.

Multiple Occupation of One Site

Numerous small developments on one site may individually not require a Travel Plan, but together the cumulative transport implications mean that an 'umbrella' Travel Plan will be required for the entire site. This will require each occupier and new occupiers to prepare and implement subsidiary Travel Plans as appropriate to their particular use and travel characteristics. It should be administered by an agent of the Developer or Landlord or the Site Manager.

Other scenarios where a Travel Plan may be required:

- Where the development is in, or very close to, an Air Quality Management Area (AQMA);
- Where the development may be refused planning permission due to harmful transport impacts that a Travel Plan would be able to mitigate;
- Where planning consent is required to provide transport infrastructure improvements it may be possible for the developer to provide a TP with stringent targets to reduce the scale of the improvements required.

- **What should a Travel Plan contain?**

A Travel Plan should establish a structured strategy for encouraging sustainable travel or reducing the need to travel. In short, the key sections to include in a Travel Plan are as follows.

- Introduction and scope of the document
- Survey data
- Strategy, aim, objectives and targets
- Measures, action plan and budget
- Monitoring and review

A Travel Plan is a continuous process, requiring ongoing monitoring, review and revision to ensure that it remains up to date and relevant to the organisation and those using the site.

To aid the process of developing a Travel Plan we have an online platform. STARSfor and STARS (schools) systems is an online portal that;

- Supports the development and implementation of Travel Plans
- Assists in the monitoring and evaluation of Travel Plans
- Recognises and rewards excellence for the promotion of sustainable travel at your organisation.

Using STARSfor or STARS is the preferred method of receiving travel plans at Milton Keynes.

Travel plans for different journey purposes

Travel plans have been developed for workplaces, schools, leisure/retail sites and residential areas. Milton Keynes Council can provide guidance in the development of travel plans for each audience group.

- Workplace travel plans
- School travel plans
- Residential travel plans
- Leisure/visitor travel plans

More detailed information can be found here;
https://www.milton-keynes.gov.uk/highways-and-transport-hub/smarter-choices/travel-planning

SECTION 2
DESIGN FOR PEOPLE AND MOVEMENT

2. Introduction

A well planned and carefully designed street pattern can enhance the appearance of new developments and should contribute to an attractive, safe, clean and nuisance-free environment.

Streets should provide safe and convenient access to all users and for all modes of transport in accordance with saved Local Plan policies T1 and T9. They should encourage walking and cycling and provide good access to public transport services.

When properly designed and constructed, a street network will minimise traffic flows and restrain speeds to acceptable levels. It will also provide access for the emergency services as well as deliveries and refuse collection. A well connected network will minimise the distances travelled by all users. As part of a well-designed development the street layout can also assist in providing safe and convenient parking, particularly for visitors.

The layout of the network at the local level should facilitate and encourage walking and cycling for shorter journeys as well as enabling easy use of public transport for longer ones. In order to achieve this, all new developments in Milton Keynes will be expected to provide high quality pedestrian and cycle connections and routes.

The design of new streets should take into account their primary function as well as the needs of individual users. A more traditional ‘hierarchy’ of streets is still likely to be appropriate where this delivers both place-making and functional needs. More lightly-trafficked streets offer greater pedestrian and cyclist priority and can be designed accordingly. Routes carrying buses and/or larger volumes of traffic will have pedestrian provision outside the carriageway and have a more formal structure.

At the highest level in the hierarchy, road types 3-5 (as defined in Section 1) will carry more traffic and the movement function will be the primary concern. However, the design principles set out in this section should be applied equally to those road types.

2.1. Accessibility

Saved Policy T1 of the Milton Keynes Local Plan sets out the Council's Transport User Hierarchy. The policy states that:

> *"Development proposals should meet the needs of transport users in the following order of priority:*
> *(i) Pedestrians and those with impaired mobility*
> *(ii) Cyclists*
> *(iii) Users of public transport and taxis, and motorcyclists*
> *(iv) Others"*

New developments have a major part to play in delivering accessibility improvements via the creation of truly sustainable communities built up from walkable neighbourhoods.

The provision of high quality cycle and pedestrian routes is a key factor in influencing travel behaviour. Links that are well designed, feel safe and are easy to use can help to encourage walking and cycling as alternatives to motorised forms of transport. These routes should connect directly to local facilities and bus services and should reflect natural desire lines.

The inclusion of high quality footways and Redways (combined cycle and pedestrian routes) will be an important determining factor in the acceptability of most development proposals. In larger developments less formal routes, such as leisure routes, footpaths and bridleways should also be incorporated into the layout.

All new pedestrian routes, including Redways and level surface streets, must take into account the needs of mobility impaired and visually impaired users. As a minimum, routes must include flush crossing points, tactile paving units, with appropriate signs and lighting. Level surface streets are a particular challenge when designing for these vulnerable users and further guidance for such streets is provided in Section 3 as well as in the Milton Keynes Council Residential Design Guide 2012.

The accessibility of individual buildings, dwellings and parking areas must also be considered carefully in the drafting of development layouts. Good pedestrian provision within streets can be seriously undermined by the lack of a pedestrian route through a parking area or by the lack of a conveniently located pedestrian link to the street.

At the finest level of detail, for individual plots and buildings, the requirements of Lifetime Homes should be incorporated into all residential development proposals. In addition to ensuring that developments are compliant with Part M of the Building Regulations, the

requirements of Lifetime Homes provide for adaptable accommodation that can meet the needs of all prospective occupants.

2.2. Pedestrians and Cyclists

High quality access to new developments should be available to all potential users and provision for the car should never be to the detriment of provision for pedestrians and cyclists. Similarly the provision of public transport routes and facilities should be considered in terms of their relationship with cycle and pedestrian routes.

The needs of the very young, the elderly, those with pushchairs or prams and people with disabilities must be considered fully in the design process. Thought should be given to the whole journey, to existing and new desire lines and to local destinations. Pedestrian and cycle routes which are not only direct, safe and convenient, but are also attractive and inviting to use, should be provided between the development and local facilities such as bus stops, schools, shops, parks and play spaces.

Level Surface Streets

Pedestrian routes have traditionally been provided in the form of footways separated from the carriageway by kerbing and although this will still be appropriate in most locations, segregation is not always essential or even desirable. Properly designed level surface streets can provide a safe pedestrian route within the street without the need for vertical separation from the carriageway.

However, it is essential that such shared environments have appropriate design characteristics to restrain vehicle speeds. The design should limit maximum speeds to 15mph (24kph), with a target speed of 10mph (16kph). Genuinely shared environments must place pedestrians and cyclists on equal terms with motorists; ‘roads without footways’ will not be acceptable.

Traffic volumes on such streets should also be limited. MfS quotes research from TRL/TfL which suggests an upper limit for shared pedestrian use of around 100vph. However, this represents the point at which pedestrians are no longer comfortable treating the space as shared and is therefore not an appropriate design aim. To actively encourage pedestrian use, a peak traffic level very far below 100vph must be achieved.

Shared surfaces can present particular difficulties for blind and partially-sighted users. The design of such areas must take into account the needs of these users and provide routes that are legible, safe and free from unforeseen obstructions. Further guidance is provided in the Milton Keynes Council Residential Design Guide 2012.

In addition to low volumes and low speeds, adequate intervisibility for pedestrians and motorists, good street lighting and ample parking provision are essential in shared environments.

Crossing facilities

Where there are larger numbers of pedestrians and/or cyclists crossing a carriageway the design of the road may incorporate ramps (to permit at grade crossing), central refuges, road narrows or build-outs. These measures should always be considered when pedestrians are crossing to facilities such as schools, play areas and parks. At other crossing points and where raised carriageways are not provided, the kerbs should be dropped and laid flush with the carriageway. Tactile paving units should be installed at all uncontrolled crossings.

Where the combined volume of vehicle traffic and pedestrian crossing flows is higher, more formal crossing arrangements should be considered. Zebra, Pelican, Puffin, Toucan and Pegasus crossings offer solutions for a range of situations. At signal-controlled crossings, delay for pedestrians and cyclists should be minimised and whenever possible, single stage crossing facilities should be provided. Installation of any of these crossings should be discussed as early as possible in the design process and will require Safety Audit.

Where desire lines indicate crossing of grid roads then there is the expectation that the crossing will be in the form of grade separated facilities.

Separated routes

If pedestrian or cycle routes are required in locations remote from carriageways, proper consideration must be given to the security of potential users. All such routes must have an appropriate lighting scheme and natural surveillance of such routes should be maximised by the careful positioning of dwellings or other buildings, and active areas such as play areas or parks.

Whilst it is essential that these routes offer adequate access for maintenance vehicles, they will require measures to prevent inappropriate access by unauthorised vehicles.

Routes that are located to the rear of dwellings and that do not have natural surveillance pose a security risk to the dwellings and are unlikely to be attractive to many potential users. These routes are not normally acceptable; however, where they must be provided early consultation with the police and the highway authority is essential.

Redways

In Milton Keynes there is an extensive network of combined cycle and pedestrian routes which, due to their coloured surfacing, are known as Redways. All new developments must include convenient extensions of, or links to, the Redway network. As Redways are cycle routes, all links to them from carriageways must form part of the cycle network. This will ensure that cyclists can make unbroken journeys and will avoid them using footways.

Links

Where other constraints mean that two adjoining streets cannot be connected as a vehicular route, it is likely to still be desirable for a non-vehicular connection to be made. These links are essential in reducing the distances travelled by pedestrians and cyclists and thus to help encourage walking and cycling. When such links are provided they should be as short as possible and offer the maximum level of security achievable.

2.3. Passenger Transport

Public transport plays an important role in allowing freedom of movement in Milton Keynes. Around 1 in 5 households in Milton Keynes do not have access to a car and around half of all households have only one car. This means that for much of the time a large proportion of residents do not have a car available as a transport option.

The promotion of public transport is a key part of the Council's transport strategies, both in terms of sustainability and to provide convenient transport, available to all. Saved Policy T5 of the Milton Keynes Local Plan requires all new development proposals to ensure that dwellings and key destinations are no more than 400m from a bus stop.

The layout of new developments can have a major influence on the likelihood of public transport services being used. It is essential that passenger transport routes and services are among the primary structuring influences in new developments. The location of buildings and uses with high numbers of visitors and the location of higher densities of development should be integrated with the provision of routes and stops.

Designing to accommodate buses

To accommodate the bus, roads and streets that form bus routes will need to be designed to Local Distributor (Type 5) standards or Principal Street standards (Type 6, but width increased to 6.2m) and should not contain vertical traffic calming features. Early identification of bus routes in the planning of areas is therefore vital. Discussions with the Council's Passenger Transport team and the operators are essential to ensure provision of properly planned and integrated services.

In addition to avoiding vertical features it is essential that roads and streets that will form part of bus routes should be appropriately designed. As well as a wider carriageway this means reducing the amount of horizontal deflection, especially small-radius bends, to a minimum. Furthermore, verges and footways should be appropriately designed to enable the provision of accessible (raised kerb) bus stops with shelters.

Bus stops should be located so that the maximum number of passengers has direct and convenient access to them. Stops should always be provided at key destinations and interchange locations. When planning large developments the highest densities of population should be located near to bus routes as well as local facilities.

Stops should also be located on straight sections of carriageway where full-sized buses (typically 12m long) are able to take a straight approach to the raised-kerb area and stand at the kerbside. Detailed advice on the location of bus stops is provided in Section 3.

Bus stops that are required to be sited on primary and district distributor roads, (which include Milton Keynes' Grid Roads) will usually be located in laybys and should be discussed at an early stage with the Council's Development Management and Passenger Transport Officers.

As well as providing good access to public transport, bus stop locations must take into account the security of people using the stop. By ensuring that natural surveillance is provided from nearby buildings, especially houses, and by the provision of high quality shelters, the experience of using bus stops can be significantly improved.

RTPI

New bus routes should incorporate Real-Time Passenger Information (RTPI) and stops on these routes will need to include appropriate information points and/or other related infrastructure.

Community Transport

In Milton Keynes there is a Community Transport service that provides vital additional and/or assisted travel for users who have difficulty using mainstream services. As part of more major development proposals and those providing facilities such as healthcare, a Community Transport parking bay should be provided (see Section 4).

Rail

With the exception of some Strategic Development Areas, it is unlikely that new development proposals will have a direct relationship with providing or enhancing rail services. However, planning obligations sought from developments in Milton Keynes will

cater for rail improvements. Consideration must still be given within the planning process to maximising the accessibility of rail services from the development.

Taxi

In more central locations, particularly for leisure and entertainment uses, access to taxis should be considered. Provision of, or extensions to, formal taxi-ranks may be required as part of the development proposals. Transport Assessments/Statements and other supporting planning documents should demonstrate that taxis have been properly considered.

2.4. Hierarchy and Connectivity

The road network and the hierarchy of routes are described in Section 1.4.

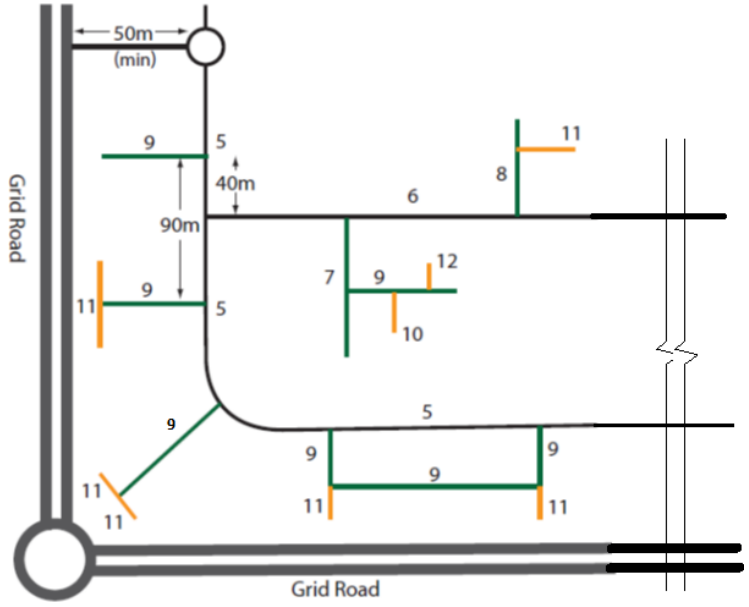
The highest levels of route form the Primary Route Network (PRN). The function of the PRN is to carry inter-urban and long-distance traffic between primary destinations.

Beneath the PRN is a system of local roads and streets which are divided into two categories according to their primary functions. In Milton Keynes these categories are simply termed Roads and Streets.

All routes that primarily serve, or are intended to serve, non-residential development are defined as Roads due to the requirement to cater for higher levels of LGV/HGV movements. Further guidance on the detailed design features of Roads and Streets is given in Section 3 and in DMRB for primary and district distributors.

A concept showing the hierarchy between routes is shown in Figure 2. Industrial roads are not shown but would have a more simplified pattern using types 3 and 4.

Figure 2 – Highway hierarchy concept plan



Roads

In Milton Keynes the Primary Route Network and all other Roads should be designed in accordance with the Design Table for Roads and Streets in Section 3.12 and the Design Manual for Roads and Bridges (DMRB). Roads carry traffic between destinations, cater for all, or most, traffic types and generally provide priority for vehicular traffic.

Descriptions of the 5 types of Roads generally provided in Milton Keynes are given below. The 'Type' number associated with each refers to the classification of the Road within the Design Table for Roads and Streets in Milton Keynes (Section 3.12).

Grid Roads

Primary Distributor Roads (Type 1)

These form the main network within a town, and provide links between the PRN and district distributor roads. Some roads, such as the A421, which pass through Milton Keynes serve a dual purpose as part of the PRN and also as Primary Distributors.

District Distributor Roads (Type 2)

Traffic that travels between different areas of Milton Keynes and between local centres will use District Distributors. These roads usually form intermediate links between Primary Distributor Roads (Type 1) and Local Distributor Roads (Types 3-5). In Milton Keynes the grid road system consists of both Primary and District Distributor Roads.

Industrial Distributor Roads (Type 3)

Industrial Distributor Roads provide access to other roads and streets within industrial estates, business parks and other commercial areas. Industrial Distributor Roads should only take access from Primary (Type 1) or District (Type 2) Distributor Roads. Where it is unavoidable for a length of road to provide access to both industrial and residential sites, the length should be kept to a minimum and the design should comply with Industrial Distributor Road standards.

Industrial Access Roads (Type 4)

These roads are normally provided within industrial estate areas and areas of business and commercial development. They provide access to individual premises and their design standards reflect the higher anticipated levels of goods vehicle traffic.

The design of Type 3 and 4 roads must provide for access by the largest goods vehicles and should allow for satisfactory servicing and manoeuvring arrangements. Roads within

industrial estates and other commercial areas should be designed as through routes or loop roads. Where this is not possible turning areas must be provided in suitable locations. Designers and developers should pay particular regard to the document 'Designing for Deliveries' issued by the Freight Transport Association when designing industrial and commercial developments. This document provides detailed advice for road layouts, access arrangements, turning areas, service yards and other related matters.

Local Distributor Roads (Type 5)

These roads provide access to streets in residential areas and local centres. In Milton Keynes they are the main routes within individual grid squares. In addition to providing access for residents and visitors, Local Distributor Roads must provide adequate access for buses, emergency vehicles, delivery vehicles and refuse collection vehicles. For this reason, traffic calming features such as road humps or major horizontal deflections should be avoided.

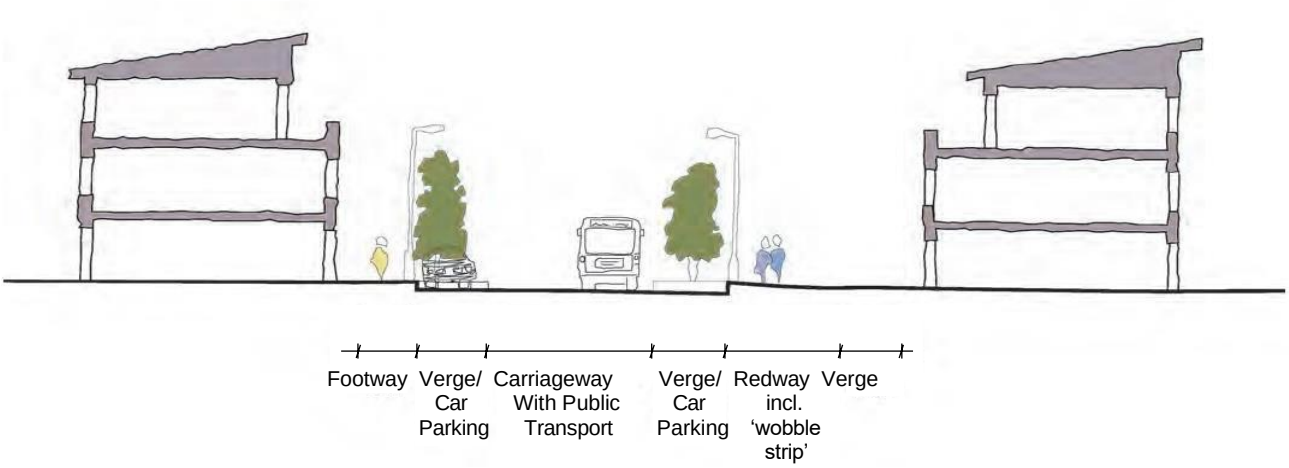
These roads should be through routes, thereby providing a minimum of two means of access. Where this is not possible the development should be discussed with the highway authority before any further planning takes place. Local Distributor Roads do not normally provide direct access to individual dwellings.

Streets

Streets should be designed in accordance with the Design Table for Roads and Streets in Milton Keynes (Section 3.12) and Manual for Streets. The primary function of Streets is to provide access to buildings and land. Streets create a very important part of the residential environment that give increasing priority to non-vehicular users.

Streets can be divided into two main groups; Residential Streets (Types 6-9) and Level Surface Streets (Type 10-12).

Figure 3 - Typical cross section for types 5 or 6



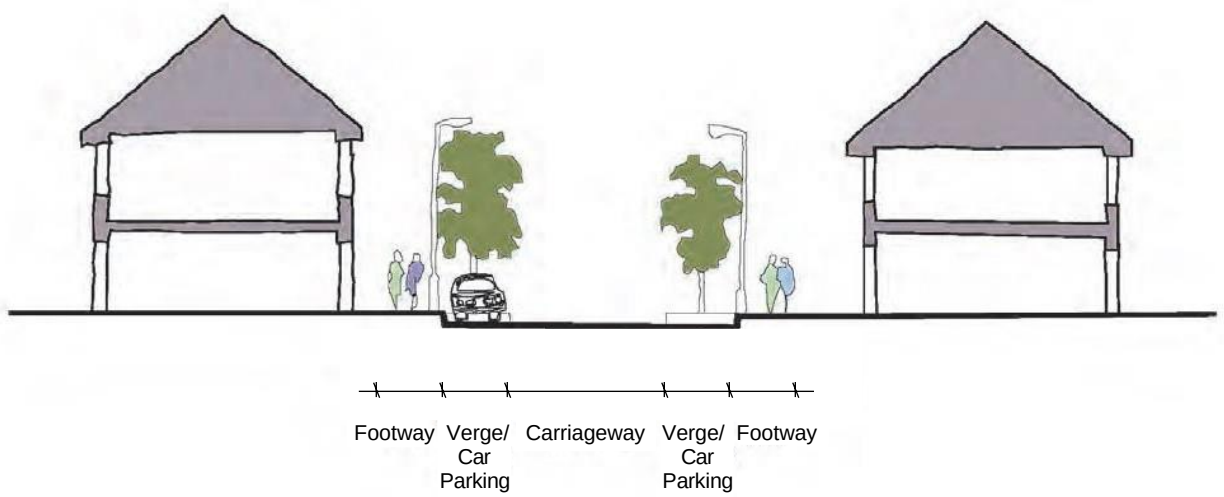
Residential Streets (Types 6-9)

These Streets will serve the majority of new development and provide access to individual properties as well as to other, lower category, roads. All Residential Streets are prospectively adoptable and should be constructed in accordance with the Council's 'Specification for Highway and Construction Work'. Residential Streets can serve up to 300 dwellings, depending upon layout and design.

Type 6 Principal Streets require two distinct access routes to the main network. This is normally achieved by ensuring that such routes are through routes. If this is not possible developers should discuss the proposals with the Highways Development Management team.

Type 7 Major Streets and Type 8 Streets will also require a second point of access, although this may take the form of an emergency access link. Emergency accesses and provision for emergency vehicles are discussed in section 3.10.

Figure 4 - Cross section of street types 6, 7, 8 and 9



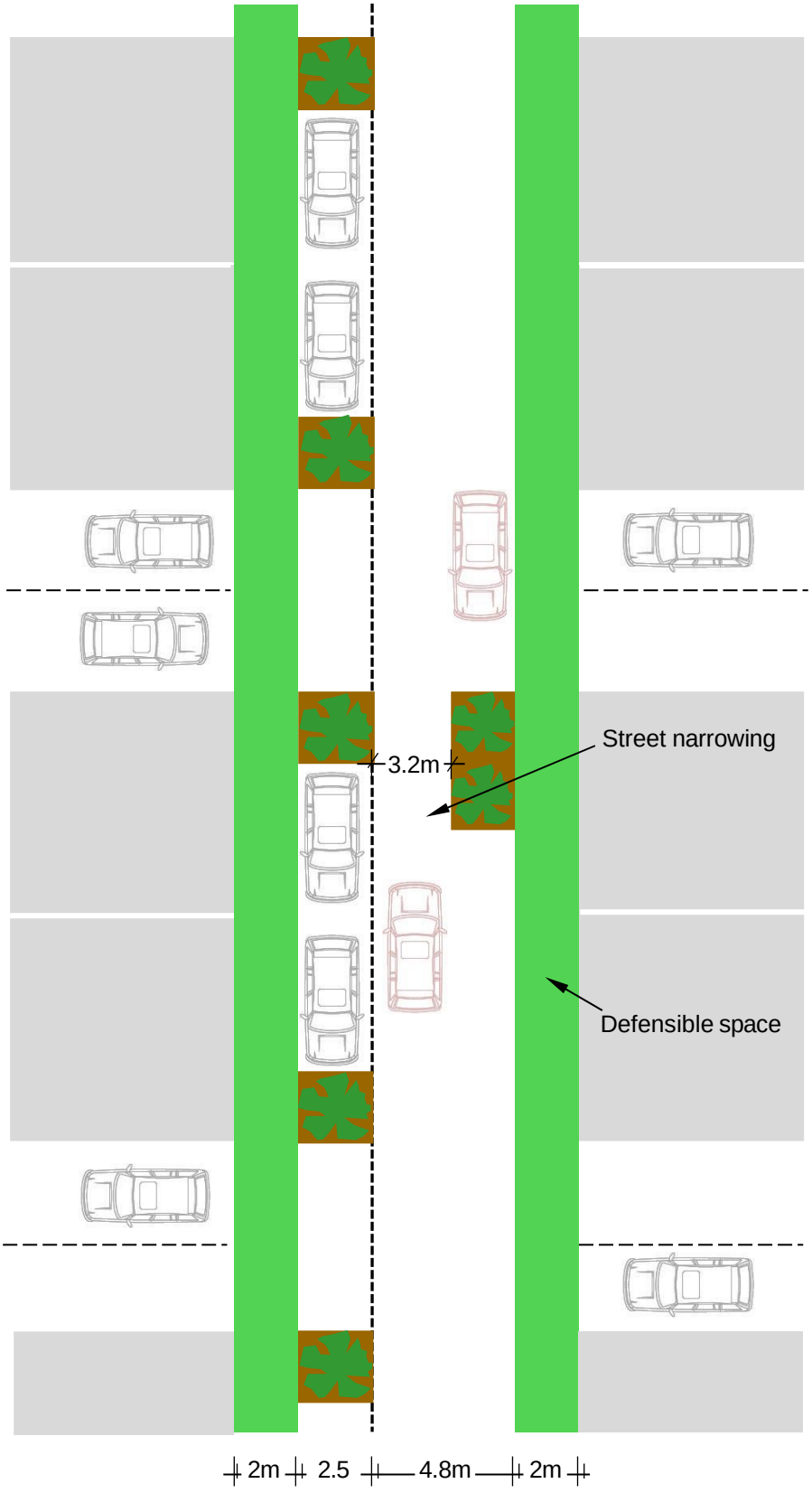
Level Surface Streets (Types 10-12)

Type 10 Shared Streets may also be called Pedestrian Streets, Home Zones, and other names that signify environments where design for pedestrian movement is given equal priority to design for the car. Generally this type of Shared Surface can accommodate the traffic generated by up to 25 dwellings. If the route is a cul-de-sac then the limit will normally be 25 dwellings; however, if it is a through route then up to 50 dwellings could theoretically be served.

Other factors, such as the type of development, the parking arrangements and the length(s) of road will also determine the numbers of dwellings that can be served safely.

The speed of vehicles has a major impact on the attractiveness of the street for non-motorised users and so vehicle speeds should be limited to 10-15mph (16-24kph).

Figure 5 Illustrative layout for a level surface street



Type 11 Shared Driveways can provide access to between 3 and 5 dwellings and are intended to provide an environment that gives clear priority to pedestrians. The safety, convenience and comfort of pedestrians is mainly achieved by limiting vehicles to extremely low speeds (5-10mph / 8-16kph).

Type 12 Shared Crossovers will serve only 2 or 3 dwellings and will provide pedestrian access to dwellings as well as vehicular access to parking spaces. These are compact private spaces.

Grid Roads

As stated above both road types 1 and 2 can form part of the Grid Road network. Lower category roads and streets do not form part of the Grid Road network and it will be expected that the Grid Road network will be retained and expanded using road types 1 and 2.

Subject to assessment, Grid Roads will normally be connected with a roundabout to retain the pattern throughout Milton Keynes. Signalised roundabouts are also acceptable if required due to capacity and fully signalised or grade separated junctions may be considered.

Grid Roads are typically 1km in length and the intermediate access to within a grid square will normally be by a priority junction – intermediate roundabouts will not normally be acceptable. On dual carriageway Grid Roads intermediate junctions for the grid square we would expect to be left in / left out for safety reasons.

Redways (including grade separated crossings of the grid road and at roundabouts) will be required on at least one and probably both sides of the Grid Road. Extensions and additions to the Redway Super Route network along the Grid Roads will continue on the same side of the road as existing Redways and will minimise the number of deviations and road crossings.

Developers should contact officers in Highways Development Management and Transport Policy at an early stage to discuss Grid Road redways as special layout and junction treatment may be required.

SECTION 3
THE LAYOUT IN DETAIL

3. Introduction

This section gives detailed guidance for the design and layout of the highways in new developments. It should be read in conjunction with the Design Table for Roads and Streets in Milton Keynes in Section 3.12, which sets out the minimum requirements such as widths, gradients and footway/verge provision.

The specifications and typical details for the construction of all highway infrastructure within Milton Keynes can be found in the Council's 'Specification for Highway and Construction Work'.

3.1. General Design Principles

The overarching Highways Development Management Policies and Principles are given in Section 1.3. Detailed highway design standards are set out in the following sections (3.2 – 3.11) and the Table of Layout Standards in Section 3.12.

In addition to those requirements the following general principles should be applied when designing new highway layouts and alterations or connections to existing highways:

- Provision must be made within all developments for vehicles to park, load and unload, and to turn around safely and conveniently. Careful design of the road layout and parking or turning areas can greatly improve the usability, convenience and overall quality of a development.
- Provision must be made for cycle parking which will normally be expected to be secure and covered. Locations must be visible and convenient to entrances.
- Street lighting will be required in all new residential developments and most commercial developments within the new city and will be considered carefully for developments located outside it. (see 3.11)
- Dropped kerb pedestrian crossings should be provided at all junctions where footways cross carriageways and at any point where a footway terminates at a carriageway. Gullies and other street furniture should be kept clear of such crossings.
- Uncontrolled crossings of carriageways should be provided with tactile paving in accordance with DfT guidance on the use of tactile paving 2007.
- Vehicular accesses will not be permitted within the bellmouth of any road junction. New accesses should be designed so as to avoid bellmouth radii and existing accesses should be relocated away from new junctions.
- Private drives and hardstandings should not be constructed of loose material that may be carried into the highway.
- Where possible, adjoining crossovers should be linked to provide a single section of dropped kerb.

3.2. Vehicle Priority Roads

This category includes road types 1-5 as described in Section 2.4 and as specified in the Design Table for Roads and Streets in Milton Keynes (Section 3.12). The approach to the design of these roads should reflect their primary function as corridors of movement. In general terms, larger volumes of traffic, travelling at higher speeds will need to be accommodated.

These roads should make provision for each class of user appropriate to the location and type of route being considered, but:

- Separate provision for pedestrians will always be required;
- Provision of Redways will be required as part of most major development proposals;
- Provision of verges separating footways from carriageways will be required on roads serving industrial development and may be required on roads serving residential development; verges are always required with Redways;
- Crossing locations should be clearly identified;
- Parking should be clear of the main carriageway. Typically this will mean the provision of a carriageway and footway(s) separated by a kerb.

3.3. Pedestrian Streets

These streets are specifically designed to give priority to pedestrians and cyclists, cars are permitted for access but the street design should restrict speeds to less than 15mph. Pedestrian streets can include Home Zones, Mews Courts and Play Streets. They will only be permitted within areas that are Traffic Calmed to 20mph and/or are part of a 20mph Zone.

Pedestrian Streets may be entirely shared surfaces but can have separate footways where appropriate. They should discourage through traffic and need to be clearly signed. If Pedestrian Streets do link to form through routes the layout should ensure that drivers do not need to penetrate the area further than necessary to access parking spaces.

The use of traffic calming measures should not be necessary for Pedestrian Streets. They should be designed to prevent drivers from attaining speeds greater than 15mph by the layout of the dwellings and the inclusion of suitable features. The Street layout should use buildings, street furniture, car parking and landscaping to create an environment where pedestrians can move freely and safely and drivers feel as though they are intruding.

3.4. Geometry

Junctions

Junctions are the point in a road layout where most attention is required by drivers and where slowing, stopping, turning and crossing movements can occur. It is important that junctions are designed carefully and consideration must be given to the number and type of vehicles that will use them. Designs must ensure that consideration is given to cyclists and pedestrians (including accommodating Redways into the design depending on the category of road).

Generally the minor road should meet the major road at an angle of 90 degrees at a point where visibility is good. The provision of junctions on the inside of bends and on or near the crest of a hill should be avoided. In exceptional circumstances consideration may be given to junctions with angles of between 70 and 110 degrees. Where such a junction is being considered, possible changes in the junction radii or visibility requirements should be discussed with the Highways Development Control team.

Simple priority or ‘T’ junctions are the most common type of junction and can serve low to medium traffic flows very well. When adequate junction radii and visibility splays are provided and pedestrian movements are catered for, this type of junction is usually the most appropriate within both residential and commercial areas.

The design of the road layout should avoid situations where two minor roads emerge close together on opposite sides of a major road. Even where this situation cannot be avoided the design should be considered carefully so as to avoid a crossroads junction. Where staggered junctions are considered only right/left staggers should be provided. Guidance on minimum stagger distances for such junctions is shown in the Design Table for Roads and Streets in Milton Keynes (Section 3.12).

As part of traffic calming proposals and in Home Zones or Pedestrian Streets the use of non-standard junction forms will be considered provided that vehicles, cyclists and pedestrians can negotiate them safely and conveniently. The use of table junctions, mini- roundabouts, junctions with islands and 'false priority’ junctions can all help to restrain vehicle speeds and assist in design.

Where major junctions are provided or where links to the primary route network are made, the type of junction chosen and the design of that junction should be in accordance with the Design Manual for Roads and Bridges. If the capacity of the junction may be an issue, any planning submission should include details such as copies of printouts from ARCADY, OSCADY, or PICADY which confirm that the junction will accommodate the design year traffic flows.

Horizontal Alignment

The minimum horizontal centre line radius of any bend on all new estate roads is shown in the Design Table for Roads and Streets in Milton Keynes (Section 3.12). Adverse camber should be eliminated on all bends, where reverse curves are proposed they should be sufficiently separated to eliminate adverse camber.

On type 3 roads, where a centre line radius of between 60m and 100m is proposed and the road bends through more than 10 degrees the carriageway should be widened by 1.2m on the inside of the bend. For centre line radii exceeding 100m no widening is required.

On type 6 and 7 roads, where the road bends through more than 10 degrees, widening should be provided in accordance with Table 3.

Table 3 – Carriageway widening for road types 6 and 7

Centre line radius (m)	20	30	40	50	60	80
Widening (m)	0.60	0.40	0.35	0.25	0.20	0.15

On type 8 and 9 roads, widening is not normally required. However, where the road bends through 70 or more degrees and has a centre line radius of 20m or less an over-run shoulder should be constructed on the inside of the bend. The shoulder should provide a carriageway width of not less than 6.0m, 5.6m and 5.4m at the apex of the bend, for centre line radii of 10m, 15m and 20m respectively.

Industrial roads (type 4 and 5) require widening on bends with centre line radii between 60m and 150m, in accordance with Table 4.

Table 4 – Carriageway widening for industrial roads

Centre line radius (m)	60	70	80	90-150
Widening (m)	1.2	1.0	0.8	0.4

Vertical alignment

Vertical curves should be used wherever two carriageway gradients meet and where those gradients when expressed as percentages differ by more than 2%. The difference between the gradients when expressed as percentages is referred to as “K”. The minimum length of such vertical curves should be the higher of 30m or 10K on type 3 and 4 roads, 30m or 6K on type 5 and 6 roads and 20m or 6K on type 7, 8 and 9 roads.

Clearances

On roads a minimum horizontal clearance of 0.6m is required between the carriageway edge and any highway structure or feature above ground level. No building, wall, hedge, fence or other enclosure adjoining the highway should be within 1.0m of the carriageway edge.

The minimum vertical clearance for carriageways below bridges and buildings, measured from the highest point of the carriageway, is 5.3m. Where restricted headroom underpasses are permitted a minimum clearance of 3.7m will be acceptable, subject to consultation with the highway authority and emergency services. For footbridges over carriageways a clearance of 5.7m is required.

Gradients

The maximum longitudinal gradients of all new carriageways are shown in the Design Table for Roads and Streets in Milton Keynes (Section 3.12). The minimum gradient of all new carriageways is 1:100; although 1:150 may be accepted on type 3 and 4 roads in exceptional circumstances and where channel blocks are used in the construction.

On driveways and other hardstandings for vehicles the maximum gradient is 1:14, in exceptional circumstances this may be increased to 1:10 outside of the highway boundary. Where driveways fall towards the highway a drainage channel or other suitable water check will be required.

Crossfalls

The standard crossfall is 1:40 but may be increased to a maximum of 1:24 in exceptional circumstances.

Where footways are provided they must fall towards the carriageway.

Verges have the same maximum and minimum crossfall requirements as carriageways and footways. If the road is on an embankment or in a cutting verges can be sloped to a maximum of 1:3 subject to agreement with the highway authority. Where such slopes are constructed a 1.0m verge at normal crossfall should be provided between the slope and the carriageway/footway. Further maintenance strips, safety fencing, or other associated works may be required for steep slopes.

Drainage

Drainage of highway areas should be via gullies connected to a surface water sewer or Sustainable Urban Drainage System (SUDS). Connections to an existing public sewer will require the approval of the local water authority. All new public sewers should be located underneath carriageways, leaving the verges/footways clear for other services.

Where a sewer, or part of it, only accepts run off from public highway, the highway authority will adopt it, or part of it, in the road adoption agreement under section 38 of the Highways Act 1980. If the sewer accepts private surface or roof water the sewer must be adopted by the local water authority under section 104 of the Water Industry Act 1991. Private (unadopted) sewers will not be accepted beneath areas that are to be adopted as public highway.

Connections to watercourses or other suitable outfalls will require the approval of the local water authority and are also likely to require approval from the Environment Agency and/or the Internal Drainage Board.

The use of soakaways for highway drainage may be acceptable where no suitable sewer or outfall exists. Proposals for soakaways should be discussed with the highway authority and the Environment Agency at an early stage. The highway authority will normally require a soakage test on site and may wish to have a representative present at such a test.

3.5. Visibility

The availability of good visibility is an important safety factor when using the public highway. Good visibility should be provided for pedestrians and cyclists as well as drivers. The provision of good visibility at junctions, accesses, bends, pedestrian crossing points, on redways and within servicing, manoeuvring or turning areas is essential if the development is to be safe and convenient for all highway users.

Where visibility splays are provided at junctions of adoptable roads and existing public highways or at existing road junctions the area contained within the splay will be adopted as part of the public highway. Similarly, forward visibility splays around bends and redway visibility splays will also be adopted.

Junction visibility

Visibility at junctions should allow vehicles waiting at the minor road to enter the major road flow without causing vehicles in the major road flow to change course, slow down or stop. The visibility that is provided should allow drivers of vehicles on the minor road to see vehicles on the major road and be to seen by those vehicles.

The visibility splays required have two main components as shown in figure 6 (a) below, an X distance and a Y distance. An X distance of 2.4m is the minimum necessary to enable a driver to see along the major road without his vehicle encroaching onto it. The 2.4m X distance is acceptable for low junction flows and flows where limited intervisibility will not affect the operation of either road. Where traffic flows or speeds are higher or where the operation of the major road may be affected an X distance of 4.5m is required. At junctions between two major roads an X distance of 9.0m is required.

At junctions, no obstruction to visibility above an imaginary line between 1.05m above the road level on the minor road and 1.05m above the road level at the end of the splay on the major road will be permitted. This may mean that if the ground rises between these two points, any obstruction may need to be removed or reduced to considerably less than 1.05m. Similarly no obstruction to visibility below an imaginary line 2.0m above the same points will be permitted. The area described by the X Distance, the Y Distance and between 1.05m and 2.0m above road level is known as the visibility envelope.

Where visibility splays are provided at junctions which are at, or near to, the outside of a bend the splay line should not be taken directly to the point on the kerbline at the end of the Y Distance. Instead the splay should be drawn on plans, and provided on site, so as not to fall in front of the kerbline of the road. Figure 6(b) indicates how the required splay line will avoid a blind spot that would otherwise occur.

Figure 6 (a) Measuring visibility – straight roads

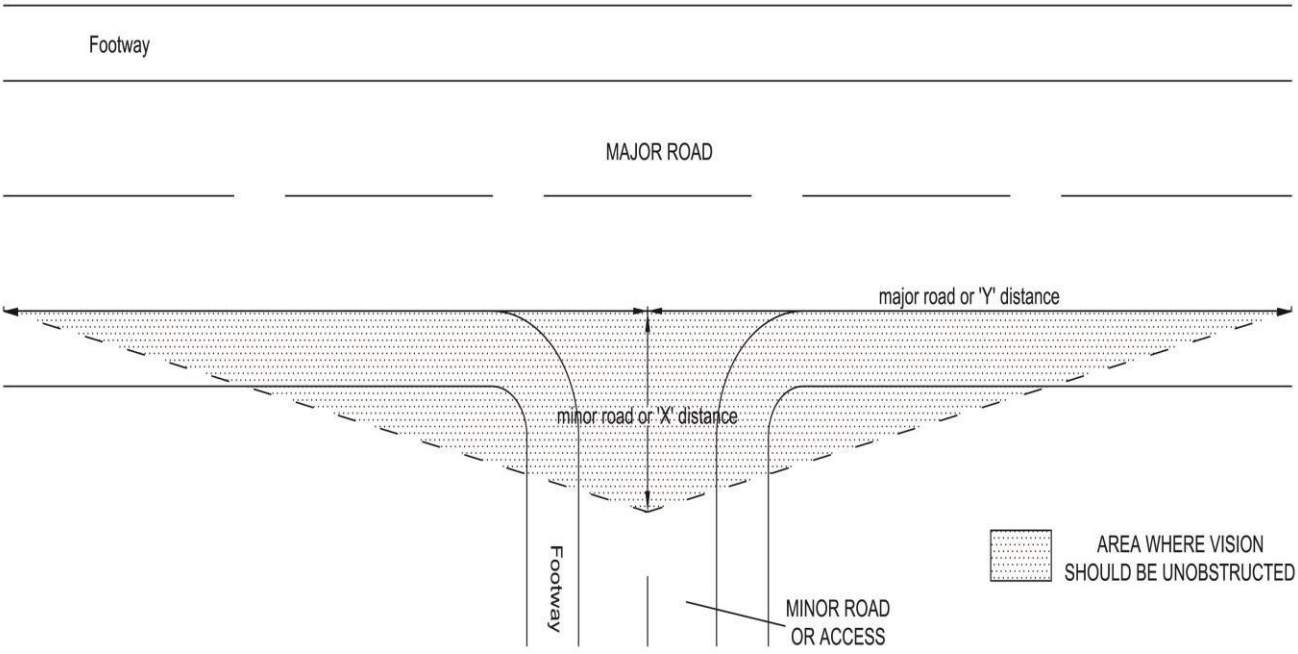
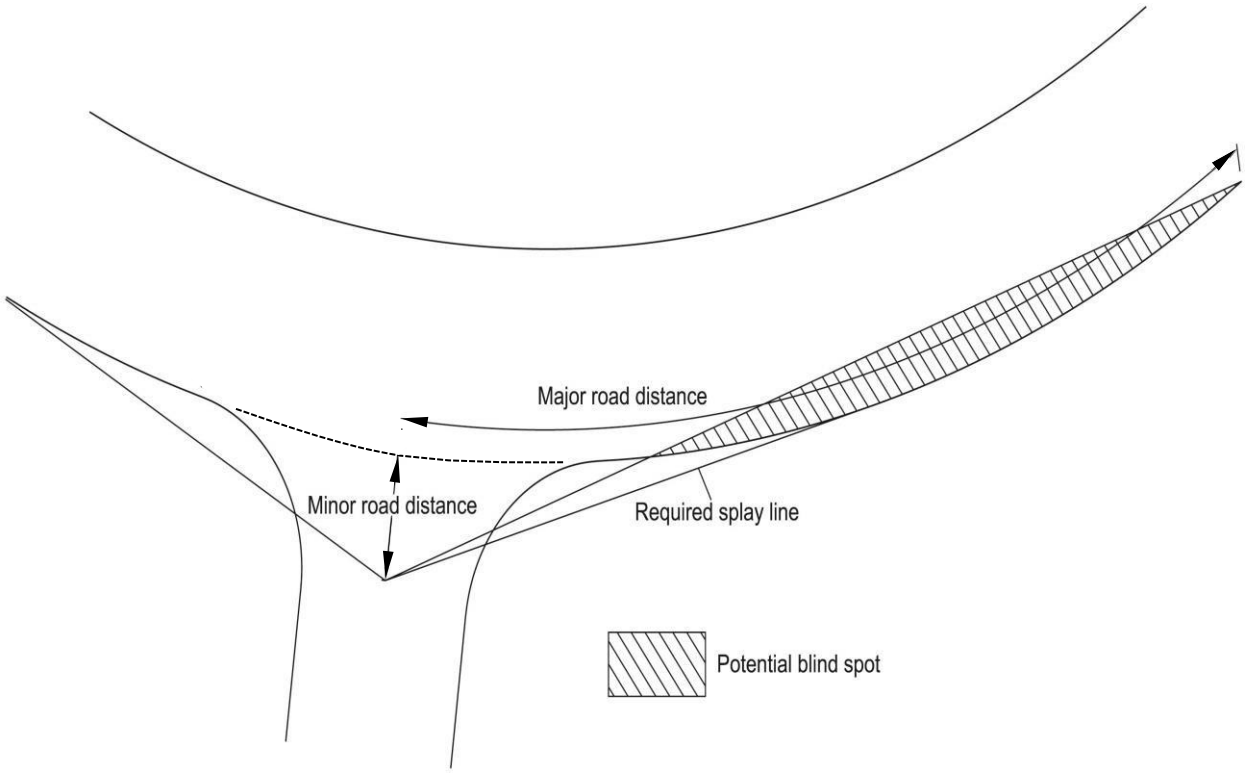


Figure 6 (b) Measuring visibility – outside of bend



The following tables give guidance on the visibility that should be provided at road junctions on new developments as shown in Figures 6(a) and 6(b).

Table 5 – X Distance (minor road distance)

Major road type	Minor road type	X distance (m)
1, 2	3, 5	9.0
3	4	4.5
4	4	4.5
5	6-9	4.5
6	7-11	2.4
7	8-12	2.4
8	9-12	2.4
9	10-12	2.4
10	11-12	2.4

The Y Distance or major road distance relates to the speed of traffic on the major road.

Where a speed survey has been carried out use the 85th%ile column in table 6 below, if not then the speed limit column should be used.

Table 6 – Y distance (major road distance)

85%ile SPEED (mph (kph))	SPEED LIMIT (mph)	Y Distance (m)	
		Streets (Types 6-10)	Roads (Types 3-5)
< 10 (16)		11	n/a
< 15 (24)		17	n/a
< 20 (32)	20	25	33
< 25 (40)		33	45
< 30 (48)		43	60
< 37 (60)		59	90
	30	43	90
< 44 (70)	40	Not appropriate speed for these street types use type 3 - 5	120
< 53 (85)	50	Not appropriate speed for these street types use type 3 - 5	160
< 62 (100)	60	Not appropriate speed for these street types use type 3 - 5	215
< 74 (120)	70	Not appropriate speed for these street types use type 3 - 5	295

In the table above a speed of 15mph (a Y distance of 17m) will require additional on street features to achieve low speeds. (as per Manual for Streets – Table 7.1)

Visibility at accesses

At accesses serving individual houses within a residential estate an X Distance of 2.0m will be acceptable, the Y Distance should conform to the tables above. In conservation areas where the speed limit is 30mph an X Distance of 2.0m may also be acceptable.

Where private accesses cross footways additional visibility splays will be required to ensure pedestrian safety. These splays should have an X Distance of 2.4m measured along the centre line of the access, from the back edge of the footway and a Y Distance of 2.4m measured from either edge of the access along the back edge of the footway. Pedestrian visibility splays should not contain any obstruction to visibility exceeding 0.6m in height above the level of the access or footway.

Forward visibility

Unobstructed visibility along carriageways should be provided to allow drivers and other road users to assess situations that may arise. Adequate forward visibility should provide drivers with sufficient stopping distance if required.

Forward visibility is required both around bends and at crests in the road. This type of visibility does not simply provide intervisibility between road users but also allows drivers to see potential obstructions or hazards in the carriageway. For this reason the envelope of visibility extends from 1.05m to 2.0m above carriageway level for the driver and between 0.26m and 2.0m at the end of the splay.

For bends within residential and industrial estate roads, forward visibility splays should be drawn using the following method:

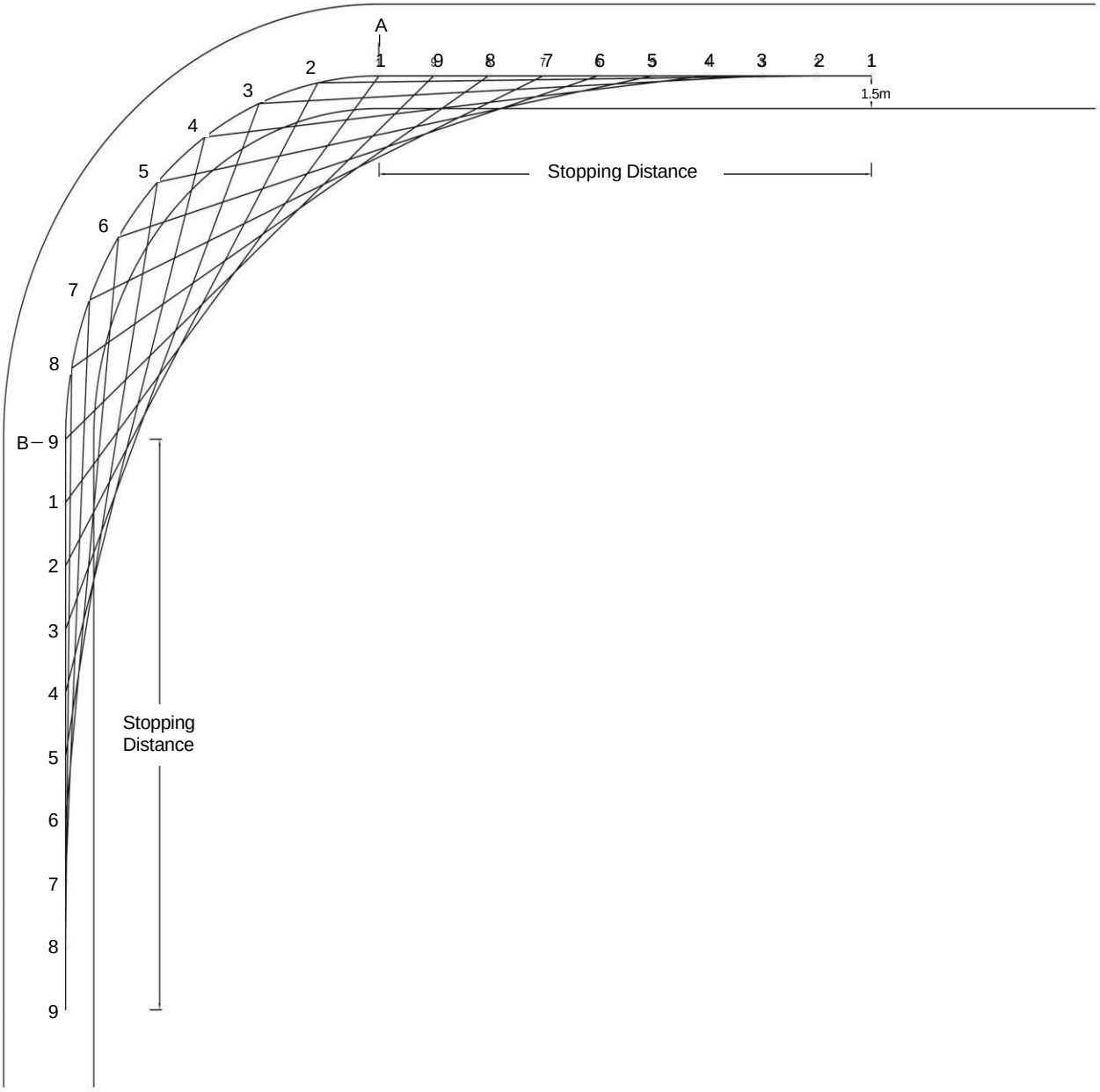
a) Draw a line parallel to the inside kerbline of the bend 1.5m from the kerbline. This represents the path of a vehicle around the bend.

b) Determine the required stopping distance from the table in 3.12 and measure this distance back along the vehicle path from tangent point A.

c) Divide the stopping distance into equal increments of approximately 2-3m. Mark these points on the plan and number them in sequence starting with the point furthest from tangent point A. Repeat this process for a full stopping distance from tangent point A around the bend, and then repeat for one further full stopping distance beyond tangent point B.

d) To construct the area of the splay join each increment with a line to the same numbered increment in the adjoining stopping distance (1-1, 2-2 etc.)

Figure 7 – Forward Visibility Splay



3.6. Redways

A 'Redway' is the local name for a combined pedestrian and cycle route. The name derives from the coloured surfacing used in its construction.

Redways follow the five core principles of Cycle Infrastructure Design which can be summarised as convenient, accessible, safe, comfortable and attractive. (Department for Transport Local Transport Note 2/08.)

The minimum width for a Redway is 3.0m; there is no segregation between pedestrian and cyclists. However, where a Redway fronts a school or other high pedestrian activity

locations we will expect a bi-directional cycle track 3m wide plus an adjacent area for pedestrians to wait / walk so that they can do this clear of the cycle track.

For adoption, maintenance and safety purposes a 1.0m verge is required either side of a Redway. Where the Redway runs alongside a carriageway it should be separated by a 1.0m verge on Access Roads (types 6-9); a 2.0m verge on type 4 or 5 Distributor Roads, and a 3.0m verge on type 3 Distributor Roads.

Redways are lit along whole lengths.

Obstructions such as street furniture, lighting columns and service cabinets must be positioned in adjacent verges and not on any Redway.

Redways adjacent to types 1 and 2 which will likely form part of the strategic Redway network should be discussed with Highways Development Management and Transport Policy officers. Redways will be required on both sides of the grid road.

There are typically two categories of Redway:

Strategic Redways:

These redways, including the Redway Super Route network are routes which will follow corridors adjacent to primary or district distributor roads. Routes will require grade separated crossings of type 1 and 2 roads and roundabouts that connect type 1 and 2 roads.

The Redway Super Route network provides a safe and efficient commuter network with a higher design speed for pedestrians and cyclists through MK. Extension of the network and connections to any major new development areas will be required.

Provision of routes along these should be discussed with the Highways Development Management Team as special design requirements including utilising desire lines, reducing deviations, minimising road crossings and interruptions and treatments of minor junctions will be required.

Other Redway:

These are typically links to/from the strategic Redways and for local access within grid squares. Crossings of these Redways by private accesses are permitted but we will expect accesses to be grouped and numbers of crossings minimised. Redways will be continuous across private accesses. Standard layout in terms of visibility splays and verges etc. will be required.

Minimum Clearances

- 2.0m to vertical features such as fences, walls, buildings or landscaping exceeding a height of 0.6m.
- 1.0m to landscaping exceeding 0.3m mature height.
- 0.5m to lighting columns or signposts.
- 2.7m vertical clearance to structures and other obstructions.

Gradients

- Should not exceed 1:20 for more than 100m.
- Should not exceed 1:15 for more than 30m.
- Should not exceed 1:12 for more than 15m.
- Should not exceed 1:40 for the first 2.5m at any junction.

The crossfall on footways should not exceed 1:24 but must be at least 1:40. The standard crossfall of 1:36 should be provided where possible.

Junctions

Where Redways cross access roads, minor roads, private roads, and vehicle crossovers it is essential that the layout of the junction is clear and recognisable to drivers, cyclists and pedestrians. Diagrams showing the standard details of such crossings are included in the Council's “Specification for Highway and Construction Work” and the new 2018 Redway Design Manual.

Visibility

Visibility splays on Redways fall into three main types, those where Redways cross roads, those where Redways meet other Redways and those where Redways cross private accesses or private roads. Within splays for Redways no obstruction to visibility exceeding 0.3m in height is permitted. Splays should be provided in accordance with the following table.

Table 7 – Visibility at Redway Junctions

Redway Junction with:	X Distance (m)	Y Distance (m)
Road Types 3-6	4.5	59
Road Types 3-6 Traffic Calmed	4.5	43
Road Types 7-12	2.4	43

Road Types 7-12 Traffic Calmed	2.4	33
Other Redways (T Junctions)	2.4	25
Other Redways (Cross-Roads) (A combination of all three splays should be provided at each arm)	2.5 5.0 10.0	20.0 15.0 10.0
Footpaths	2.4	25
Private Access Roads	2.4	25

Signing

Signing of destinations on Redways should be provided using blue and white finger post signs. These signs should incorporate the adult/child and cycle motif. The exact type, position and wording of all Redway signs must be agreed with the highway authority.

Drainage and Construction

Details of the drainage and construction requirements are also contained in the Council's 'Specification for Highway and Construction Work', which includes diagrams of standard details that may be required.

3.7. Footways, Footpaths and Bridleways

The normal width requirement for a footway to allow unrestricted access to all users is 2m. Outside schools and similar facilities, or where footways are remote from carriageways, a width of 3m will be required. On type 8 or 9 roads, where there are low pedestrian flows and where there will not be significant numbers of young, old or less able users, footway widths of 1.35m may be acceptable.

The minimum vertical clearance over footways is 2.6m. This may be reduced in exceptional circumstances to 2.3m for distances of no more than 10m. Footways adjoining carriageways must be constructed to fall towards the carriageway.

Footpaths

The provision of new footpaths or leisure routes will need early discussion with the Council's Rights of Way Officer.

Bridleways

Milton Keynes has an extensive network of bridleways, which form part of the highway network. Where the need for a bridleway has been identified the developer should discuss the route and layout with the Council before plans are submitted for approval.

The location of bridleways should make provision for the separation of horses from vehicular traffic. Consideration should also be given to making separate provision for pedestrians and cyclists where space exists to do so.

Care should be taken not to discharge horses onto carriageways where visibility is restricted. Provision of properly laid out areas adjacent to the carriageway is essential and the design of the crossing itself must be discussed with the Council at the earliest opportunity.

Links between Bridleways may be made on low traffic and low speed roads without the need for separate facilities. However, early discussions with the Rights of Way officer should be undertaken to ensure that this is appropriate.

The minimum vertical clearance for bridleways is 3.7m.

3.8. Public Transport

Provision for bus services must be considered at an early stage of the design process because road widths, junctions and bus stop locations are all key in making bus operations as efficient as possible. As such, requirements will need to be discussed with the council's Highways Development Management and Passenger Transport teams.

Buses will be expected to operate only along road types 1 to 6. However, road type 6 is normally 5.5m wide and this must be increased to 6.2m to allow buses to operate along it. On road types 1 and 2, bus stops will usually be located in laybys, on other roads, stops should be located on straight sections of carriageway so that full-sized buses (typically 12m long) are able to take a straight approach to the raised-kerb area and stand at the kerbside.

Requirements are that all houses and most other development must be no more than 400m from a bus stop. In higher density developments a distance of 250 – 400m may be sought. Bus stops will also require real time passenger information displays to be fitted and raised access kerbs.

Appendix B gives layout drawings of bus stop layouts at various locations.

Developers must also carefully consider access to bus stops to ensure that pedestrian links to them are direct and that there is good surveillance to and at the bus stops. The following diagram shows an indicative layout that provides good access and surveillance.

Figure 8 - Two possible layouts to achieve safe pedestrian access to a bus stop

Financial support for public transport

Where it is not possible to divert existing commercial bus services, developers will be required to financially support bus services to an appropriate level and developers should therefore contact the Highways Development Management and Passenger Transport Officers to discuss proposals in more detail. Financial support will be secured via a Section 106 agreement.

Detailed guidance on service requirements will eventually be included a Supplementary Planning Document (SPD).

3.9. Speed Restraint

Speed restraint is the term used to describe methods of limiting vehicles to speeds that are appropriate to the environment in which they are travelling. Acceptable and appropriate speeds will reduce as drivers move from routes higher up in the hierarchy to those that are lower down.

In new developments speed restraint should be achieved mainly by the design of the buildings and streets. For some new developments and for most existing streets more traditional traffic calming techniques may be required.

Speed restraint by design

In new developments speed restraint should be achieved through the design and layout of the streets, spaces and buildings. The need to provide direct and legible routes needs to be balanced against the need to ensure that traffic speeds are acceptable to all users.
Speed restraint can normally be satisfactorily achieved by the combined use of three elements of the design:

- Horizontal alignment;
- Vertical elements;
- Materials, landscaping and street furniture.

Horizontal alignment

Changes in the horizontal alignment of vehicle paths can significantly reduce vehicle speeds. Small offsets in alignment (such as kerb build-outs or islands) and small radius bends can reduce speeds by breaking up longer sections of straight routes.

Changes in priority, at appropriate locations, can also interrupt an otherwise unrestricted path for vehicles. ‘False priority’ junctions, as they are sometimes referred to, can create confusion and should normally be avoided. Changes in priority should only occur at

recognisable decision points and in locations where the street network has been designed accordingly.

Vertical elements

The careful placement of buildings adjacent to the carriageway will help to create a streetscape that reduces the ability and temptation to drive at inappropriate speeds. Reduced building-to-building distances across a street have a significant effect on vehicle speeds.

Other vertical elements such as ancillary structures, walls and fences can help to achieve the same effect. The use of these features must be carefully considered in terms of their impact on the aesthetics of the street and any restriction to visibility.

Materials, landscaping and street furniture

When used to complement the horizontal and vertical features mentioned above, the careful use of materials, landscaping and street furniture can further reduce vehicle speeds.

Paving materials such as blocks can reduce speeds due to their appearance simply by taking drivers out of the more familiar ‘blacktop’ road environment. Various styles and colours of block paving are available and some proprietary coloured surfacing materials can also be considered.

Street trees, landscaped beds and raised planters are all examples of features that can assist in speed reduction. These features need to be integrated into the street carefully but when appropriately used they can have a very positive impact on the streetscape.

Some functional street furniture can have a negative impact on the overall attractiveness of a street; however, alternative choices can have a much more positive impact and can aid speed reduction. The location of street furniture is often flexible and can be incorporated into or located with other elements.

Street furniture such as nameplates, lighting columns, bollards, railings and signposts should all be considered in the context of the street design but features will be expected to be standardised designs.

In order for new road layouts to provide effective speed restraint, long straight (or nearly straight) lengths of road must be avoided. Furthermore, the amount of available forward visibility for drivers should also be limited, but not below the minimum levels required in the Design Table for Roads and Streets in Milton Keynes.

The placement of properly designed on-street parking that has physical features associated with it can help to reduce vehicle speeds. Such physical features may include kerb build-outs, street trees, landscaping and street furniture. However, this does not apply to general kerbside parking where the presence of such vehicles can unacceptably impede other vehicles and can restrict visibility. Furthermore, kerbside parking is not always present and therefore will not reduce speeds at all times.

The submission of innovative development proposals that may incorporate novel features is welcomed. Such proposals will need to achieve adequate speed restraint while conforming to the basic design requirements for the road type. Early consultation with the Highways Development Management team on such proposals is essential.

Traditional 'Traffic Calming'

More traditional traffic calming features such as those listed below can all be used as part of speed restraint proposals:

- Build-outs;
- Chicanes;
- Traffic islands;
- Pedestrian refuges;
- False roundabouts;
- Mini roundabouts;
- Road narrows (pinch points);
- Gateways;
- Table junctions;
- Overrun areas;
- Small radius bends.

Other features such as those listed below can assist with reducing vehicle speeds; however, they do not produce sufficient speed restraint when used in isolation and are only suitable for use in association with the features mentioned above. These features include:

- Rumble strips;
- Thumps;
- Changes in surface treatment;
- Coloured surfacing materials;
- Carriageway markings.

The use of a series of vertical features (road humps or cushions) should be avoided where possible on existing streets or roads and will not normally be acceptable on new streets or roads. Individual vertical features may be used at specific locations such as junctions, pedestrian or cyclist crossing points, or at other sensitive locations such as schools. Streets or roads that are, or are intended to be, bus routes should not include vertical features.

Design Speeds

Outside of 20mph zones, speeds should not exceed 30mph (50kph) on type 3 and 4 distributor roads, 25mph (40kph) on type 5, 6 and 7 access roads, 20mph (32kph) on type 8 and 9 access roads and 15mph (24kph) on type 10 and 11 minor roads.

Straight, or nearly straight, sections of road should be restricted in length must not exceed 100m to help restrain speeds to below 30mph; 60m to help restrain speeds to below 20mph and 40m to help restrain speeds to below 15mph.

20mph zones

An important aspect of speed restraint is the introduction of 20mph zones. These areas provide the advantage of lower vehicle speeds but also reduce the amount of road signs required for individual traffic calming features. There is also no requirement for speed limit repeater signs within 20mph zones.

20mph zone signs are required at every entrance to the zone and speed limit signs are required at every exit, including 20mph repeaters within zones. Within the zone all roads must be designed or traffic calmed to attain speeds of 20mph. Further guidance on the use of 20mph zones is available in Traffic Advisory Leaflets 07/91, 09/99, 12/00 and 03/01 (DoT/DTLR) and in Circular Roads 4/90 (DoT).

New residential areas in Milton Keynes will be expected to be designed in a way that facilitates the introduction of 20mph zones. The introduction of a 20mph zone should be part of the planning proposals for new residential developments and the mechanisms for introducing it should be secured within the planning approval and any associated legal agreement.

In addition to 20mph zone signs, the use of gateways, along with changes in surfacing will reinforce the message to drivers that there is a different character to the area being entered. Within the zone all streets or roads must be designed or traffic-calmed to attain speeds of 20mph, generally this can be achieved by spacing features between 40m and 60m apart.

3.10. Servicing and Manoeuvring

Servicing

Both residential and commercial developments require servicing and the design of road layouts and commercial premises should take into account those servicing needs. Within residential developments servicing needs are usually restricted to refuse collections and deliveries of mail, milk, parcels and, very occasionally, larger items.

Provided that the road layout has been carefully designed all of these needs can be met without the need for extra provision. Where developments have special needs such as spaces for doctors, ambulances or fire vehicles these should be provided within the curtilage of the site.

The layout of residential estate roads should permit access for fire appliances to within 45m of all dwellings. Access for refuse collection vehicles should be to within 25m of collection points for houses and within 9m of grouped stores for flats or apartments. Residents should not be required to walk more than 30m to the collection point. Designers must also make sure that collectors do not have to wheel/walk over grass/soft surfaces or down steps.

Service areas and loading/unloading bays for commercial developments should be designed in accordance with the recommendations contained within the Freight Transport Association's document "Designing For Deliveries". Service bays should measure 15.5m x 3.5m for articulated vehicles and 11m x 3.5m for rigid vehicles. Generally service areas will be adequate if the manoeuvring area is the same width as the service bay length.

Manoeuvring

All new culs-de-sac should terminate with either loops or turning areas, which allow vehicles to perform a 3-point turn. The location, layout and availability of turning areas will determine how well used they are, for this reason the layout of both residential and commercial developments should discourage parking within turning areas. The most effective way of preventing parking within turning areas is to locate accesses or visitor parking spaces adjacent to them as well as providing adequate parking for nearby dwellings or premises.

Residential layouts should be designed to allow a clear distance of 6.0m behind all car parking spaces to allow adequate access and to allow cars to turn. This can be provided on an access road by a 1.2m margin and a 4.8m carriageway. On level surface streets and private drives the carriageway width must be increased to 6.0m adjacent to driveways or parking spaces.

Turning areas for residential roads, industrial roads and individual properties are shown in Appendix A and details of which turning area should be used are in the Design Table for Roads and Streets in Milton Keynes in Section 3.12.

3.11. Other Design Considerations

Emergency Access

The emergency services require quick and unobstructed access to all buildings and road layouts should provide for this. Roads that serve up to 50 houses require only a single point of access for all vehicles, roads serving between 50 and 100 houses should have a second point of access which can be in the form of an emergency link. Roads serving more than 100 houses should have two full points of access, either as a loop road or as part of a through route.

In accordance with approved document B (Building Regulation B5), access for fire tenders is required to a point not further than 45m from all parts of the ground floor of any residential building. Any road or private drive forming part of such a fire access way must be no less than 3.7m wide between kerbs (although this may reduce to 3.1m for a gateway or similar short narrowing). It should have a minimum centre line radius of 6.55 m (or 7.55m if enclosed by walls) and headroom of 3.7m. The access way, including any manhole covers should be capable of carrying a 12.5 tonne vehicle and any cul-de-sac more than 20m long must have adequate provision to turn a fire tender around. Fire access will normally be to the front of dwellings but rear access is acceptable provided that it is clearly signed and the dwellings are also numbered from that side.

Emergency access links should be a minimum of 3.7m wide and be provided with suitable vehicle deterrent bollards at their junctions with the carriageway/footway. Vehicular access to dwellings will not be permitted from emergency access links and emergency links must not take access from private drives or parking areas.

The design of traffic calming schemes and individual features must take into account the need for emergency access and developers should be able to demonstrate that such features will not prevent access or seriously prejudice response times.

Street Lighting

Street lighting is required on all new public highway areas within the city of Milton Keynes and Newport Pagnell. Outside of these areas street lighting is still likely to be required and developers should contact the council's Street Lighting Section for advice.

Where lighting is provided on prospectively adoptable highways it should conform to MKC Street Lighting Specification (June 2017, rev 2) and must be approved by the council's lighting engineer. The street lighting columns should be located at the back of footways

where possible and should not be located directly outside of properties and in particular near to upper windows of homes. The Council's Street Lighting Section offers a design service and a developers' pack has been produced for street lighting.

Conservation Areas

Within conservation areas and areas containing listed buildings some relaxation of highway requirements may be appropriate. Developers are encouraged to consult with the Highway Authority at an early stage to discuss how proposals can enhance and preserve conservation areas, while at the same time ensuring safe operation of the highway. This may include the use of specialised or non-standard materials. Developers are encouraged to consult with highway and conservation at an early stage and make references to technical guidance that relate specifically to conservation areas.

Landscaping

The use of landscaping can be an important part of any development and landscaping within highway areas can result in a more attractive layout. When landscaping is to be used in or around the public highway it should be designed to avoid visibility splays, lighting columns and the route of underground services.

Slow growing and low maintenance plants should be used within, or adjacent to, the public highway. Thorny or prickly plans should not be planted within 1.5m of a footway or redway. Where planting is agreed within junction visibility splays, only species with mature heights of 600mm or below should be used and trees will not be permitted. No planting, other than grass, should be provided within forward visibility splays. Trees should not be planted where their roots may interfere with either hard surfaced areas or underground services.

Highway Structures

Where the road layout includes highway structures such as culverts in excess of 900mm, bridges or retaining walls, the approval of the highway authority will be required. This applies both to structures within the highway and those that are adjacent to it and may affect it.

Prior to any design work is undertaken, designers are advised to discuss the proposals with the Engineer (Bridges and Highway Structures Team) who will be the Technical Approving Authority 'TAA' to oversee the compliance of all structures designs and construction details with the relevant standards and specification.

All queries related to technical approval should be sent to highwaystructures@Milton-keynes.gov.ukhighwaystructures.

Services

The provision of services is a key factor when considering the design of footways and verges within a development. Utility companies, and from time to time residents, will need access to underground services. This should be possible with minimum disruption to vehicular access and with the safety of those repairing/maintaining the plant in mind.

Most statutory undertakers and utility companies will require placement of services outside of the carriageway, either within footways or verges. If all services are to be provided on one side of the carriageway a 2m margin (verge/footway) will be required. If the services are split and located both sides of the road a 1.2m margin should be provided either side of the carriageway.

Street furniture

The provision of nameplates, signs, lining, litter bins, benches, planters and other items may be required to satisfactorily complete a development. Where such items are to be provided they should not impinge on visibility splays or create other hazards to highway users. Street furniture within the public highway should comply with the council's requirements (minimum clearances for pedestrians, around and between street furniture of 1.5m and should not reduce width available to pedestrians) and should be shown on drawings submitted for adoption agreements.

Archways and access between buildings

These accesses should provide vehicle and pedestrian visibility splays in accordance with the guidance in the preceding sections. The minimum width of archways and accesses between buildings is 3.2m (wall-to-wall) where up to 3 dwellings are served.

For accesses serving 4 or more dwellings, a minimum wall-to-wall width of 5.0m should be provided. Alternatively, where such an archway or restriction is set back more than 8.0m from the adjoining carriageway and the access allows an entering vehicle to wait clear of the highway while a second vehicle exits and vehicle intervisibility through the archway is provided, the width can be reduced to a minimum of 3.2m.

Archways that do not need to permit service or emergency vehicles can have a minimum vertical clearance of 2.8m. Where access is required for service, emergency, or other large vehicles, a minimum vertical clearance of 5.3m should be provided.

Gates

Where gates are provided across a vehicular access to the public highway, they should be positioned in accordance with the following dimensions, dependent upon the use of the site:

Use	Set-back[1]
Industrial / Warehousing	20m
Small Commercial	12m
Agricultural / Equestrian	12m
Residential	6m

[1] Set-back measured from edge of carriageway and gates to open into site.
For gates opening outwards, add gate width to set back dimension.

3.12. Table of Layout Standards

DESIGN TABLE FOR ROADS AND STREETS IN MILTON KEYNES

TYPE	NAME	SERVES	WIDTH (m)	FOOTWAY	VERGE	DESIGN SPEED mph (kph)	FORWARD VIS (m)	JUNCTION RADIUS (m)	JUNCTION SPACING[1] (m)		ACCESS		MAXIMUM GRADIENT	MIN C.L. RADIUS	TURNING HEAD
									ADJ	OPP	FROM	TO			
ROADS															
1	Primary Distributor	N/A	Refer to the Design Manual for Roads and Bridges												
2	District Distributor	N/A	Refer to the Design Manual for Roads and Bridges												
3	Industrial Distributor	250+ vph	7.3	2 x 2m	2 x 3m	30 (50)	70	15	90	40	1, 2	4	1:20 1:40 first 30m	60	N/A
4	Industrial Access	Up to 250 vph	7.3	2 x 2m	None	25 (40)	45	15	50	25	1-3	N/A	1:20 1:40 first 30m	60	9-12
5	Local Distributor	300+ Dwellings	6.75	2 x 2m	2 x 1m	30 (50)	70	10.5	90	40	1, 2	6-9	1:14 1:40 first 30m	60	N/A
RESIDENTIAL STREETS															
6	Principal Street	100-300 Dwellings	5.5[4]	2 x 2m	None	25 (40)	33	9	50	25	2, 5	7-11	1:14 1:40 first 15m	20	1-4
7	Major Street	50 to 100 Dwellings	5.5	2 x 2m	None	25 (40)	33	7.5	30	15	5, 6	8-12	1:14 1:40 first 15m	20	1-4
8	Street	25 to 50 Dwellings	4.8	1 x 2m	1 x 1.2m	20 (32)	25	6	30	15	5-7	9-12	1:14 1:40 first 10m	15	1-4
9	Minor Street	Up to 25 Dwellings	4.8	1 x 2m	1 x 1.2m	20 (32)	25	6	20	5	5-8	10-12	1:14 1:20 first 5m	10	1-4
LEVEL SURFACE STREETS															
10	Shared Street	Up to 25 Dwellings	Variable (Min 3.2)	Integrated	Min 0.5m[2]	<15 (24)	15	4	N/A	N/A	6-9	11-12	1:14 1:20 first 5m	7.5	1-4
11	Shared Drive	3 to 5 Dwellings	3.2 to 4.1	Integrated	2 x 1.2m[5]	<10 (16)	N/A	4	N/A	N/A	6-10	N/A	1:14	N/A	5-8
12	Shared Crossover	2 or 3 Dwellings	3.2	Integrated	None	N/A	N/A	45º Splays	N/A	N/A	7-10	N/A	1:10	N/A	13-17

1. Measured Centreline to Centreline. The minimum distance to the first junction on a road/street is 50m for types 1-6 or as per the relevant adjacent “ADJ” distance for types 7-9.
2. To be determined in conjunction with statutory undertakers and the Council’s Highway Adoptions team.
3. Where the gradient of the redway exceeds 1:15, forward visibility of 30m should be maintained.
4. Where the road is part of a bus route the width should be increased to 6.2m.
5. Verges are required for adoptable Shared Drives. On private Shared Drives verges are not required.

NB for streets incorporating parking and for Redways see figures 3 & 4

SECTION 4 - PARKING

4. General Principles

Parking provision is becoming an increasingly important element of sustainable transport measures and the policies that support them. The need to manage the amount, availability and location of parking is a key factor in successful travel management.

The supply of parking must however take into account local circumstances and the requirements of individual users and developments. For example, where there is frequent and high quality public transport provision a reduction in car parking provision may be appropriate.

However, where the omission of large numbers of parking spaces from new developments is likely to simply transfer parking to other locations, a reduction in the parking requirement is unlikely to be considered appropriate. If those locations include the surrounding public highways then a reduction in on-site parking will not normally be acceptable.

The government continues to forecast a rise in car ownership at the national level. The number of households without any access to a car is predicted to continue to decrease and the number of households with access to more than one car is predicted to continue to rise. Car ownership in Milton Keynes is higher than the national average at 1.30 cars per household compared to 1.16 per household for England (2011 Census data).

Because car ownership continues to rise, yet increased and unnecessary use of the car is discouraged, the provision of adequate residential parking has become increasingly important. However, there is no evidence that the availability of car parking at residential premises directly affects car ownership.

Parking is one of the main factors affecting the selection of the car as the mode choice for an individual journey. The availability of parking at non-residential destinations has a large influence but the availability of safe and secure parking at the journey start point (home) is also crucial.

Developers should refer to the Council's adopted parking standards for parking requirements for residential and non-residential developments. It should also be noted when calculating the parking requirements that garages (even if large enough to park a car) do not count as parking spaces.

Copies of the parking standards are available to download at:

http://www.milton-keynes.gov.uk/streets-transport-and-parking/parking/parking-standards

4.1. Residential Parking

Safe and convenient parking in residential developments is always required, but as parking at workplaces and leisure sites is constrained and more journeys take place by modes other than the car, the provision of high-quality, secure parking, normally within the curtilage of dwellings, has become essential.

The provision of sufficient, conveniently located and secure parking is one of the prime concerns in all new developments. The ultimate appearance of estate roads and the usefulness of them will depend as much upon parking provision as it will on the design of the roads and footways themselves. Evidence suggests that where improvements to the street scene have been proposed in conjunction with reduced parking, residents will continue to park their vehicles close to their dwellings even if inappropriate. This can result in driving along or even parking on footways or verges and parking within and restricting or blocking carriageways.

Grouped parking areas should be well lit and have good surveillance from the dwellings they serve. If provided, grouped parking areas should be as close as possible to the dwellings they serve and should certainly be closer than any other carriageway areas. The provision of bollards, railings or other vehicle deterrent features may be necessary to prevent parking on areas closer to the dwellings than the parking spaces. Typically this type of parking will only work within housing squares or courts.

Remote or grouped parking which has little or no surveillance can encourage car crime, is intimidating for some residents and leads to inappropriate on-street, verge and footway parking. As such rear parking courts are not supported. However, it is accepted that for certain streets, frontage access can’t be achieved or is not permitted. In these cases small private and secure rear parking courts may therefore be required.

Visitor parking is required for all new developments adjacent to the dwellings it serves. Grouped visitor parking at one or two locations on a site is likely to be remote from the majority of dwellings and is less likely to be used. The provision of visitor spaces immediately in front of dwellings should also be avoided where possible. Such spaces are often used by residents, particularly where a shortfall in parking exists and visitors are often reluctant to use them when they are very close to other dwellings. The provision of visitor parking adjacent to turning areas can assist in keeping such areas free of on-street parking, thus ensuring that larger vehicles can still turn. Single space visitor spaces should be avoided.

No specific provision will normally be required for delivery, service or emergency vehicles in residential areas; these can usually be accommodated within the carriageway for short periods. Special provision may be required in certain circumstances, such as for

residential institutions or where the road serving the development is not suitable to accommodate such short term parking.

The minimum size of parking spaces for cars is 5.0m x 2.5m. The minimum width of a vehicular access or driveway to a garage is 2.75m. When located in front of a garage or other solid feature then the minimum driveway length is 5.5m and 6.0m is recommended. The figures below show standard layout of spaces including appropriate circulation space, Developers should refer to the council's adopted parking standards for parking requirements for new development. Developers should note that garages are not counted as parking spaces. Allocated parking is defined as privately owned spaces that are for the sole use of an individual dwelling.

Unallocated parking will normally be located in properly set out bays within the highway and will be so designed so that the street dimensions requirements are not compromised by the on-street parking. Unallocated parking should also be grouped so as to avoid single space parking bays.

Figure 9 – Single parking space

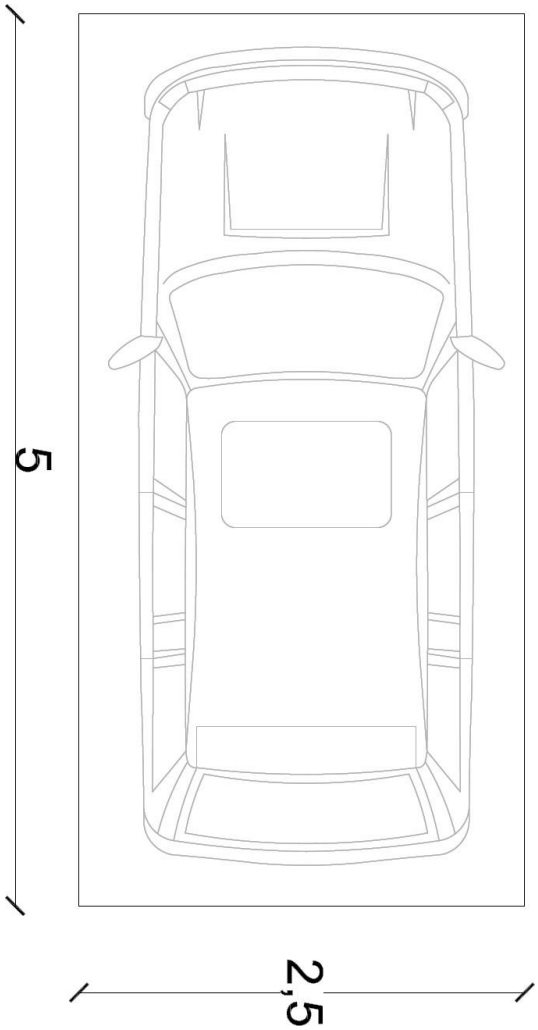


Figure 10 – Multiple spaces adjacent to a wall or fence

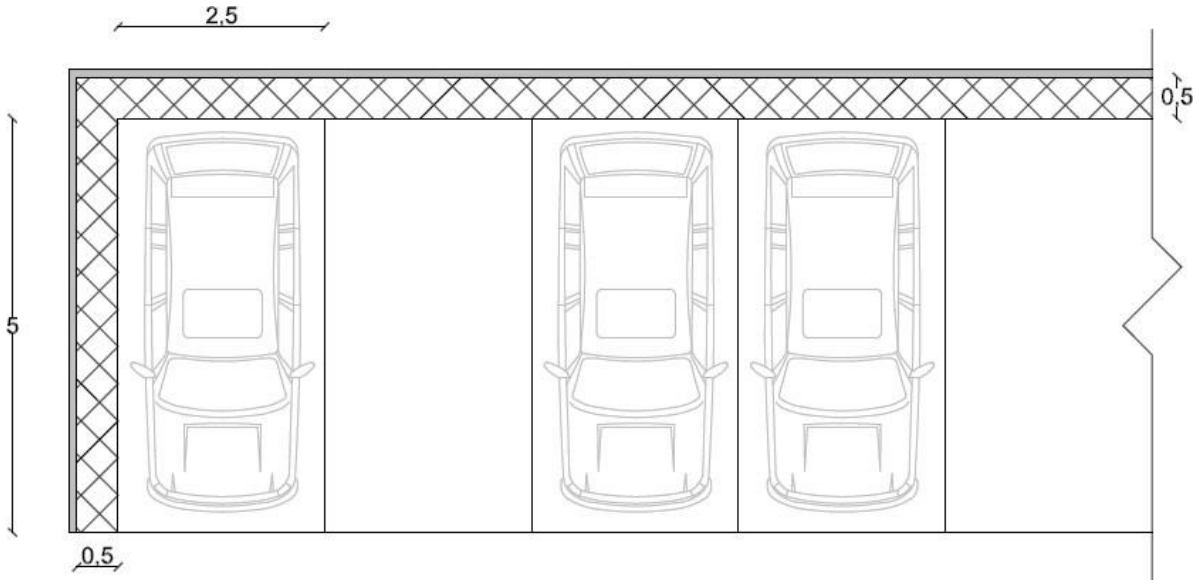


Figure 11 – Typical layout for on plot parking (in front of dwelling)

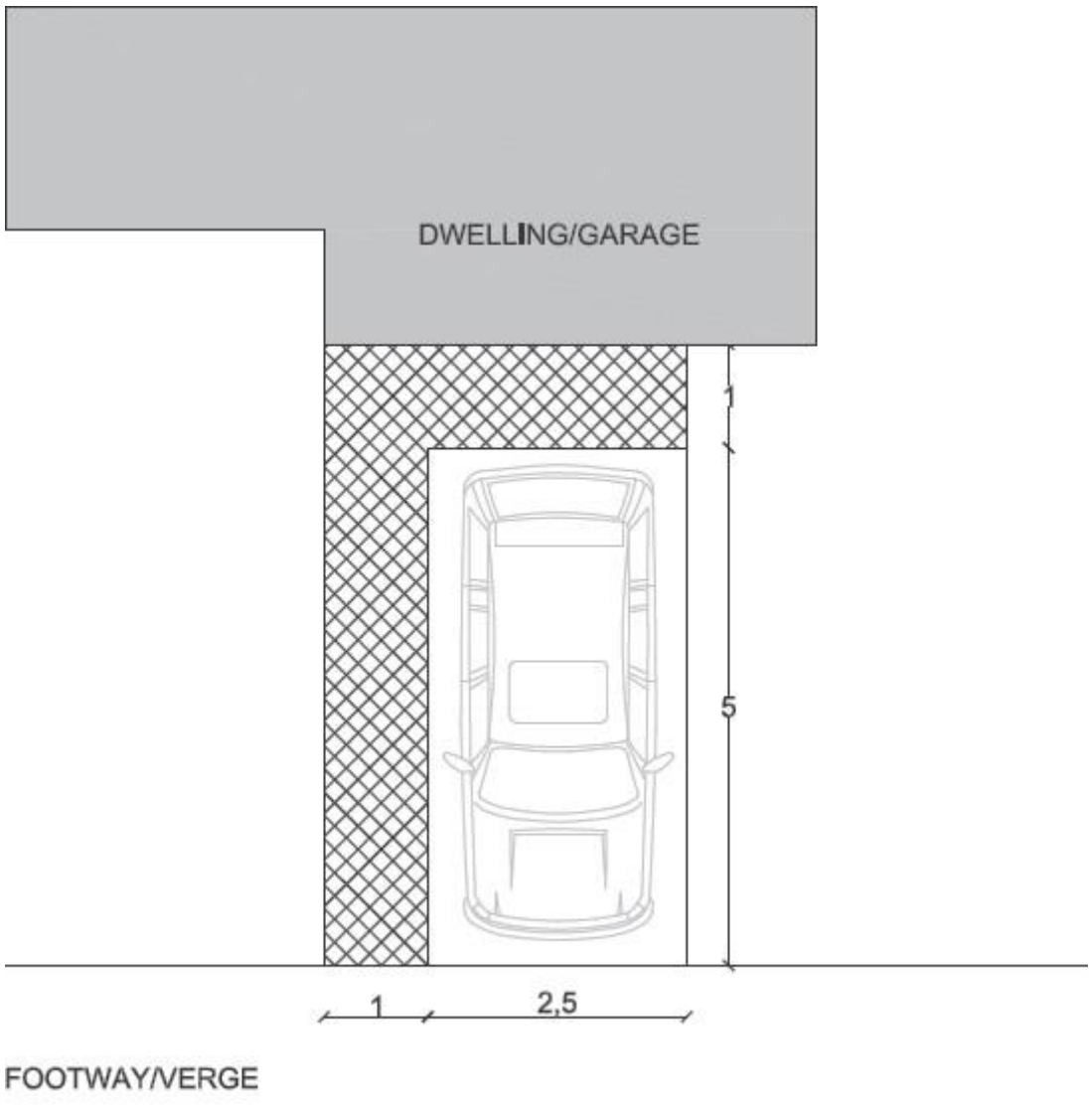


Figure 12 - Typical layout for on plot parking (dwelling to side)

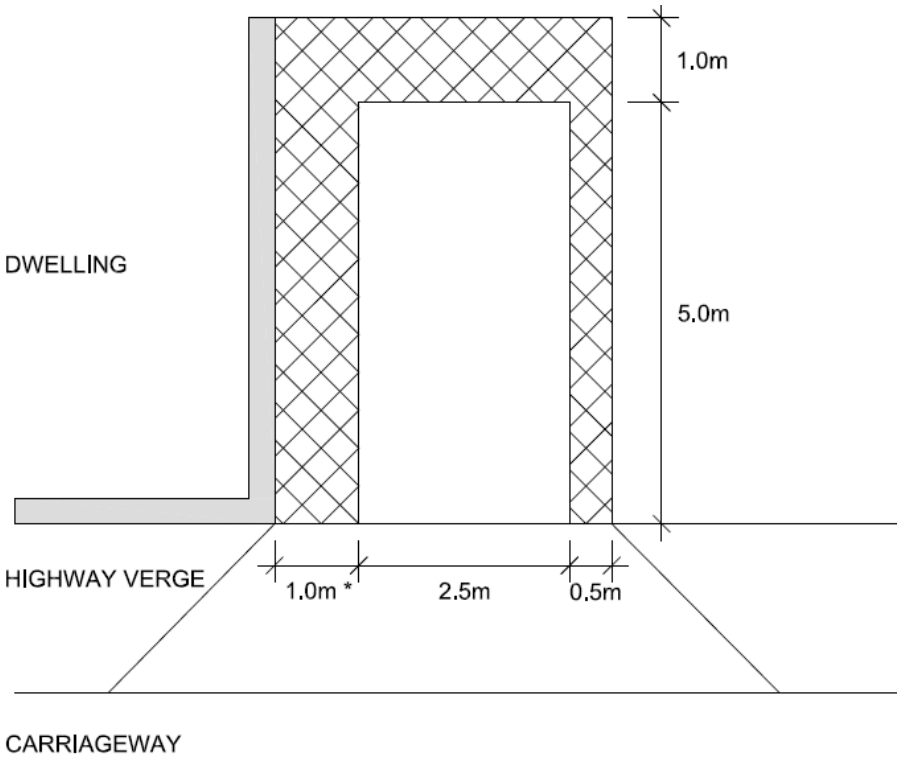


Figure 13 - Typical layout for two spaces in same ownership with dwelling to side

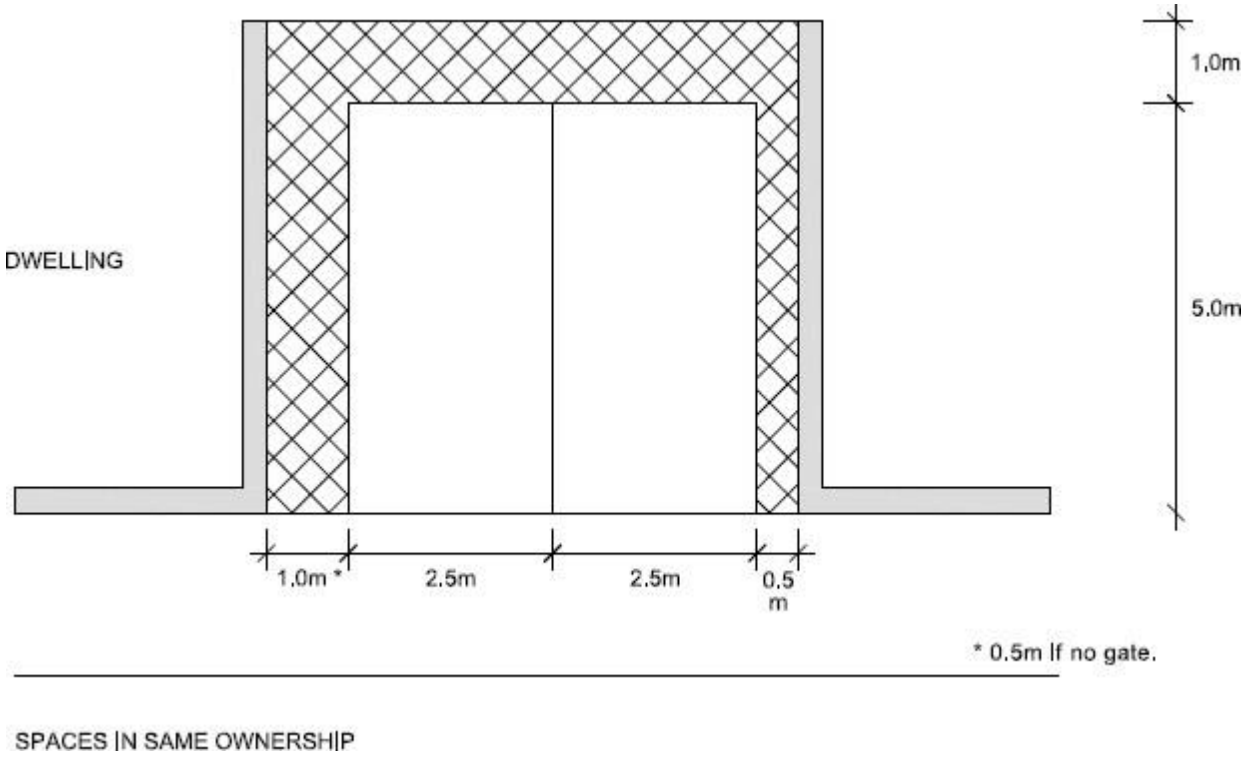
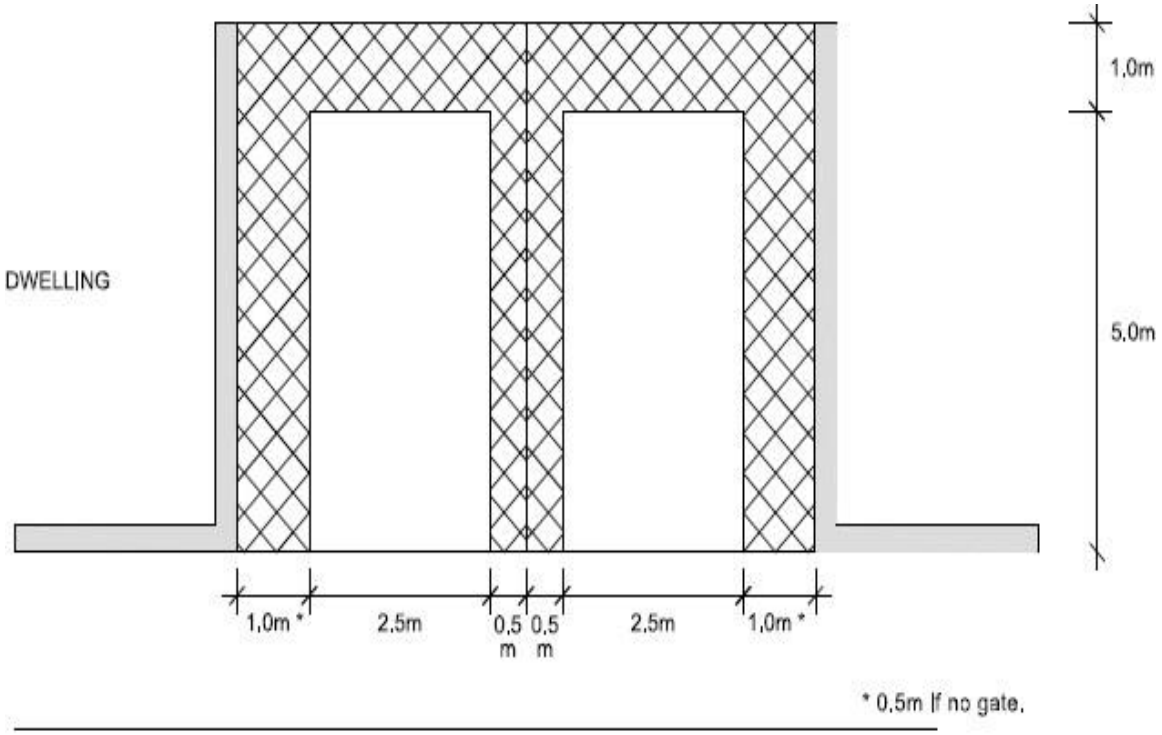


Figure 14 - Spaces in different ownership



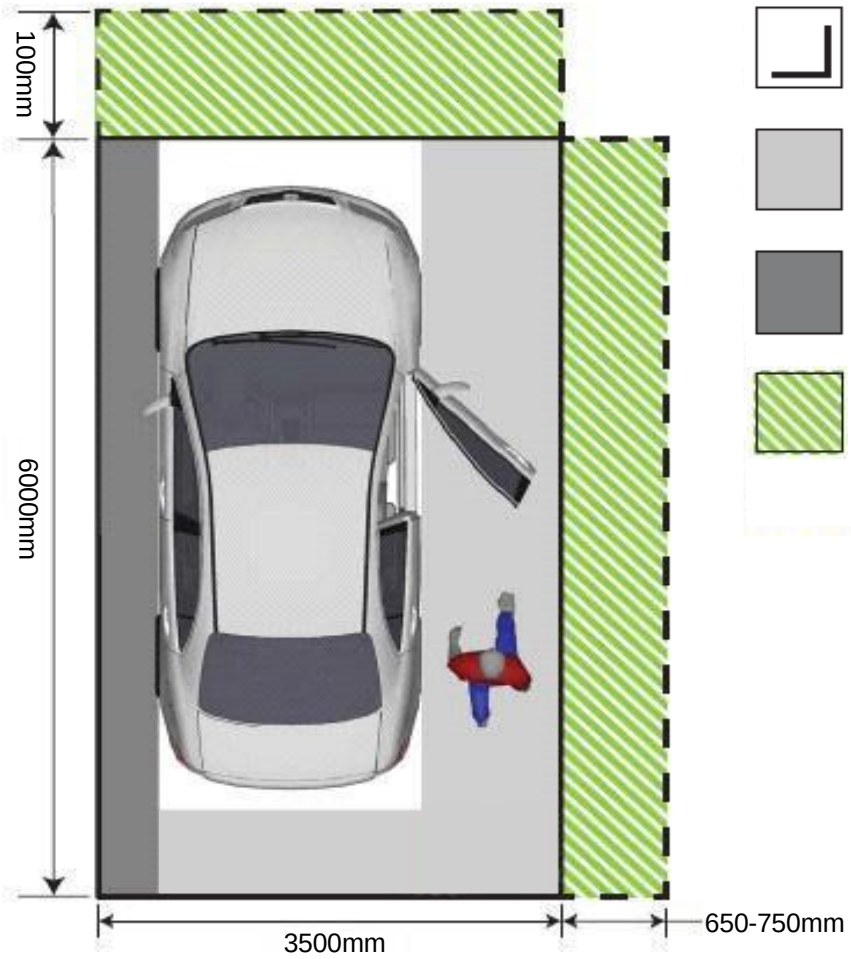
SPACES IN DIFFERENT OWNERSHIP IF DEVELOPER WISHES TO SUBDIVIDE

Garages

As stated above, garages are not counted as parking spaces when calculating the number of spaces required in a development as set out in the council's adopted parking standards.

However, most new developments include garages but unfortunately they are frequently designed too small to park a car within them. It is recommended that all garages should be suitable to park cars should the owners wish to do this and as such the following dimensions are recommended to allow a family car to park within it and at the same time allowing space for storage, including cycles.

Figure 15 – garage layout plan



Minimum dimensions of garage: 3500mm x 6000mm.

Circulation space.

Area allocated to allow vehicles door opening (minimum 450mm).

Potential cycle storage area.

Developers have flexibility in deciding whether to include storage areas either in the 1000mm zone at the back of the garage or in the 750mm zone to the side.

Car ports

Car ports must be open on at least two sides and meet dimensions of at least 3.5m wide (open sides front/back) or 3m (open front / side) and 5.5m long per space (closed at end) or 5m (open at end). Single car ports that are open just at the front will not be acceptable. See diagrams

In order to provide a secure garden area any fence or wall erected to do this must be located at least 1m from an open side / end of a car port to make sure that the car port remains open on two sides.

Figure 16 – Car port open at front (shared with neighbour to side)

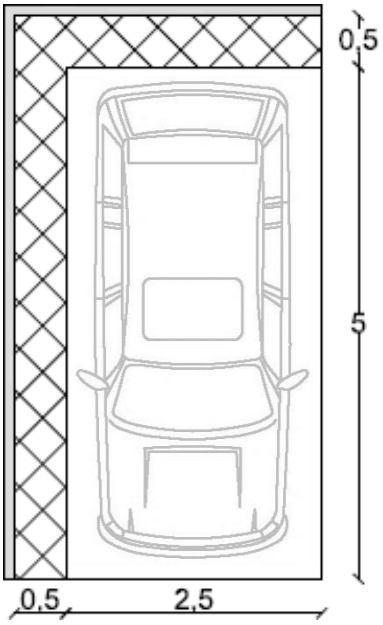
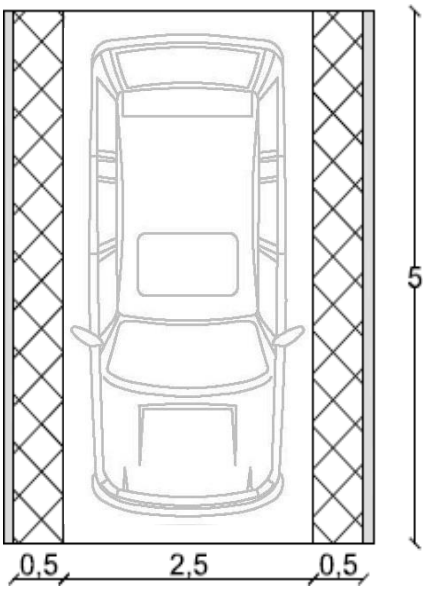


Figure 17 – Single Car port open front and back



Car ports that are accessed off the public realm are discouraged as they can result in attracting anti-social behaviour. This is particularly the case for rear parking courts and as such car ports in these locations are not recommended.

On Street parking layouts

The following diagrams set out standard layout requirements where parking is required on street, such as for meeting the unallocated parking requirements as set out in the council's adopted parking standards.

Figure 18 - On street parking layout with end bays squared (Type 4A)

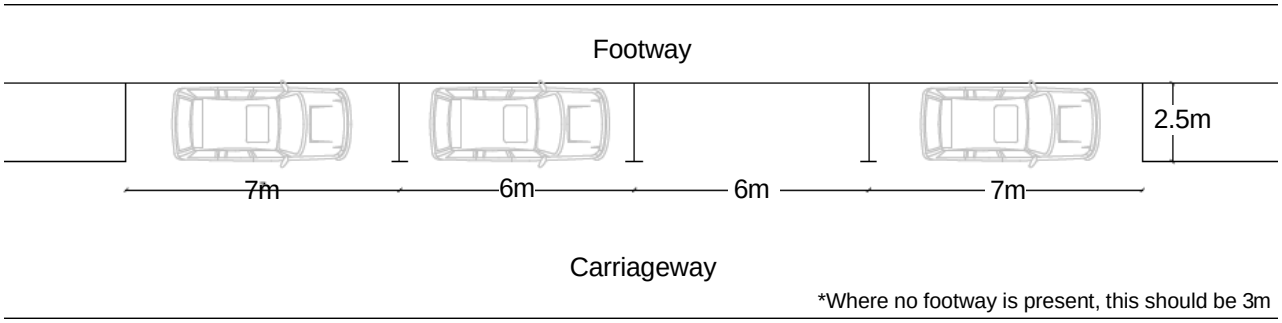


Figure 19 - On street parking layout with end bays splayed (Type 4B)

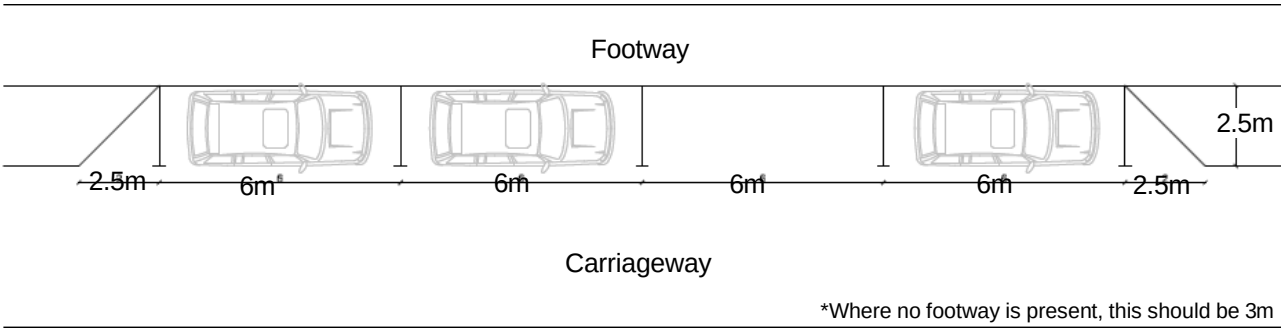
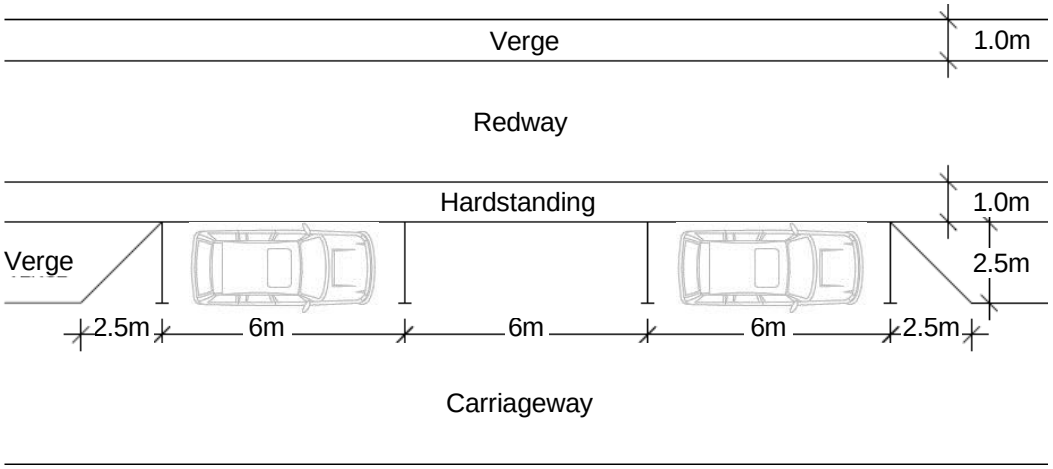


Figure 20 - On street parking layout (splayed ends) adjacent to a Redway (Type 4C)



The 1m hardstanding between the parking spaces and the Redway is required to provide a hard surface for car users to stand when leaving their vehicle and as a buffer zone so cyclists are not put in danger with car doors opening across the Redway.

Figure 21 - Standard parking bays at 90 degrees to carriageway edge (Type 4D)

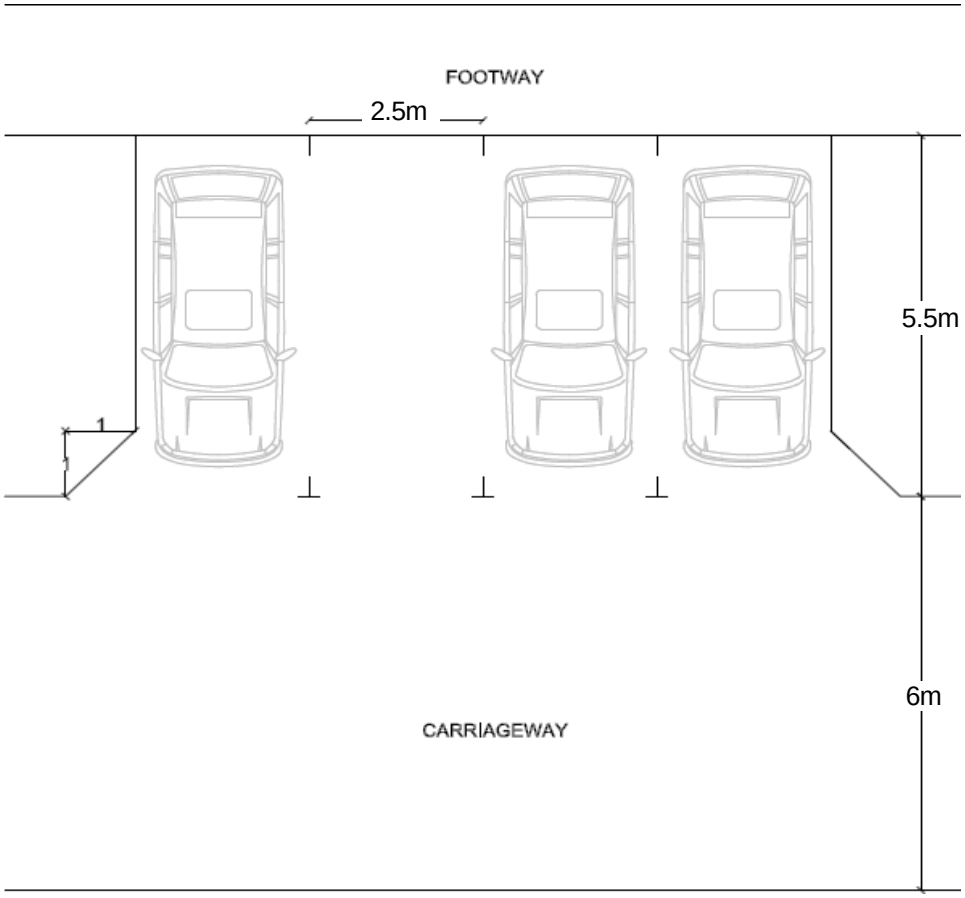
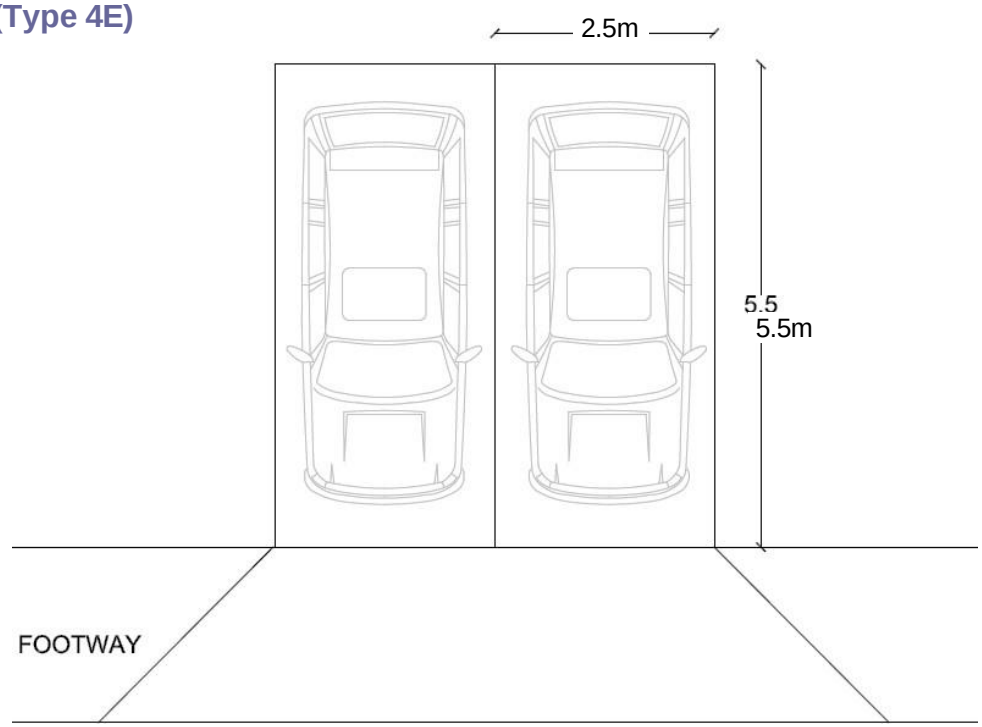


Figure 22 - Standard parking bays at 90 degrees to carriageway edge (with footway crossing) (Type 4E)



4.2. Grouped parking layouts residential and non-residential

Grouped parking will typically be for non-residential developments and located off-street. However, some flat developments may require group parking in layouts as shown below.

The standard layout dimensions are the same for all types of parking spaces whether residential and non-residential.

Figure 23 - Standard group parking layout (aisle allows two way traffic) (Type 4F)

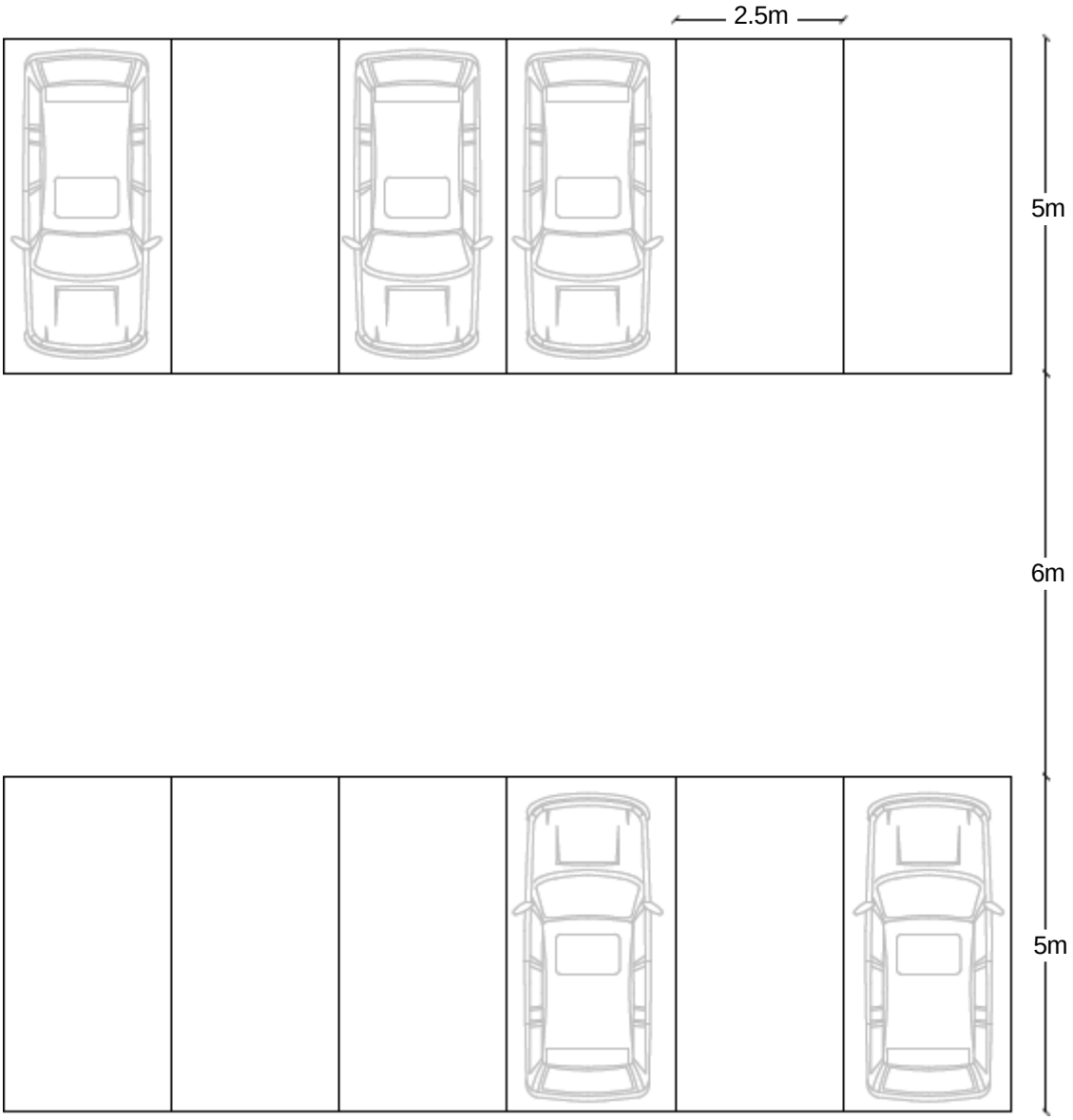


Figure 24 - Echelon parking 60 degree angle (aisle width suitable for one way traffic only) (Type 4G).

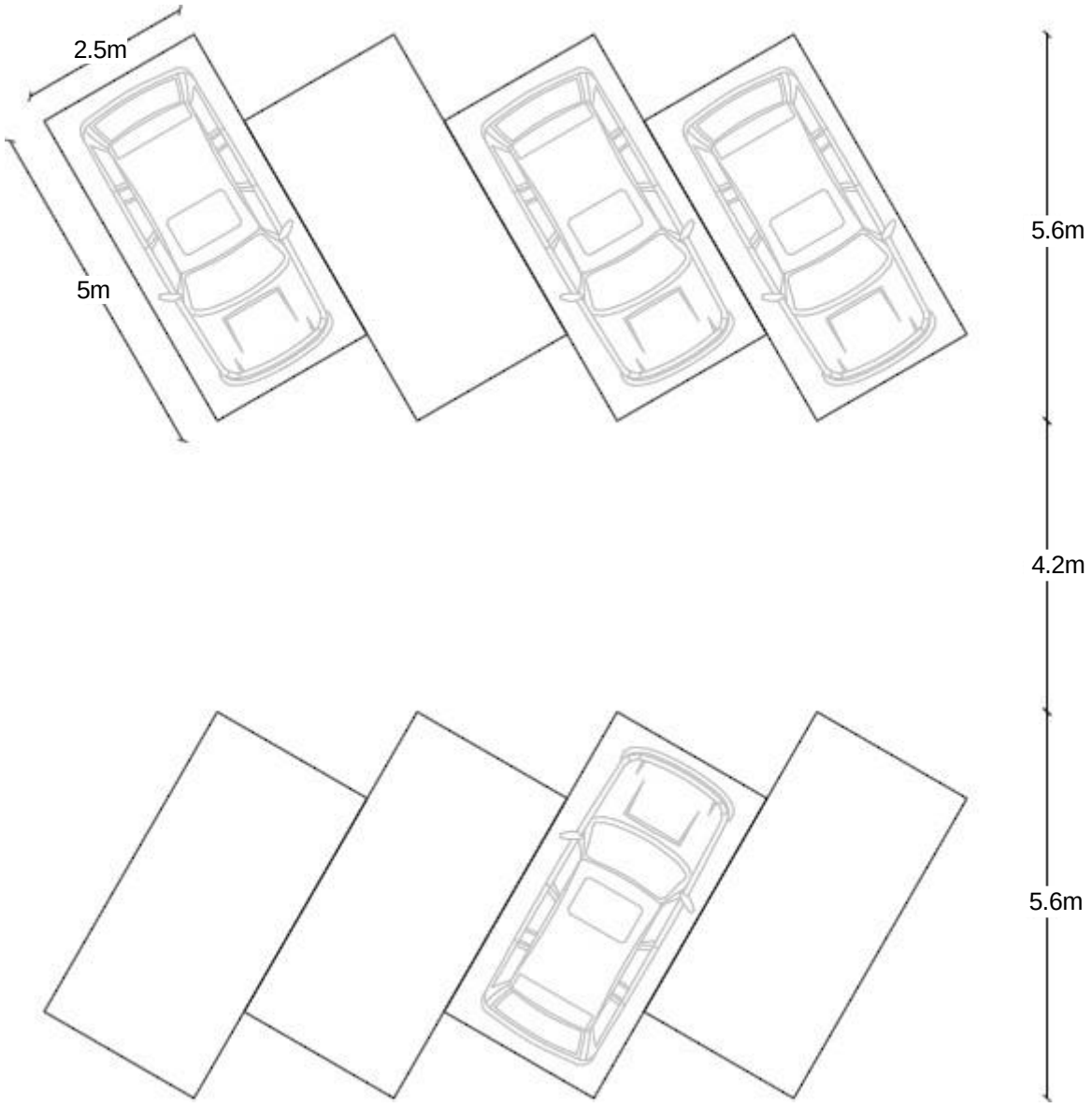
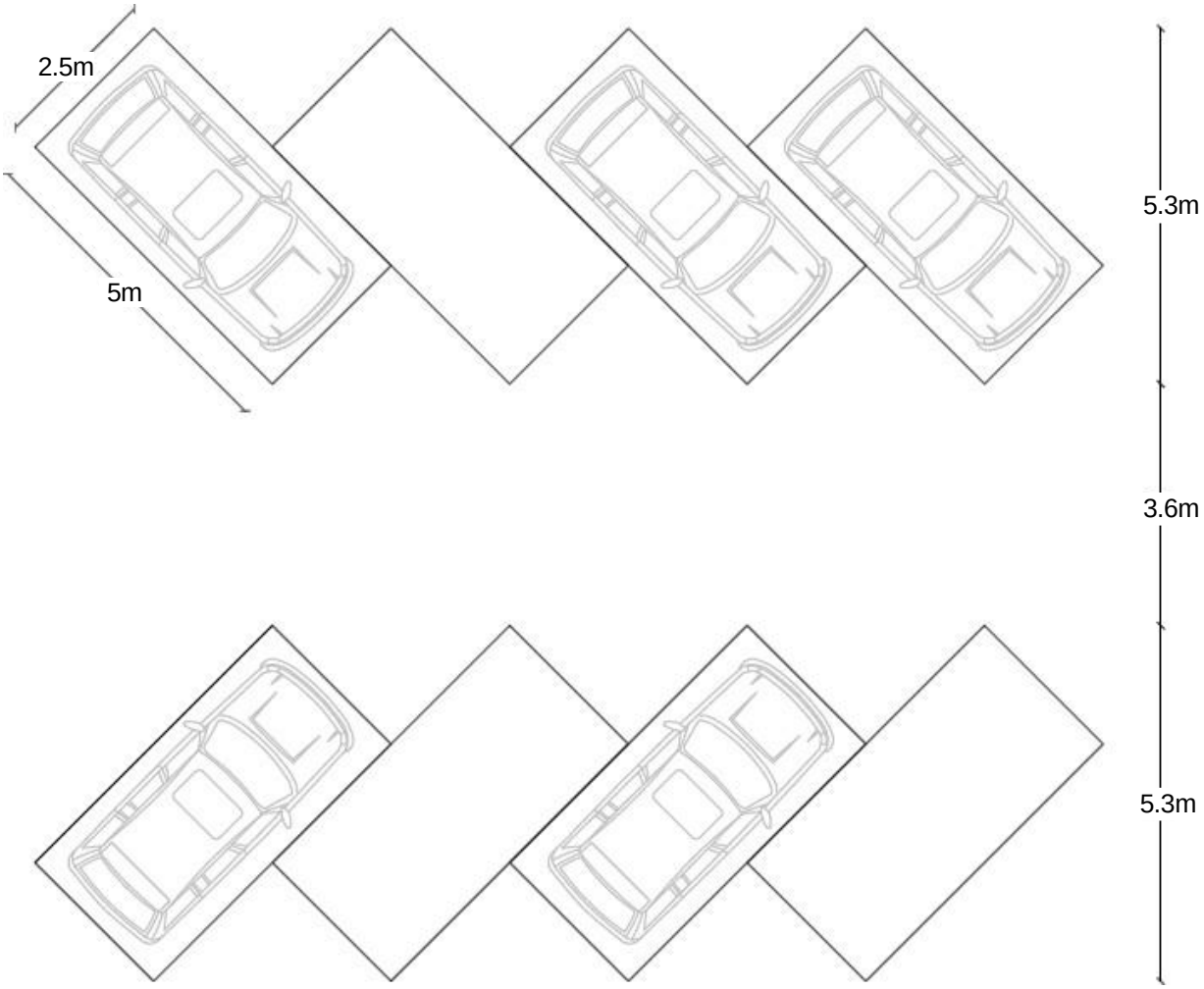


Figure 25 - Echelon parking 45 degree angle (aisle width suitable for one way traffic only) (Type 4H).



Type 4F should be the preferred design on most new developments but 4G and 4H are acceptable on some space restricted sites with single direction of travel.

4.3. Disabled parking

Disabled parking needs to be positioned as close to the entrance to the development as possible. The number of spaces to be provided will be as per the Council's adopted parking standards.

The positioning of the spaces must therefore take into account how disabled people will reach the entrance ensuring that there is adequate circulation space around landscaping and other obstructions.

For developments which have an obvious large number of disabled people or people with restricted mobility such as care homes then provision will need to be made for accessible minibus parking. A dedicated community transport bay will also be required.

Figure 26 - Multiple disabled bay (off street)

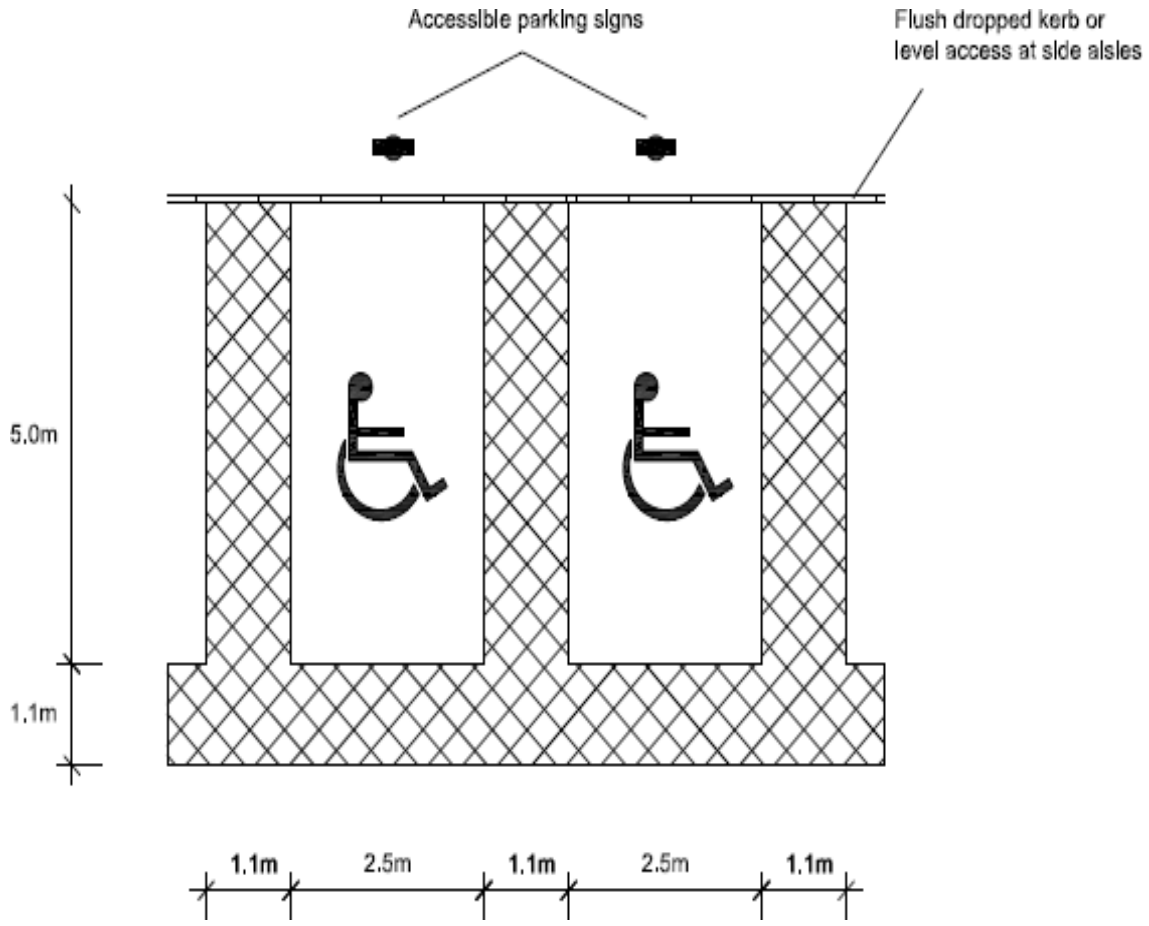
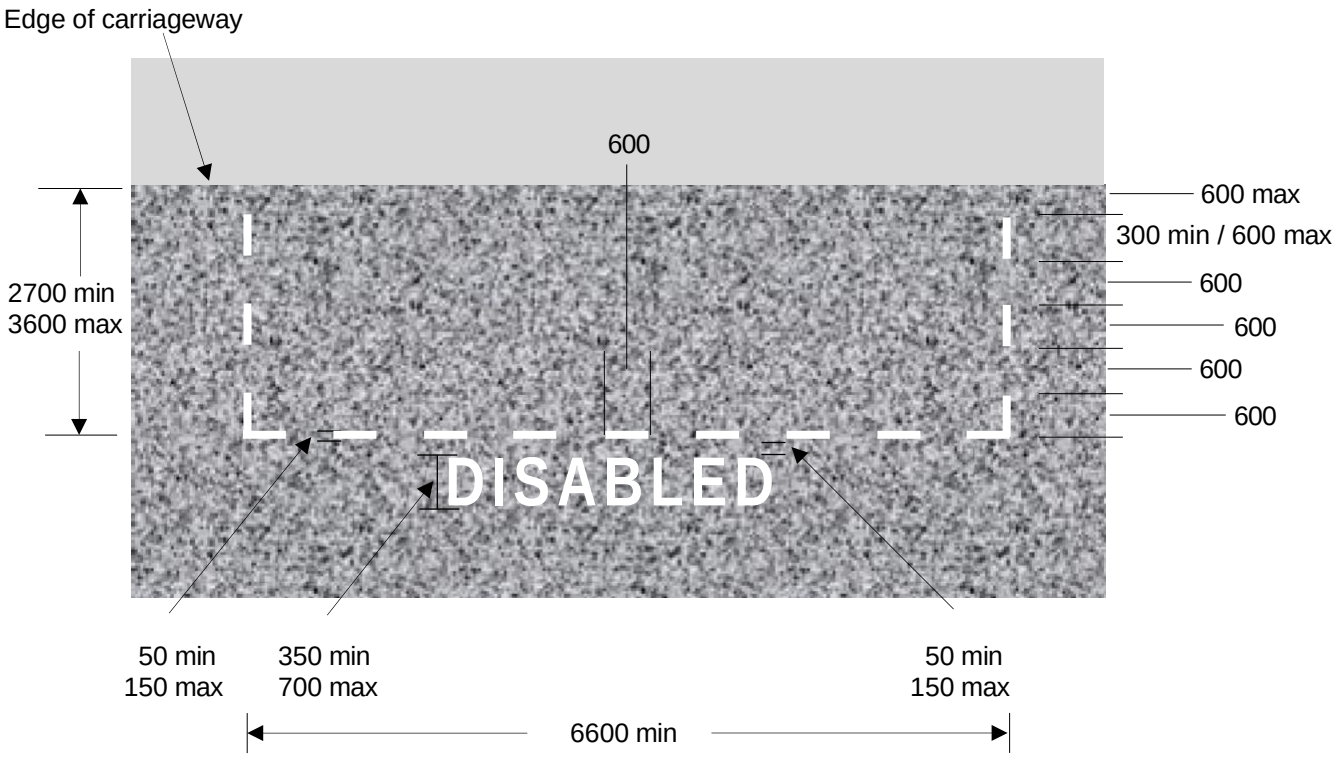


Figure 27 - Single disabled parking space on street

Layout must include disabled parking sign (Diagram 661A)



4.4. Cycle parking

Developers should refer to the council's adopted Parking Standards for details of the number of cycle parking spaces required for a development. The Mobility Strategy requires that all cycle parking infrastructure is of a sold-secure standard.

Each type of development will require a different standard of cycle parking. The location and level of security are the main issues to be considered. Broadly, the requirements will be as follows but each planning application is on its merits:

- Houses – most house developments will have a lockable garage and this is suitable for storing bikes for a whole family. It is recommended that developers follow the garage design recommendations as set out above. Where a garage is not provided then a lockable shed is acceptable.

- Small flat development – a lockable building with internal Sheffield stands or similar standard of cycle rack inside to the appropriate layout dimensions. If this building is also the bin storage area then the cycle storage must have a separate entrance and separate internal layout so bikes and bins are kept apart.

- Large Flat development – an internal cycle parking area that allows bikes to be parked in individual lockable cages.

- Retail / local centre / leisure facility or other key location – high quality facility to the front of the development, easily accessible in a prominent position. The facility to consist of covered parking, cycle parking sign, information board or totem and in some locations public cycling tool, stand pump (see note below)

- Other non – residential developments e.g. offices – covered cycle parking located in a secure area of the site or internal to the building. Additional covered cycle parking to also be provided to the front of the building for use by visitors or over flow parking.

- Local journey attractors e.g. shops and cafes, supermarkets, health clinics – short-term parking solution of small clusters of Sheffield stands conveniently located close to the entrance of the destination with natural surveillance. (Visibility from within a refreshment stop or small shop is preferable.)

If cycle parking is proposed to the rear of a building then this must have adequate surveillance and also be an entrance that pedestrians would normally use to enter the building. A parking area in a part of a service yard is unlikely to be accepted unless safe access for pedestrians/cyclists can be provided without dangerous conflicts with delivery vehicles.

Note: re Adoptable parking facilities: Where cycle parking is intended to serve more than one premises, e.g. in a Town Centre or Local Centre location, it should normally be located within the public highway. Other cycle parking will be considered for adoption subject to location, layout and design

Cycle parking design

The following are examples of some potential designs and their applications.

Figure 28 is a secure cycle facility useful in non-public areas such as at offices and small flat developments:

Preferred features

- Clear glass only to ensure CCTV coverage.
- Cycle stands to be Sheffield style with cross bar.
- Illuminated.

Figure 28 - Canopy style cycle parking (preferred option)

Figure 29 – Canopy with narrow footprint is required.

This style is suitable for more public locations such as shopping centres.

Figure 30 – Standard dimensions for single Sheffield stand

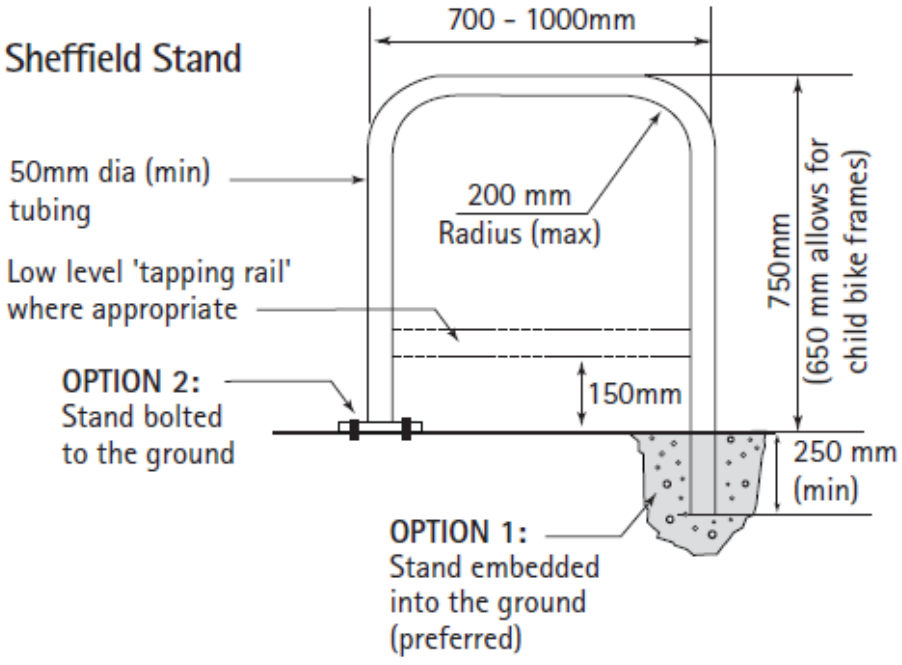
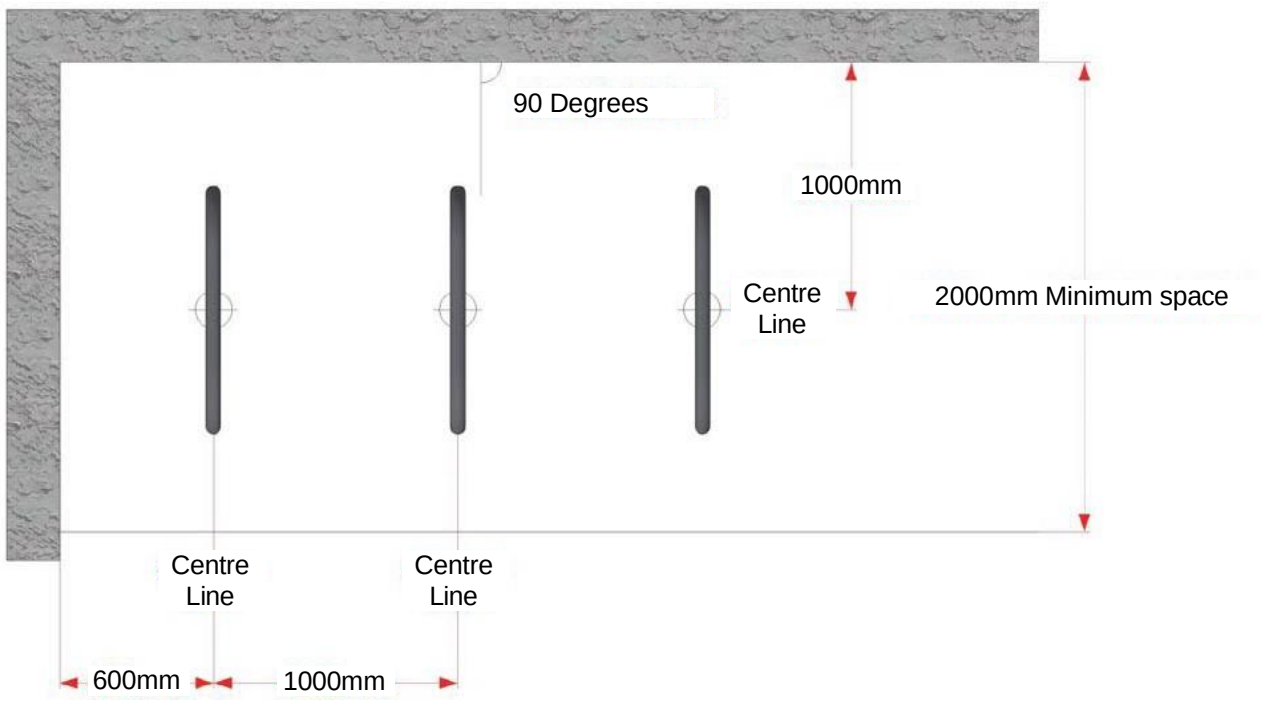


Figure 31– Standard layout for Sheffield style stands located next to a building or within a structure.



Information board to accompany street cycle parking facilities

We will usually expect street parking to be accompanied with information boards or totem signs. Detailed design requirements are available on request.

4.5 Powered Two Wheelers

Developers should refer to the council's adopted Parking Standards for details of the number of cycle parking spaces required for development.

Powered Two Wheeler users will require parking should be near to their destination, clearly set out, secure and safe to use.

Users will naturally look for parking opportunities as close as possible to their destination. 20 metres is desirable. Beyond 50 metres the use of unofficial space can become prevalent. Formal parking spaces should be clearly marked and signed to highlight them to users.

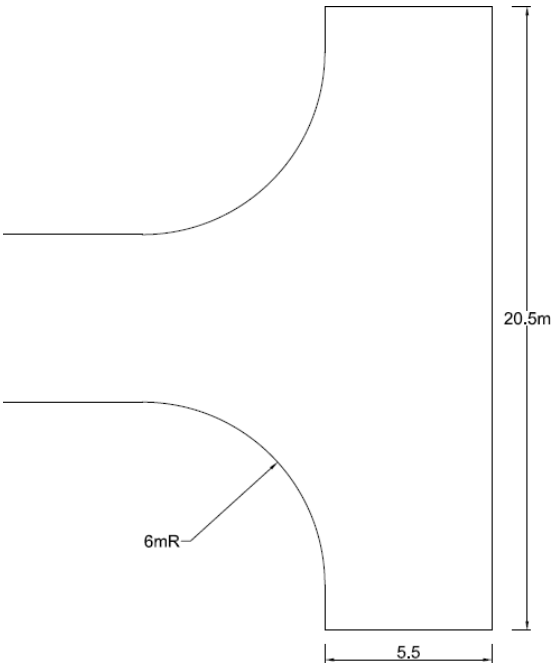
Security is a key issue and physical measures are highly sought after and attractive to users, as is natural surveillance. Covered off street parking is desirable as it provides protection from weather and damage. Storage areas for clothing and equipment should also be provided.

As with all types of parking, personal security and safety is highly important to encourage use. Things to consider are a level surface to move the machine around on, lighting, CCTV and natural surveillance.

Individual spaces should not be marked in order to make the most efficient use of the available space. Most machines range from 700mm to 1000mm wide. Allowing for a nominal mount/dismount space of 600mm suggests that an average width of 1400mm per machine is required. Where there is significant use by smaller or larger machines, this figure can be altered to suit.

Appendix A -Turning Areas

Type 1



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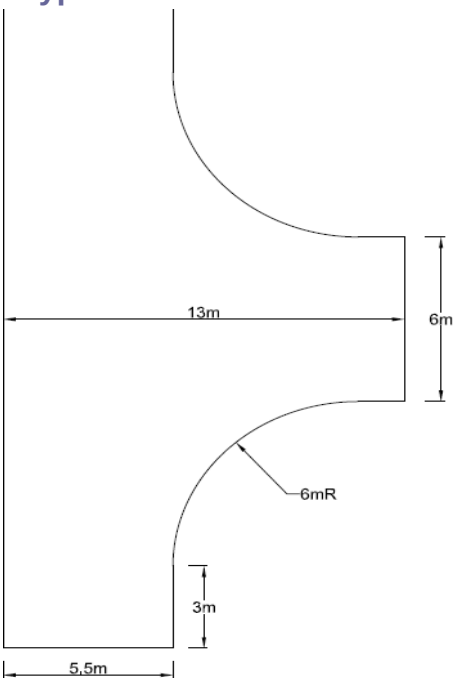

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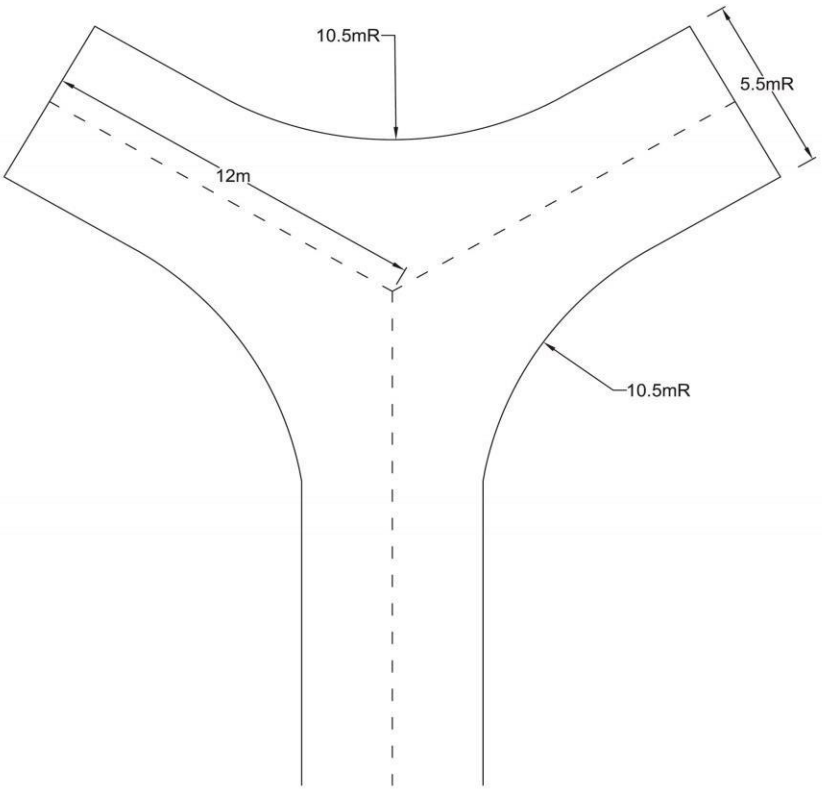

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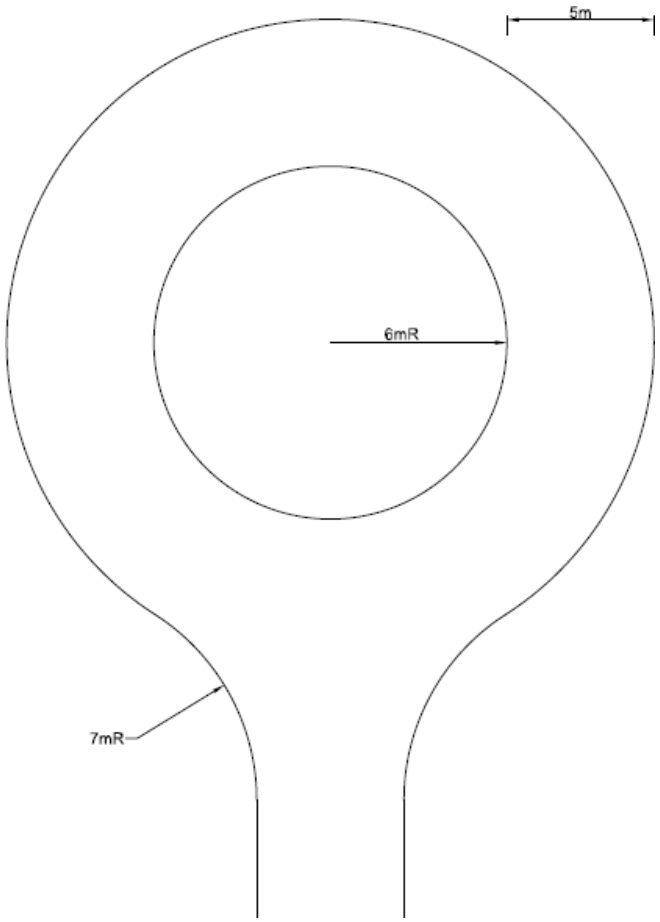

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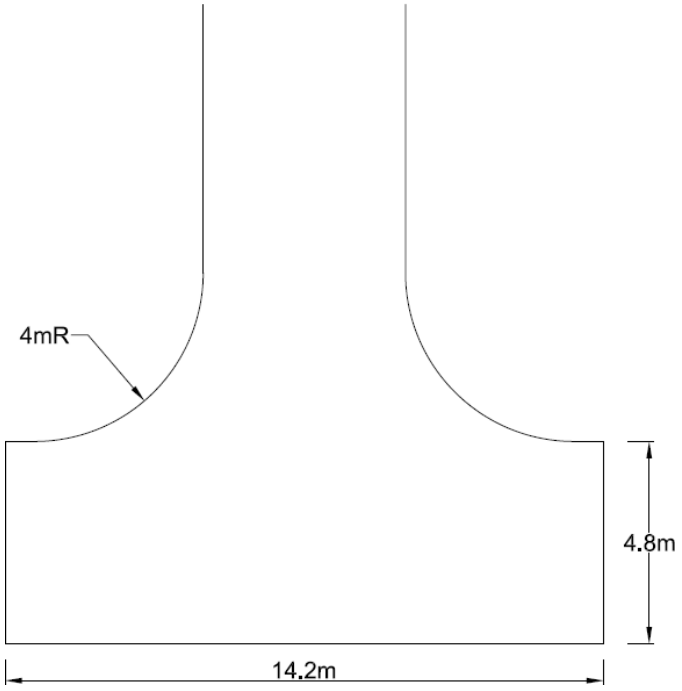

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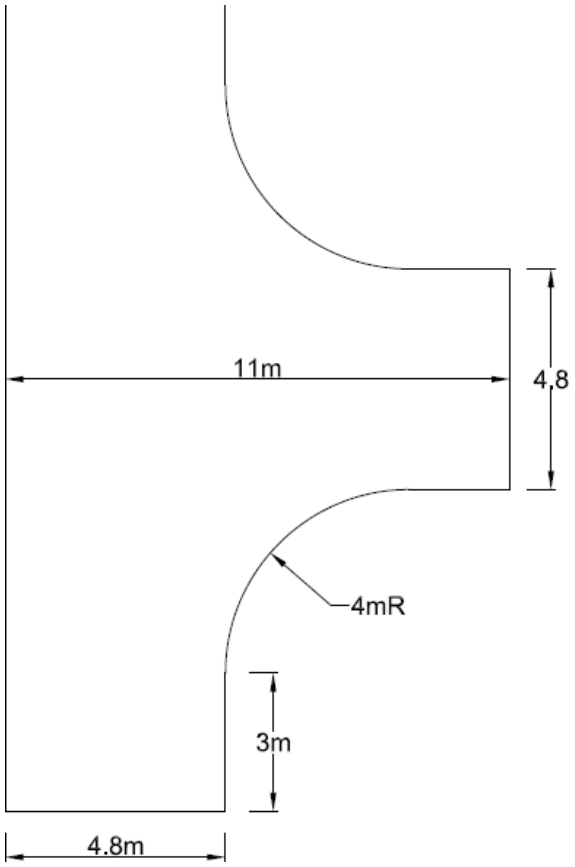

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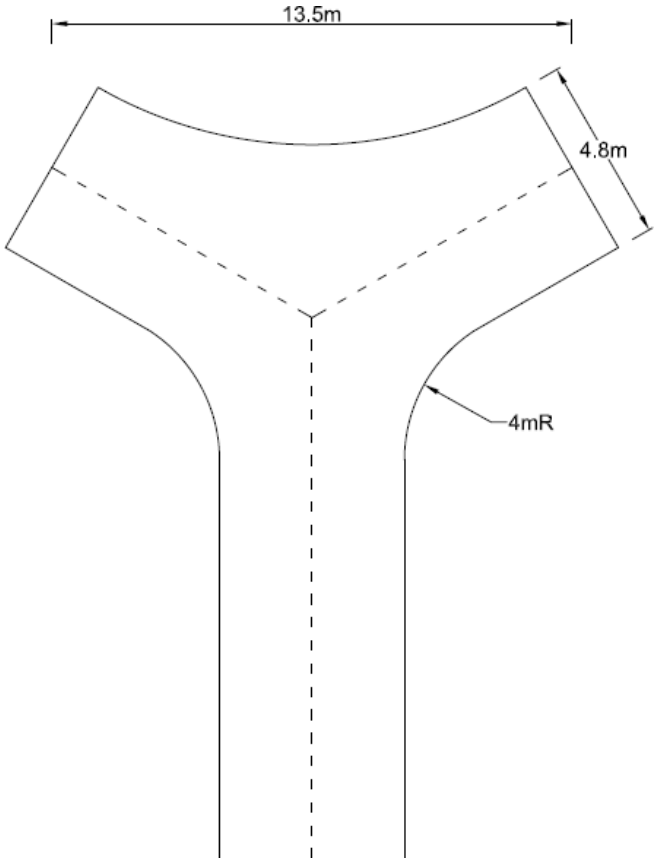

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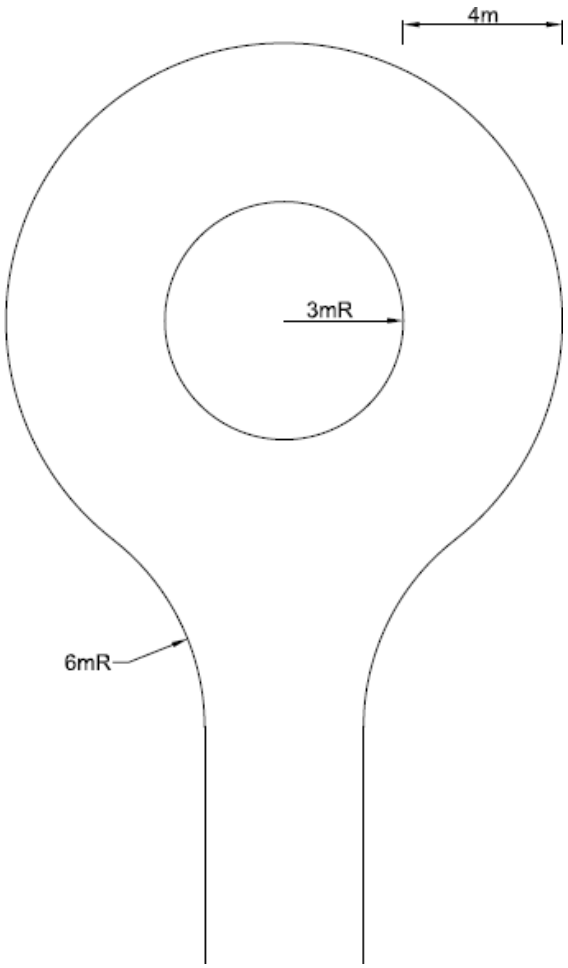

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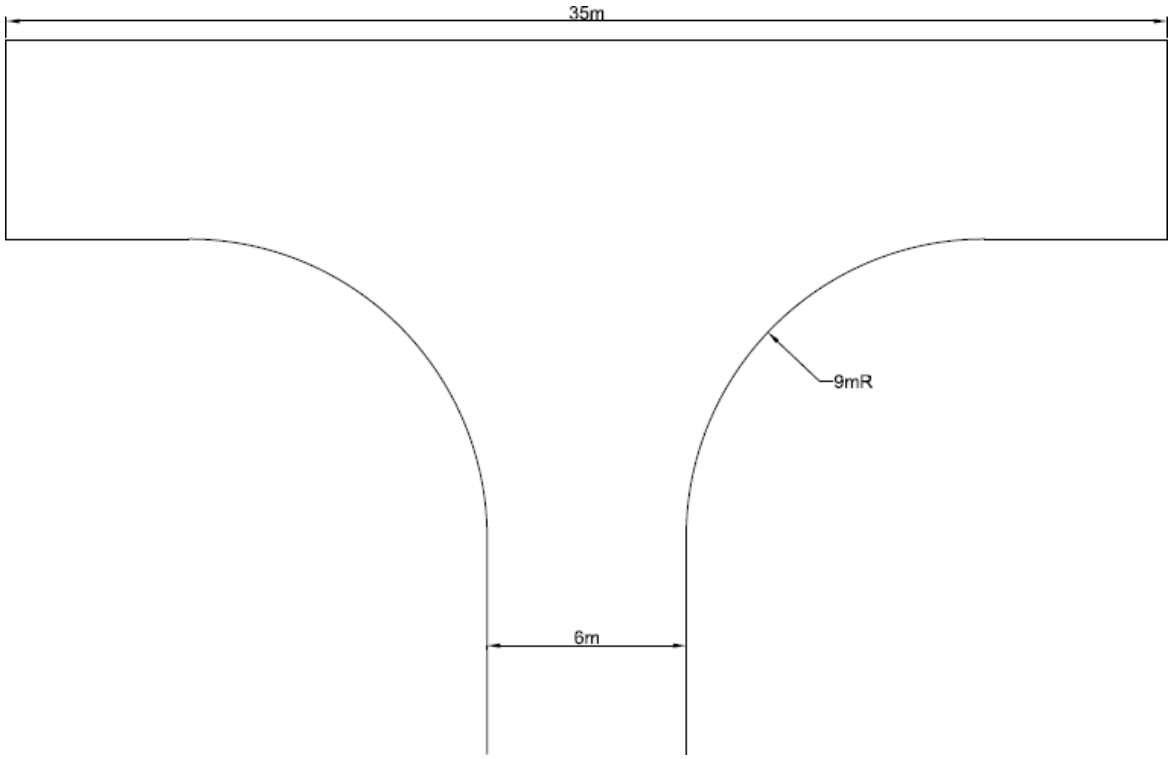

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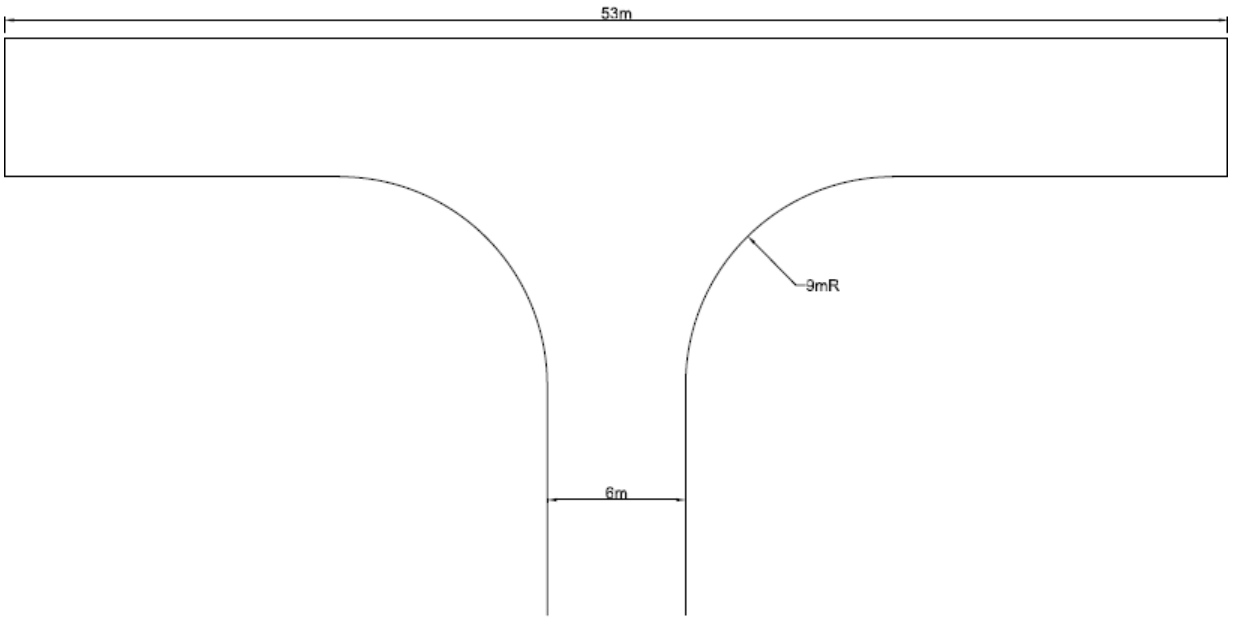

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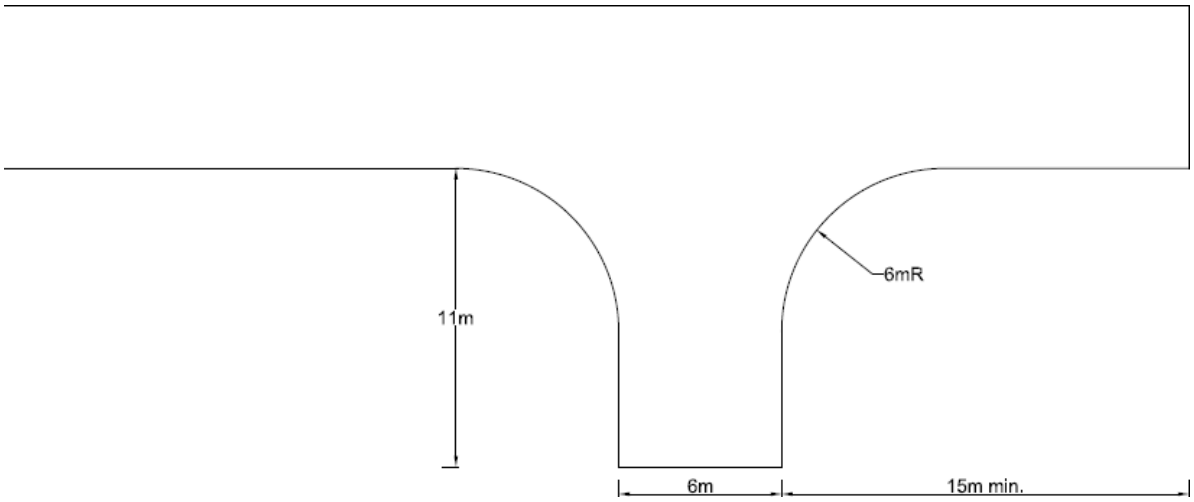

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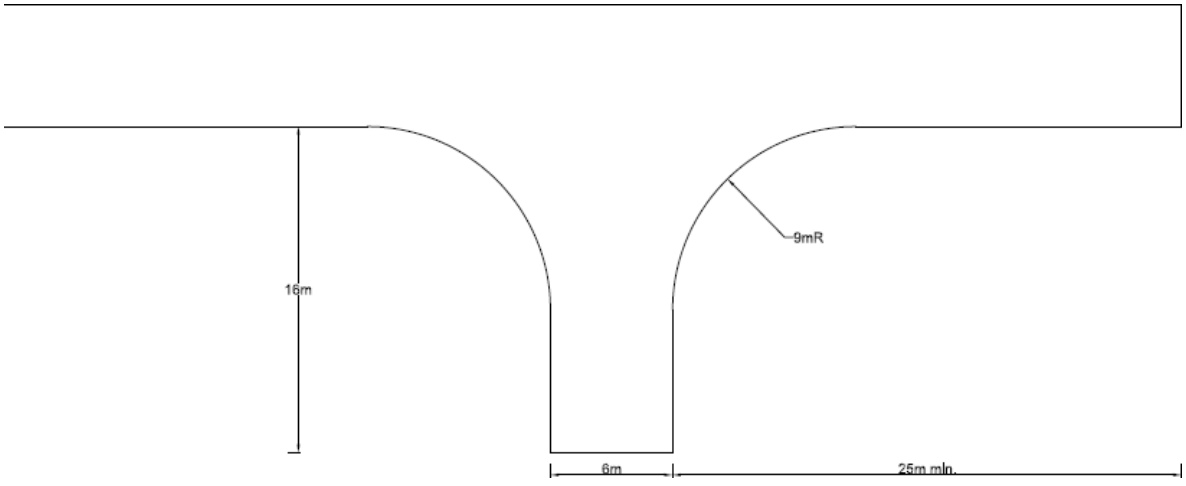

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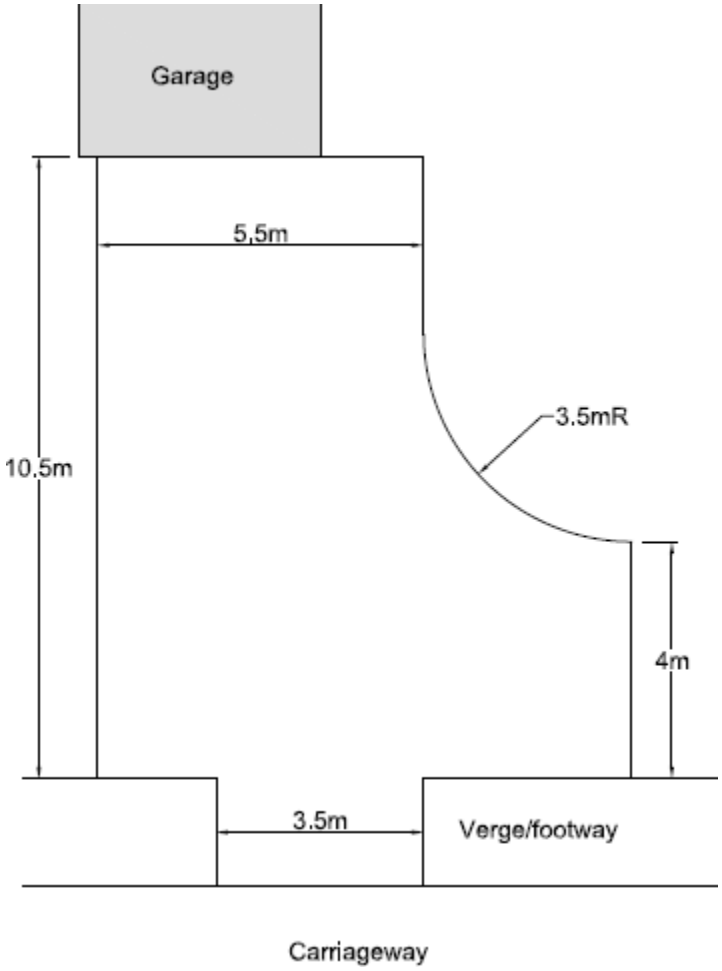

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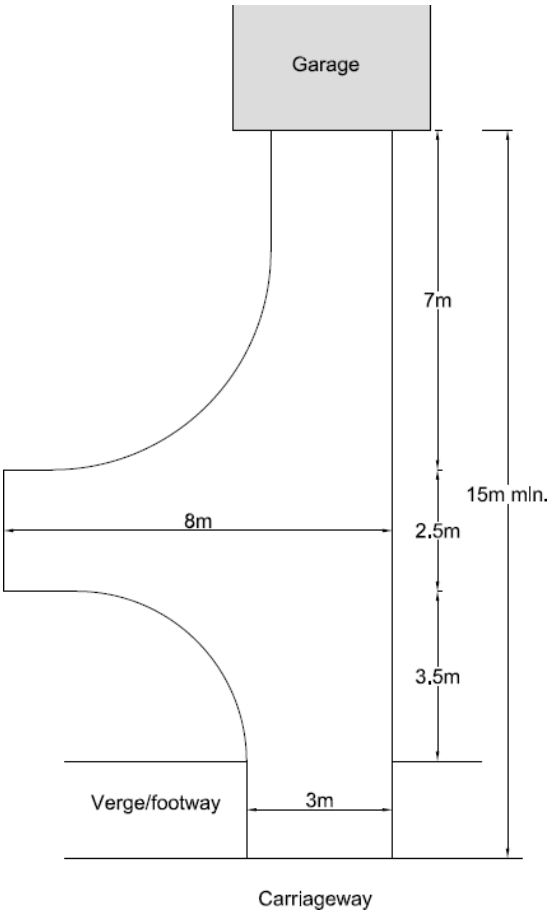

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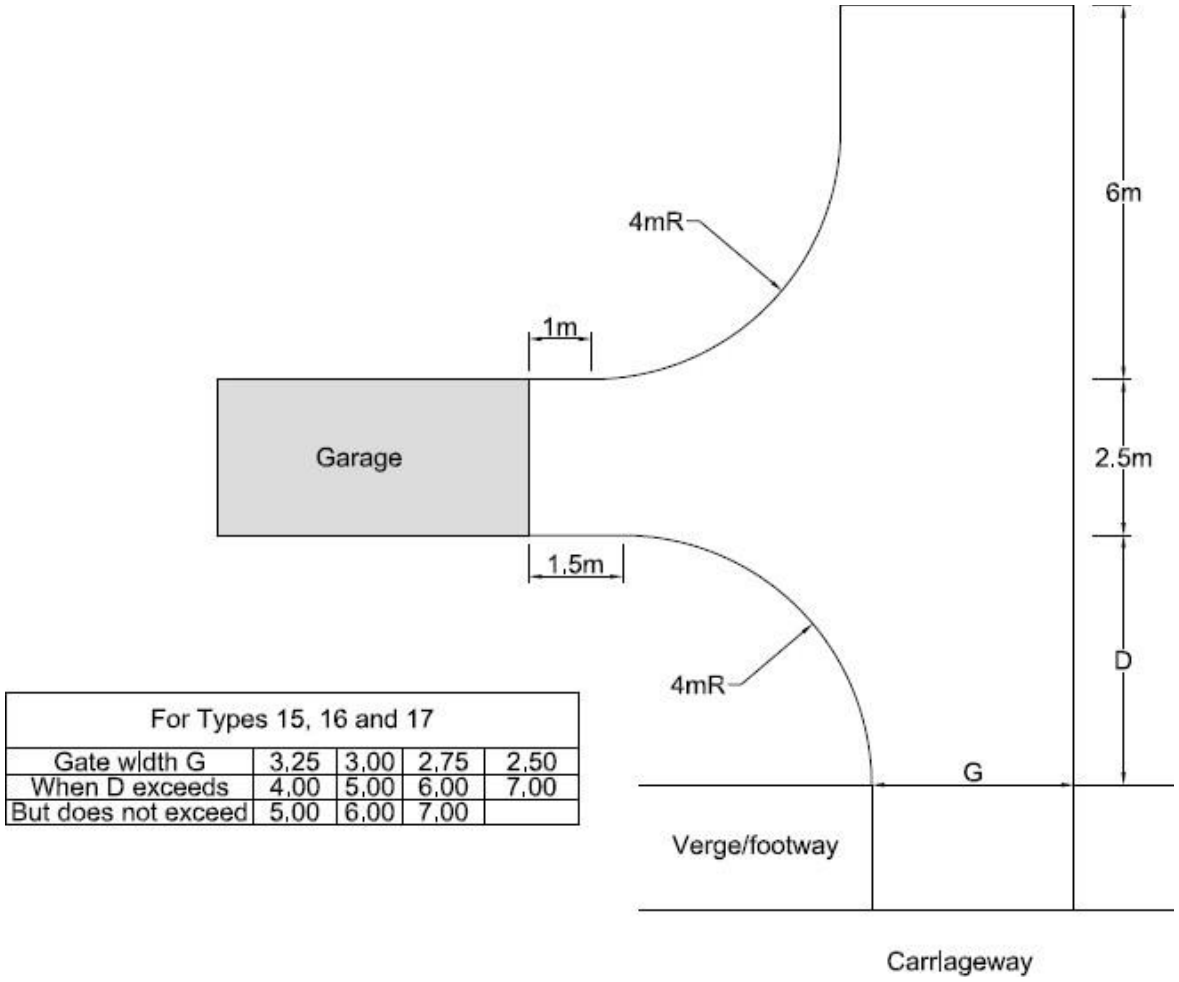
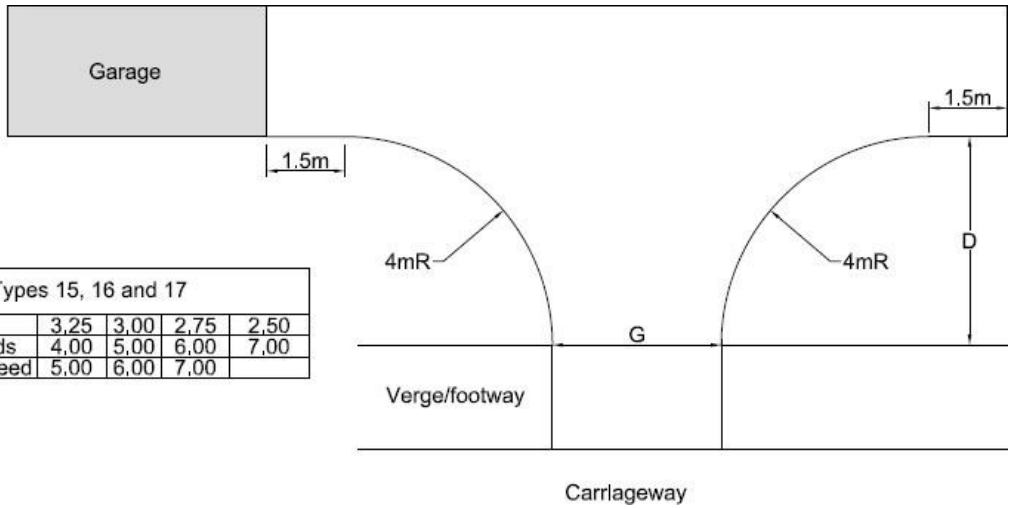


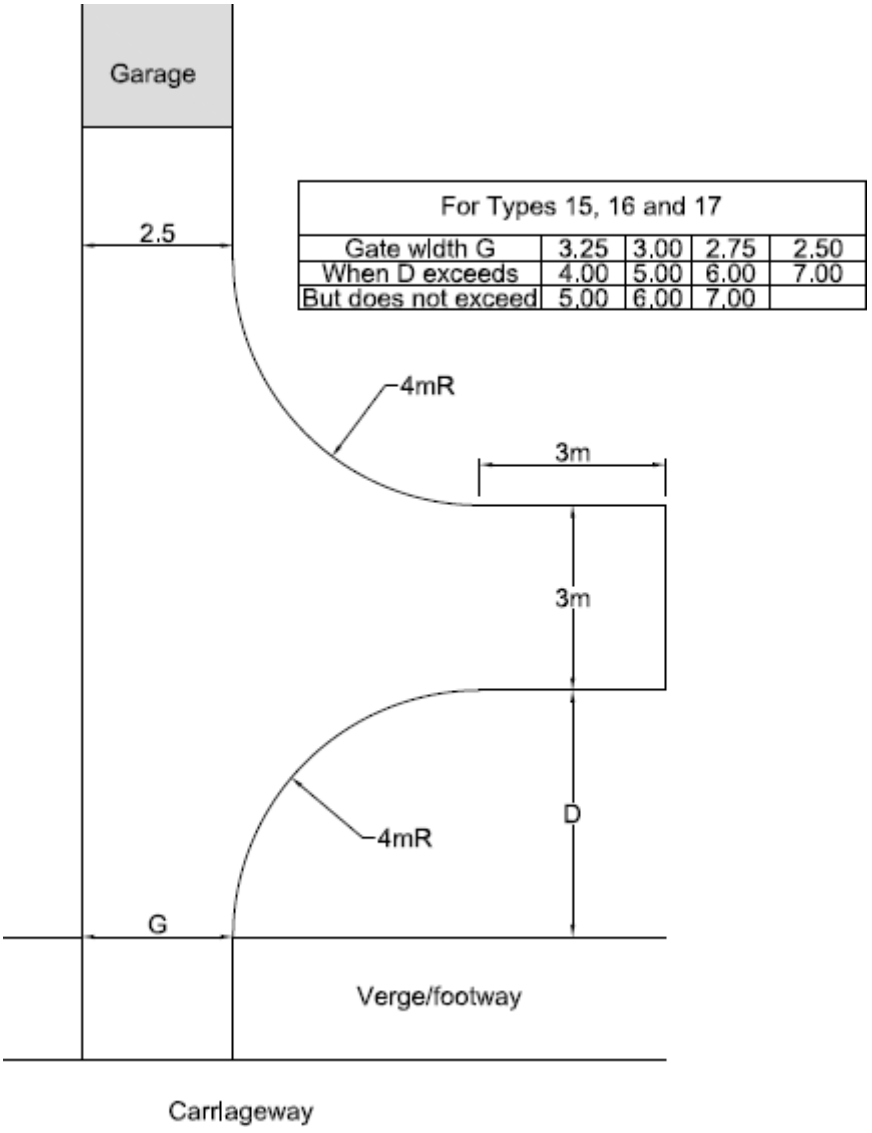
For Types 15, 16 and 17				
Gate w|dth G	3,25	3,00	2,75	2,50
When D exceeds	4,00	5,00	6,00	7,00
But does not exceed	5,00	6,00	7,00	

Type 16



For Types 15, 16 and 17				
Gate w|dth G	3,25	3,00	2,75	2,50
When D exceeds	4,00	5,00	6,00	7,00
But does not exceed	5,00	6,00	7,00	

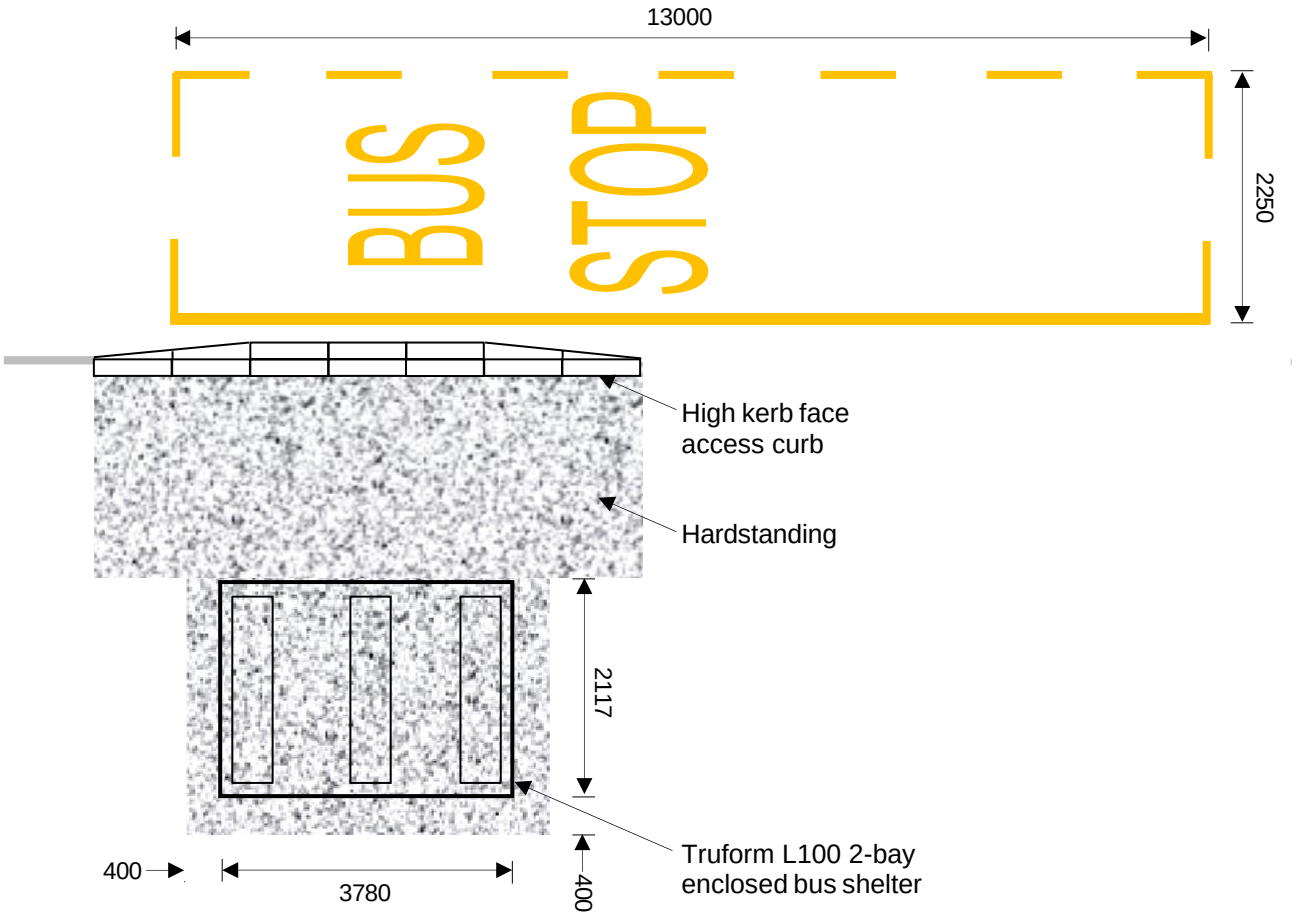
Type 17



For Types 15, 16 and 17				
Gate width G	3.25	3.00	2.75	2.50
When D exceeds	4.00	5.00	6.00	7.00
But does not exceed	5.00	6.00	7.00	

Appendix B – Bus stop layout design

Bus Stop Scheme Layout SS2-Layout



Measurements in mm

Bus Stop Scheme Layout SS3-Layout

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