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# Section 10



## 10.00 Movement and Streets

### 10.01 Introduction

#### 10.01.01

This design supplement addresses the design of streets as places which are accessible to all, functional, accommodate movement and are appropriate to their context. Whilst engineering considerations are still an essential aspect of highway design these are balanced with three dimensional considerations of the design of the street and the importance of the achievement of highway safety.

#### 10.01.02

This supplement provides practical advice and guidance with respect to:

- Street types and parameters
- Design for parking
- Shared surfaces and level surface streets
- Design principles
- Detailing the street

#### 10.01.03

The scope of guidance broadly follows that in Manual for Streets and reference should be made to this document in designing schemes. For roads outside of settlements and major developments, or which are major distributors, the guidance found in the Design Manual for Roads and Bridges is applicable

#### 10.01.04

##### **Relationship to other Supplements**

It is essential also to consult Placemaking Principles which sets out the policy context and generic design guidance relevant to almost every type of development in Central Bedfordshire. It identifies the wider context of the need to create sustainable, locally distinctive places and the method for appraising sites and their settings. It also sets out the general principles for designing for movement and accessibility as well as parking standards.

#### 10.01.05

Consideration should also be given to the following supplements in designing highways schemes and street layouts:

**GI and Sustainable Buildings** – Street trees and landscaping, footpaths and Sustainable Drainage Systems.

**The Historic Environment** – Where new streets or improvements are proposed within Conservation Areas or within the setting of Listed Buildings.

**Public Art** – Integrating public art within the street.

**Residential Development** – Frontage conditions and setbacks, boundary treatments and the use of garages as a parking solution.

**Large Footprint Buildings** – Vehicle access and servicing and relationship to the street.

**Retail Development** – designing for pedestrian access and comfort, vehicle access and car parking, and servicing.

## 10.02 Street Typology

### 10.02.01

#### Street Hierarchy

The Placemaking Principles supplement introduces the street hierarchy, a key component in the layout and form of a new development to facilitate movement. The hierarchy of different routes should be considered at the outset of the design process as it influences the spatial characteristics of the development.

### 10.02.02

The setting of a development site is likely to influence the hierarchy of streets and their layout. Well designed linkages to adjacent areas are vital in ensuring the development is well integrated within the area and accessible by walking, cycling, public transport or car. The Council's Local Transport Plan and supporting strategies should be used to inform the design process from the outset.

### 10.02.03

The movement function of the street will determine its position within the hierarchy. In identifying the hierarchy of streets consideration should be given to the following:

- The level of traffic the route is expected to accommodate.
- Land uses the route serves.
- Whether it is a main, access or minor route.
- Whether it carries large vehicles, such as HGVs.
- Whether it is used by public transport.
- Whether pedestrians and cyclists will be afforded priority over vehicles.
- Whether the route is exclusive to pedestrians or cyclists.

### 10.02.04

#### Functional Street Types

A development may incorporate all or a selection of three functional street types: main street, access street and minor street. This section of the Design Guide sets out the parameters and guidance for designing these three functional street types. Larger developments may also require more major roads which are not covered in the scope of this Design Guide. In these cases reference should be made to the Design Manual for Roads and Bridges (DMRB).

### 10.02.05

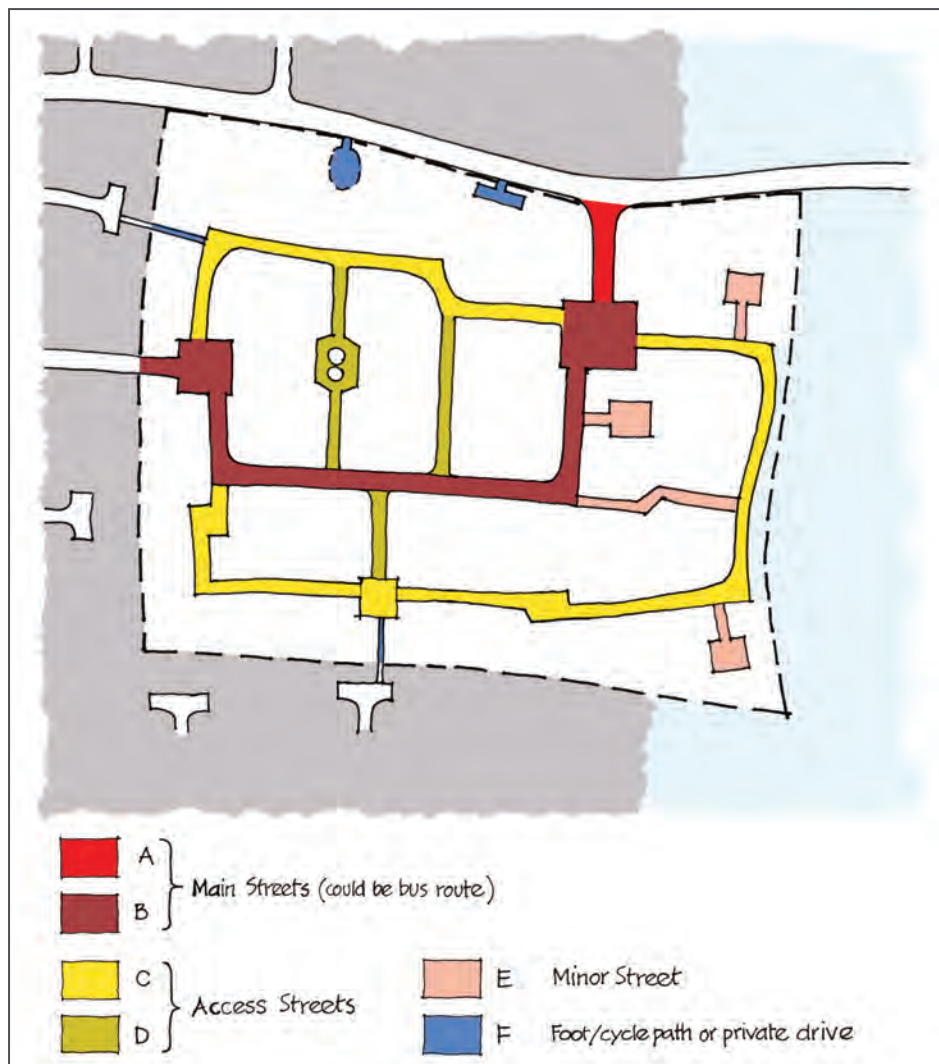
Expected levels of potential pedestrian, cycle and vehicle activity should be assessed for each street within the development, through the number and type of dwellings and their relative proximity to services and facilities. The assessment of pedestrian and cycle flows should also take account of available off-road routes. The following table identifies the typical characteristics for each functional street type.



Typical characteristics		
Main street	Access street	Minor street
Serve more than 300 dwellings and/or other uses	Serve up to 300 dwellings	Serve up to 50 dwellings
Over 200 vehicles per hour (peak flow)	15-200 vehicles per hour (peak flow)	10-15 vehicles per hour (peak flow)
Accommodates bus route	May accommodate bus route	Would not accommodate a bus route. Must accommodate refuse collection and emergency vehicles
Accommodates transiting vehicle traffic. A main route for all types of traffic through a development	Accommodates vehicle traffic generated from Minor Street, linking to Main Street	Serves as essential access only

**Figure 10.1:** Typical characteristics

*The peak flows given within this table are indicative. The actual peak flow of vehicles will be influenced by the context of the site, such as whether it's urban or rural, or a through route, town centre or industrial area for example.*



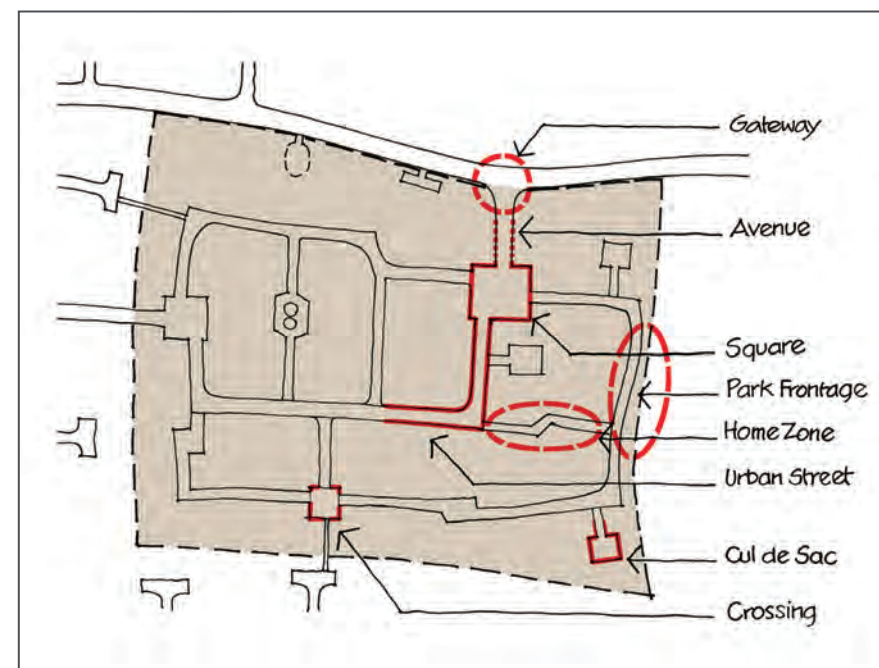
**Fig 10.02 Main street (A)** The length and design of the street should encourage speed reduction and enhanced driver perception after leaving the road and before entering the square. **Access streets (D)** It is important to avoid inadvertently creating 'rat-runs' through junction design, alignment or surface treatment. **Pedestrian/cycle links (F)** Pedestrian/cycle links to existing development should be created where they can make an important contribution to the strategic network and where they are likely to be well used and direct.

10.02.06

### Street Character

Once the movement function of the individual streets have been determined, consideration should be given to their character. Streets with similar functions may have completely different characteristics depending on their context and location, and may display characteristics of the following examples.

These are some examples of street character types and are not an exhaustive list. In designing schemes the context and location of the site is likely to influence character. Placemaking Principles sets out the different character types and typical design cues that will influence a scheme.



**Fig 10.03 Assessing the street character**

### 10.02.07 Street Character Typologies

**Avenue/Boulevard** – A street taking on different characteristics such as suburban tree planted verges or an urban main route with tree lined pavements.



Fig 10.04 Avenue/boulevard

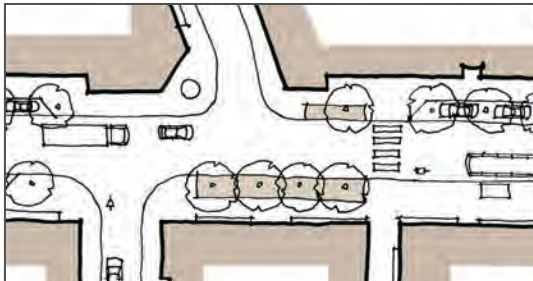


Fig 10.05 Avenue/boulevard



Fig 10.06 Avenue/boulevard section

**Urban Street** – A higher density street enclosed by buildings, often with a more continuous frontage. Could accommodate a mix of uses.



Fig 10.07 Urban street

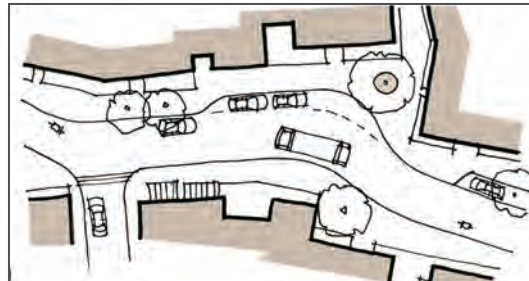


Fig 10.08 Urban street



Fig 10.09 Urban street section

**Suburban Street** – A street where buildings are set back to give a more open aspect compared with an urban street. .



Fig 10.10 Suburban street



Fig 10.11 Suburban street



Fig 10.12 Suburban street section



# Section 10

**Square** – An area defined by formally arranged buildings. To establish a sense of place routes through should be indirect.

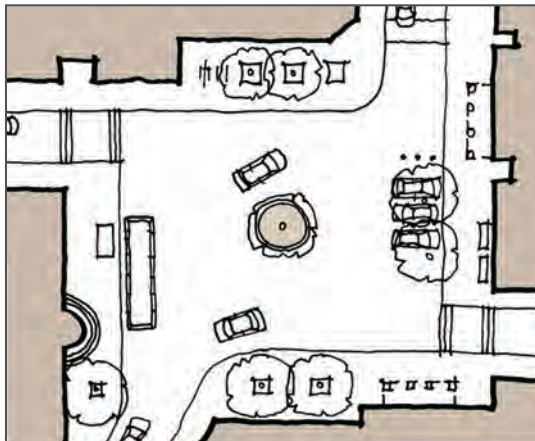


Fig 10.13 Square

**Homezone** – A residential street in which the living environment clearly dominates any provision for traffic. Pedestrians have priority over vehicles and streets are designed to produce very low vehicle speeds.

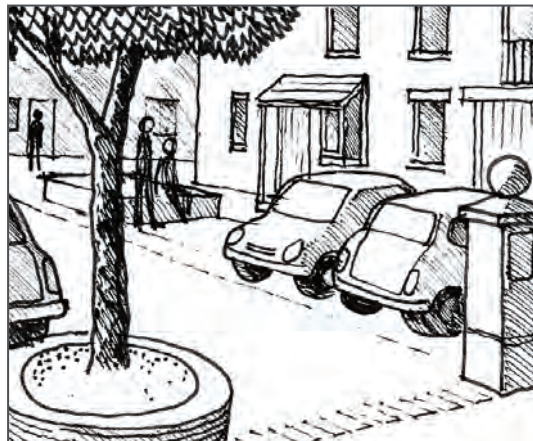


Fig 10.15 Homezone puts people first

**Mews** – A small street or courtyard surrounded by closely set buildings to give a sense of enclosure.



Fig 10.17 Mews development gives sense of enclosure



Fig 10.14 Main square, Leighton Buzzard



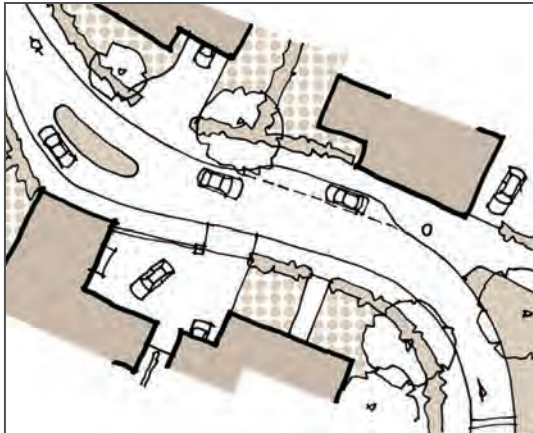
Fig 10.16 Residential square



Fig 10.18 Cul-de-sac with central parking court



**Lane** – A road of limited width that typically has a rural character and often residential frontage on one side only. Its function may be to link the edge of a development to the surrounding rural area.



**Fig 10.19** Lane

**Private Driveway** – A private area providing access and parking to a small number of dwellings normally a maximum of five from a residential access street. Often have the characteristics of a Homezone.



**Fig 10.21** Residential lane

**Path** – A residential frontage onto a path through a development which is accessible for pedestrians and cyclists. Parking is located either to the rear or in a communal parking area. Paths should be used exceptionally over short distances



**Fig 10.23** Buildings fronting onto path



**Fig 10.20** Lanes can link the edges of a village to the surrounding rural area



**Fig 10.22** Shared private driveway



**Fig 10.24** Buildings fronting onto path

10.02.08

## Street Parameters

Having identified some street character types in the previous section, this table sets out the key parameters which should be followed in designing the three types of functional street types – main, access and minor. Some of the parameters may be subtly varied to create streets with different characters, for example widths of carriageways, footpaths and verges. Parameters will apply to both new schemes and retrofitting existing streets. These parameters should be considered alongside the guidance included within the Manual for Streets. Strategic routes, where the main purpose is to carry motor vehicle traffic, should be designed in accordance with the Design Manual for Roads and Bridges. In designing shared spaces the parameters in this table should be followed, where appropriate, to reflect the movement function and type of street. Some more specific guidance and parameters in relation to level surface streets are included in the following section.

	Main street	Access street	Minor street
Street character types	Avenue/boulevard; urban street; square	Urban street; suburban street; square	Homezone; mews; lane; private driveway; path
Target speed	20mph	No more than 20mph	Less than 15mph
Carriageway width	5.5m (reduced to 4.8m if sufficient inset parking bays are integrated into the street)  Bus routes require a minimum of 6.5m.	4.8m - 5.5m (may be reduced to a minimum of 3.7m - 4.1m for pinch points). Sufficient inset parking bays must be integrated into the street. Bus routes require a minimum of 6.5m.	4.8m - 5.5m (may be reduced to a minimum of 3.7m - 4.1m for pinch points). Sufficient inset parking bays must be integrated into the street.
Shared footway and cycleway width	Minimum 3.0m (at least 4.5m outside community facilities)	-	-
Footpath width	Minimum 2.0m (at least 3.5m outside community facilities)	Minimum 2.0m (at least 3.5m outside community facilities)	Minimum 2.0m (at least 3.5m outside community facilities)
Verge width	Minimum of 2.0m or sufficient to accommodate suitable landscaping.	Minimum of 2.0m or sufficient to accommodate suitable landscaping.	Minimum of 2.0m or sufficient to accommodate suitable landscaping.
On street parking bays	6.0m x 2.4m parallel (must not be located within 10m junctions) 5.0m x 2.5m for echelon and perpendicular bays	6.0m x 2.2m (parallel) 5.0m x 2.5m for echelon and perpendicular bays	6.0m x 2.2m 5.0m x 2.5m for echelon and perpendicular bays
Junction kerb radius	6.0m (may increase if side road carries a sig. no of HGVs)	4.5m onto main street	N/A onto access street
Junction sightlines	2.4m x 43m (from side road)	2.4m x 25m	2.4m x 17m

	Main street	Access street	Minor street
Junction spacing – opposite	-	15m (doesn't apply to streets serving 25-100 dwellings)	No restriction
opposite R/L	15m	-	
opposite L/R	30m	-	
Right turn lanes	3.0m	-	-
Forward visibility	43m	25m	17m
Min longitudinal gradient	0.80% or 1:125	0.80% or 1:125	0.80% or 1:125
Max longitudinal gradient	6% or 1:17	8% or 1 in 12	8% or 1 in 12
Cross section gradient	2.50%	2.50%	2.50%
Kerb height	125mm (185mm at bus stops)	≤100mm (185mm at bus stops)	≤50mm
Direct access to properties	Where appropriate (dependent on number of vehicle movements and use of street)	Yes	Yes



### 10.03 Shared Space and Level Surface Streets

#### 10.03.01

##### Shared Spaces

Shared spaces can be used as a method to enhance a street's sense of place while maintaining the ability to accommodate vehicular movement.

#### 10.03.02

Shared space seeks to change the way streets operate by reducing the dominance of motor vehicles. The highway infrastructure provides less formal indication as to how drivers are expected to behave, making their progress within the street dependant on interpreting the behaviour of pedestrians, cyclists and other motorists. Pedestrians are not restricted to the side of the street, and shared spaces can facilitate increased social interaction and leisure activities, encourage people to spend longer in the street and enable crossing at locations, angles and times of their choosing.

#### 10.03.03

Proposals for shared spaces will be supported in appropriate locations in Central Bedfordshire. They can be implemented on all street types within the movement hierarchy and are particularly effective in locations with high pedestrian demand for uses, in locations of historical and cultural significance, at junctions or squares and in residential streets.

However, for pedestrians to fully share the space relatively low traffic flows and speeds are necessary. The Manual for Streets indicates that above 100 vehicles per hour pedestrians treat the general path taken by vehicles as a space to be crossed rather than occupy.

#### 10.03.04

There is no such thing as definitive shared space design. Each street is different and the way it performs will depend on its individual characteristics and features and how they work in combination. The design response will need to respond to the context and function of the place. The following table shows typical features of shared design that can be used to inform a scheme.



**Fig 10.25** Shared surface street with plentiful seating

Less shared design		More shared design
Kerbs	Low kerbs, chamfered kerbs	No kerbs
Pedestrian barriers		No pedestrian barriers
Vehicles restricted in parts of the street e.g. by bollards, street trees etc.	Implied vehicle paths using surface materials, for example	No barriers to vehicle movement
Poor quality and unwelcoming public space or materials	Few places where people can rest and chat	Presence of features such as cafes, markets, abundant seating, planting, public art etc.
Conventional road markings and signs	Limited road markings	No road markings and limited signage
Traffic signals		No traffic signals
Signal controlled crossings	Zebra crossings	Courtesy crossings or no crossings

## 10.03.05

The following key principles should be adhered to when designing shared spaces in Central Bedfordshire, as part of a new development or retrofitting:

- A maximum design speed of 15mph.
- Ensure the design is inclusive. The needs of all street users should be considered from the outset. Special consideration should be given to the needs of disabled people. Design solutions can include clutter free comfort space at the side, plentiful seating, tactile paving or tonal contrast.
- When retrofitting, an assessment needs to be made that identifies how people currently use the space.
- Consider the long term maintenance of the scheme from the outset and ensure it is budgeted for. Successful shared space streets are a result of the overall careful and sensitive design and do not have to use costly and elaborate materials. The materials palette and location and design of utilities must be discussed with the Council at an early stage to minimise future disruption and cost.
- Special consideration is needed in sensitive areas. This applies to Conservation Areas and within close proximity to important or listed

buildings. The space needs to be appropriate to the street's context, and any features of historic interest should be identified and retained.

- Parking spaces must be designed into the street to minimise the opportunity for inappropriate parking and should be clearly delineated. This is particularly important where level surfaces are used. This could be achieved through contrasting paving materials, for example.
- Further guidance on shared space principles and design is available in the Department for transport's Local Transport Note 1/11 on Shared Space.



**Fig 10.26** Shared surface street (Birmingham)



**Fig 10.27** Level surface street with planting and places to park

## 10.03.06

**Level surface streets**

Level surface streets are a specific type of shared space most appropriate to minor streets, and are defined as “A street surface with no level difference to segregate pedestrians from vehicular traffic” (DfT Local Transport Note 1/11, October 2011).

## 10.03.07

A level surface street is often intended to remove a physical and psychological barrier to pedestrian movement. It can also indicate to drivers that pedestrians are not confined to the footway and that they can expect to encounter them in the whole of the street.

## 10.03.08

The highway infrastructure provides less formal indication as to how drivers are expected to behave, making their progress within the street dependant on interpreting the behaviour of pedestrians, cyclists and other motorists.

## 10.03.09

Level surface streets can be used as a method to enhance a street’s sense of place while maintaining the ability to accommodate vehicular movement.

## 10.03.10

In an appropriate setting, the benefit of level surface streets is that they provide for a better quality pedestrian environment by giving over a greater part of the street for the use of pedestrians

and allows for a variety of character to occur across a development.

## 10.03.11

The needs of all street users should be considered from the outset of the design process. If poorly designed, level surface streets can be problematic for some street users particularly blind and partially sighted people. ‘Inclusive mobility – a Guide to Best Practice on Access to Pedestrian and Transport Infrastructure (DfT, 2002) provides advice on accommodating the needs of disabled people in the built environment and much of the guidance remains valid in level surface street settings. The following principles should be adhered to in designing level surface streets:

- Surfaces should be well maintained and free from clutter and obstructions;



**Fig 10.28** Quality level surface street (New Hall, Harlow)

- Streets must be legible with identifiable features to aid orientation. Tonal and texture contrast may be used to assist with perceiving boundaries whilst ensuring surface patterns are not over complicated;

- The building line should be uncluttered; and

- Comfort space for pedestrians at the edge of the street should be provided with opportunities for seating.

## 10.03.12

Level surface streets have not always been seen as successful environments to live on in developments in Central Bedfordshire for the following reasons:

- Too much through traffic because inappropriate street selected as level surface street (too connected, too long and serving too many houses);
- Lack of adequate defensible space to the front of properties;
- No clear delineation for cars to park and hence parking in inappropriate places has occurred;
- Too narrow which has been exacerbated by lack of ‘designed-in’ on street parking that together have not allowed easy access through for emergency and waste vehicles;
- Lack of speed restraint measures.



10.03.13

**Key Design Principles**

Proposals for level surface streets will be supported in appropriate locations in Central Bedfordshire but should adhere to the following design principles. These have been informed by national policy, lessons learnt as well as surveys of residents who live on level surface streets:



**Fig 10.29** Contrasting materials delineate parking bays

10.03.14

**Location and Design Speed**

- They are most appropriate for minor streets at the lowest end of the hierarchy, serving a maximum of 25 houses. They are well suited for example therefore to cul-de-sacs and single side streets that face onto open space
- They are designed to a maximum 15mph speed and hence the layout must be such to ensure that this speed limit is adhered to.

10.03.15

**Defensible Space**

- Where parking occurs to the side of the property, there should be a minimum private defensible space of 2m to the front of the property;
- Where terrace housing occurs and hence where there is no parking to the side, there should be at least 1.5m defensible space to the front of the property;
- Anything located within the defensible space should be a maximum of 0.6m high to provide sufficient visibility for small children.

10.03.16

**On-street Parking**

- Parking spaces must be designed into the street to minimise the opportunity for inappropriate parking and be clearly delineated through contrasting colour paving material;
- On-street parking (as in all cases) will be unallocated if placed within the adoptable highway.



**Fig 10.30** Wide surface allows movement of large vehicles

10.03.17

**Width**

The level surface street must be sufficiently wide that it can at the very minimum accommodate on street parking (where appropriate) and a clear route for large vehicles areas to pass through unimpeded. A swept path analysis must be undertaken to ensure that this can occur. Appropriate visibility splays must also be achieved;

- As a general minimum, all level surface streets should allow for 2 way traffic with a minimum carriageway width of 4.8m;
- The location and design of utilities must be discussed at an early stage with the Council.



**Fig 10.31** Right-angled parking creates a road narrowing

Variations in carriageway width occur primarily because of 2 factors:

The additional inclusion of right angled parking which requires 6.0m for reversing;

- Narrowings. In order to improve the overall environment of the street for the pedestrian as well as slowing traffic down, the 4.8m carriageway can be narrowed for short stretches to a single lane that still allows for the largest required vehicles to pass through. This should not occur for stretches longer than 5m. Pinch points can typically occur through planters, trees, kerbed islands or bollards.

10.03.18

**Drainage Channels**

Drainage channels should be located to avoid unintentionally demarcating footpaths or parking.



**Fig 10.32** Level surface street with planting and parking

10.03.19

**Speed Restraint Measures**

In order to improve the overall environment of the street for the pedestrian, various speed restraint measures should be included in the design to slow traffic down to maximum speeds of 15mph. There are various ways of achieving this:

1. Designing the layout of development to ensure streets including building lines have significant variation in horizontal alignment (i.e. creating bends in the street)
2. Where the building line remains predominantly straight, horizontal deflection of the carriageway can be caused by :
  - Enclosure of the street
  - Trees and Planting
  - Planters
  - Other street furniture such as bollards and lighting
  - Narrowings
  - 'Designed-in' car parking spaces at different angles with different surface material (to create chicane effects)

10.03.20

**Materials**

In order to emphasise their difference from conventional streets and thus help to vary the character across a development, the preferred surface material for level surface streets is block paving although other surface materials will be considered. The future maintenance of surface materials must be considered and discussed with the Council from the outset of the design process. Further guidance of materials and detailing is included in section 10.06.



**Fig 10.33** Shared surface street with plentiful seating

10.03.21

**Cul-de-sac**

Many developments built up until the 1990s are characterised by numerous cul-de-sac and they represent environments many people choose to live in.

10.03.22

They are useful where through routes aren't allowed, where larger blocks are desirable or where there are any topographical, physical features or boundaries that prevent streets connecting up, such as infill developments. They may also be used in low density areas where they can help accentuate the quiet nature of the area.

10.03.23

Cul-de-sac should complement the overall movement network and neighbourhood/development and should adhere to the following principles:

- They should be located within a wider connected movement network for ease and choice of access across the wider development;
- They should not be included on pedestrian desire lines such as to shops, schools or other facilities which would then require segregated footpaths leading to the destination. In these instances streets with footpaths on each side should lead directly to the destination.
- They should be arranged and designed such that they don't overly concentrate traffic impact on a small number of dwellings (those at the end of the cul-de-sac that joins the wider connected network);
- They should not be arranged and designed such that they reduce legibility and wayfinding across a development;



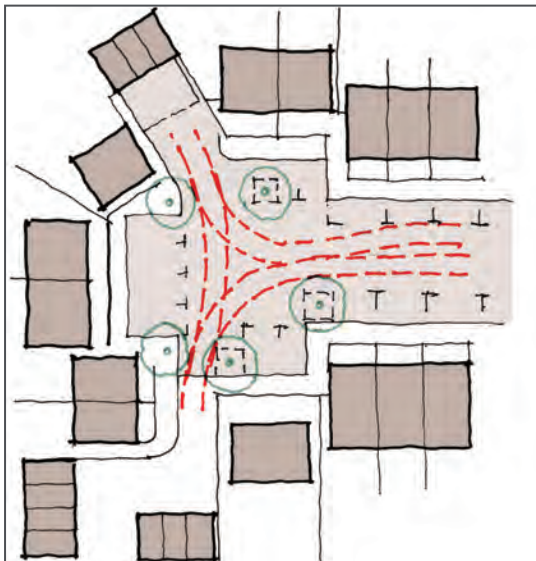
**Fig 10.34** Turning area designed around parking court



**Fig 10.35** Shared surface street (Birmingham)

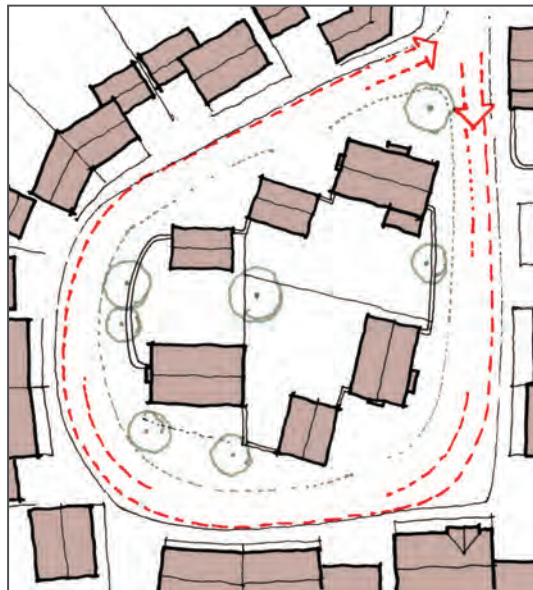


- 10.03.24 Pedestrian routes off cul-de-sac will be acceptable where the public space that the route passes through is designed into the overall layout of the development such that it feels safe and comprises an unambiguous public route that is short, straight/direct and overlooked by housing (including where the cul-de-sac or the short, direct overlooked pedestrian route opens into parkland or play areas etc);



**Fig 10.36** Cul-de-sac layout - ensure that the design of a cul-de-sac or courtyard will allow for the turning of service vehicles unobstructed by parked cars. Note that the layout is not dictated by a 'hammer head' alignment.

- Other forms of pedestrian route out of cul-de-sacs that do not meet the above criteria will not be acceptable, in the interest of crime prevention;
- Careful consideration needs to be given to how large vehicles will turn at the end of cul-de-sac. Turning areas could for example be designed around an attractive open space or a parking court.



**Fig 10.37** Alternative cul-de-sac layout allowing service vehicles to make a full circuit, eliminating the need for reversing or turning

10.03.25

### Turning and Servicing

New developments should be designed to avoid the need for service and emergency vehicles to reverse.

10.03.26

In locations with a single point of access a turning area should be provided for service and emergency vehicles. Turning facilities must fit within the overall building layout. Where a turning area is required tracking should be used to demonstrate that such a manoeuvre is achievable. Sufficient parking solutions should be provided to avoid car parking in turning areas. This should be achieved using a combination of solution, including well designed inset parking bays within the streets.

10.03.27

Where it may be necessary for vehicles to reverse, distances should be limited to no more than 12m. In these situations routes need to be straight and free from obstacles and visual obstructions.

## 10.04 Accommodating parking within design

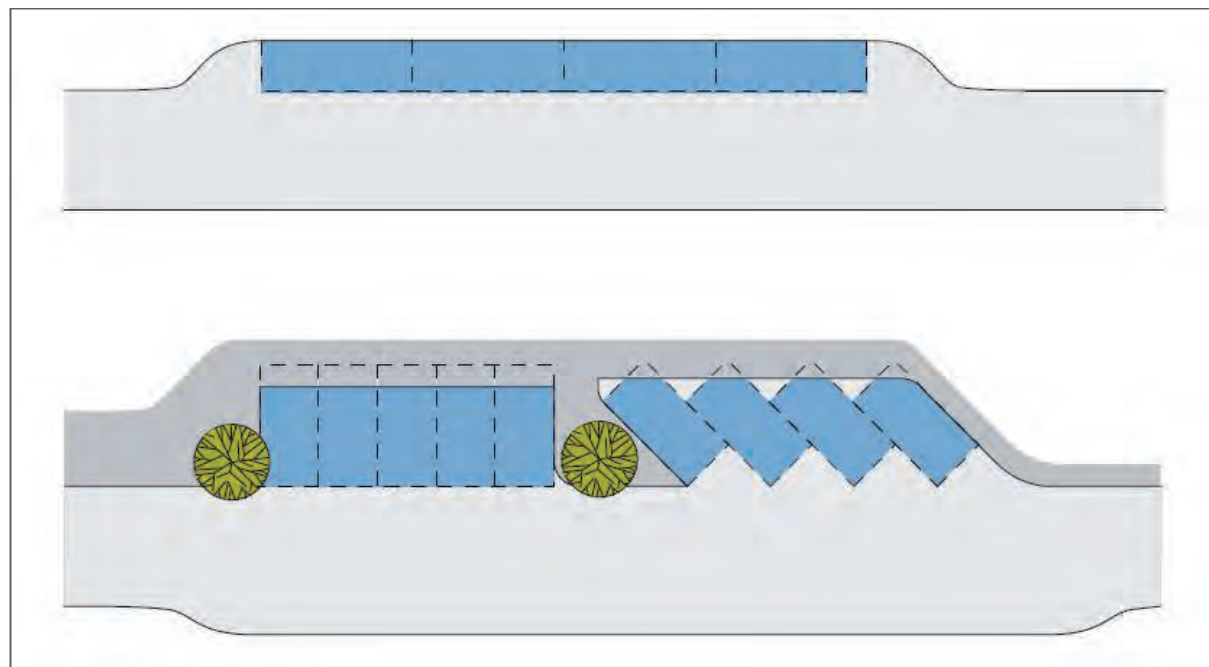
### 10.04.01

Accommodating parking is integral to good placemaking. The following paragraphs provide guidance on how car parking can be accommodated on-street by providing examples of different types and dimensions. Placemaking Principles sets out the parking standards and the key principles for accommodating parking with design, providing examples of how parking can be achieved using a combination of on-plot, off-plot and on-street provision. The Residential Development Supplement provides guidance of garages.

### 10.04.02

#### On-street Parking Key Principles

- visual impact on the streetscape, but should not reduce the size of available bays.
- Within Homezones and larger shared spaces, careful design responses are required to informally control parking including landscaping, materials and limited street furniture to clearly demarcate parking spaces.
- The type of on-street parking will be influenced by uses along the street and likely demand for on-street spaces; and the level of off-street parking provision.
- All on street parking within the extent of the adoptable highway will be unallocated and will provide parking for visitors as well as residents.
- On street parking can be provided on all street types within the functional hierarchy and should be provided in inset bays adjacent to the main carriageway or widened sections of the carriageway with landscaping to avoid indiscriminate parking on footpaths and cycleways. In situations where echelon parking is provided the width of the footpath should be increased to cater for any vehicle overhang.
- Landscaping should be used to reduce the



**Fig 10.38** Inset parking bays adjacent to carriageway (Essex Parking Standards 2009)

10.04.07

**Echelon Parking**

Echelon parking should be considered in all locations as an efficient, safe and attractive method of accommodating parked vehicles together with suitable landscaping to reduce the visual impact of parked vehicles on the street.



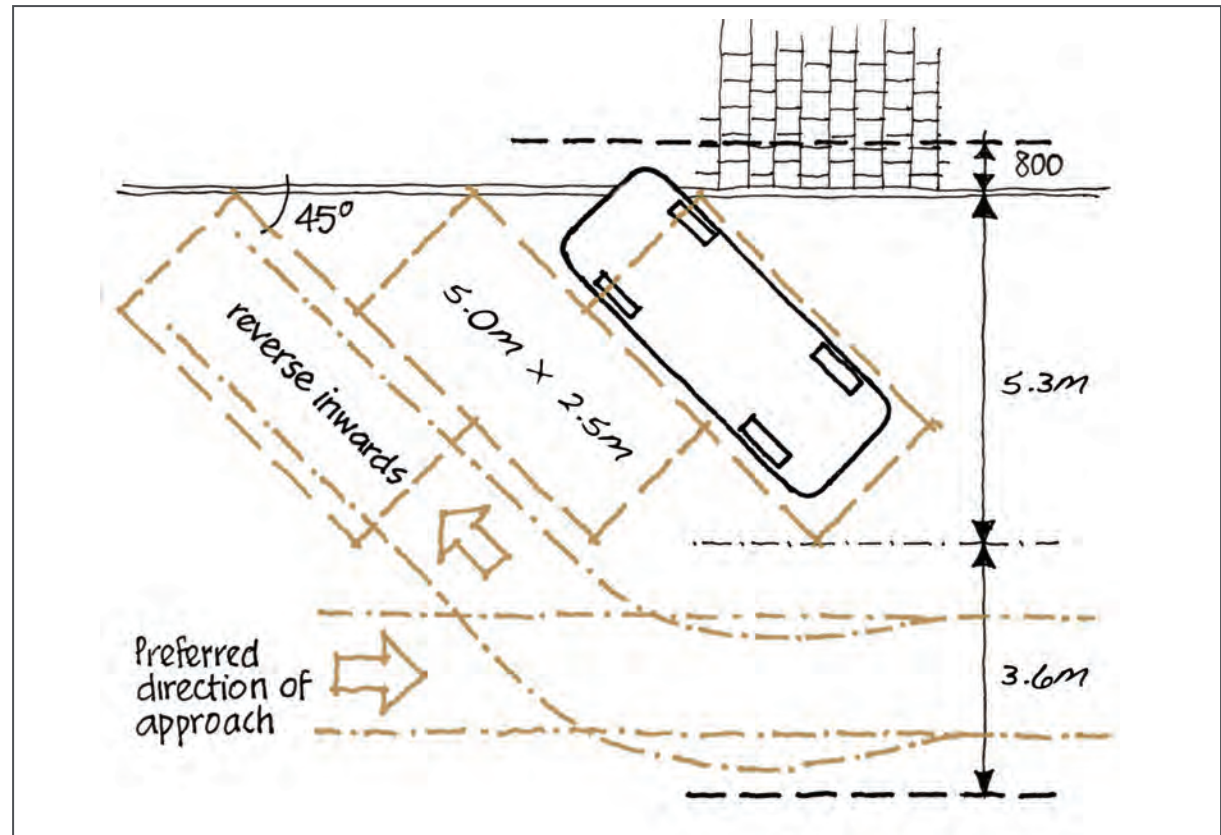
**Fig 10.39** Bollards prevent vehicles overhanging footway (Leighton Buzzard)

10.04.08

Echelon parking is usually between  $30^\circ$  and  $60^\circ$  to the kerb, and the footpath width should increase by 0.8m to allow for the overhang of vehicles.

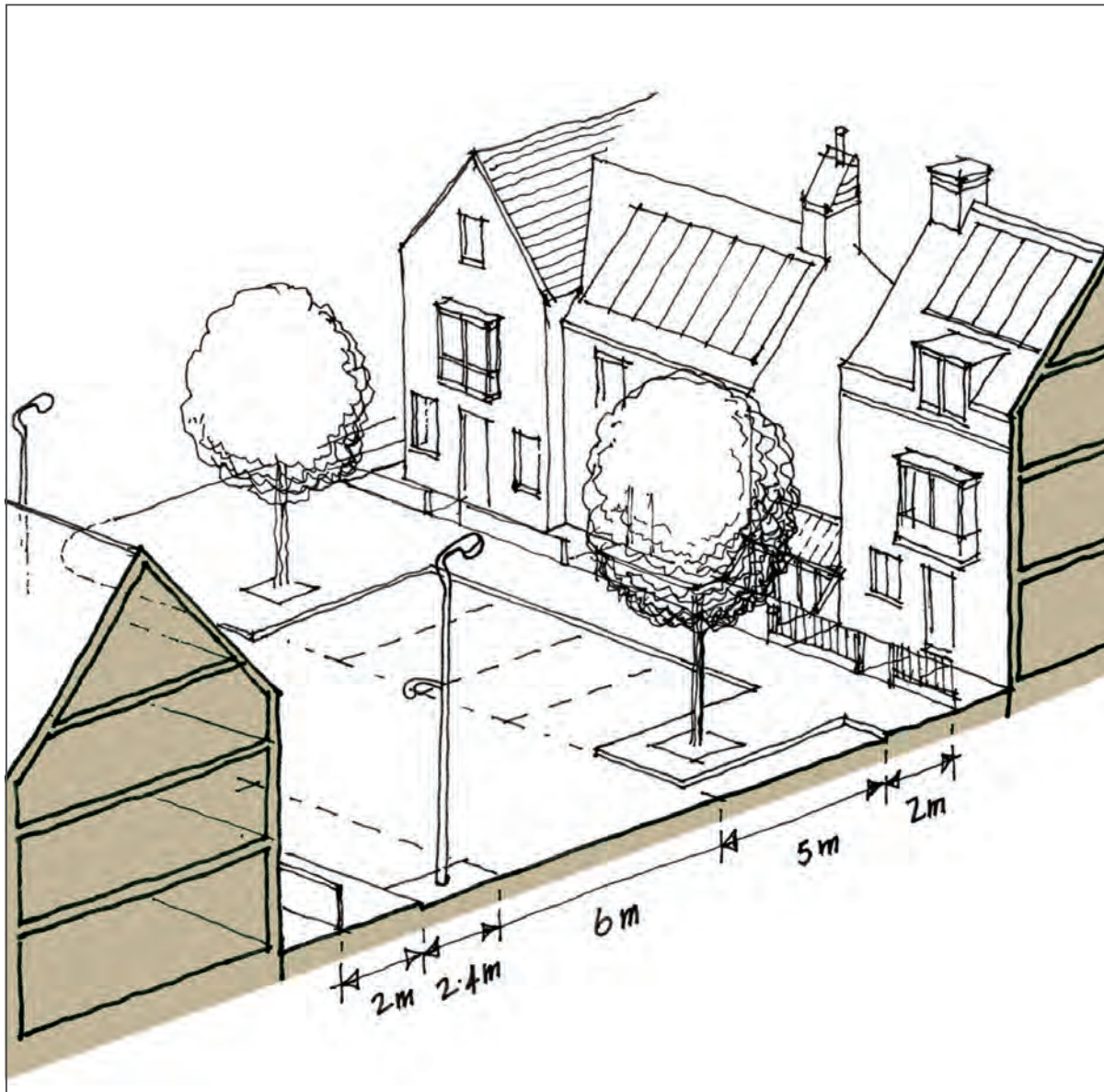
10.04.09

45° parking bays require a projected length of 5.3m from the kerb plus a 3.6m wide manoeuvring area. Vehicles may access parking spaces by either reversing or going forward. The function of the road will determine the most appropriate option.



**Fig 10.40** Echelon parking bay layout





**Fig 10.41** Parking integrated into street design



**Fig 10.42** Wider footpath allows for vehicle overhang

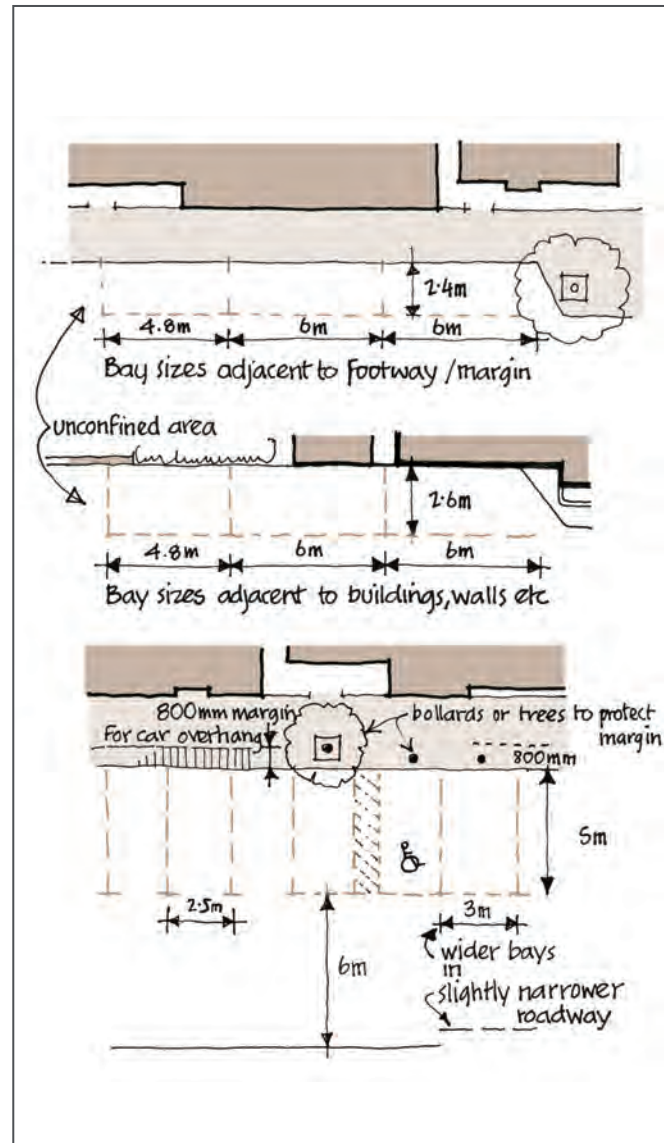


**Fig 10.43** Right-angled parking (Fairfield)

10.04.10

**Perpendicular Parking**

Right angled parking along main streets should be avoided. In the case of private dwellings, right angled parking could be appropriate although consideration should be given to the safety in entering the public highway and streets should be of a sufficient width.



**Fig 10.44 Perpendicular parking.** Perpendicular bays should generally be 4.8m x 2.4m with a minimum 6m manoeuvring area

10.04.11

**Parallel Parking**

Parallel parking is more suitable in locations where there will be a lower level of demand for on-street spaces. Parallel spaces should generally be 6.00m x 2.40m. Spaces do not necessarily need to be marked out but the use of different materials could be beneficial.

10.04.12

For both echelon and parallel parking, bays for disabled drivers should have an additional strip of 900mm-1200mm width to one side of the bay.

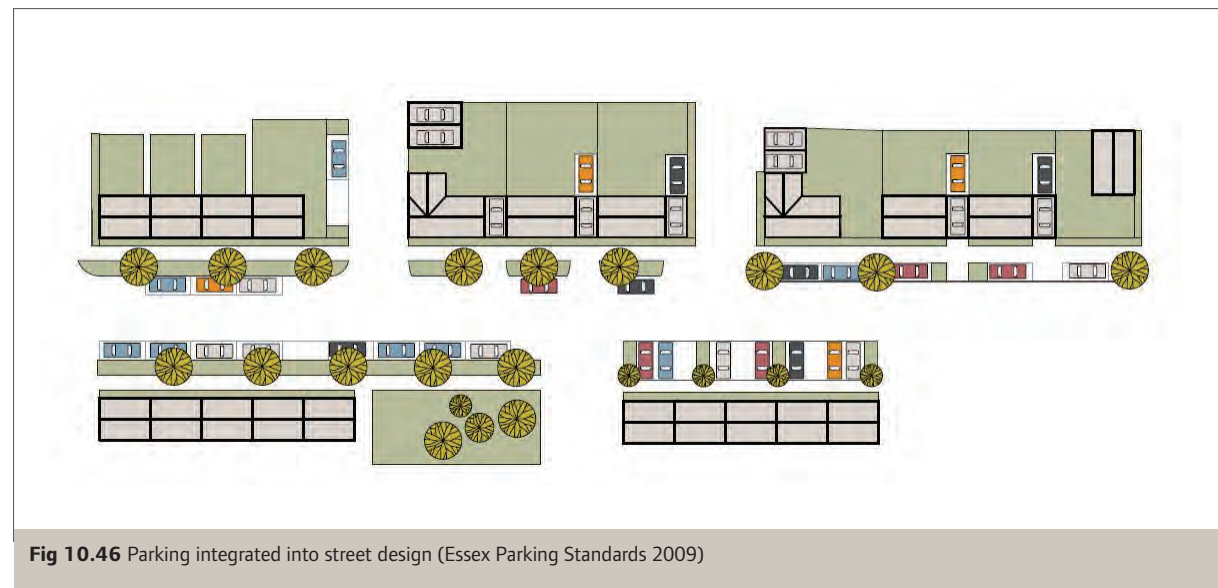


**Fig 10.45** Well-designed parallel parking (Woburn Sands)

10.04.13

On mixed use streets where parallel parking is required to accommodate other vehicles such as vans and HGV's, the following bay dimensions should be used:

- Vans – 9.0m x 3.5m (sufficient to accommodate longer vans)
- Articulated HGVs – 17.0m x 3.5m
- Rigid HGVs – 12.0m x 3.5m



**Fig 10.46** Parking integrated into street design (Essex Parking Standards 2009)



10.04.14

**Cycle Parking**

Convenient cycle parking for residents and visitors must be considered from the outset of a schemes design as the space needed to accommodate bicycles can be significant. Full details of the location, type of rack, spacing, numbers, methods of installation and access should be provided. Developers should consult the Council's current Cycling Parking Guidance.

10.04.15

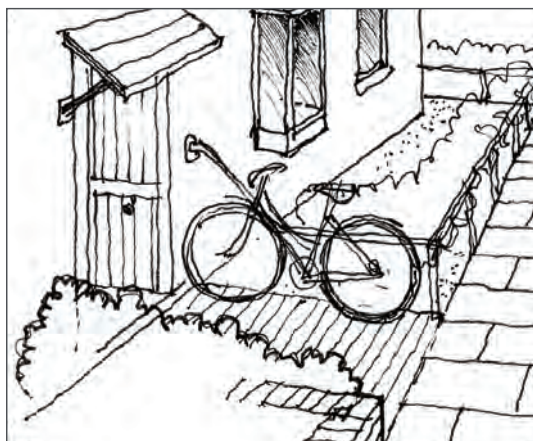
Cycle parking should be easily accessible but should not obstruct pedestrian and cycle routes. Cycle parking should be located in close proximity to the entrance to buildings and should be overlooked to provide security.

10.04.16

For parking to the rear of buildings a minimum passage width of 1.5m will be required to allow walking alongside a cycle.

10.04.17

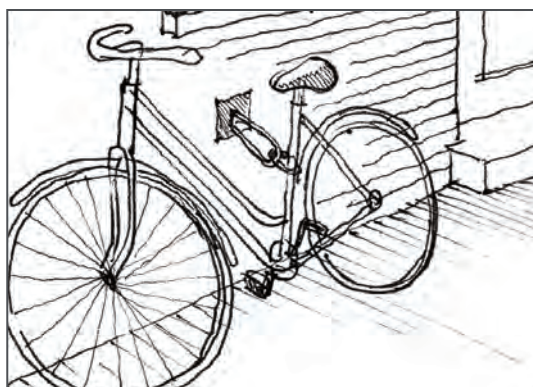
Convenient, well designed and adequate cycle parking should be provided in town and village centres and at all community and public facilities.



**Fig 10.47** Short stay or visitor parking near to building entrance



**Fig 10.49** Convenient short-stay residential cycle parking



**Fig 10.48** Informal domestic secure bicycle parking



**Fig 10.50** Cycle parking for community facilities

### Key principles for accommodating cycle parking

- All residential cycle parking should be sited in a manner that encourages use of a cycle as a first choice for short trips of up to 3km.
- All cycle parking should be easy to get to with no inconvenient detours, steep slopes or narrow access ways. . Visitor cycle parking should be easy to find and located next to main entrances.
- Residential cycle parking should always be secure and give confidence to the cyclist that the bike will still be there when they return. Locations should be well lit and have good natural surveillance.
- Parking provided for residents should always be covered and, where appropriate, this should also apply to visitor parking.
- The recommended choice of rack is the Sheffield Stand. Butterfly-type or wall mounted hooks are not recommended as they do not provide sufficient support and allow the cycle frame and both wheels to be secured. In locations where children are likely to need cycle parking an extra horizontal bar at 650mm above ground level or a reduced sized stand to support a smaller frame should be provided.
- The design of cycle parking facilities should be in keeping with their surroundings.

**Fig 10.51** Key principles for accommodating cycle parking

## 10.05 Design Principles

10.05.01

### Designing Pedestrian Routes

Pedestrians should be provided with direct routes to all key local destinations, such as schools, shops and other community facilities. Developments should be designed around pedestrian and cycle desire lines and routes should make sense and be the shortest possible.



**Fig 10.52** Pedestrian crossings should always follow desire lines or they will be ignored

10.05.02

### Footpaths

Footpaths should be provided on both sides of the street. Possible exceptions are where one side is undeveloped such as adjacent to an open space, in existing narrow streets or where a shared surface would be appropriate.

10.05.03

A marginal strip should be provided alongside higher order streets where speeds will reach 30mph or more for pedestrian comfort and safety. In rural areas this could take the form of a grass verge.



**Fig 10.53** Clutter free marginal strip

10.05.04

Footpaths should be clutter free. Space should be provided, either on the property side or carriageway side, to accommodate signage, street lamps, waste bins, bus stops, parked cars, seating, dropped kerbs etc beyond the normal width.

10.05.05

Footpaths should be constructed to an adoptable standard and should be level.

10.05.06

Crossfall over the useable width should be no more than 2.5%.



**Fig 10.54** Access to driveways can be provided whilst maintaining a clear level usable width for pedestrians

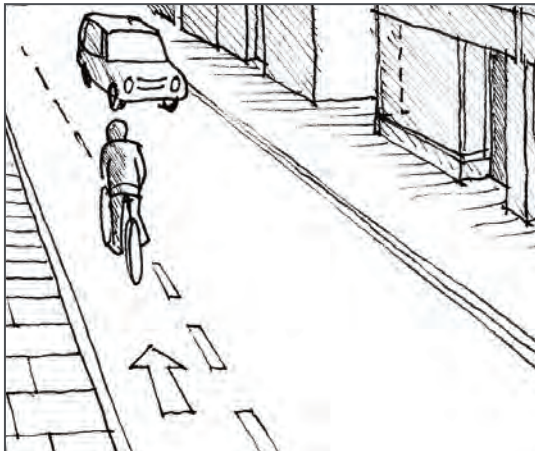
10.05.07

### Designing Cycle Routes - Sharing the Carriageway

Streets should be designed for low traffic levels and vehicle speeds so that cyclists and vehicles can safely share the carriageway. Sharing is suitable at up to 20mph.

10.05.08

Routes recommended for cycling should be signed. Cycle lanes should be provided at locations where traffic queues are likely, and should have a minimum width of 1.50m. Advance stop lines with appropriate lead in lanes are a mandatory requirement as are cycle contraflows on any street converted to one-way operation.



**Fig 10.55** One-way street with contraflow cycle lane

10.05.09

### Off-Carriageway Cycle Tracks

Off carriageway cycle tracks can create more direct and attractive links to local facilities such as schools. They should be clear, coherent, well integrated, open, overlooked by housing and lit. Shared cycle tracks/paths can be used as an alternative to sharing the carriageway on higher speed or heavily trafficked routes.

10.05.10

The design of cycle tracks should ensure they are continuous, avoiding the need for cyclists to give way, stop or dismount. Where it is a shared use path, the track should be sufficiently wide to accommodate pedestrians and should generally be unbounded (open with grass on either side). Where cycle tracks border heavily trafficked or higher speed roads they should be separated from the carriageway by a verge or hard shoulder.



**Fig 10.56** Well designed strategic cycle route

10.05.11

### Designing for Public Transport

Within the street hierarchy main streets and access streets should accommodate bus services. Public transport facilities and the bus service should be integrated into the design process from the outset to ensure residents make a habit of using it and choose it as a real alternative to the car. The location and type of public transport infrastructure should be considered in terms of anticipated use and discussed with the Council and bus operators at the outset of the design process.

10.05.12

Buses require a carriageway width of at least 6.5m to allow buses to pass each other at a normal speed, without needing to slow down. Where speed reduction measures are required on a bus route, they should be designed to accommodate buses where possible. For example, speed bumps or tables should be flat on top for a distance greater than a bus wheelbase.

10.05.13

Bus lay-bys or stops within the carriageway should be clearly marked in yellow and be of a sufficient length to accommodate a 15m long bus. Along bus routes inset bays for car parking will be required to prevent any obstruction. Bus priority measures should be implemented in line with requirements identified in the Local Transport Plan.



10.05.14

**Bus Stop Locations**

A direct bus route should be considered with bus stops located where they can be reached within 10 minutes, or a 250m walk, for pedestrians, in close proximity to residential plots and new employment sites. A clear route to the bus stop should be provided with pedestrian crossings where necessary. Directional signage could be used to emphasise the location of bus stops within a new development. Stops should be located near a junction and/or other bus stops to make interchange easier.



**Fig 10.57** Timetable information at bus stops

10.05.15

Bus stops should be integrated with existing features such as town square, shop or community facility where possible. A key stop should be provided in the most connected location and designed to accommodate more travel information such as a bigger display board and a bus shelter in the direction of most travel. Bus stops should not be located directly in front of residential properties in order to protect amenity. On residential streets they should be adjacent to an area of open space or properties should be sufficiently set back from the footway to ensure privacy.



**Fig 10.58** Buses at the heart of the community

10.05.16

**Bus Stop Requirements**

Bus stops should include shelter, seating, lighting and real time travel information. They should have a curved roof and clearly transparent sides to ensure the safety of bus users.

10.05.17

Level access will be required at bus stops. In shared space locations a raised kerb should be used to ensure level access, and should be clearly marked.

10.05.18

Where a route is served by buses using a Guided Busway consideration must be given to the guide wheels when designing bus stops. Entrances to the bus stop must be shallow and kerbs must be of a sufficient height to achieve level access.



**Fig 10.59** Bus facilities form part of the street scene

## 10.06 Detailed Street Design

### 10.06.01

#### **Creating safe streets with low vehicle speeds**

Streets should be designed to ensure that all users feel safe. There should be sufficient space on the street to facilitate movement and social interaction, and streets should feel comfortable to use. In locations where different users interact, such as junctions, there should be clear visibility and awareness. It is important that vehicles move slowly and drivers are encouraged to be aware and cautious. Often the building line and ground floor activities can have a calming effect but it can also be necessary to provide other speed reducing features within the overall design, such as street narrowing, the presence of parked vehicles and gateway features, as well as the perception of sharing.



**Fig 10.60** Restricting forward visibility helps reduce speed

### 10.06.02

#### **Tracking**

Swept path analysis, or tracking, is used to determine the space required for various vehicles and is a key tool in designing carriageways for vehicular movement within the overall layout of the street.

### 10.06.03

Ideally on-street parking provision should be designed into the street at the outset to remove the need for informal parking. Where inset parking bays are defined within the street the vehicle carriageway could reduce to a minimum of 4.1m-4.8m (depending on the function of the street). Where parking is not defined, vehicle carriageways should have a minimum width of 5.5m to ensure that any informal parking can be incorporated comfortably within the street.

### 10.06.04

Carriageways may need to be wider where there is direct access from off-street parking. Typically a width of 6m is required to allow a car to turn out of a parking space.

### 10.06.05

#### **Junction Design**

The number and type of new junctions and access to the main road network will be restricted to ensure their efficiency and safety.

### 10.06.06

Junction type needs to be determined by the amount of traffic generated by the development and using it and the volume of traffic on the main road. Traffic generation and capacity assessment of junctions will need to be undertaken using the appropriate modelling.

### 10.06.07

#### **Junction Spacing**

The street parameters table (10.02.08) sets out the requirements for junction spacing for each route type.

### 10.06.08

Additionally, where a main street or access street joins a main road it should not have any junctions within the first 20m, unless it is a small scale development.

### 10.06.09

Cross roads should be avoided but may be considered acceptable on routes that serve between 100 and 300 dwellings, subject to appropriate measures being taken to reduce vehicle speeds.

10.06.10

**Junction Visibility**

To enable drivers to both see and be seen at junctions it is necessary to provide clear unobstructed visibility related to the anticipated vehicle speeds.

10.06.11

Consideration should be given to how the street fits within the building layout and then make an assessment of the route a vehicle would take (usually following a line 1.50m from the kerb) and the anticipated speed along the route. Junctions and forward visibility sightlines should then be plotted based on this assessment. This will identify any need to adjust the building line or introduce any additional features to reduce vehicle speed.

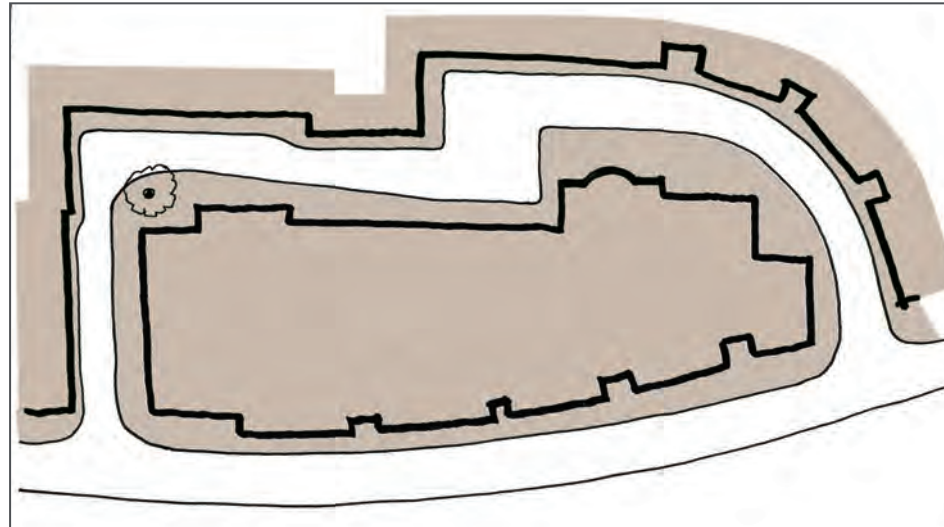


Fig 10.61 Buildings dictate road layout

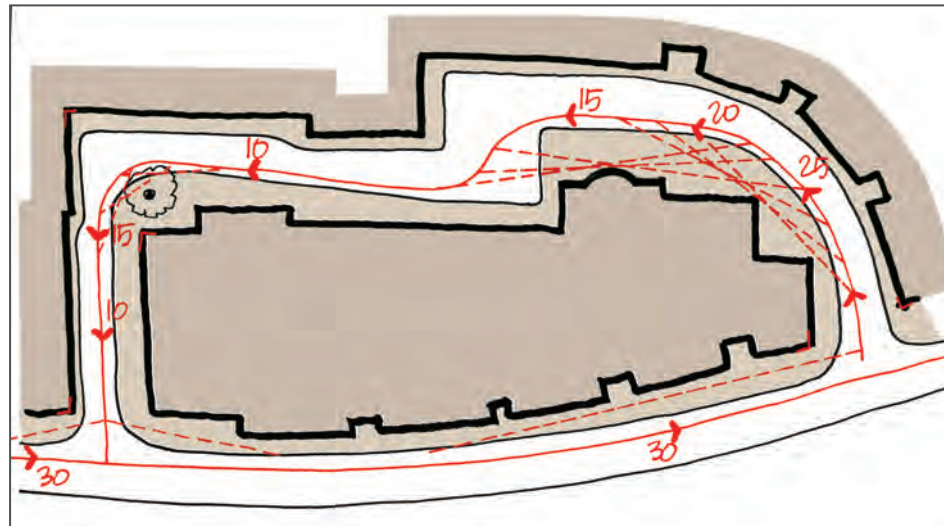


Fig 10.62 Assessment of vehicle speeds and visibility requirements

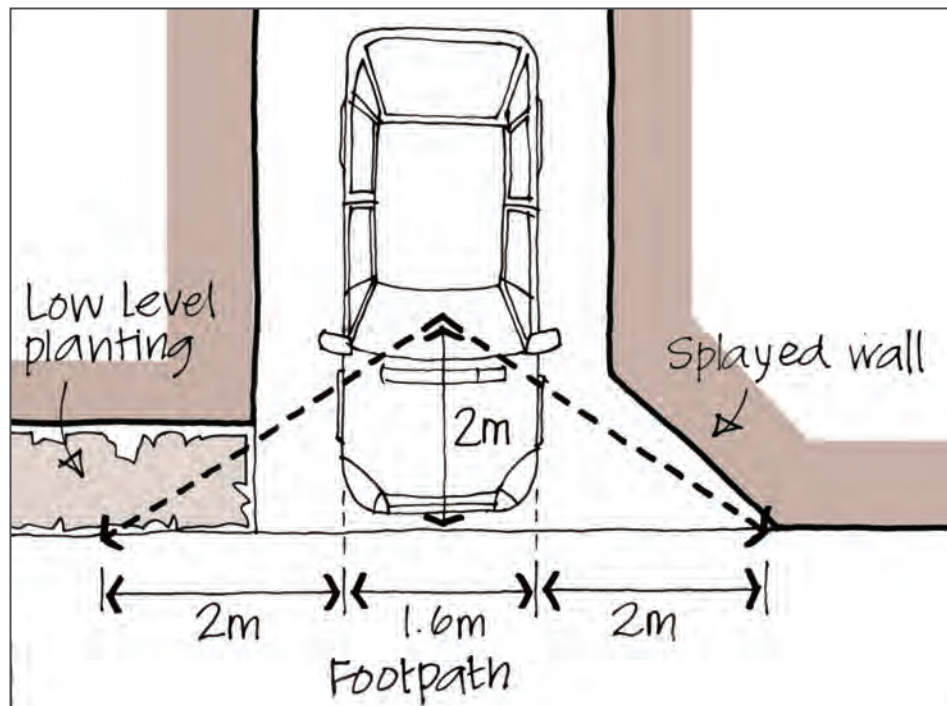


10.06.12

Drivers need to be able to see obstructions between 600mm and 2.00m above the carriageway. Where a driveway meets the rear of a footway sufficient intervisibility should be provided between drivers and pedestrians. A minimum requirement will be a splay 2.00m from the rear of the footway to a point 2.00m either side of the anticipated vehicle path.



**Fig 10.63** Vehicular entrance to apartment block. In some locations crossover access is appropriate. Leighton Buzzard



**Fig 10.64** Vehicle/pedestrian visibility at crossover. Low level planting should be below 600mm. The assumed position of the vehicle will vary depending on width and use of access

10.05.32

Trees within sightlines will only be considered if they are clear stemmed up to a height of 2.00m and do not impact on overall visibility.



**Fig 10.65** Forward visibility is not compromised by occasional trees of appropriate species and size



# Section 10

10.05.33

## Visibility Splays for Streets

Junction visibility should be based on distances appropriate to anticipated vehicle speeds as shown in table on this page 'X' distances should normally be as shown in the street parameters tables.

Vehicle Speed (mph)	Forward Visibility/Y Distance (m) for level streets (no gradient) using an x distance of 2.4m
10	11
15	17
20	25
25	33
30	43
37	59

10.05.34

## Visibility Splays for Roads

Speed Limit (mph)	Forward Visibility/'Y' Distance (m) for roads using an x distance of 2.4m where there is a speed limit but vehicle speeds are not known
30	90**
40	120
50	160
50	215
70	295

\* Agricultural access 'X' distance of 3.5m, major junctions 4.5m

\*\* Where it can be shown that vehicle speeds will be contained to 30 mph the y distance can be amended to 60m.

10.05.35

## Typical Anticipated Vehicle Speeds Related to Layout Features

Feature	Design Speed (mph)
Bend – Centreline Radius (m)	
10	10
15	15
20	20
25	22
30	25
40	30
Vertical Deflection	15
Horizontal Deflection	20
Narrowing to Single Lane	20
Roundabout	20
Narrowing to Reduced Width	30
Distance from stationary position	
10m	5
20m	10
30m	15
40m	20

10.05.36

### Junction Speed Tables and Pedestrian crossings

Pedestrian crossings should be implemented on desire lines, and the choice of crossing will depend on vehicle flows and speeds. The choice of crossing type will depend on traffic flows and speeds. Junction speed tables can provide crossing points for pedestrians whilst slowing down traffic and defining the junction. They also improve safety for cyclists. This method should be used in combination with other features to reduce vehicle speeds, particularly in new layouts.

10.05.37

Where average speeds are no greater than 20mph informal crossings are suitable, especially using raised tables where the footpath crosses a carriageway. At side roads the footway should be continued across the junction at footway height. It may be necessary to reduce the carriageway width to minimise pedestrian crossing distance and bollards may be required to enforce tight kerb radii. Alternatively, the footway can be dropped to carriageway height but visually continued using different materials to suggest priority if traffic flows and speeds are appropriate.

10.05.38

Where speeds are below 30mph Zebra crossings can provide the most suitable option and should wherever possible be raised to add weight to

pedestrian priority. Alternative solutions may be more appropriate in particular circumstances such as outside accommodation where visually impaired residents may be present.

10.05.39

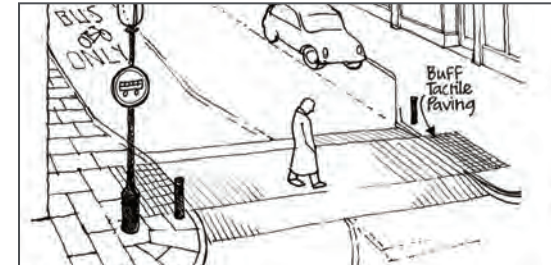
On higher order routes with high pedestrian flows Pelican, Puffin or Toucan crossings may be appropriate.



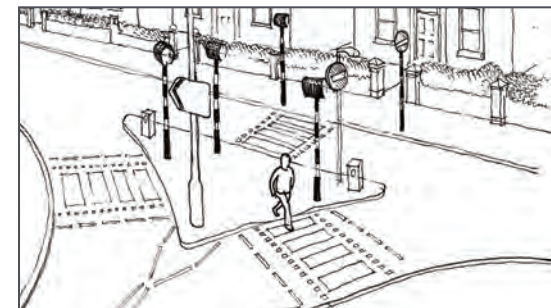
**Fig 10.66** A raised footway extension gives disabled people and other pedestrians the most comfortable and convenient crossing point at side road junctions



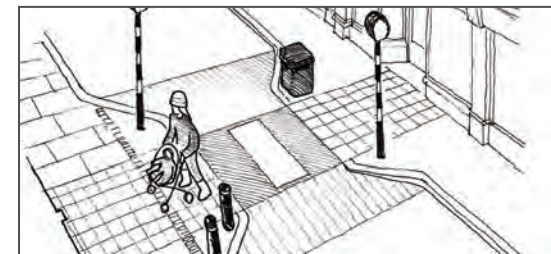
**Fig 10.67** Raised footway combined with reduced width entry provides for excellent pedestrian continuity



**Fig 10.68** A raised informal crossing is usually effective in providing pedestrians sufficient opportunity to cross in low traffic situations



**Fig 10.69** This junction has been designed to meet all pedestrian movements



**Fig 10.70** A raised Zebra crossing combined with a road narrowing gives excellent pedestrian priority over this shopping street

10.05.40

**Speed Reduction Measures**

A combination of methods should be used to ensure average vehicle speeds are kept within agreed limits within a development. A design speed of 20mph is preferred within built up areas,

- Small radii bends can be used on all street types. Building lines and forward visibility need to be considered and widening may be necessary on busier streets.
- Carriageway narrowing is simple and effective in reducing vehicle speeds, but consideration should be given to the needs and safety of cyclists. The removal of the centre line can be used to give the appearance of carriageway narrowing.
- Gateway features mark the entrance to a place, and can be achieved through a change of surface materials, landscaping, architecture, fencing and carriageway narrowing. The design of a gateway should be appropriate to its context, have minimum signage and use materials that do not create problems for cyclists.

10.05.41

Speed control measures should be spaced appropriately and the distance between each feature should relate to the road type and target speed:

- 30mph – every 80m-120m
- 20mph – every 60m



Fig 10.71 Speed control bend



Fig 10.72 Carriageway narrowing



Fig 10.73 Gateway as entrance to village

## 10.06 Detailing the Street

### 10.06.01

Attention to detail in the design and construction of both the buildings and streets is vital to give places character and local distinctiveness.

### 10.06.02

Standard grey kerbs and plain blacktop footpaths and carriageways may be appropriate in some locations, but the use of other materials can help give a better quality feel and create public areas that people will find more attractive whilst at the same time being functional and durable. Similarly, the choice of street furniture, signs and lighting can influence the way a place is perceived whilst still serving the purpose for which they were intended.

### 10.06.03

Conversely, the use of an unlimited variety of materials can give an uncoordinated and untidy appearance and will make the future maintenance and repair of these areas more difficult and costly. The aim should always be to use a limited palette of materials that will create a public realm that compliments the buildings and local character.

### 10.06.04

**The future maintenance of any materials should be considered and discussed with the Council from the outset of the design process.**



**Fig 10.74** Conventional blacktop surfacing can give an attractive finish

### 10.06.05

#### **Surfacing Materials**

Dense Bitumen Macadam provides a smooth flexible surface and is commonly used on both carriageways and Footpaths. Combined with good quality kerbing and channel detailing, it provides a visually acceptable and serviceable surface in keeping with both urban and rural environments. Care should be taken to avoid its blanket use, particularly in conjunction with plain grey kerbs, which can create an unattractive public realm.



**Fig 10.75** Blacktop carriageway and footway with small element kerbing



10.06.06

**Surface Dressing**

Bound gravel surfaces are more appropriate in rural settings but are also suitable for parking courts and mews type streets as well as on Footpaths and cycle ways. Bound gravel can be effective in breaking up the otherwise dull appearance of blacktop. Surface dressing products should not be confused with aesthetic products such as Golden Gravel when a proper inlay is required

10.06.07

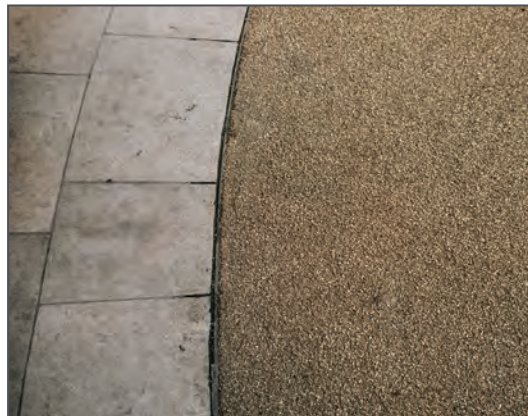
The use of loose gravel is unacceptable in the public realm. Where used in private areas, measures will be needed to avoid spillage onto the highway (normally a 5m paved space between the area of loose gravel and the highway).

10.06.08

Coloured surfacing usually has a specific highway function, such as denoting a bus or cycle lane and is not particularly useful in enhancing the quality of the public realm. Its use for other purposes is generally discouraged due to its high maintenance costs but it will be considered subject to payment of a commuted sum.



**Fig 10.76** Bound gravel used footways and carriageway



**Fig 10.77** Bound gravel used in pedestrian area

10.06.09

**Blocks**

Block paving can offer a good alternative to blacktop surfacing where a less traffic dominated environment is desirable, such as on minor residential streets. Plain concrete paviors are available in a wide range of colours and it is important to consider carefully how they will relate to the overall appearance of the street and whether they are readily available and therefore can be replaced if future maintenance is required. A more rustic appearance is provided by tumbled blocks such as “Tegula” blocks (or similar). These are available in different but compatible sizes and their use in a semi random pattern can add visual interest.

10.06.10

Granite setts generally provide a less even surface and are best suited to areas where low vehicle speeds are desirable and in small detailing areas. Whilst their natural appearance can greatly enhance the quality of a street, care should be taken in using them in large areas that will be predominantly used by pedestrians or cyclists or where their overuse would be particularly detrimental to those with mobility impairment.



**Fig 10.78** Tumbled blocks



**Fig 10.79** Concrete blocks



**Fig 10.80** Granite setts



**Fig 10.81** Clay block paving

10.06.11

### **Paving Slabs**

Plain grey concrete slabs are of low cost and durability but they do not have great aesthetic qualities, particularly when used in large areas. More attractive textured concrete slabs are available with similar durability. Staggered coursing and jointing of slabs can add visual interest. Slabs are generally only appropriate for use in Footpaths and care needs to be taken in their specification and location to minimise the likelihood of damage by heavy vehicle overrun. Some natural stone slabs may require the payment of a commuted sum to cover higher maintenance costs.



**Fig 10.82** Concrete paving slabs laid in a radial pattern

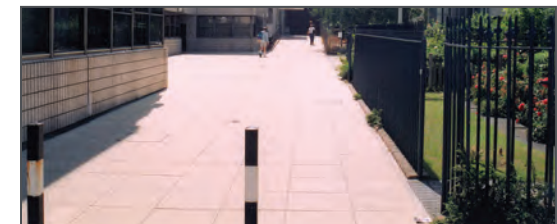
10.06.12

### **Kerbs and Edges**

Standard grey hydraulically pressed kerbs are less likely to add to the overall value of a street and much more attractive alternatives are available. Conservation and textured concrete kerbs are available in standard sizes. Many existing streets in Central Bedfordshire have fairly wide kerbs and this, particularly when combined with paved drainage channels can add definition to the street.



**Fig 10.83** Short granite kerbs



**Fig 10.84** Textured concrete slabs

10.06.13

**Boundary Treatments**

It is important that there is a clear way for people to distinguish between the public domain and private areas. There is also a requirement to identify the extent of the highway. In many cases this distinction is obvious, being provided by boundary walls and fences. In other places the edge of the highway can be delineated by a flush concrete edging or by a change in surface treatment. In some urban locations it may be more desirable to provide a consistent paving type between the face of buildings and the edge of Footpaths. In this case marker studs may be used to delineate the edge of the adopted highway. Similarly where a grass highway verge is provided in front of open space land, the highway boundary has less significance to most people and it is sufficient to delineate by stone, concrete or tanalised wood flush with the ground.

**Fig 10.85** Flush concrete edging

10.06.14

**Verges, Margins and Private Strips**

A traditional feature in Central Bedfordshire is the pebble paving along the frontage of a building. This feature may be appropriate to delineate any private strips provided to accommodate drainage and building overhangs.

10.06.15

An alternative to this is to use block paving or granite setts. Unpaved verges should normally be planted with grass or landscaped if private.

**Fig 10.86** Pebble paving used on private strip**Fig 10.87** Concrete blocks used on private strip

10.06.16

**Tactile Paving**

Tactile paving should be provided where pedestrians are expected to cross a carriageway at grade. Particular care should be taken in laying out tactile paving, especially where two or more areas of paving intersect at angled junctions. Inattention to detailing can produce visually intrusive solutions, often creating problems for maintenance and reinstatement.

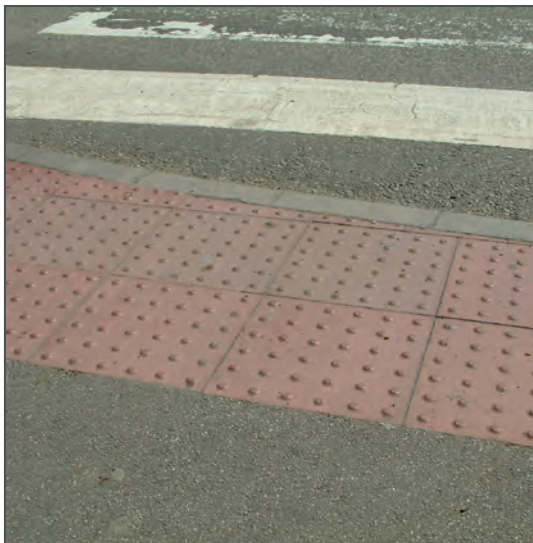
10.06.17

Red tactile paving is required at controlled pedestrian crossings. However, the detailing and extent of paving provided should carefully balance the function of guiding those with visual impairment. In some cases it may be more appropriate to use natural stone. Reference should be made to the DfT "Guidance on the use of Tactile Paving Surfaces" and DfT "Inclusive Mobility" (A Guide to Best Practice on Access to Pedestrian & Transport Infrastructure) for specific information on tactile paving specifications and directions for use.





**Fig 10.88** Pebble paving used on private strip



**Fig 10.89** Pebble paving used on private strip

10.06.18

### Drainage

Drainage channels formed from 2-5 rows of granite setts are a fairly typical feature of existing streets in Bedfordshire and can be used along the edges of carriageways and to collect surface water along the edges of paved areas.

10.06.19

Standard inspection covers and gulley gratings complying with the relevant standards are normally required. The detailing of these and how they fit into the overall paving pattern is important. Particular care should be taken when gratings and drainage channels are used in pedestrian areas and at crossings. Even where not strictly required, drainage channels can add character and reduce the visual impact of the carriageway. Drainage channels are not always required at the edge of carriageway where the longitudinal gradient is adequate. Consideration should also be given to opportunities for SUDS within the street such as roadside water gardens, filter strips and swales within verges. Further guidance on SUDS is available in the Green Infrastructure supplement.



**Fig 10.90** Granite setts used as drainage channel



**Fig 10.91** Blockwork drainage channel with grating



10.06.20

**Street Lighting**

The use of high-quality lighting is fundamental to safety and can also be used to enhance the quality of a place. Lighting will generally be required in all areas of the public domain to ensure that places are well lit for pedestrians, cyclists and drivers. Exceptions to this are in rural areas on some non-strategic Footpaths where there are important environmental considerations.

10.06.21

Lighting should be regarded as an integral part of the design process rather than as a separate exercise in illuminating the highway.

10.06.22

Lighting should be provided by overhead street lamps with full cut off lanterns utilising directional, white light LEDs or such improved technology approved by the Council. Whilst the mounting height and spacing of lighting units will need to ensure appropriate levels of illumination, it should relate to traffic flows, street widths and scale of development. Consideration must be given to the placing of lighting in relation to property frontage.

10.06.23

**Signage and Street Furniture**

Signs should only be provided where they are necessary to meet an established need. In a legible place with a strong sense of character there should be little or no need to direct people or to warn them against the unexpected. In particular signs on cycle ways and Footpaths should be avoided where it is reasonably obvious to those using them how they are expected to behave.

10.06.24

Where signs and road markings are considered essential or are a legal requirement their size, type and siting should detract as little as possible from the quality of the place and as a general rule the minimum size permissible should be chosen consistent with road safety considerations. Opportunities should be taken to minimise the number of sign posts by attaching signs to lamp columns and walls.

10.06.25

Street name plates should be of a type in keeping with the locality and where possible, should be mounted on buildings or walls.

10.06.26

Street furniture such as seats, benches, cycle stands and bollards should be carefully coordinated and located to contribute to a coherent streetscape and avoid clutter. The type of furniture should be in context with the character of the area and particular care must be taken in sensitive locations such as conservation areas to ensure that signage and street furniture are sympathetic and appropriate. Further guidance is available in the Historic Environment supplement.

10.06.27

**Trees and Landscape**

Trees can add much to the character and enjoyment of a place, and can also play a role in reducing vehicle speeds by giving a greater sense of enclosure to a street.

10.06.28

Additional guidance on new tree planting is included in section 2.08.15 of the Green Infrastructure, Climate Change Adaptation and Sustainable Buildings supplement.

10.06.29

In highway terms, trees should not be located in such a way as to pose an unacceptable hazard. The types of tree chosen should be from species that will not cause significant future maintenance problems or grow in such a way as to significantly obstruct either the flow of traffic or driver visibility. Generally they should be located at least 1m back from kerb lines.

10.06.30

The Council does not generally maintain landscaped areas other than grass or trees. Other types of landscaping should be avoided in areas to be adopted as public highway. Species of trees should always be agreed with the Council's Highway Officer.



**Fig 10.92** Careful siting of trees does not obstruct visibility



**Fig 10.93** Trees in a formal paved context

10.06.31

Public Art can be a useful way to improve and define movement legibility and navigation of streets and spaces. Public Art can help to create a sense of place and contribute to the design, theme and character of a development for example artists can design and influence a number of key features of a development such as signage, way markers, hard and soft landscaping, bollards, street furniture, tree grills, floor treatments and surfacing. Refer to the Public Realm supplement for more guidance.

10.06.32

**Provision for Services**

In locating plant and services consideration should be given to future maintenance and the need to provide access whilst maintenance is being carried out. Access covers should be located in such a way that they can be used without significantly affecting the movement of people and vehicles. Electricity substations, kiosks for telecom switchgear etc should be located in such a way as to not detract from the overall layout and should be considered at an early stage in the design process. Normally a 2.00m strip is required both sides of the street (e.g. in verges, shared surface or footway) see National Joint Utilities Group guidance.

## Movement and Streets Checklist

- Has the scheme responded to the street hierarchy set out in the Placemaking Principles?
- Has the movement function of both new and existing streets been identified in terms of the type of route and users and the level of movement?
- Have the street parameters been used in the detailed design of the street?
- Are shared spaces, or level surface streets, appropriate within the scheme? If so, have the needs of all street users been considered and have the key design principles been adhered to ensure the space is appropriate?
- In accommodating car parking:
  - Has sufficient on street parking been included in accordance with the parking standards (p29, Placemaking Principles)?
  - Has consideration been given to Placemaking Principles and the Residential Development Supplement in relation to on-plot parking and garage dimensions?
  - Has the most appropriate type of parking been identified that reflects the function and type of street?
  - Does the scheme include landscaping?
- In accommodating cycle parking:
  - Has sufficient cycle parking been included in accordance with the Council's standards?
  - Is cycle parking in accessible and convenient locations, and is it secure, covered and well surveilled?
- Have streets been designed to ensure low vehicle speeds (ideally no more than 20mph)?
- Do pedestrian and cycle routes take account of desire lines and provide sufficient space to facilitate movement?
- Have routes for public transport been identified and are the streets of a sufficient width and design to allow for buses to travel unimpeded?
- Are bus stops in accessible locations near to homes, jobs and community facilities, and is suitable infrastructure proposed?
- Have suitable materials, street lighting and furniture been identified? Have the Council been consulted about the cost and future maintenance of materials?

## 10.08 Appendix: Policies and Guidance

### 10.08.01

The following policies and guidance will be relevant:

- Local Transport Plan (CBC)
- Local Development Framework (CBC)
- National Planning Policy Framework (DCLG, 2012)
- Manual for Streets (DfT, 2007)
- Manual for Streets 2 (DfT, 2010)
- Design Manual for Roads and Bridges (DfT)
- Manual of Contract Documents for Highway Works (DfT)
- The Construction (Design and Management) Regulations 2007
- Environmental Guidelines for the Management of Highways in the Chilterns (Chilterns AONB, 2009)
- Streets for All: East of England volume (EH, 2005)
- The Way to Better Streets (CABE)
- Managing Waste in New Developments (BCC/LBC)
- Inclusive Mobility: A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure (DfT)
- Safer Places: The Planning System & Crime Prevention (ODPM & The Home Office, 2004)
- The Highways Act 1980, Sections 38, 184 and 278
- The Town and Country Planning Act, Section 106
- Good Practice Guidelines: Delivering Travel Plans through the Planning Process. April 2009 (DfT)
- Road Safety Audit (DMRB Vol 5 Section 2 Part 2 HD19/03)
- The Road Traffic Regulation Act 1984
- The New Roads and Street Works Act 1991
- Providing for Journeys on Foot (IHT, 2000)
- Circular 4/90 (DfT)
- The Traffic Management Act 2004
- The Traffic Calming Act 1992
- The Roads (Traffic Calming) Regulations 1993
- The Traffic Signs Regulations and General Directions 2002
- Cycle Parking Guide for New Residential Developments (February 2010) (Transport Initiatives LLP and Cambridge City Council)
- Cycle Infrastructure Design LTN 2/08 (DfT)
- Traffic Calming LTN 1/07 (DfT)
- TFL London Cycling Design Standards
- Guidelines & Practical Details (Issue 2): Sustrans
- Cycling England Design Checklist and Guidance (DfT website)
- Sign Design Guide, a guide to inclusive signage (Sign Design Society and JMU Access Partnership)
- Local Transport Note 1/11 Shared Space (DfT, 2011)
- Central Bedfordshire Council Lighting Report July 2009
- TAL 9/97 Cyclists at Roundabouts – Continental Design Geometry (DETR 1997)



