7.0
Movement

- Design Principles
- Street Design and Hierarchy
- Surfacing
- Boundaries
- Drainage
- Street Furniture
- Public Art
- Accessibility

7.0 Movement

Accessible and easy to move around.

7.1 Introduction

7.1.1 The Movement of people and all modes of transport should be a crucial part of the design process from the outset, as a poor design can have negative consequences and impact on residents, businesses, and the environment. Sustainability must be a key part of all movement considerations. Connections and streets must be designed around a hierarchy which prioritises sustainable modes of travel and incorporates well-designed walking and cycling networks.

7.1.2 This section addresses the design of streets to ensure they are functional, appropriate to their context and accessible for all. Engineering considerations are an essential aspect of highway design to ensure safety, alongside other design considerations which seek to create high quality places which encourage walking and cycling.

7.1.3 This section should be read in conjunction with chapters 8, 9, 11 and 12 of the NPPF, the adopted Local Plan (policies T1-T6) and Sections M1, M2 and M3 of the National Design Guide, 2019, are also relevant to this and provide guidance on how to design successful movement networks.

7.1.4 This section should be viewed alongside the following guidance documents:

- Central Bedfordshire's Highways Construction Standards and Specifications Guidance
- CBC Local Cycling and Walking Infrastructure Plan
- CBC Local Transport Plan
- CBC Parking standards for New Developments SPD
- CBC Electric Vehicle Charging SPD
- Rights of way | Central Bedfordshire Council
- Manual for Streets
- Manual for Streets 2
- Design Manual for Roads and Bridges
- Traffic Signs Regulations and General Directions 2016 (TSRGD)
- Traffic Signs Manuals
- 20-minute Neighbourhoods TCPA
- LTN 1/20 Cycle Infrastructure Design
- Free Species Selection for Green Infrastructure TDAG
- Inclusive Mobility A Guide to Best Practice on Access to Pedestrian & Transport Infrastructure DfT
- Guidance on the Use of Tactile Paving Surfaces (DfT)
- Secured By Design
- CBC Sustainable Drainage SPD
- CIRIA SUDS Manual
- School Streets website
- Playing Out website

7.2 Design for Movement

User Hierarchy

7.2.1 The design of all developments should prioritise sustainable modes of travel and consider movements and connections in this order:

- Pedestrians, including people with mobility needs
- Cyclists
- Equestrians
- Users of public and shared transport services
- Delivery and service vehicles
- Other motor traffic

Permeability

7.2.2 Developments should be structured around a layout that minimises travel distances, encouraging walking within a 20-minute radius to key destinations and an 800 metre radii for key services such as bus stops. The 20-minute neighbourhood is about creating attractive, interesting, safe, walkable environments in which people of all ages and levels of fitness are happy to travel actively for short distances from home to the destinations that they visit and the services they need to use day to day – shopping, school, community, and healthcare facilities. These places need to be easily accessible on foot, by cycle, or by public transport – and accessible to everyone, whatever their budget or physical ability, without having to use a car. If walking is not an option, short journeys should be made by sustainable modes of transport to local facilities and services, such as cycling or using public transport.

7.2.3 New development should be designed for permeability or the ease with which you can move through a space from the outset. All routes should be beneficial and have a purpose. Developments should also ensure that pedestrian and cycling connectivity is provided into adjoining developments, especially along proposed routes to school and other key trip generators. The use of cul-de-sacs and shared minor streets should allow for permeability by pedestrians and cyclists, but should also be designed to maximises safety and making the route attractive to use, through the use of active frontages and open space.

7.2.4 However, this must be done with regard to community safety concerns. These can be addressed through the use of:

- Grid-type layouts (subject to settlement characteristics) with high permeability, which gives an advantage for pedestrians and cyclists for local trips
- Wide and open footpaths with good lighting
- Buildings designed to overlook footpaths and public spaces and with appropriate 'open' boundary treatments
- Well-designed landscaping schemes to allow spaces to be overlooked
- Secure rear accesses to buildings, where these are provided
- Clear definition between public and private spaces.

7.2.5 Buildings (or built form) define the edge of streets or movement corridors, and the hierarchy of different street types will determine how buildings should be laid out. When designing streets, consideration should be given to:

- The existing network of streets and the opportunity to create connections to enable sustainable modes of travel
- The historic character of existing streets
- The needs of all street users
- The scale of the street (is it a major route or is it a minor lane leading to just a few properties)
- How the street adds to a sense of enclosure
- Safety for all street users, both whilst travelling and for children using the street as a play space
- Legibility – how the street pattern enables people to navigate through the space

Figure 169: Consider how best the site can be connected with nearby main cycle and public transport routes and associated facilities

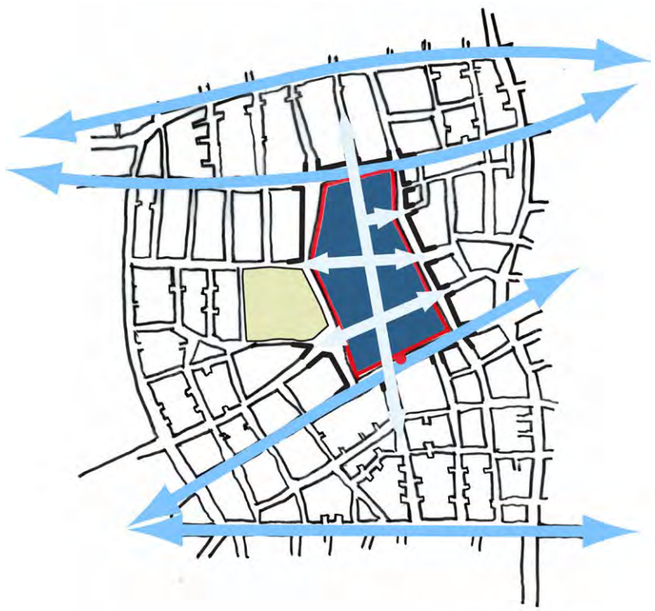


Figure 170: Pedestrian-friendly approach that Integrates with the surrounding community, links existing and proposed streets, and provides direct links to public transport

Figure 171: The resulting street pattern forms the basis for perimeter blocks, which ensure that buildings contribute positively to the public realm

Vehicular access

7.2.6 A vehicle crossover is used for private driveways and small developments with a minimal number of vehicular movements (see Highway Construction Standards & Specifications Guidance). A standard junction would be used for all other accesses where more frequent vehicular movements are required. Where vehicular access into the site is required, the location of the access way should minimise any disruption to the continuity of principal frontages and pedestrian amenity. The layout of the access should be designed to minimise the crossing distance for pedestrians (when there is a footway either side of the access) but be able to accommodate the largest vehicle likely to need to gain access.

7.2.7 For example, it would be extremely rare for two large vehicles to pass within the width of an access opening to a standard car parking area. Any proposed HGV access will need to be assessed based on current design guidance and visibility standards.

7.2.8 Early consultation with the Council's highways officers is recommended. In some cases, the access way dimensions should be determined by the tracking of the largest vehicle reasonably expected to use the access, such as a refuse vehicle. The junction radii is determined by the largest vehicle likely to require access. This could be an 11.5 metre long refuse vehicle but would depend on what the junction is designed to serve.

7.2.9 Two storey height vehicular access archways should be avoided, as these introduce and emphasise a large scale to the streetscene. Where the usual 3.7 metre headroom is not considered adequate for predicted vehicle usage, archways should not be used.

7.2.10 The design of domestic crossovers, premises accesses and interconnecting minor roads should ensure that pedestrian movements are afforded priority over traffic seeking to enter or exit. The design should ensure junction radii are kept to a minimum acceptable, to reduce crossing distances and minimise vehicle entry and exit speeds.

Car and cycle parking

7.2.11 Details of acceptable parking standards are available in the Council's Parking Standards for New Developments SPD. Levels of parking provision should consider the location and opportunities for sustainable travel to key services and facilities. In terms of the location of parking, a balance needs to be struck between the ability of parking to animate the public realm (improving activity) and its potential to dominate, clutter and spoil the public realm. Rear parking courts which are further away from the property than on-street parking and are not overlooked by the vehicle owners are rarely used as intended and are discouraged. The use of parking courts should be used as a last resort in the design process and opportunties for other parking options should be explored first.

7.2.12 Public parking should be located in clear public areas and not internal to blocks. Where public parking is located internal to a block it must be designed such that the space feels public and with features that make drivers, cyclists, and pedestrians feel safe. Where landscaping is used in parking areas, consideration needs to be given to how occupants will access their vehicles. For example, ensuring there is sufficient space and hardstanding for the occupant to open the doors on their vehicle without trampling on any landscaping features.

7.2.13 Multi-storey car parks that are visible from the public realm should be seen as a piece of architecture in their own right and designed with consideration of local context and identity.

Making Provision for Walking, Cycling and Public Transport

7.2.14 Provision for walking and cycling should follow the following principles:

- Coherent - people must be able to reach their destinations easily, along routes that connect, are simple to navigate and are of consistent high quality.
- Direct - routes should provide the shortest and fastest way of travelling from place to place.
- Safe - routes must be safe and crucially must also be perceived to be safe.
- Comfortable - routes should be good quality, well-maintained, smooth, have minimal stopping-starting and avoid steep gradients.
- Attractive - environment should be attractive, stimulating and free from litter.

7.2.15 For new developments cyclists must be physically separated and protected from high volume motor traffic and treated as vehicles and not as pedestrians. Both pedestrians and cyclists should be accommodated on infrastructure appropriate for the intended use, route, context and connections. For low order streets with minimal traffic and low speeds (up to 20mph) then cyclists are able to mix with vehicle traffic.

7.2.16 Facilities for walking and cycling should run alongside the carriageway as being overlooked by drivers, residents and other users affords a greater sense of personal security. Regardless of length, all pedestrian and cycle routes away from the carriageway, should be barrier-free to ensure they are fully accessible. The adoption of LTN1/20 within new developments will be inspected by Active Travel England.

Figure 172: Cycle friendly development at Accordia, Cambridge

7.3 Key Design Principles – Pedestrian Networks

7.3.1 Nationally, pedestrian journeys make up around 27% of all journeys. In Central Bedfordshire, 50% of children walk to school. Pedestrians should be given the highest priority and places should be designed in accordance with the following key principles:

- Pedestrians should be provided with routes to all key local destinations, which should be as direct as possible, safe, and attractive and involve a walk time of 20 minutes or less (for large-scale major applications). Facilities include a play area, a shop selling convenience goods, a children's nursery, a primary school, and an amenity space equipped with a bin.
- Routes should be logical and wherever feasible, afford pedestrians with an advantage over other modes. For the most part these routes should follow the pattern of the vehicular routes.
- Routes to local facilities should reflect natural desire lines, both at road junctions, across the development and how it links into the wider footway network, avoiding right angle turns.
- Routes should be intuitive to the user seeking to navigate their way through an area they lack familiarity with. The network of routes within a development should be "legible" and memorable in terms of streets, signage, and landmarks, including public art.
- The pedestrian network should be permeable, creating high quality links for pedestrian journeys without creating an unnecessary multitude of routes that are likely to be poorly used.
- Windows overlooking the footway and activity at ground level can help create a sense of security and safety. These principles also apply to any separate footpaths and cut throughs. In most cases separate footpaths and cut throughs will also be used by cyclists and should be designed to accommodate both uses.
- A 2-metre-wide service margin should normally be provided on both sides of streets, either as a verge or footway. Possible exceptions are where one side is undeveloped, for example adjacent to an open space, in existing narrow streets in low density schemes, or where a shared surface would be appropriate. However, the design of such streets should afford a priority to pedestrian movements and in some cases, footways may also need to be secured in such locations to achieve a safe continuity of a key pedestrian route.
- Segregated footways should be appropriately surfaced and should only have low-level planting alongside them to ensure a measure of openness and security, ensuring to minimise clutter on footway as per the planting guidance.
- Many older people and people with disabilities can only walk a limited distance before needing a rest. In line with Inclusive Mobility, a resting area should be built in on main pedestrian routes every 100 metres. Suitable facilities might be a seat, a low public wall or other feature including public art installations. Ideally these should be planned to be in pleasant locations such as by play parks or other areas of activity, with good natural surveillance and be well lit.
- Footways should be clutter free. Sufficient space should be provided, either on the property side or carriageway side, to accommodate street trees, signs, streetlamps, waste bins, bus shelters or seating so that pedestrians using the footway are in no way inconvenienced or disadvantaged.
- Planting adjacent to footways and footpaths must be suitably set back to ensure there is no risk of future encroachment and obstruction.
- Where a street is designed to accommodate parking adjacent to a footway, care must be taken to deter 'half-on' behaviour. This could be through the use of designed in parking bays or using design and materials to influence appropriate parking behaviour.
- Where a cycle track is provided adjacent to a footway this should be segregated by means of a kerb and ideally, change in level.
- A marginal strip should be provided on streets designed to accommodate vehicle speeds of 30 miles per hour to aid pedestrian comfort and safety. These protective margins are distinct from service margins and could take the form of a grass verge.
- Footways and paths should be constructed to an adoptable standard and have crossfall in accordance with the Highways Construction Standards and Specifications Guidance.
- Where a footway within a development is recorded as part of the Public Rights of Way network, it should be upgraded to be of an appropriate width and have a tarmac surface.

7.4 Key Design Principles - Cycling

7.4.1 Cycle routes should be as direct as possible and safe to use by a competent 12-year-old travelling independently. Places should be designed in accordance with the following key principles:

General principles

- Cycle routes should interlink to form a permeable network and should be appropriately connected to the wider promoted cycle and road network.
- The cycle route network should serve all key destinations such as town centres, schools, shops, and local transport hubs and interchange facilities. With the widespread adoption of e-bikes, in most locations cycling offers a convenient, attractive, and sustainable alternative to using the car for local journeys of up to 3 miles.
- All dwellings and buildings should be provided with secure cycle parking in accordance with Central Bedfordshire Council's Parking Standards for New Development SPD.
- Where a cycle track borders a heavily trafficked road they should be separated from the carriageway by a verge or hard shoulder, as per guidance in the Cycle Infrastructure Design LTN 1/20.

Sharing the carriageway

- Residential fronted streets should look to have a maximum speed limit of 30 miles per hour. Where cycle and equestrian routes cross minor roads this should preferably happen at kerb height by means of a raised road table/pillow. Alternatively, where traffic speeds are higher, this should be facilitated by dropped kerbs at either side and tactile paving. Where speeds are higher than 30mph depending on the context, we may be asking for a controlled crossing. Please find detailed advice within the Cycle Infrastructure Design LTN 1/20.
- Routes recommended for cycling should be signed.
- Where on carriageway cycling is allowed for cycle lanes, cycle lanes should be provided at locations where traffic queues are likely and should have a minimum width of 1.5 metres. Advance stop lines, with appropriate lead in lanes, are encouraged as are cycle contraflows (designed to appropriate standards) on any street converted to one-way operation. Cycle contra-flows on one-way streets are only acceptable when the road width permits, otherwise this can create a danger for cyclists.

Off carriageway cycle tracks and bridleways

- Within developments, new streets that require significant traffic movements or which function as higher speed link road are required to design in a segregated cycle track, as per LTN 1/20, which should be separated from the carriageway by a verge or hard shoulder, where the design speed is 30mph or above
- Off carriageway cycle tracks and bridleways can create more direct and attractive links to local facilities such as schools. They should be unobstructed, open, overlooked by housing and lit. Segregated or shared cycle tracks/paths should be used as an alternative to sharing the carriageway on higher speed or heavily trafficked routes.
- The design of cycle tracks should ensure they are continuous and remove the need for cyclists to give way at side roads or stop to dismount. For examples, no junctions, provide raised table crossings at side roads, etc.
- Where the only option is for cyclists to share use of a path section with pedestrians the path should be at least 3 metres in width and should generally be unbounded (open with grass on either side).
- Rights of Way - Cycle tracks with equestrian access, segregated from roads, should have a dual surface, with a sealed surface strip for cycle use and an abutting grassed or unbound surface strip for equestrian use.

7.5 Key Design Principles - Designing for Public Transport

7.5.1 Places should be designed in accordance with the following key principles:

- In accordance with the Highways Construction Standards and Specification Guidance, within the street hierarchy, main streets and access streets should be designed to accommodate the operation of public and shared-transport services.
- Public transport facilities should be informed by a service strategy and plan and integrated into the design process from the outset. As part of this Plan, consideration will be given to a phased approach to serving the development as a different strategy may be appropriate during the early phases of construction (and before roads and streets are adopted).
- The location and type of public and shared transport infrastructure, including bus stops and shelters, Electric Vehicle car club bays and associated charge points, cycle docks etc, should be considered in terms of anticipated use and discussed with the Council at the outset of the design process[1].

Design requirements

- Buses require a minimum carriageway width of 6.5 metres to allow buses to pass each other safely.
- Where speed reduction measures are required on a bus route, they should be designed to accommodate buses. For example, speed bumps or tables should be flat on top for a distance greater than a bus wheelbase.
- Bus lay-bys or stops within the carriageway should be clearly marked in yellow and be of a sufficient length to accommodate a 15-metre-long bus. Along bus routes inset bays for car parking will be required to prevent any obstruction.
- Bus stops should be located such that they are within a 400-metre radius of properties and buildings served, equivalent to a 5-minute walk for able bodied persons (based on an average walking speed of 80 metres per minute). A clear route to the bus stop should be provided with pedestrian crossings where necessary. Directional signage should be used to emphasise the location of bus stops within a new development.
- Bus stops should be also integrated near existing features such as town squares, schools, shops, high-use rights of way or community facilities where possible. Certain facilities can function as a mobility hub, where you can interchange across differing services and modes of transport, this can be developed as a key stop which should be provided in the most connected location and designed to accommodate more travel information such as a bigger display board, a bus shelter, and seating. Bus stops should not be located directly in front of residential properties to protect amenity, where possible.
- Subject to an assessment of need, most bus stops should include shelter, seating, lighting, and real time travel information. Bus Shelters should be provided that have clearly transparent sides to ensure bus user safety and be fully in line with Central Bedfordshire Council's Bus Stop Specification Guidance, available on request. Raised kerbs should also be implemented for level access.
- 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. Specific design information can be found in the Highways Constructions Specifications and Standards Guidance for Central Bedfordshire.

[1] - Depending upon the legal and policy status of each mode at the time proposals are developed.

7.6 Street Design Principles

7.6.1 All streets are required to following basic overarching principles set out in figures 173 to 178 to ensure streets are accessible and safe.

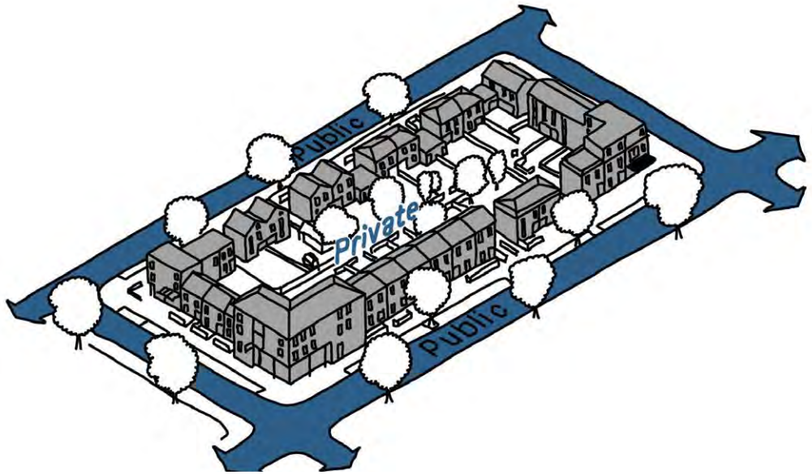
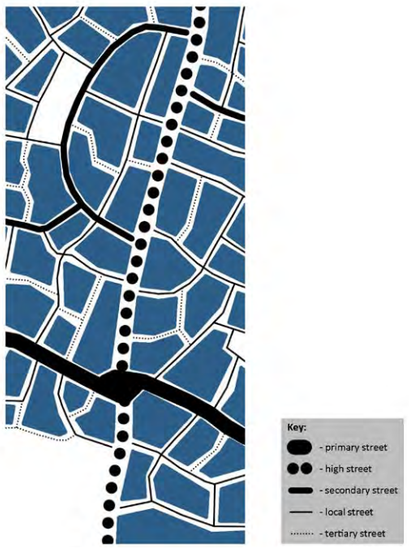


Figure 173: Creating a sense of enclosure will help to ensure that buildings take priority rather than roads



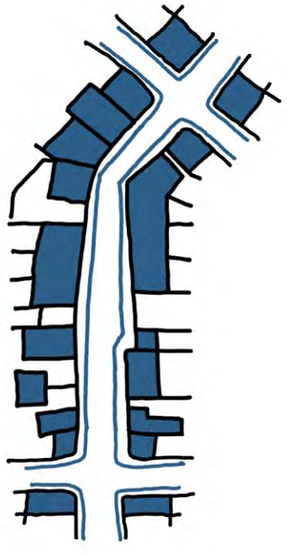


Figure 174: (left) A clear hierarchy of avenues, streets, squares, and courts create a legible structure
Figure 175: (right) A coherent, legible street network allowing logical building layout and connections where appropriate

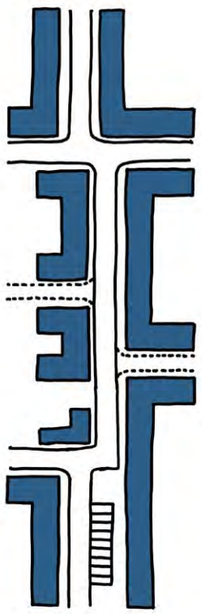


Figure 176: (left) Frequent changes of direction and tight corners with narrow sight lines can, where appropriate, control speed (these should be checked by tracking and compliance with the appropriate standards)
Figure 177: (right) Shared surfaces and the reduction of signs convey to the driver a sense of entering a pedestrian priority space

Figure 178: Streets with irregular carriageway, with tracking to show underlying geometry

7.7 Street Typology and Hierarchy

Street Hierarchy

7.7.1 The hierarchy of different routes (including any pre-existing public rights of way) should be considered at the outset of the design process as it influences the spatial characteristics of the development. The setting of a development site is likely to influence the hierarchy of streets and their layout. Well-designed linkages to adjacent areas and to the surrounding public rights of way network are vital in ensuring the development is well integrated within the area and prioritises walking, cycling and public transport. The guidance set out in this Design Guide should be used in conjunction with Central Bedfordshire's Local Transport Plan, Highways Construction Standards and Specification Guidance, and other supporting strategies to inform the design process from the outset.

7.7.2 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 street will be expected to accommodate.
- Land uses along the street.
- Whether the street forms part of a main, access or minor route.
- Whether the street is required to accommodate HGV movements.
- Whether the street will be used by public transport (with consideration as to directionality of bus routes).
- Whether the route is exclusive to pedestrians, cyclists, and equestrians.
- Whether pedestrians and cyclists should be provided with segregated facilities.

Functional Street Types

7.7.3 A development may incorporate all or a selection of the following functional street types: Shared Minor Street, Minor Streets, Access Streets, Main Streets and Collector Streets, all of which have a design speed of 30 miles per hour or less. Larger developments may also require more major roads (with speeds of 40 miles per hour or higher) and 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).

7.7.4 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 routes. Typical characteristics for each functional street type can be found within Chapter 3 of the Highway Construction Standards and Specifications Guidance.

Street Character

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

7.7.6 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.

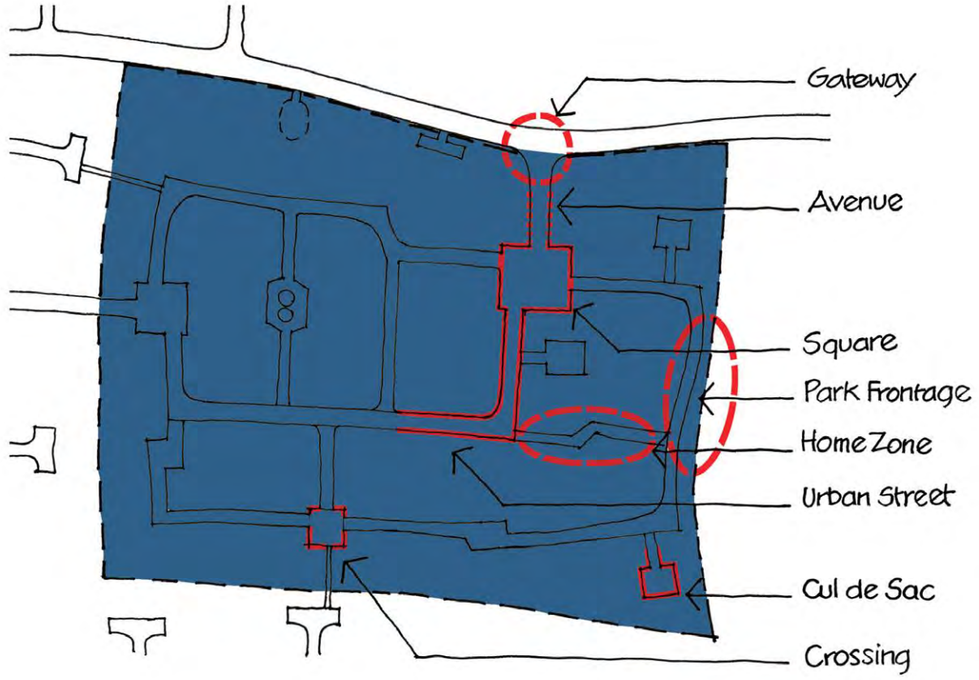


Figure 179: Assessing the street character and the focal points of the development

Street Character Typologies

7.7.7 Avenue/Boulevard (Collector Street Typology) – A street taking on different characteristics such as suburban tree planted verges or an urban main route with tree lined pavements.

Figure 180: Avenue/boulevard, Fairfield Park

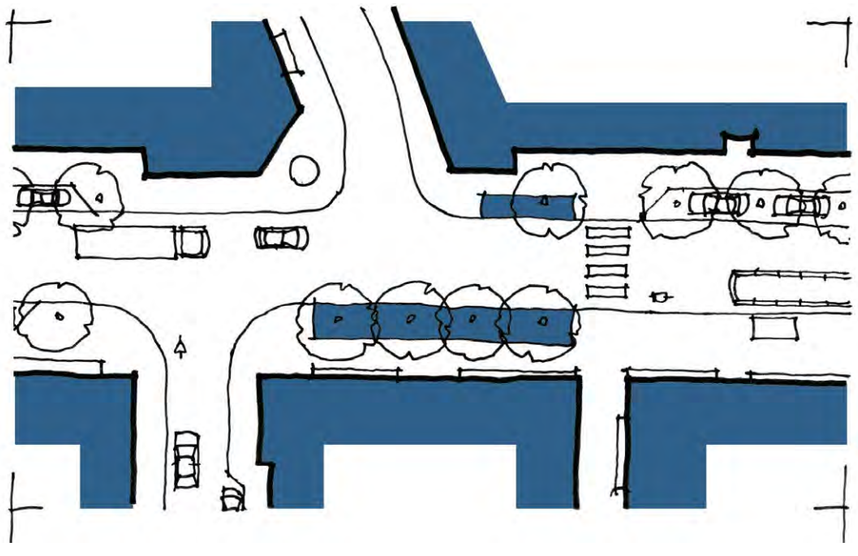


Figure 181: Avenue/boulevard layout

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

Figure 182: Urban Street

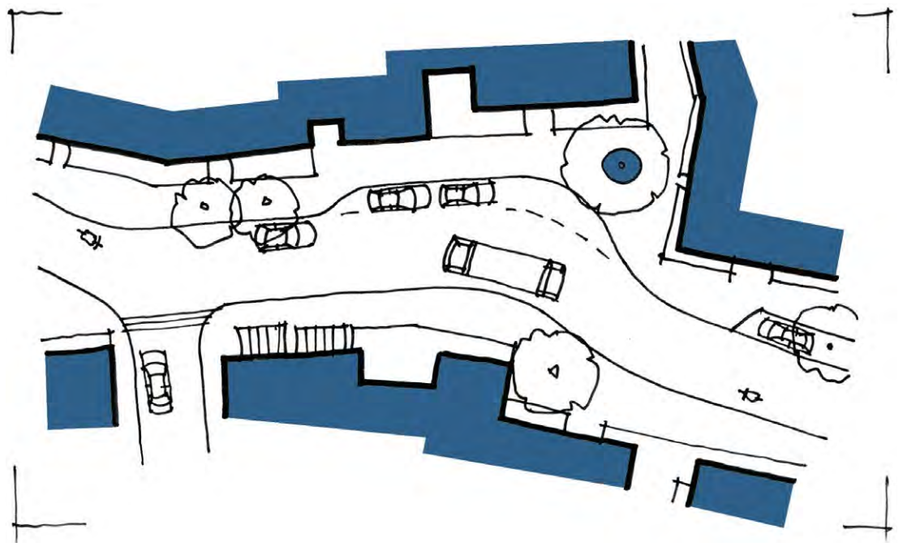


Figure 183: Urban Street layout

7.7.9 Suburban Street (Access Street/Minor Street) – A street where buildings are set back to give a more open aspect compared with an urban street.

Figure 184: Suburban Street, Ampthill

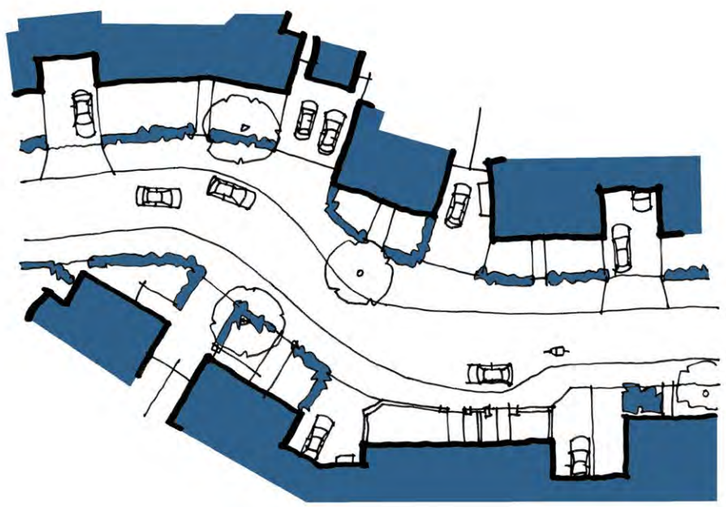


Figure 185: Suburban Street layout

7.7.10 Square (Minor Street) – An area defined by formally arranged buildings. To establish a sense of place routes through should be indirect.

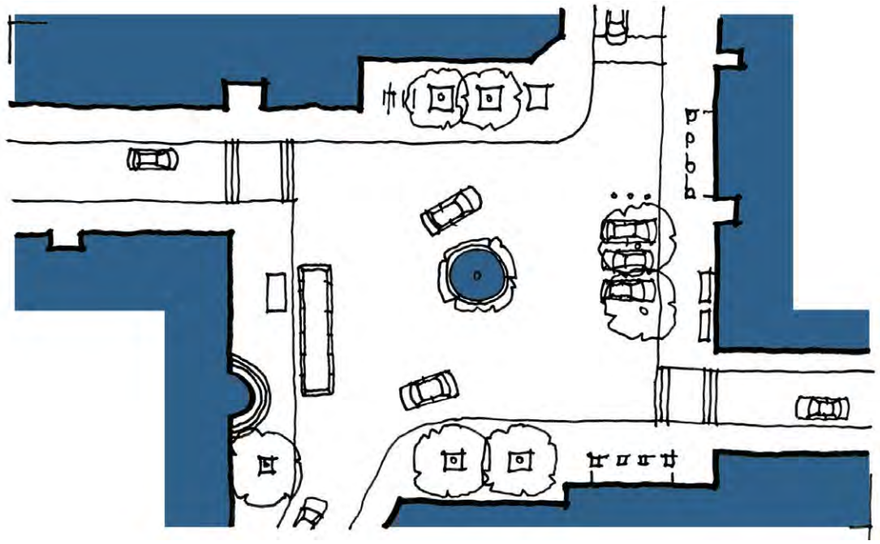


Figure 186: Square layout

7.7.11 Shared Minor Street – 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.

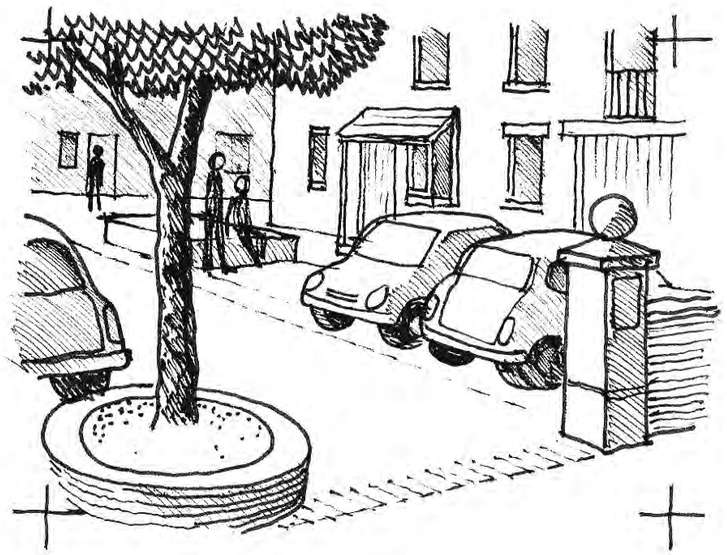


Figure 187: Shared Street puts people first

7.7.12 Mews (Shared Minor Street/Minor Street) – A small street or courtyard surrounded by closely set buildings to give a sense of enclosure.

Figure 188: Mews development gives sense of enclosure, Timber Lane

7.7.13 Lane (Minor Street) – 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.

7.7.14 Private Driveway (Shared Minor Street) – 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 shared street

7.7.15 Path – A residential frontage onto a path through a development which is accessible for pedestrians and cyclists. Paths should be used exceptionally and over short distances

7.7.16 Public Right of Way - A segregated route through areas of public open space or a long a green corridor, possibly alongside SUDS or SWABs (Surface Water Attenuation Basins) that connects into the wider public rights of way network. These are overlooked by nearby properties and roadways and create green corridors with tree planting that allow both leisure walking and cycling as well as active travel/commuting in a traffic-free environment.

Street Parameters

7.7.17 The key parameters which should be considered in designing functional street types are set out in the Highways Construction Standards and Specification Guidance. Consideration should also be given to the Manual for Streets and the Design Manual for Roads and Bridges.

7.8 Street Trees

7.8.1 Trees have an important, multi-faceted role to play in the design of streetscapes and contribute in multiple ways to the surrounding area. They help to reduce and slow surface water run-off, thus helping to mitigate against localised flooding; they provide shade, which is important in large areas of hard surfaces such as streets; and they create habitats and corridors for biodiversity. They also provide great amenity to the surrounding area. Trees also have an important role to play in slowing vehicle speed by visually narrowing the width of the carriageway. Where developments involve new roads, streets, pedestrian or cycle links, tree provision should reflect the street and space hierarchy and deliver streets that are tree lined, in accordance with the NPPF. Trees should be provided in all public spaces and parking areas.

7.8.2 Trees in private gardens will not count towards meeting the NPPF requirement for street trees. If they are proposed as part of a landscape scheme they must be provided in addition to any trees within the public realm.

7.8.3 Innovative use of landscaping and the inclusion of trees should be used to soften the appearance of car parking and make the area aesthetically pleasing. Where landscaping is used in parking areas, consideration needs to be given to how occupants will access their vehicles. For example, ensuring there is sufficient space and hardstanding for the occupant to open the doors on their vehicle without trampling on any landscaping features.

7.8.4 All parties should enter into formal pre-application discussions with the Council, which is helpful for identifying planning issues relevant to a specific site and it is more likely that existing trees can be successfully incorporated into the design if considered early in the planning process. Landscape plans must illustrate how trees and soft landscaping will enhance all public open space, streetscapes and public realm, parking areas and gardens.

7.8.5 The Council expects existing trees to be retained within new developments. Applicants must consider tree retention as a high priority and at the earliest point in the design stage. It will be necessary to demonstrate that tree retention has been fully considered as part of the planning process. It is expected that all relevant applications should be submitted with a Tree Survey (in accordance with the BS5837) to identify the classification of trees and those to be removed and those worthy of retention.

7.8.6 The provision of site access, roads and driveways should be placed to minimise the need to remove trees and hedges for sightlines. Applicants should not seek the removal of trees as a first step to achieve sightlines.

7.8.7 Notwithstanding this, whilst tree cover should be maximised, tree and soft landscape planting should be designed with due consideration to visibility splays and general highway safety. Any planting should be clear of visibility splays both at the time of planting and with consideration given to expected growth and spread.

Collaborative working with the Council is recommended to avoid unnecessary tree loss. The Council recognises the importance of increasing tree diversity across its network. To reduce the risk of catastrophic tree loss due to pests we recommend planting no more than 10% of any one species, 20% of any one genus or 30% of any one family.

7.8.8 The scale of street tree planting should be in accordance with the relative importance and hierarchy of each street in the movement network. Street tree planting should also be designed in accordance with Central Bedfordshire's Highways Construction Standards and Specifications Guidance. The key considerations for the different route and hierarchies are set out below:

- Strategic Routes/ Collector Street – To be designed as able to accommodate large species of trees on both sides of the highway, preferably utilising semi-mature stock. Where the route passes through existing or proposed developments or significant areas of hard standing it should be flanked on both sides of the highway by soft landscape zone incorporating trees and green and blue infrastructure, e.g. SuDS features to holistically manage water runoff onsite to reduce the quantity, and increase the quality, of surface water that drains into sewers from a development (e.g. rain gardens).
- Main Streets – To incorporate large trees species (medium sized may be acceptable, depending on the species and the context) on either one side of the street, or, on alternate sides using preferably semi-mature stock. Bus routes and access roads with several side streets are, for example, significant enough to require large trees. To be flanked on both sides of the highway by a minimum of 3 metre soft landscape zone incorporating trees and SuDS features, (e.g. rain gardens).
- Access and Minor Streets - include one medium sized tree species, verges or other communal planting areas using preferably 18-20 centimetre girth or greater stock. Should aspire to delivering a 3 metre plus soft landscape zone incorporating trees and SuDS features, (e.g. rain gardens) and incorporate medium and large trees and other soft landscape within play areas (LAPs, LEAPs and NEAPs), sitting areas, modal filters and other features and points of interest throughout the neighbourhood.
- Active Travel Corridors – To include trees and soft landscape to form an integral part of the corridor, with planting designed to emphasise the route, supporting legibility, and providing shade. To incorporate SuDS features within the soft landscape design (e.g., rain gardens) as part of the landscape and water management strategy. To incorporate trees within play areas, sitting areas and other features along the route that encourage sociability and exploration. Tree canopies also create shaded areas reducing UV and urban heat gain
- Focal Spaces, Nodes and Public open space - These are features of interest within Neighbourhoods, Active Travel Corridors, nodes or more formal squares within local centres and the wider public greenspace network. These are places where people can gather, rest, enjoy the view. Trees and soft landscape are critical in helping to create a sense of place or drama within these areas, as well as provide shade, places to sit and opportunities for socialising. All structural trees are recommended to be planted at semi-mature size.

7.8.9 Table 9 sets out the size class which reflects The Trees and Design Action Group (TDAG) sizes and examples of the type of trees within each class. However, this list is not exhaustive, and the type of species will be dependent on the context and where it will be located.

Table 9: Examples of trees and size classifications

Size Class	Mature Size (Metres)	Examples
Small	<10m	Hawthorn, Cherry Plum, European Crabapple
Medium	10-15m	Field Maple, Callery Pear, Rowan
Large	15-25m	Norway Maple, Hornbeam, Turkish Hazel
Massive	25m+	Pedunculate Oak, Common Lime, Scots Pine

Figure 189: Street trees incorporated into grass verges along street, Steppingley Road

Figure 190: Street trees incorporated into grass verge, Ampthill

Figure 191: Careful siting of trees and using suitable species is important so that it does not obstruct visibility, Fairfield

Street trees and parking

7.8.10 Large areas of car parking severely undermine the quality of residential developments. High quality landscape design, utilising new tree planting to enhance areas of hardstanding along with low level landscaping, can improve the visual aesthetics of a residential development, moderate the microclimate (e.g. reduce summer temperatures through shading) and provide many other environmental benefits. Where landscaping is used in parking areas, consideration needs to be given to how occupants will access their vehicles. For example, ensuring there is sufficient space and hardstanding for the occupant to open the doors on their vehicle without trampling on or hitting the landscaping features.

7.8.11 For further guidance see the Parking Standards for New Developments SPD.

Conflict management

7.8.12 Conflicts with above and below ground utilities, sightlines, street lighting and shading of solar panels can result in pressure to prune or remove trees in the future, once they have become established and grow larger. Landscapes should be designed to ensure that new tree planting has priority, with careful consideration given to predicted tree sizes and potential future conflicts. Planting new trees close to buildings, infrastructure, and private gardens, may limit their future potential canopy size and leaf area either through physical barriers or through pruning requirements.

7.8.13 The selection of an appropriate species will be vital in terms of the impact that it will have on the surrounding environment. There should be adequate space allowed for newly planted trees to reach their full mature height and spread without causing nuisance to adjacent buildings and occupants.

7.8.14 Trees should be given appropriate growth space away from main buildings that will be sufficient throughout their life cycle. This excludes small structures such as garages and bin stores. Trees with a fastigiate habit will be considered in their own context and with potential variation from these distance requirements.

7.8.15 Planting trees into hard landscapes, such as pavements or public squares may be required in some circumstances to break up large areas of hard surface. However, such planting can present unique challenges with regards to tree establishment and thus to maximising future benefits. Factors relevant to hard landscapes can include soil volume, water infiltration, drainage, aeration, and soil compaction, along with simultaneously providing structural support for hard surfaces. Where additional new trees are to be planted within areas of hard landscape, applicants should use proven, up-to-date technical solutions to tree pit design in these areas.

7.8.16 These solutions may also serve multiple purposes, such as storm water management. The amount of soil volume required for the trees to successfully establish and mature should be calculated and justified. Street furniture should be carefully considered in relation to context, and soft landscaping features. In some circumstances street furniture can help to protect trees within public spaces which enhances their lifespan and quality.

Integrating street trees with wider objectives

7.8.17 Tree pits and planters can be designed to collect and attenuate run off by providing additional storage within the underlying structure. The soils around trees can also be used to filter out pollutants from run off directly. The Council supports the integration of trees with the drainage system and use of SUDS on new developments to help drain the adoptable highway. Design guidance around trees in hard landscapes and surface water drainage can be found in the CIRIA Suds Manual C753, Chapter 19. This chapter is concerned specifically with use of trees in planting beds, pits, structural soils below pavements and similar structures as part the surface water management system.

7.8.18 For further guidance on the placement of trees please consult the Highway Construction Standards & Specifications Guidance.

7.9 School Streets and Play Streets

7.9.1 The built environment is an important space for social interaction and opportunities to foster and encourage community spirit and outdoor play for children and young people should be maximised wherever possible. Creating a safe and sustainable environment for children's journeys can help to embed positive attributes around active travel and create an environment outside the home that people want to use and engage with. Two opportunities for this are the ideas of school streets and play streets, that are often retrofitted where opportunities allow.

School Streets

7.9.2 School Streets are designed to be closed to motor traffic at one of both ends of the school day. Scotland was the first in the UK to introduce school street schemes in 2015. Camden was the first in London in 2017. This initiative can have health benefits around active travel and air quality, road danger reduction and encouraging independent mobility.

7.9.3 School streets are unique in that they have a different dynamic in terms of traffic flows, parking, the busy periods (drop off and pick up) and the hazards from the users. Whilst the Council has guidance on footways and how they should consider the number of pedestrian movements and uses nearby such as schools, additional options and opportunities can be considered to make the environment around schools as safe as possible.

7.9.4 Local authorities in the UK have powers under the Road Traffic Regulation Act 1984 (s1 and s6-9) to regulate traffic and restrict access:

- to avoid danger to persons or other traffic using the road,
- to facilitate the passage on the road of any class of traffic (including pedestrians),
- to prevent the use of a road by vehicular traffic where such use is inappropriate given the street context.

7.9.5 A traffic management order is applied to a street around a school, temporarily restricting access to motorised vehicles. That street will in, effect, become a pedestrian and cycle only zone. Times for the restrictions are determined in agreement with the school. These can be for between 30-45 minutes and only on weekdays and term times. The Statutory Guidance was published in May 2022 for all local authorities so that they apply to the DfT to enforce school streets with moving traffic offence powers.

7.9.6 Further information, including case studies, can be found on the School Streets website.

Play Streets

7.9.7 Play streets (or 'playing out' sessions) are neighbour-led short road closures, creating a safe space for children to play freely together on their doorstep. Play streets typically allow children to play freely, without organised games or activities. In practice, this means children use streets to cycle, scoot, skate, chalk, skip, hopscotch, kick a ball around and make up games.

7.9.8 This model was first developed by parents on one street in Bristol in 2009 and has now been taken up by hundreds of street communities all over the UK, supported by councils and local organisations. Play streets give children a chance to play, be active and make friends on their street, whilst also building community and encouraging active citizenship. As well as these immediate benefits, they can help to bring about a longer-term culture-change, where streets are safer and friendlier, and it is more normal for children to play out.

7.9.9 Having time and space to play is widely recognised as fundamental to every child's health, happiness, and development. Unlike organised or paid-for activities, playing outside near home – where it is possible – is also fun, free, and open to all children. But children in the UK are less and less able to play out as they once did. Children haven't changed but the world around them has. National and local decisions around traffic, communities, housing, planning and education have not considered children, pushing them out of streets and public space.

7.9.10 Further information, including case studies, can be found on the Playing Out website and any initiatives proposed will need to adhere to the Highway Construction Standards & Specifications Guidance and Parking Standards for new developments SPD.

7.10 Shared minor streets

Shared spaces

7.10.1 Shared spaces can often go by different names (shared spaces, level surface streets, shared minor streets, home zones, etc.). However, to align with the street hierarchy in the Highway Construction Standards and Specifications Guide they shall be referred to as 'shared minor streets' and can be used as a method to enhance a street's sense of place while maintaining the ability to accommodate vehicular movement. The space should be designed such that pedestrians are afforded priority over vehicles within the space. It should also be clear as to where vehicles are required to park within the space so that they do not present a barrier or obstruction to pedestrian movement.

7.10.2 Shared minor streets change the way streets operate by seeking to reduce 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. The design must make it clear that pedestrians have priority across the space and are not restricted to the side of the street. When designed well, with appropriate features and landscaping to visually break up the space, a shared surface can facilitate increased social interaction and children's' play activities, encourage people to spend longer in the street and enable crossing at locations, angles, and times of their choosing.

7.10.3 Proposals for shared minor streets will be supported where appropriate on minor streets in Central Bedfordshire, serving a limited number of dwellings. For pedestrians to safely share the space low traffic flows and speeds are necessary. Shared minor streets may also be considered in locations of historical and cultural significance and at junctions, or within squares that are not designed to accommodate parking (as this can impact intervisibility).

7.10.4 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 will need to respond to the context and function of the place.

7.10.5 The needs of all street users should be considered from the outset of the design process. If poorly designed, shared minor 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, 2021) provides advice on accommodating the needs of disabled people in the built environment and much of the guidance remains valid in shared minor streets settings. The following principles should be adhered to in designing shared spaces.

7.11 Key Design Principles

7.11.1 Proposals for shared minor 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:

Location and Design Speed

- They are most appropriate for minor streets at the lowest end of the hierarchy, serving fewer than 20 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 15 miles per hour speed and hence the layout and features must ensure that this speed limit is adhered to.

Defensible Space

- Where parking occurs to the side of the property, there should be a minimum private defensible space of 2 metres to the front of the property, such as shrubbery planting. Consideration should be given to the location of electric vehicle charge points on each dwelling to reduce hazards from trailing cables.
- Where terrace housing occurs and hence where there is no parking to the side, there should be at least 1.5 metre defensible space to the front of the property. Again, consideration should be given as to where individually metered electric vehicle charge points will need to be provided if there is no parking within the curtilage of each dwelling. In the case of terraced housing, consideration may need to be given to the provision of a local neighbourhood electric vehicle charging hub.
- Anything located within the defensible space should be a maximum of 0.6 metres high to provide sufficient visibility for small children.

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 and consideration should be given as to whether a Traffic Regulation Order will be needed to control its use.

Width

- They must be designed to accommodate on-street parking including for cycles. Consideration also needs to be given for large vehicles where these must access and pass through the space and a swept path analysis must be undertaken to ensure that this can occur. Appropriate visibility splays must also be achieved.
- Shared minor streets should have a typical width of 8.8 metres, with no upstands or kerbing within that width. There should be no separate footways, but they must provide safe routes for pedestrians. Bollards could be used to create pedestrian-only spaces in front of dwellings if required.
- In order to improve the overall environment of the street for the pedestrian as well as slowing traffic down, the street can be narrowed for short stretches to a single lane not less than 3.7 metres, although consideration must be given to pedestrian routes in these locations. Any narrowing should not occur for stretches longer than 5 metres and can typically occur through planters, trees, kerbed islands, or bollards.
- The location and design of utilities must be discussed at an early stage with the Council. Drainage channels should be located to avoid unintentionally demarcating footpaths or parking.

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:
  - Designing the layout of development to ensure streets including building lines have significant variation in horizontal alignment (i.e. creating bends in the street)
  - Where the building line remains predominantly straight, horizontal deflection of the carriageway can be caused by: enclosure of the street; trees and planting; planters and other street furniture such as bollards and lighting; narrowing; and designed in car parking spaces including EV charging bays, at different angles with different surface material (to create chicane effects).

Materials

- In order to emphasise their difference from conventional streets and to vary the character across a development, the preferred surface material for shared minor 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.

7.12 Cul-de-sacs

7.12.1 The use of cul-de-sacs should not hamper the overall movement framework for a development and should adhere to the following principles:

- They should not be included on pedestrian desire lines such as to shops, schools or other facilities which would then require segregated footways leading to the destination.
- They should not be arranged and designed such that they reduce legibility and wayfinding across a development for pedestrians.
- Pedestrian and cycling routes off cul-de-sacs will be acceptable and are encouraged. However, the public space that the route passes through should be designed into the overall layout of the development. This will ensure that it feels safe and comprises a 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).
- Where onwards passage from a cul-de-sac is required to maintain the route of a public right of way, this will need to meet the above criteria of being overlooked and set within a wider corridor to avoid creating any tunnel effect.
- New developments should be designed to avoid the need for service and emergency vehicles to reverse. Careful consideration needs to be given to how large vehicles will turn at the end of cul-de-sacs. Turning areas could for example be designed around an attractive open space or a parking court, with waiting restrictions in place to avoid turning heads becoming unofficial parking bays.

7.13 Turning and Servicing

7.13.1 In locations with a single point of access a turning area should be provided for the type of vehicles likely to need to take access, such as service vehicles (refuse collection and deliveries [6.5-metre-long vehicles]) and emergency vehicles, in both adoptable and private areas. 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, for example using well designed inset parking bays within the streets.

7.14 Detailed Street Design

7.14.1 Specific highways detailing is set out within the Central Bedfordshire Highway Construction and Specifications Guidance.

7.15 Kerb Design

7.15.1 Standard grey kerbs and plain blacktop footways and carriageways may be the standard approach to use however 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.

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

Figure 192: Blacktop carriageway and footway with small element kerb

7.16 Surfacing Materials

7.16.1 Dense Bitumen Macadam (tarmac) provides a smooth flexible surface and is commonly used on both carriageways' footway and internal footpaths, including those designated as public rights of way. 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.

Surface Dressing

7.16.2 Bound gravel surfaces are more appropriate in rural settings, but are also suitable in other instances such as 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 (tarmac). Surface dressing products should not be confused with aesthetic products such as Golden Gravel when a proper inlay is required

7.16.3 The use of loose gravel is unacceptable in the public realm. Gravel surfaces should be used for aesthetic areas only such as planted areas and not areas that are going to be driven on (driveways) or footpaths to front doors. Gravel is not accessible for wheelchair users and makes it difficult for wheeling bins in or out and can cause spillage onto the highway. It should be used more for temporary arrangements rather than a permanent fixture.

Block Paving

7.16.4 Block paving can offer a good alternative to blacktop surfacing in locations where there are fewer vehicle movements, such as on minor residential streets. There is also the opportunity to use permeable paving as part of a sustainable drainage system (SuDS), this will need to be discussed in detail at the planning application stage to ensure that it can be adopted or that commuted sums are put in place. Plain concrete pavers 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.

Figure 193: Block paving to front of houses, Ampthill

Figure 194: Block paving to front of houses, Timber Lane

7.16.5 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.

7.16.6 Granite setts generally provide a less even surface and are best suited to areas where low vehicle speeds are desirable and in small areas to provide detailing. 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.

7.16.7 With both block paving and paving slabs the depth of the material chosen will need to reflect its usage. For example some blocks and paving slabs are not designed to take the weight of a vehicle and are for use in pedestrian and cycle arears only.

Figure 195: Tumbled blocks

Figure 196: Concrete blocks

Figure 197: Granite setts

Figure 198: Clay block paving

Paving Slabs

7.16.8 Plain grey concrete slabs are of low cost and durable, 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 footways and footpaths. Use should be directed towards areas within the property curtilage or for shared areas around parking spaces. Care needs to be taken in their specification and location to minimise the likelihood of damage by vehicle overrun. Paving slabs tend to cause more of a maintenance issue with slabs coming loose, becoming uneven and creating a trip hazard. Some natural stone slabs may require the payment of a commuted sum to cover higher maintenance costs.

Figure 199: Concrete paving slabs laid in a radial pattern

Kerbs and Edges

7.16.9 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 wide kerbs and this, particularly when combined with paved drainage channels, can add definition to the street.

Figure 200: Short granite kerbs

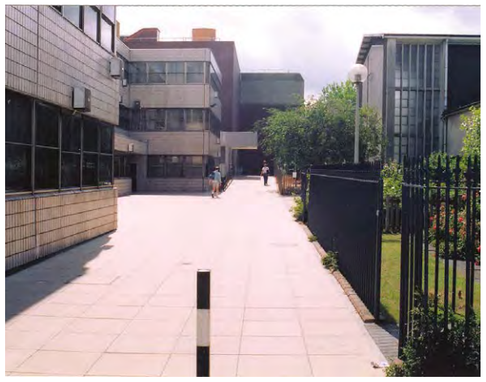


Figure 201: Textured concrete slabs

7.17 Boundary Treatments

7.17.1 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, fences, or hedging. In other places the edge of the highway can be delineated by a flush concrete edging or by a change in surface treatment.

7.17.2 In some urban locations it may be more desirable to provide a consistent paving type between the face of buildings and the edge of footways. 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.

Figure 202: Concrete edging

7.18 Verges, Margins and Private Strips

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

Figure 203: Pebble paving used on private strip

Figure 204: Concrete blocks used on private strip

7.19 Tactile Paving

7.19.1 Tactile paving should be provided at locations where pedestrians are directed to cross a carriageway at grade, although these may not always be suitable for shared spaces and shared minor streets. 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.

Figure 205: Tactile paving

7.20 Drainage

7.20.1 Drainage channels formed from 2-5 rows of granite sets are a 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. Standard inspection covers and gulley gratings complying with the required standards. The detailing of these and how they fit into the overall paving pattern is important.

7.20.2 Gratings and gully covers should be clear of pedestrian 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 Resources section and the Council's Sustainable drainage supplementary planning document.

Figure 206: Granite setts used as drainage channel

Figure 207: Blockwork drainage channel with grating

7.21 Street Lighting

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

7.21.2 Lighting should be provided by overhead streetlamps 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.

7.22 Signage and Street Furniture

7.22.1 Signs should only be provided where they are necessary to meet an established need. A need would be where that sign is a legal requirement to support the highway design layout, for example one-way signs, weight limits, banned turns, no entry etc. Additional signage may include directions for cyclists to key destinations.

7.22.2 For cycle and pedestrian wayfinding signs, the use of standard white on blue fingerpost signs is required for reasons of network consistency as is the use of travel times in preferred to distances. This is the case for cycle route signs but not always for walking routes, for example in town centres there may be bespoke wrought iron signs that form part of a local signage network. Where this is the case and additional signs are required as part of a development the new signs should match the existing. If travel times are included for key destinations, calculations of travel time should assume a 12mph average cycling speed and 2.5 mph average walking speed.

7.22.3 In a legible place with a strong sense of character there should be little need to direct people. Hazard warning signs should only be used where a hazard is unexpected and the speed limit is higher than 20mph. Where possible, unexpected hazards should be designed out of new developments, reducing the need for such signs to locations where the inclusion of a hazard is unavoidable. The intrusion of signs can be reduced by specifying the smallest signs permitted and for the signs to be incorporated into street furniture such as bollards, and for repeater signs to make use of existing street furniture, such as mounted on lamp columns.

7.22.4 In general, large advanced direction signs and direction signs are not required within residential areas. If a through route is incorporated into a development, direction signs could be used temporarily, but not permanently unless there is a proven need - for example the through route is designed to form a link to a main route such as the M1. Too many direction signs and advanced direction signs going in that are not necessary where destinations are inconsistent with the surrounding signage network can cause confusion and clutter. New road layout ahead signs should be avoided and where absolutely necessary should be removed within 3 months.

7.22.5 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 rule, the minimum size permissible should be chosen consistent with road safety considerations. Street name plates should be of a type in keeping with the locality and where possible and should be mounted on buildings or walls.

7.22.6 Sign illumination requirements should also be considered. the TSRGD 2016 downgraded the illumination requirements for some signs, particularly where the speed limit is 20mph. Wherever possible signs should not be illuminated, but should use the appropriate class of sign material to ensure that the sign is visible to traffic throughout the hours of darkness. This should follow the rules set out in the TSRGD 2016.

7.22.7 Street furniture such as electric vehicle charging pillars, 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.

7.23 Public Art

7.23.1 Public Art can help to create a sense of place and contribute to the design, theme, and character of a development. It can also help with navigation of streets and spaces. 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. Further guidance on Public Art is available in the Public Realm section of this Design Guide.

7.24 Provision for Services

7.24.1 When locating services, consideration should be given to future maintenance and the need to provide access whilst maintenance is being carried out. The location of access covers should not significantly affect the movement of people and vehicles and should be located outside of expected wheel tracks of cycles and motorcycles. Access covers should not be located on unsurfaced bridleways or on bends of any cycling route. 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. These should be located outside of visibility splays. A 2-metre margin strip is required on both sides of the street (e.g. in verges, shared surface or footway) see Street Works UK Guidance.

7.25 Accessibility

7.25.1 All users must be accommodated within the built environment. This includes older people, children, wheelchair users, those with pushchairs or those with a range of other disabilities. This should not be an addon where special provisions are made but should be integrated into the design process at the outset.

7.25.2 The consideration of accessibility and futureproofing in the design of new homes is well established and new development must conform with policy H2 of the Local Plan which requires 35% Part M4(2) – Accessible and Adaptable Dwellings and 5% Part M4(3) Wheelchair Accessible Homes. However, consideration also needs to be given to the spaces outside of the home. Creating and maintaining an accessible public realm is crucial for ensuring that people with disabilities are not excluded from playing a full role in society. Inclusion should be a key consideration during the early phases of designing new developments, as we need to make sure that all individuals have equal access, opportunity and dignity in the use of the built environment. Inclusive design is essential as an accessible environment will result in added value to a project.

7.25.3 There are numerous legislative responsibilities that directly relate to discrimination and equality, and these have particular relevance to disability rights. Three primary pieces of legislation have the most influence, namely, the 2010 Equality Act (EA), the Regulatory Reform Order (RRO) and the Special Educational Needs and Disability Act (SENDA). Also relevant, to a limited degree, is the Human Rights Act (HR). All this legislation has implications for employment, transport, education, service provision and premises.

7.25.4 The Equality Act requires that reasonable measures have been taken, it has an anticipatory duty, and for those working on public buildings, has additional public sector duties. As the Equality Act is civil-led, rather than building-led legislation, it is the activity that falls under the Act, not the building. There are no technical standards that apply, but nevertheless, adherence with the legislation is obligatory. A building either enables or disables a person from accessing services or employment. Any architect or designer has a professional responsibility to provide advice on the requirements of the legislation and it is crucial that buildings meet inclusion requirements now and in the future.

7.25.5 The UK is leading the way in inclusive design and has some of the best guidance available, such as

- BS 8300-2:2018 Design of an accessible and inclusive built environment. Buildings - code of practice,
- The Sign Design Guide,
- BB102, Inclusive Mobility: making transport accessible for passengers and pedestrians
- Accessible Sports Facilities.

7.25.6 There are also awards to recognise the projects that have best combined good design and good access. Qualified access consultants have been influential in the Selwyn Goldsmith Civic Trust Award and the new UIA Friendly Spaces Award, both of which celebrate inclusive and universal design.

7.25.7 People's needs differ greatly, and engagement should be a constructive process to ensure that these needs are understood and responded to. Engagement should include a wide and appropriate range of people who have a protected characteristic defined in the Equality Act 2010. This will include disabled people, such as: mobility impaired people, including wheelchair users; people with non-visible impairments; older people; vision impaired people; people with a hearing impairment; people with a learning difference and other neurodiverse people. Effective engagement enables designs and schemes to be tested with end-users, maximising inclusivity.

7.25.8 Planners and designers should also engage with other key stakeholders, such as local authority access officers, other equality & diversity professionals, engineers, architects, surveyors and transport providers. Engagement should continue throughout a project, contribute to the design, and might include user tests and trials. Advice is also available from a variety of local organisations and national disabled people's organisations such as the Royal National Institute of Blind People (RNIB) and the Royal National Institute for Deaf People (RNID), and Disability Rights UK.

7.25.9 Advice on engagement with stakeholders and on engaging with people with non-visible impairments within the context of walking and cycling is provided in the Department for Transport publications Local Cycling and Walking Infrastructure Plans: Technical Guidance for Local Authorities and Local Transport Note (LTN) 1/20 on cycle infrastructure design. The latter also advises on the importance of engagement with local groups representing the interests of disabled people and has references relating to consideration for visually impaired people throughout.

Accessibility considerations

7.25.10 All developments should be designed with accessibility in mind. Key area to consider and implement in the design process are as follows:

- Accessibility: The ability of people to move around an area and reach places and facilities, including older and disabled people, those with young children and those carrying luggage or shopping.
- Compact form of development: Development that is planned with a relatively high residential density and an urban layout. Community facilities are closer to one another and their users, preserves more open landscape, and makes efficient use of land and resources.
- Walkable: Local facilities are within walking distance, generally considered to be no more than a 20-minute walk, with key facilities such as bus stops being within 800 metre radius
- Destinations: Places or facilities that people want to visit. In a neighbourhood these may be transport hubs, open spaces, local services such as schools, shops, healthcare or community facilities.

7.25.11 It is also important to appreciate the different aspects of a disability and how this may mean that person engages and interacts with the built environment around them. There are various ways or models used to define disability, but in functional terms this guidance is mainly concerned with the following:

- Mobility impairments: includes people who use wheelchairs and those who can walk but only with difficulty, often using some form of aid such as a stick or walking frame. Approaching 70% of disabled people have a mobility impairment; those with walking difficulties outnumber wheelchair users by about 10:1.
- Vision impairments: vision impaired people include blind people and partially sighted people. According to the National Health Service (www.nhs.uk/conditions/vision-loss), there are almost 2 million people in the UK living with sight loss. Of these, around 360,000 are registered as blind or partially sighted.
- Hearing impairments: RNID reports that there are 12 million people in the UK with hearing loss greater than 25dB, of whom 151,000 are British Sign Language (BSL) users (www.rnid.org.uk).
- Limitations with reaching, stretching and dexterity: these are frequently the result of arthritis, which can make these movements painful and difficult, or of muscular dystrophy causing a loss of muscular strength, or of complaints of the nervous system.
- Neurological and learning differences: including those making it hard to understand complicated information or use complex machines (like some ticket machines).

7.25.12 It should be remembered that these categories are not mutually exclusive. Some disabled people, particularly older people, have more than one impairment.

7.25.13 Consideration should be given to how all users will engage and move about the spaces that are designed. The RNIB has a number of resources that can help provide prompts for consideration when designing new space, particularly around shared minor streets.

7.25.14 Parking bays for people with disabilities should be designed so that drivers and passengers, either of whom may have a disability, can easily and safely enter/exit a vehicle. Bays should be longer and wider than the preferred bay size to allow for improved access and protection from other vehicle

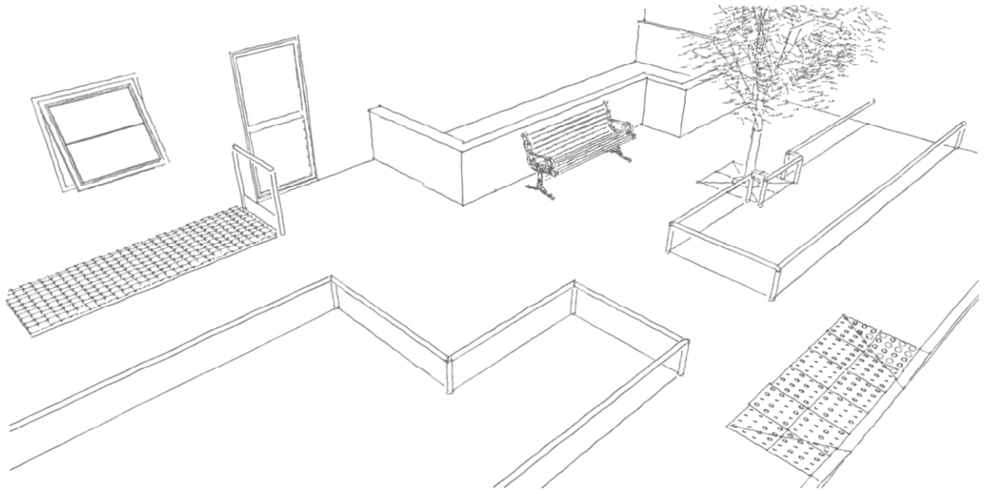


Figure 208: Indicative illustration showing required access arrangement considerations when detailing approach to buildings

Pedestrian guardrails

7.25.15 The knock-on effects of design decisions need to be considered from the outset. For example, one of the Council's priorities is to encourage walking and cycling for short journeys over car use. However, pedestrian guardrails can, in some cases, create a physical barrier for pedestrians and increase the length of a walking route. Unnecessary pedestrian guardrails can have a negative impact on the aesthetics of a street. They can also restrict access for pedestrians who need more space, such as those that use a mobility scooter or wheelchair, or those with young children in a pushchair.

7.25.16 For further information see the CBC guidance on guardrails.

Continuous Crossings

7.25.17 Continuous footways are a good way of providing pedestrian continuity at quiet side road crossings and across private accesses. Larger junctions where higher levels of vehicular movements are expected should have radius kerbs and a standard junction layout. For details on the scenarios in which continuous crossing should be used, reference can be found in Section 4.6 of the Highways Construction Standards and Specifications Guide.

7.25.18 Consideration should be given to the approach and access arrangements for all users. Good visibility into the junction is essential. The paving material of the footway needs to contrast with the carriageway surfacing and where appropriate the adjacent footway surfacing material should be applied across the junction to reinforce the footway. A kerb is required across the junction bell mouth to delineate the edge of carriageway of the major road. It is essential that this is a bullnose type kerb with a typical upstand of 25 millimetres to provide a tapping edge for visually impaired users. The minor road should approach the footway with a ramp to bring the carriageway up to the level of the footway.

7.25.19 For tactile paving guidance refer to the latest version of the DfT Guidance on the use of Tactile Surfaces. All tactile paving shall be contained by a concrete edging kerb, laid flush. Extent of dropper kerbs must match the width of tactile paving.

7.26 Electric Vehicle Charging

7.26.1 The Council has an Electric Vehicle Charging SPD which should be referred to for specific details and design considerations.

7.27 Public Rights of Way within developments

7.27.1 It is essential that developers ascertain what public rights of way cross, and connect with, the development site at the earliest opportunity. This can be confirmed through the land search process or through contacting the Council's Highways Team. Developers need to engage with the Area Rights of Way Officer at the earliest opportunity whilst initial designs are being prepared to prevent developments being significantly delayed or potentially refused by a failure to properly integrate public rights of way into them. Engagement will also define the management of any temporary closures and diversions during construction and commissioning.

7.27.2 The obstruction of a public right of way may lead to enforcement action, prosecution or blighted properties. Early engagement is more likely to lead to the consequent submission of an acceptable Rights of Way Scheme detailing how any affected public rights of way will be incorporated within the development. Any diversion or change to a public right of way will need to provide an improvement over the existing path and should avoid being incorporated into estate road footways and, wherever possible, should be incorporated into the development as a positive feature for leisure use and active travel.

7.27.3 For further information on Rights of way see the Council website.