2.0 Residential Car Parking

Residential Parking Standards for Residential Use Class C3

Minimum standards as set out in Table 1 below will normally be required for new build. Extensions to existing residential buildings which result in an increase in bedroom number or rooms capable of use as additional bedrooms will need to provide the corresponding number of parking spaces for that size property. These standards apply to family houses which include up to 6 occupants living together as a single household.

Table 1 Residential Minimum Parking Standards per dwelling

Dwelling size	**Vehicle spaces**
1 bedroom	1
2/3 bedroom	2
4+ bedroom	3

Visitor unallocated spaces:

- Minimum of 0.4 space per dwelling except where over 60% of the total parking provision for a street or block of flats for example is unallocated or in a Controlled Parking Zone where no additional visitor parking is required.
- For residential street layouts, visitor parking in addition to the minimum above will be required at regular intervals for the convenience of visitors and to accommodate the requirements of the swept path of vehicles.

Minimum standards:

- Only garages that comply with the minimum areas set out in this design code will count as a parking space. Garages shall have the minimum internal area of 22m^{2}which can either have a minimum length of 5.5m (4.0m width) or a minimum width of 3.2m (6.9m length) with no internal obstructions. (4.2m in width and 6.8m in length for wheelchair accessible dwellings). Garage door widths shall be at least 2.44m (8 feet) (clear unobstructed width).
- Double garages that include an area as required for single garages will only count as 1 space regardless of how much additional space is provided.
- Car ports will not count as parking spaces if they have doors/gates unless they comply with the minimum internal area requirements for garages (above) and there is a minimum of 6m of driveway in front of the open doors/gates to allow a vehicle to be parked clear of the highway.
- Driveway widths should be a minimum of 4.1 metres to allow for access to a vehicle by a driver or passenger in a wheelchair.

No newly constructed residential dwellings, conversions or subdivisions of existing dwellings or other land use classes to residential are eligible for residents' permits as per Bedford Borough Council CPZ Order 2008 (amendment 18 Order 2013).

Any exception to the minimum standards MUST be accompanied by strong evidence which will include car ownership and visitor parking demand for the potential lifetime of the development.

Developers must be able to demonstrate a balanced mix of parking methods, comprising where possible on plot, private courtyards (private courtyards can also be mixed as long as the mix favours small courtyards) and parking within the highway. Applications for new build flats, mixed use developments (which include an element of residential) and / or conversion of floor space above existing non-residential buildings will be treated on their own merit based upon the character of the immediate surrounding area.

The provision of Electric Vehicle charging points in communal parking areas and in town centre developments of 2 or more dwellings will be welcomed. For more information on electric vehicle infrastructure see Section 3.

It should be noted that any future proposal to convert an annex to a separate dwelling will need to meet the Council's standards and requirements including independent access from the highway.

Applications for the development of, or conversion to, houses in multiple occupation (HiMO) will be considered on their merits.

Car Free developments are encouraged in accessible urban areas within the current CPZ and developers should discuss such proposals with Highways Development Control at the earliest opportunity (telephone: 01234 228895).

Proposals to provide car parking in accordance with the standards using underground space will be determined on merit.

Design Context and Layout

2.1 Parking Principles

Car parking areas should make a positive contribution to the design and setting of a development and the area in general, taking account of its townscape character.

There can often be a conflict between providing transport infrastructure and producing housing layouts of good design. As discussed in Section 2, without adequate car parking provision for residents and visitors, cars are parked on verges and on streets that have not been designed with parking in mind, which can lead to the following problems:

- Emergency and refuse collection vehicles cannot get through;
- Footpaths become impassable;
- Verges become unsightly – grass is churned up, kerb stones are damaged;
- Visibility at junctions and on bends is impaired making the street more dangerous for all users;
- The streets look untidy.
- Difficulty crossing the road and can cause dooring hazard for cyclists

Rear parking courts have not been particularly popular for residents, resulting in streets based on minimum carriageway widths which had been carefully designed with soft landscaping areas actually looking like a disorganised car park. Sufficient designated parking spaces, in the places where residents will use them, must be

provided, and opportunities for inappropriate parking should be designed out as much as possible by using carriageway widths, street furniture and planting. Depending on the location, trees may need protecting by kerbs and other planting should be in raised beds or protected by a physical barrier such as bollards.
Note: Trees, planting and planters in the highway will require a commuted sum.

Parking for a dwelling should be located:

- on plot – at the front or side of the dwelling or in the rear garden, and/or
- in a communal parking courtyard, and/or
- on the street to the front of the dwelling – streets must be wide enough to accommodate parking without compromising access by emergency / waste collection vehicles and must not impair visibility at junctions and on bends. Further information is contained in Manual for Streets section 8.3

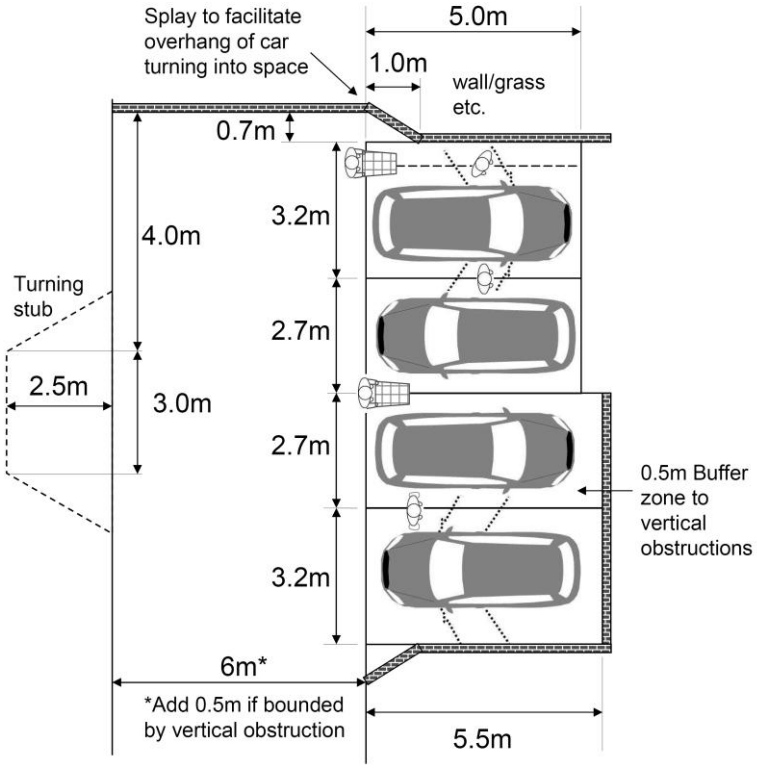
If none of these options is achievable, alternative options should be discussed with the Council at an early opportunity.

Describing car parking spaces as unallocated in small parking courtyards is unlikely to be acceptable as the spaces would effectively become allocated to certain properties regardless of their designation. All parking layouts submitted should be clearly thought through on a property by property basis to avoid any such issues.

2.2 General dimensions

Most cars can fit into a 2.2m x 5m notional space. This includes wing mirrors but does not allow for door opening, access past the vehicle or clearance to walls etc. These clearances must be added for each situation appropriate to context.

Figure 1: Minimum dimensions for perpendicular car parking:



Regardless of whether service/emergency vehicle turning is required, parking areas at the end of non-through routes should allow for cars that have entered the area but are unable to park to be able to do a three-point turn and leave in forward gear. For example if there is parking on both sides of the aisle the aisle could be increased to 8m wide, if not, a 2m deep, 3m wide splayed turning stub could be provided as shown above.

Where standard aisle widths cannot be achieved in small car parking areas it may be possible to increase the width of the spaces to compensate for this. Table A shows the absolute minimum aisle and corresponding space widths for perpendicular spaces:

Table A

Aisle width (m)	**Space width (m)**
6.0	2.7
5.5	2.8
5.0	3.0
4.8	3.1
4.5	3.2
4.1	3.5
3.5	4.1

0.5m should be added to each side of a space bounded by a vertical obstruction or to the end space.

The aisle should allow for two vehicles to pass (at least 4.8m), but an absolute minimum aisle width of 3.5m can be considered in exceptional circumstances. Non-standard car parking arrangements should be checked to see if it can accommodate the swept paths of large family cars with vehicle tracking software.

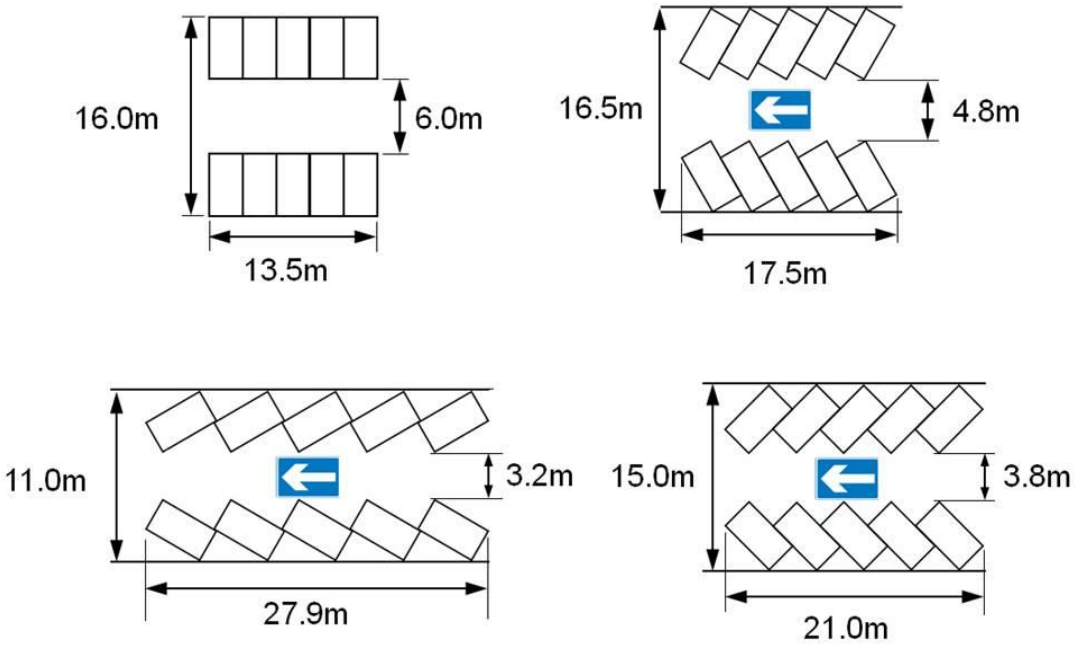
Table B below shows the minimum aisle widths for angled standard (2.7m wide x 5m long) parking bays:

Table B

Angle of parking to through route	**Aisle width**
0^{o} (Parallel)	3.0m
30^{o}	3.2m
45^{o}	3.8m
60^{o}	4.8m
75^{o}	5.0m
90^{o} (Perpendicular)	6.0m

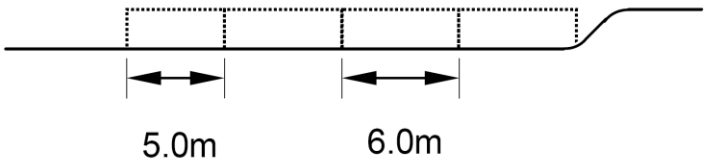
The diagrams below give an indication of the relative amount of space various different angled spaces need. Additional clearances would be required as outlined for perpendicular spaces.

Figure 2



Echelon bays should be arranged so that drivers are encouraged to reverse into them. This is safer than reversing out, when visibility might be restricted by adjacent vehicles.

End-to-end parallel parking bays must be a minimum of 6m long, unless one end is open as shown below.



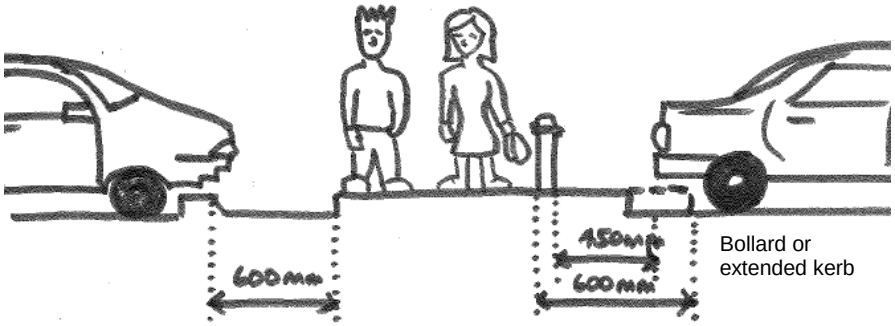
See Tables A and B above for dimensions.

If trees are used to define the end of individual spaces within a bay the space length should be increased to 7.5m.

All circulatory/manoeuvring aisles which are also likely to be used by cyclists should have a width of 3m (in conjunction with parallel bays only) or a minimum of 4.1m (greater as required for different angled bays) as intermediate widths can lead to motorists overtaking cyclists despite there being inadequate clearance.

Where the end of a parking space is adjacent to a pedestrian area, overrun/overhang must be prevented (Figure 3).

Figure 3 Examples of restricting car movement



2.3 On-plot

There are a number of ways parking can be accommodated on plot.

Where access is taken from a Classified Road (A,B,C Roads) the layout to accommodate on-plot parking will be required to enable all vehicles to enter or leave in a forward gear.

The use of garages

It is recognised that garages are in many cases being used for other purposes, such as for storage or they have been converted to living accommodation. In other cases they are not of a suitable size to accommodate a modern, family size vehicle[1].

The availability of other spaces, including on street parking and the availability of separate cycle and other storage influence whether residents use the garage for parking a vehicle.

National research undertaken by Department for Communities and Local Government concluded that only approximately 40% of garages are used for parking. Warwickshire County Council carried out research into parking at new developments and found that 38% of respondents who own a garage, use it to park their vehicle on a regular basis. 56% reported that they never use or seldom use their single garage.

In the past, garages have been counted towards parking provision even if their dimensions or locations have been unsuitable. This has added to the demand for on-street parking.

For this reason all single residential garages and car ports in order to count as a car parking space shall have the minimum internal area of 22m^2 which can either have a minimum internal length of 5.5m (4.0m width) or a minimum width of 3.2m (6.9m length) with no internal obstructions e.g. piers (4.2m in width and 6.8m in length for wheelchair accessible dwellings).

Double garages will not count towards car parking provision as it is unlikely that two cars would be parked at one time. A double garage if provided must comply with the minimum dimensions for a single garage if it is to count as a parking space.

[1] An average family sized vehicle is considered to be a Ford Mondeo: dimensions 4.84m x 1.87m (excl. mirrors)..

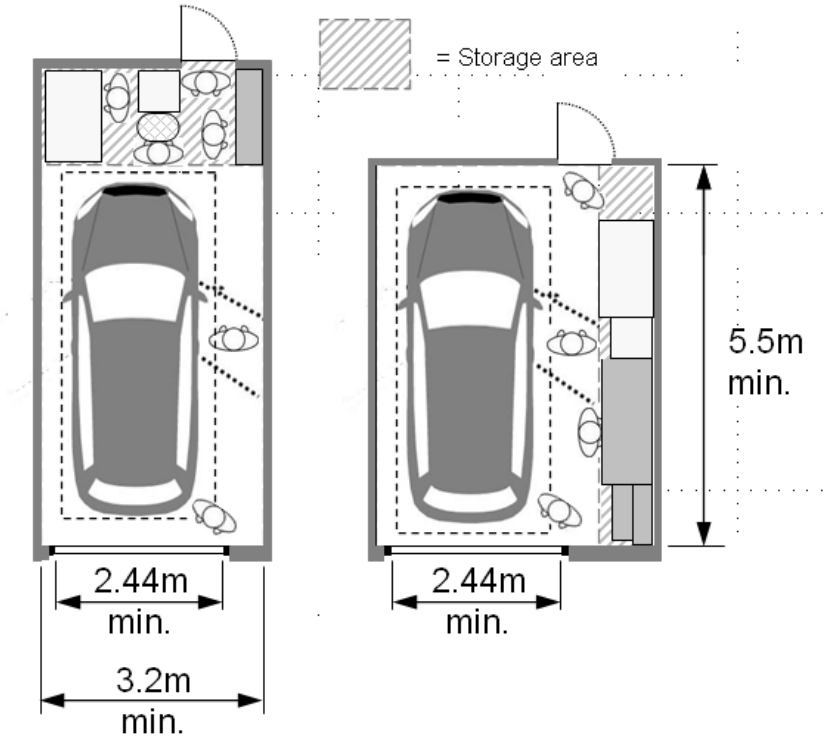
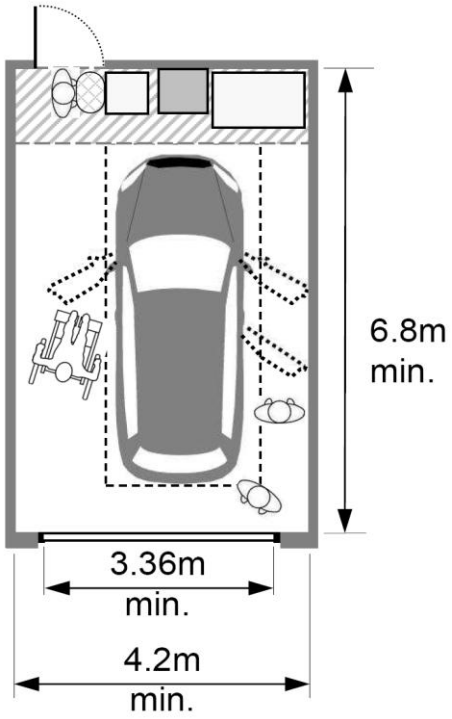


Figure 4: Examples of garages with minimum internal floor area of 22m2 showing notional 2.2m x 5m car space with clearance to walls and doors with additional storage space

(Indicative items shown in storage area include chest freezer, tumble drier and workbench)

In accordance with British Standard 8300:2009 if feasible, access to garages and individual enclosed parking spaces for disabled motorists should be level and under cover. The access to the spaces, including the vehicular entrance and the ceiling level, should permit the use of a wheelchair hoist and have a vertical clearance of not less than 2.6 m. A single garage or enclosed parking space for use by a motorist who is a wheelchair user should be large enough to allow the wheelchair user to turn around at the side of the vehicle, to access the rear of the vehicle and to get into and out of the space. The space available should also be sufficient to allow a non-disabled person to alight and then, if necessary, to assist a disabled companion to get out of the vehicle and into his or her wheelchair. Where power-operated doors are fitted to the entrance of a garage or enclosed parking space, they should be operable from inside the vehicle. The dimensions of a garage or enclosed parking space for use by a wheelchair user and an ambulance driver should be as shown in Figure 5.

Figure 5: **A garage designed for a wheelchair user and an ambulant driver**



Space for wheelchair access provided at the rear of the vehicle.

Full width garage door opening (11ft minimum) provides flexibility in positioning the car within the garage and therefore allows wheelchair transfer from either passenger or driver side

NOTE
An increase in 750mm is required if both driver and passenger are wheelchair users

Garage door size

To allow practical access of a vehicle, the minimum unobstructed drive-through opening of a single garage door width must be 8 feet (2438mm). Additional design width may be required to accommodate the frame.

The height of the door should be such that a minimum drive-through height clearance of 7 feet (2135mm) is provided when the door is open, taking into account that an up-and-over door panel also hangs down in the opening when the door is up and reduces the drive-through height.

If a double garage is provided and it is desired to make it possible for a second car to park inside a double width door of minimum width of 18 feet (5486mm) would be required.

Garage setback

Consideration must also be given to accessing the garage. Garages have sometimes been set back from the road, but not leaving a full vehicle space in front. This results in residents parking their vehicle in front of their garage and blocking the footway.

When designing houses along a street, garages must be set back a minimum distance of 6.5m behind the highway boundary (rear edge of footway/verge). In exceptional circumstances if no parking space is to be provided in front of the garage, the garage should be set back a minimum distance of 0.5m from the public highway to allow for garage door opening. With this set back only up-and-over and roller shutter doors can be used.

Car ports with doors / gates should be set back a minimum of 6m from the highway from the open door/gate.

2.4 On Plot / driveway parking

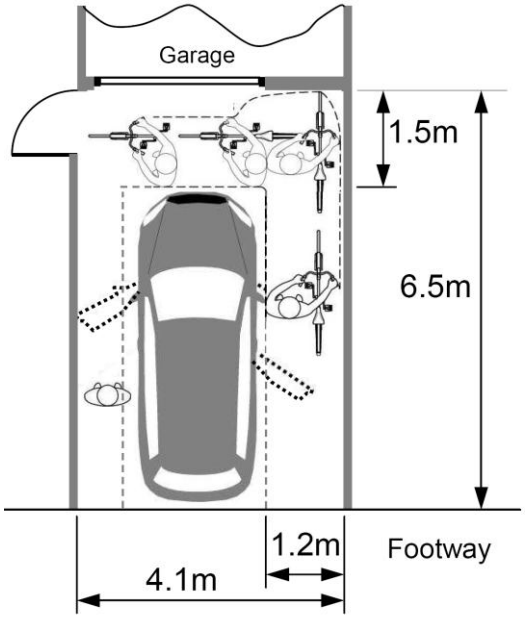


Figure 6
A car parking space on a driveway in front of a garage or cycle parking facility must provide full pedestrian access to the car and pedestrian and cycle access to the rear of the site.

Dimensions shown are minimums

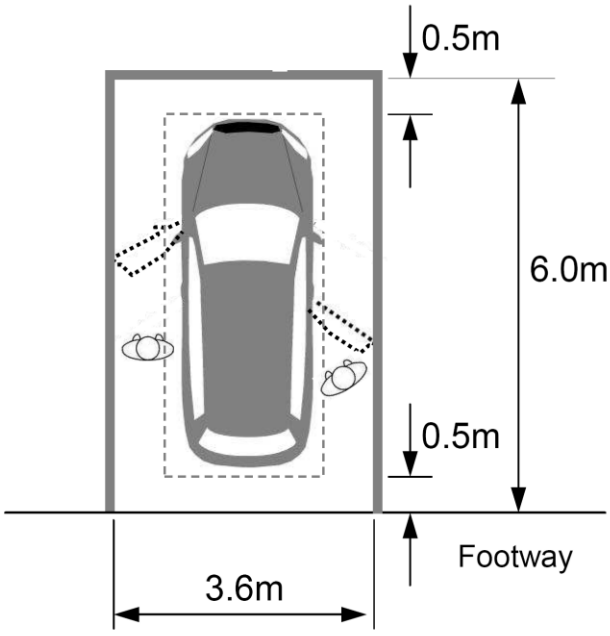


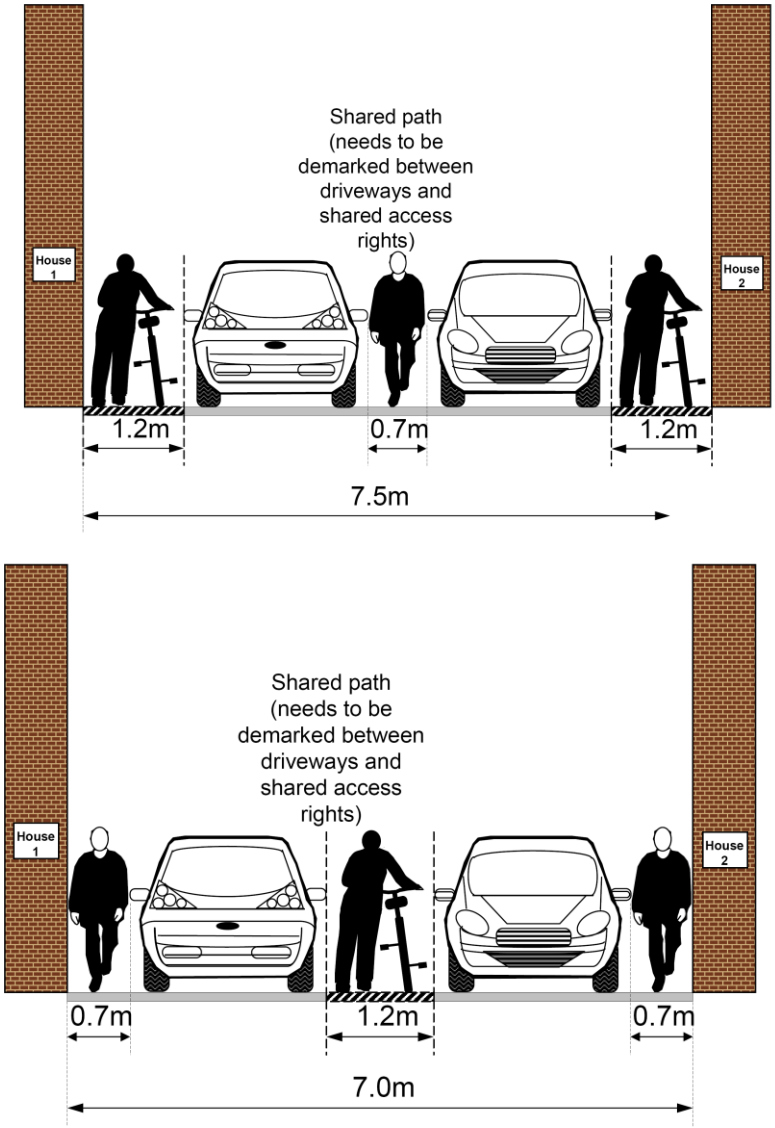
Figure 7
Minimum dimensions of single drive or car port without pedestrian and cycle access to rear.

An extra 0.5m in length is provided to ensure clearance from a public footpath or/and highway where the far end of the car space is immediately adjacent to a vertical boundary feature,

A parking space located between walls should include additional width to allow adequate space for the doors of the vehicle to be opened and for access down the side of the parked vehicle.

Double driveways (allocated to one house) or twin driveways (allocated to 2 adjacent houses) also require pedestrian and cycle access. In the case of a twin driveway it may be desired in order to reduce the width to allocate either a shared pedestrian area or cycle access along the centre of the drive. This should be clearly defined on the ground and both houses would need access rights over this area, see below:

Figure 8



Triple tandem (end-to-end) parking (including garages) is acceptable but will only count as two not three parking spaces because of the inconvenience this would cause the householder of regularly needing to manoeuvre cars. The inevitable consequence would be that at least one of those vehicles would be parked on the road.

The driveway should be hard-surfaces in a stable material (not loose gravel or chippings); for a minimum distance of 5m into the site from the Highway boundary; pedestrian cycle route of a minimum of 1.2m width from the Highway boundary to the front door / any rear access point / cycle parking must also be hard-surfaced in a stable durable material (not loose gravel or chippings); the Highway boundary must be clearly defined.
A dropped kerb to a minimum width of the driveway should be provided.

2.5 Communal parking

Courtyard parking

Courtyard parking should primarily be sited at the front of the dwellings, serving no more than six dwellings with easy and direct access to the dwellings they serve. Overlooking and appropriate lighting is required to make these spaces safe without impacting on the amenity of neighbouring properties. Larger courtyards may be considered if they have similar features to above and include surveillance from surrounding dwellings and soft landscaping features.

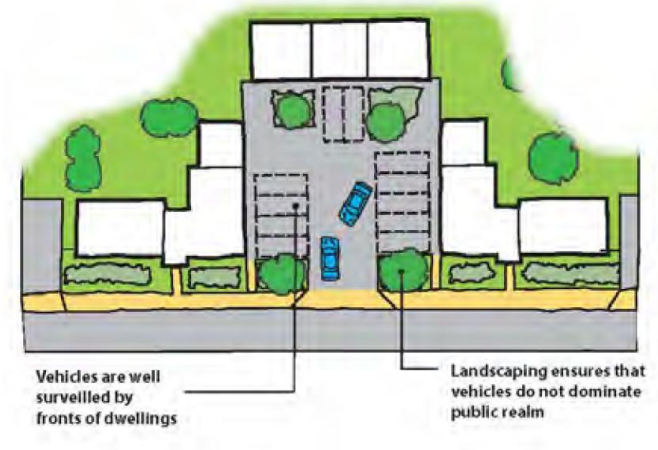


Figure 9
Example of front parking court on straight section of street

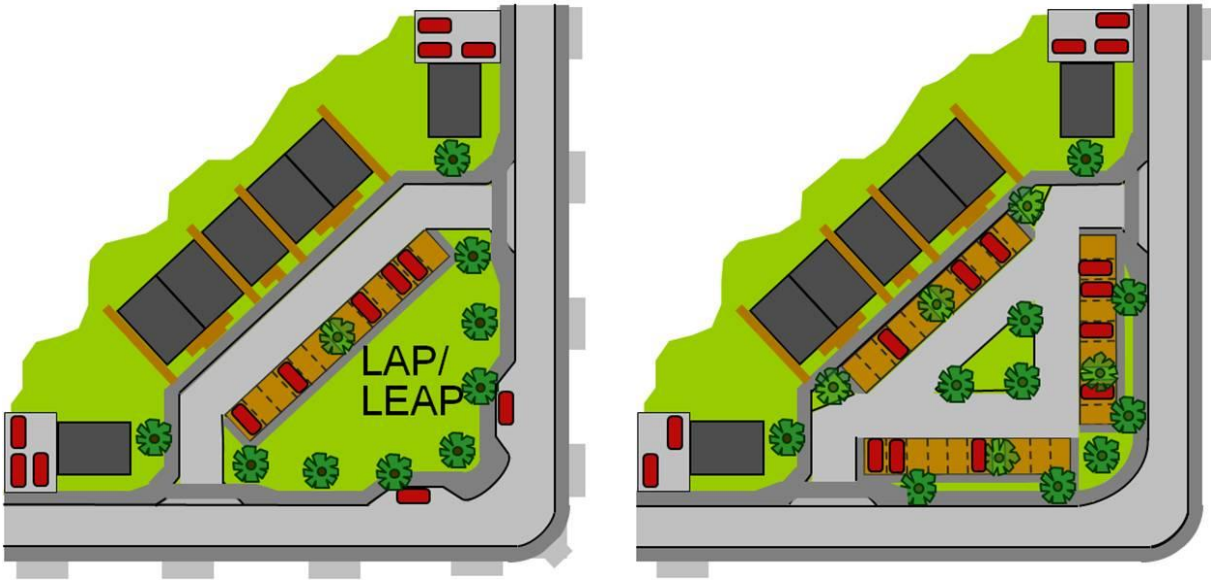
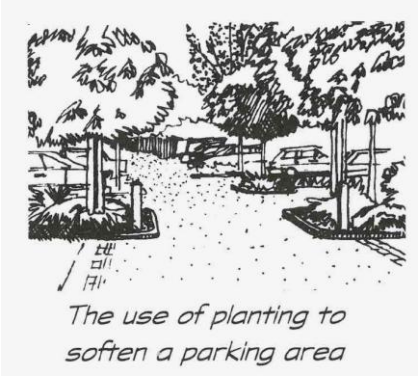


Figure 10
Example of front parking courts on a bend serving either the properties on the inside of the bend or both sides of the street



It is however accepted that for certain streets, frontage access for vehicles from the street can't be achieved or is not permitted. In these cases small private and secure rear parking courts may therefore be required.

Where rear parking courts are included it is essential that on street parking is carefully managed. If on street parking is not allowed then this should be suitably enforced through for example double yellow lines. If it is allowed, parking should be carefully designed into the streetscape so as to avoid indiscriminate parking on verges, pavements or indeed in the carriageway such that it prevents safe through movement of large vehicles.

Rear parking courts must be made to feel as private and secure as possible. See guidance in Bedford Borough Council Achieving Quality in Residential Layouts SPG (or its successor document). In addition to this guidance they must also be well lit and achieve appropriate BS standards. Adequate vandal resistant lighting should be provided; taking care to prevent glare in drivers' line of vision. In order to aid surveillance, the boundaries of houses that abut parking courts should be a maximum 1.8 metres high with an additional 200 mm visually permeable trellis on top.

Flats Over Parking (FOPs) have often been included in rear parking courts to help with surveillance of the latter. They can however compromise the privacy, security and public-private interface of the parking court and will not usually be permitted.

Where FOPs can be used is to screen and protect rear parking courts. They must form part of the street frontage with the FOP needing to have its front door facing the street.

Rear parking courts must be designed so that the resident's parking space is located on the boundary of the rear garden. In this way residents are more likely to use the parking court, rather than parking in inappropriate locations (e.g. on verges and pavements).

Parking Courts Checklist

Parking courts should generally be within the range of 6-12 spaces. Courts to provide a maximum of 18 parking spaces, which may be appropriate for apartments (see 2.6 below).

Minimum 1.2m clear access routes for cyclists / pedestrians into rear gardens is required.

There should be a maximum of 15m between parking space and the boundary of the property it serves.

Lighting, landscaping and turning will need to be taken into consideration.

Use the dimensions set out in Figure 1, Table A and Table B.

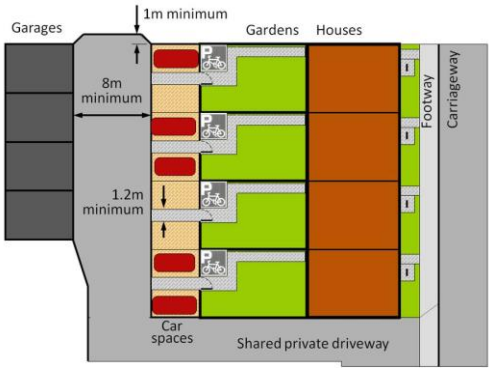
Tandem parking will not be allowed, as vehicles tend to dominate the court and the amount of vehicle manoeuvring is increased.

No visitor spaces to be included in rear parking courts. Parking courts should be signed private and best kept small to maximise ownership, supervision and familiarity.

All homes must be accessible from the rear and preferably through lockable gates that can be opened by means of a key from both sides. Gates should be 1m wide to allow cycle access or 1.2m if a 90^{o} turn is required to enter. Footpaths need to be provided within rear gardens from the rear gate to rear door of the house to enable ease of access through garden when it is wet.

Garages and car ports should generally be avoided within parking courts as they block surveillance of vehicles. However if provided they should generally be arranged as shown below.

Figure 11



Where there are two rear parking courts adjoining each other, they must have a 1.8 metres solid structure (preferably brick wall) separating them.

2.6 Parking for Apartment Development

Because of their higher density, apartments often need parking in the form of courts. These are not referred to as rear parking courts if front entrances and habitable rooms face the parking court. Care needs to be taken that entrances also face the street (i.e. dual frontages are created). In these cases, such parking courts are acceptable. For apartments, there is no requirement for a permeable upper 200 mm to the boundary treatment.

(Some sections of text above taken from Milton Keynes New Residential Design Guide SPD)

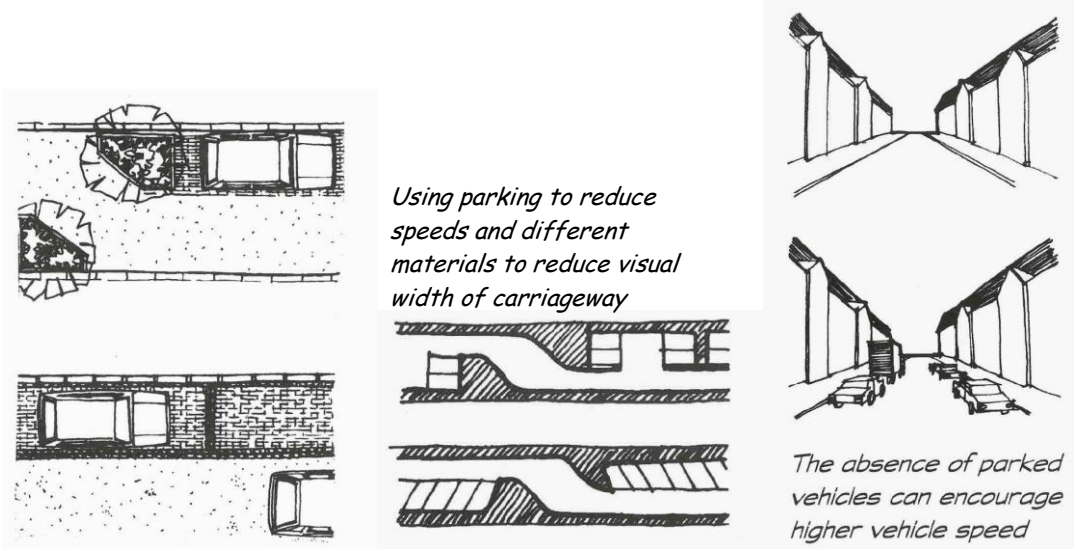
2.7 Highway parking

Whilst in terms of convenience and security, there are advantages in accommodating as much car parking as possible within the curtilage of dwellings, this may in certain circumstances be unacceptable or impracticable. The arrangement of parked cars within the street can have a beneficial effect in terms of slowing traffic.

The use of delineation of parking bays using different materials and textures can also be useful in reducing apparent amounts of road space even when unoccupied by parked vehicles and helps to promote parking in responsible locations. Parking bays can also be arranged so as to complement chicanes.

Allocated parking cannot be provided within the adopted highway but unallocated spaces can be created within the highway for use by any highway user including residents. In some cases it may be possible to provide all the parking for certain dwellings within a suitably designed area or length of highway. Such spaces should be convenient for, and clearly visible from, the properties they generally serve.

Figure 12

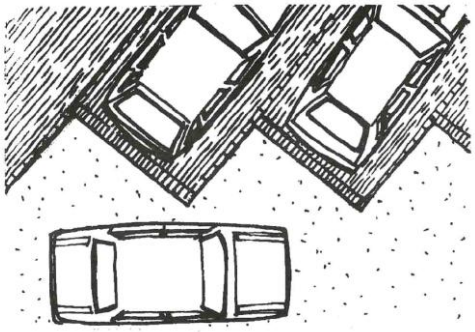


Using parking to reduce speeds and different materials to reduce visual width of carriageway

The absence of parked vehicles can encourage higher vehicle speed

Angled parking will be more effective in reducing speed as drivers perceive a potential threat from vehicles reversing out into the main carriageway. This perceived threat is less apparent if parallel parking is used.

Figure 13



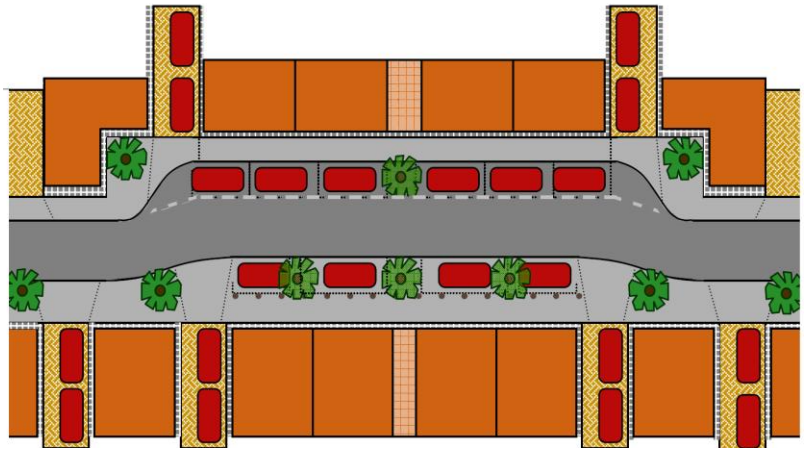
The use of parked cars to necessitate a speed reducing change of direction

The use of trees to delineate parking bays

It is possible to provide parking spaces on both sides of the street using several methods together but designed so as not to give the impression of an excessively wide carriageway.

Left: Parking both within demarked areas (blockwork) within carriageway protected by trees and within widened area of carriageway.

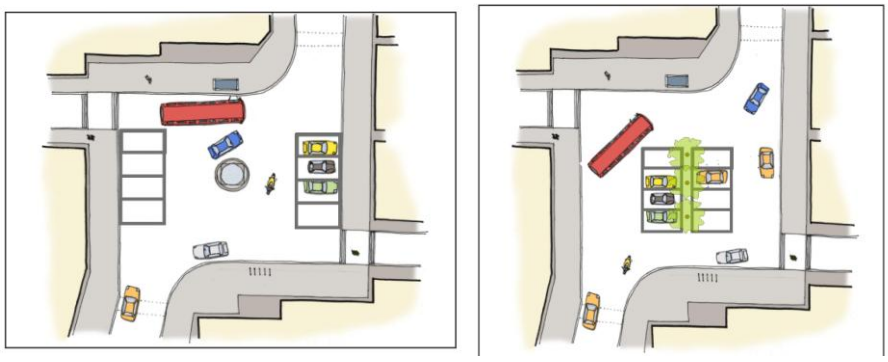
Figure 14: Parking with formal bay defined with channel blocks or blockwork rather than white lining and bays within widened footway accessed by dropped kerb separated from footway by wooden posts and separated by trees



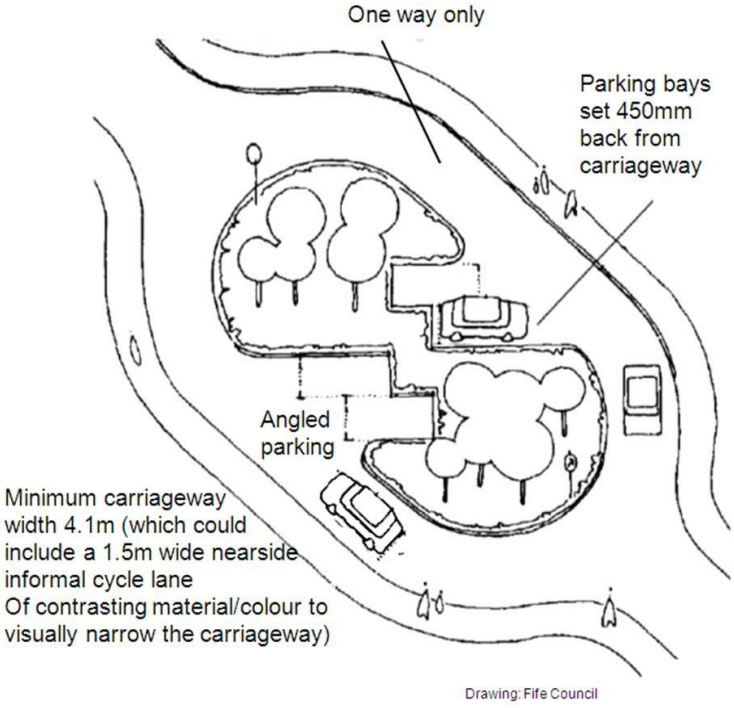
This example shows a mixed housing development with some on-street parking.

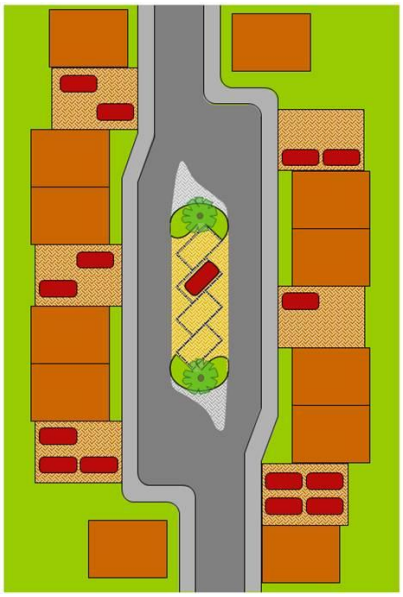
As well as along the edges of streets, car parking within routes with a 20mph design speed can be accommodated within 'parking squares'. These may incorporate junctions and can facilitate parking in the centre of the square as a speed control measure. Care must be taken to ensure that one-way sections of carriageway around parking bays are not reduced below 4.1m where angled parking is used to ensure that there is sufficient room for motorists to safely pass cyclists. A 450mm buffer should be provided between the ends of standard parking spaces and the carriageway.

Figure 15: Examples of parking squares




Sheridan Grove


One way only
Parking bays set 450mm back from carriageway
Angled parking
Minimum carriageway width 4.1m (which could include a 1.5m wide nearside informal cycle lane
Of contrasting material/colour to visually narrow the carriageway)
Drawing: Fife Council



Dimensions
Parking spaces within the highway should accord with the basic dimensions above. However widths of parallel parking bays will vary depending on circumstances as shown in the table below:

Parallel parking bay widths:

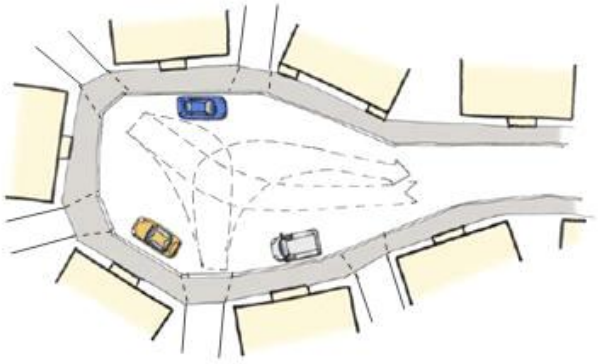
Street type	Design Speed (mph)	minimum width (m)
Level surface street /Home Zone	10	2.0
Quiet residential street with footways	20	2.0m
Main residential street with footways	20	2.5m
Main street with footways	30-40	3.0m (inc demarked buffer zone)

Where there is a grass verge behind a parking space a minimum of a 0.7m wide hard standing (including any kerb width) is required alongside the kerb to allow occupants access to both sides of the vehicle.

2.8 Highway markings
Any formal road markings to indicate parking bays should accord with the current Traffic Signs Regulations and General Directions as amended. The minimum width of road side highway parking bays in TSRGD 2002 is 1.8m which would only be appropriate in certain retrofit situations. Clear non-standard delineation is acceptable in 'Restricted Parking Zones'.

2.9 Pedestrian crossing facilities
Long rows of parked cars should be avoided, where possible, as this creates difficultly and inconvenience for pedestrians to cross the adjacent carriageway. Groups of four to six cars are generally appropriate and safe provision must be made for pedestrians to cross in the vicinity of the end of a row of parked cars.

2.10 Turning provision



Sufficient space for turning and casual car parking

Figure 16: Turning heads designed purely for turning are in practice often used for casual parking. Layouts should be designed to allow for parking which does not obstruct turning. Parking may be provided in various forms including the service margin of a level surfaced street, demarked within the carriageway, or within laybys.