Residential Road

Design Guide
CONTENTS

Section 1
1.1 Principles of Design

Section 2
2.1 Road Hierarchy

Section 3
3.1 3A Local Distributor Road
3.5 3B Transitional Road

Section 4
4.1 4A Collector Road
4.5 4B Car Way

Section 5
5.1 5A Access Way
5.19 5B Mews Court
5.42 5C Housing Square
5.60 5D Access Drive
5.66 5E Private Drive
5.74 Footpaths and Cycle Ways

Section 6
6.1 Standard Details
6.3 Junctions
6.4 Turning Heads
6.5 Kerb Details
6.13 Rumble Areas
6.15 Surfacing Materials

Section 7
7.1 Adoption
7.25 Public Utilities Services

Section 8
8.1 Landscaping
8.9 Conservation Areas

Section 9
9.1 Bibliography
SECTION 1

Introduction

1.1 This design guide has been produced to introduce an alternative approach to the design of residential layouts and roads, based upon the Department of the Environment/Department of Transport, Design Bulletin 32 “Residential Roads and Footpaths”, to promote local guidance and provide information for prospective developers.

1.2 Design Bulletin 32 contains information and advice on the layout of roads and footpaths in new private and public sector housing schemes. Its aims are to strike a balance between departmental interests, to promote local guidance, and to provide a flexible approach to road design and residential layouts. The emphasis is on ways and means of ensuring safety while at the same time allowing for the convenience of drivers, economic design and solutions and an improved environmental quality.

1.3 The main sections of this guide are concerned with general principles and design requirements and are followed by a number of appendices on specific aspects. The guide should be used in conjunction with the Lancashire County Council publication 'Specification for Construction of Estate Roads', 'Design Bulletin 32' and when applicable 'Roads in Urban Areas' M.O.T. 1966 as amended by the Department of Transport publication TA 9/81 Highway Link Design and TA 20/81 Junctions & Accesses: The Layout of Major/Minor Junctions.

Philosophy

1.4 The fundamental concept of this design guide is based upon the principle that the relationship between drivers and pedestrians varies dependent upon the type of road being used and the environmental character of the area adjacent to the road. On major traffic routes the driver and road predominates, however in residential cul-de-sacs the pedestrian and dwellings are more important and the form of the road should reflect this.

1.5 A journey may be divided into three separate parts, leaving, travelling and arriving, and only in the second element is speed a major consideration. Therefore only on the “travelling” roads, the distributors, should vehicles be dominant. The extremity of the journey, the roads where we live, should be designed to favour the pedestrian and the cyclist. We must therefore have two basic road types, roads for travelling from place to place and road which are places.

1.6 Thus this design guide proposes that houses should be built in small groups around cul-de-sacs on which people have priority over vehicles. Traffic from these small groups is then collected on a larger cul-de-sac before joining the distributor road upon which the driver will dominate.

Approach

1.7 This design guide is intended to be considered as a flexible design tool and not a definite catalogue of standards. The statements of design principles do not imply that other solutions will be rejected on the grounds of non-conformity. If a developer can that his proposals satisfy the principles detailed in this design guide and Design Bulletin 32 then they will be approved as regards the highway aspects of the planning application.
Objectives

1.8 The objectives of this design guide are to help create better places for people to live in, places which are safer, more convenient and more attractive than the conventional suburban estate, whilst bearing in mind the duty of the highway authority under Section 66 of the Highway Act 1980 to provide a proper and sufficient footway in any case where they consider the provision necessary.

1.9 Empirical evidence is not yet available on all aspects of design dealt with in this guide and it has been necessary therefore to balance the desire to encourage innovation with caution on some issues where matters of safety or the risk of increased expenditure on maintenance may be involved. It is the intention to improve safety by reducing street parking and establish road hierarchies which will eliminate large volumes of traffic in housing areas by avoiding through routes and by limiting the number of houses served by housing estate roads. The reaction of drivers and the speed of vehicles will be influenced by providing recognisable characteristics for each type of road, and it is considered that the implementation of the guidance suggested will promote a better relationship between the driver and the pedestrian, and thereby improve the environment of the people living in and using the residential area.

1.10 The collaboration of highway, planning and housing authorities will enable new layout solutions to be developed, particularly with regard to the requirements for the adoption of highways. It is essential that new roads and footpaths should be constructed so that they are suitable for adoption.
SECTION 2

Road Hierarchy

2.1 The hierarchy of roads table is an extension of the classification of roads which was established in "Roads in Urban Areas" (MOT 1966) and incorporated within Design Bulletin 32. Road types 1 and 2 of that classification, Primary Distributors and District Distributors, are not considered in this design guide which is specifically concerned with residential roads.

2.2 This design guide relates to the two basic road categories, Local Distributors and Residential Access Roads, and subdivisions within these categories which have been adopted by a majority of local authorities, as follows.

2.3 Type 3 roads are local distributor roads. In housing areas, they are the link between district distributors and residential roads. On these roads the movement of vehicular traffic is dominant and direct access is not permitted.

2.4 Type 4 roads are the main vehicular routes within housing areas and have a “collector” function. They require a footway system and usually have limited or no direct access.

2.5 Type 5 roads are joint-use pedestrian/vehicle cul-de-sac, usually without footways, which serve small groups of dwellings and with direct access.

2.6 The following table illustrates the road hierarchy and the possible links between different road types, with text describing the detailed requirements for each road type.
Only permissible in certain circumstances and when traffic speed is limited to 30mph.

Type 5E
Access Drive
Up to 2 dwellings
2 car spaces per dwelling.
2.3m-4.5m wide.
Direct access.

Type 5D
Mews Court
Up to 25 dwellings
2 car spaces per dwelling or 1.5 in group parking.
4.5m min width.
Direct access.

Type 5C
Housing Square
Up to 20 dwellings
1.5 car spaces per dwelling.
4.5m width.
Direct access.

Type 5B
Transitional Road
200 – 400 dwellings. 6m wide.
No direct access.
Footway both sides.

Type 5A
Access Way
Up to 30 dwellings
2 car spaces per dwelling.
4.1m-6m wide.
Direct access.

Type 4B
Car Way
Up to 50 dwellings. 3m wide.
Separate footway system.
No direct access.

Type 4A
Collector Road
Up to 300 dwellings. 5.5m wide.
Limited direct access
Usually footways both sides.

Type 3B
Transitional Road
200 – 400 dwellings. 6m wide.
No direct access.
Footway both sides.

Type 3A
Local Distributor Road
Serves over 400 dwellings. 6.75m wide. No direct access.
Usually footways both sides.

All joint pedestrian/vehicle use. No footways.
2.8 Road Hierarchy

- 3A Local Distributor Road
- 3B Transitional Road
- 4A Collector Road
- 4B Car Way/Emergency Link
- 5A Access Way
- 5B Mews Court
- 5C Housing Square
- 5D Access Drive
- 5E Private Drive
- Footpaths
- Footways
SECTION 3

Local Distributor Road

3.1 Local distributor roads are through traffic routes which link environmental areas with district distributor roads. Any road which links together roads which in total give access to more than 400 dwellings or any road which is a bus route should be a local distributor road.

3.2 Direct access, both vehicular and pedestrian, is not permitted since these roads are traffic routes and are not suitable for residential frontage purposes. This limitation of no direct access creates a design problem with regard to the screening and landscaping treatment of the private boundaries adjacent to the public highway.

3.3 A carriageway width of 6.75m is required. Long straight roads which encourages higher traffic speeds and are visually monotonous, are not acceptable and a flowing alignment of curves is preferred with a minimum centre line radius of 60m. Lane widening is required on bends and if a bus router should be bus bays at every stop, designed in accordance with the recommendations in “Roads in Urban Areas”.

3.4 A footway is required on each side of a local distributor road, unless it is quite clear that there will be no pedestrian traffic and a separate footpath system is provided. The minimum width of footway and footpaths is 1.8m but an informal alignment is preferred. A highway verge may be provided between the footway and the kerb, with a minimum width of 2m. Grass and/or dense low ground cover is acceptable, but any trees planted in wide verges must not be less than 1m from the kerb. If no footway is provided the verge should not be more than 3m wide unless visibility requirements dictate otherwise.

Transitional Road

3.5 Transitional roads are only used in developments serving 200 – 400 dwellings from a single junction with the local distributor road. They are always a short link between the local distributor road and two type 4 roads. The transitional road always forms the stem of a ‘T’ junction with other roads.

3.6 Direct access, both vehicular and pedestrian is not permitted along the length of the transitional road as it is used as a ‘change over’ zone between the distributor system and the housing area.

3.7 A carriageway width of 6m is required and although its length should be not less than 25m long transitional roads are not desirable.

3.8 Footway and verge requirements are as for local distributor road, type 3A.
SECTION 4

Collector Road

4.1 A collector road is either a cul-de-sac or loop road which links together type 5 roads within a housing area and serves normally in total a maximum of 200 dwellings. Direct access is permitted, but every endeavour should be made in its design so that access to dwellings is taken from the type 5 roads.

4.2 A carriageway width of 5.5m is required. Long straight roads are not acceptable and a flowing alignment of curves should be used with a minimum centre line radius of 20m.

4.3 A footway is required on each side of a collector road, unless it is clear that there will be no pedestrian traffic and a separate footpath system is provided. The minimum width for footways is 1.8m but variable widths may be accepted. A verge of a minimum width of 2m may be provided between the footway and the kerb, but if no footway is provided there is no frontage development, then a verge of a minimum width of 0.5m should be provided, unless the verge is also to be used by statutory undertakers for services when it should be of a minimum width of 2m.

4.4 A turning head is required at the end of a collector road if it forms a cul-de-sac. The arms of the turning head may be used for access to type 5 roads.

Car Way

4.5 A car way is a single track cul-de-sac, linking together type 5 roads, which serves up to 50 dwellings. Car ways are particularly suitable for use with housing squares, type 5C.

4.6 A minimum carriageway width of 3m is required, with the junction between the car way and the type 5 road providing a passing bay. These junctions should be intervisible and the use of an offset alignment of curves will create a meandering effect, which can be developed with a flowing alignment of curves with a minimum centre line radius of 20m. Where services must inevitably cross the car way there should be incidental widening to avoid problems during repair or maintenance.

4.7 Direct access is not permitted and a separate footpath system is an essential design feature of housing layouts using car ways. The footpaths should follow pedestrian desire lines and generally be at right angles to the car ways. It is important to provide a clear visibility splay at all footpath crossing points.

4.8 If public utilities are unable to follow the footpath system a verge should be provided on at least one side of the car way, with a minimum width of 2m. Otherwise a vehicle clearance strip of 0.5m width on both sides is required.
4.9 **Essential characteristics of a Car Way**

1. Carriageway width may vary to emphasise a sinuous alignment but with a minimum width of 3m.
2. Housing Square.
3. Separate footway system.
4. No direct access from Car Way.
5. Turning Head.
6. Rumble Area.

4.10 **Junction between a Car Way and a Type 4A road.**
4.11 Junction between a Car Way and a Housing Square.

4.12 Emergency Link. A car way of limited length, carriageway width of 3m, with a removable barrier at both access points, can be used as an emergency link to connect two type 5A culs-de-sac. This would provide an alternative emergency access to a housing area served by a type 4A cul-de-sac road, as illustrated in diagram 2.8.
SECTION 5

Concept/Design

5.1 An access way is a short informal cul-de-sac serving up to 30 dwellings with a joint pedestrian/vehicular surface on which pedestrians are given priority by virtue of distinctive design features and on which vehicle speeds are severely restricted.

5.2 It is essential that the joint use surface be visually distinct from traditional vehicle priority carriageways and the essential characteristics of access ways are listed here and shown in the diagrams.

5.3 Three are various acceptable solutions to the concept of pedestrian priority and the features shown may be used in combination to achieve the objective.

Junction with Type 3/4 Road

5.4 The junction of the access way with the type 4 or 3A road should be in the form of a standard road junction with footways on both sides to a point past the rumble area.

Rumble Area (change of surface material)

5.5 At the entrance of the access way at the inner tangent point of the junction a strong physical definition of the changing character of the space is essential in order to emphasise the change from conventional roads and the rumble area (change of surface material) should be a visual and/or audible warning to vehicular drivers.

Turning Head

5.6 A turning head for vehicles should be provided at the end of every access way and this should preferably be amorphous in shape in keeping with the informality of the access way.

Widths

5.7 The surface of an access way should have a varying width between 4.1m and 6m, to aid informality. It must be 4.5m wide at the entrance rumble area and within the access way only a minor percentage may be 4.1m in width. Where the number of dwellings exceeds 20 a minimum width of 4.5m is required. The maximum width should not exceed 6m and the wider areas arranged in suitable positions to accommodate the occasional waiting vehicle.

Surfacing

5.8 The surface finish of an access way gives one of the best opportunities to provide the essential and physical contrast to indicate the change from a traditional vehicle priority carriageway.

5.9 On long access ways it is essential that the variation in surface treatment and alignment combine to make the motorist aware that they must give priority to pedestrians.
5.10 On short access ways where it is physically impossible to exceed speeds of 10 – 12 mph macadam surfaces may be permitted, but in these cases it is essential that a rumble area not less than 2m in depth and of approved materials and design shall be provided at the entrance of the access way.

5.11 The section on surfacing materials gives examples of suitable materials for the surfacing of access ways.

Edging

5.12 The surface edging should not be standard kerbing and in no case should the vertical upstand exceed 40mm. The opportunity to emphasise the informality and change in character should be taken by the use of setts, concrete blocks or other approved materials.

Drainage

5.13 The surface area can be drained by street gullies either alongside one edge with a crossfall, alongside both edges with a camber or along the centre line.

Verges/Utilities/Adoptions

5.14 The highway authority will adopt verges next to access way surfaces but it is anticipated that these verges will normally be maintained by the occupier as part of the frontage garden, otherwise these verges would receive minimal maintenance by the highway authority. All frontage verges should be 2m in width to enable them to be used for cables and apparatus of statutory undertakers. Where the verge is not used by the statutory undertakers and has no frontage development, a minimum width of 0.5m may be permitted. The width of the verges shall run parallel to the edge of the surface of the access way and marker blocks shall be provided in appropriate positions and in all cases at driveway entrances, in order to delineate the extremity of the adopted highway.
5.15 Essential characteristics of an Access Way.

1. 6m radius bell mouth from Type 4A road.
2. Change to less formal kerb material.
3. Amorphous turning head.
4. Small radius means that curves can give an interesting informal appearance to turning areas.
5. Surface dressing, concrete blocks or similar to contrast with colour and texture of other roads.
6. Footway usually not required.
7. Verge 2m wide contiguous with private frontage gardens may be used for services.
8. Kerbs do not run parallel and have constant 40mm upstand, do not drop for private drives.
9. Rumble area (change of surface material) at entrance 4.5m wide by 2m, with footway access to joint vehicular/pedestrian surface.

5.16 Verges is access way suitable for public utilities

1. Service verge marked by a line of setts or engineering bricks or similar permanent materials laid flush with drive, acting as highway boundary.
2. Minimum width service verge 2m.
3. Plot boundary markers required.
4. Planting limited to grass or ground cover to avoid damage to services.
5. No physical definition of boundary across the private garden.
6. Drive access with ‘bell mouth’ to dwelling across verge.
7. Boundary sighted between markers in drives.
8. Verge with no services minimum width 0.5m.
9. Lighting column, local widening to 0.8m.
Parking

5.17 In order to discourage parking on the access way each dwelling should have space for the parking of a minimum of two vehicles within its curtilage, either by the provision of garages or drives. Developers may wish to consider the advantages of side by side parking within the private dwelling curtilage.

Landscaping

5.18 The use of access ways should result in saving to the developer and it is expected that this will be reflected in a high standard of landscaping incorporating if possible existing trees and features as well as the introduction of suitable new planting. An overall landscaping plan for the gardens around the access way will help to establish a community feeling and can be an effective sales feature. It is recommended that the developers seek the advice of a qualified landscape designer.

Mews Court

Concept/Design

5.19 A mews court is a more formal cul-de-sac than an access way yet still with a joint used pedestrian/vehicle surface on which pedestrians are given priority by virtue of distinctive design features. A mews court may serve up to 25 dwellings and once again it is essential that the joint use surface is visually distinct from traditional vehicle priority carriageways.

5.20 Mews courts are particularly suitable for higher density developments with minimal soft landscaping in front of the dwellings. The entrance past the road junction will be narrow and restricted and the designer should contrast this, using the buildings to present a courtyard appearance in front of the dwellings. The mews court may be particularly appropriate in an urban environment or village infilling site where the
arrow entrance can maintain a village street and the court open out to reflect the character of a village space.

5.21 Standard house types will usually be inappropriate and the developer should give special consideration to ways of achieving privacy where dwellings are grouped close together. The use of vertical emphasis in windows and internal living layouts with main living spaces opening onto private rear gardens should be considered.

**Junction with Type 3/4 Road**

5.22 The junction of the mews court with the type 3A or 4 road should always be in the form of a standard road junction with footways on both sides to a point 2m past the rumble area (change in surface material) or the inner tangent of the kerb radii. The width of the rumble area at the inner tangent point of the kerb radii should be 4.5m and the visual narrowness must be created by the use of walls or dense planting. The walls may be those of dwellings, garages, porches or garden walls, etc, and should normally be not less than 1.8m high and at least 2m in length.

**Rumble Area** (change of surface material)

5.23 At the entrance of the mews court at the inner tangent point of the junction a strong physical definition of the changing character of the space is essential in order to emphasise the change from conventional roads.

**Turning Heads**

5.24 A turning head for vehicles should be provided within the space at the end of every mews court.

**Widths**

5.25 The hard surface in a mews court should enclose a clear core area of 4.5m wide, with a minimum centre line radius of 10m. In many instance the minimum width will be exceeded to allow for site conditions and the variations in building line essential to create a satisfactory courtyard space.

**Surfacing**

5.26 The surface finish of the joint pedestrian/vehicle surface within the mews court gives one of the best opportunities to provide the essential physical and visual variations to indicate the change from a traditional vehicle priority carriageway and also to differentiate between the adopted and unadopted parts of the surface.

5.27 Block paving, setts or similar may be appropriate to mews courts but subject to the agreement of the Planning and Highway Authorities and in instances where the mews court is small and vehicle speeds can be physically restricted by the size of the court, macadam surfaces may be permitted. In these cases it is essential that a rumble area not less than 2m in length and of approved materials and design shall be provided across the entrance to the mews court.

5.28 The section on surfacing materials gives examples of suitable materials for the surfacing of mews courts.
5.29 The edging materials to the adopted surface should not be standard kerbs, and generally should have a vertical upstand of not more than 40mm. The edging should always be at least 0.5m from the face of any wall or building, and where this minimum distance applies the kerb upstand may be increased to afford protection to adjacent buildings.

5.30 At the narrow entrance to the mews court the space behind the edging should be hard surfaced; elsewhere it may be used for planting in unadopted areas.

Drainage

5.31 Surface water should drain away from the buildings to either central or side channels or gullies. It is also an advantage to make the adopted area fall towards the court entrance to avoid the risk of flooding if gullies become blocked. Where the adopted area is lower than the court entrance an alternative scheme for the disposal of surface water should be proposed.

Verges/Utilities/Adoptions

5.32 In mews courts the public utilities will inevitably be placed under the joint pedestrian/vehicle hard surface and there should be no need to provide 2m verges for the apparatus of the utilities.

5.33 Service access difficulties and the space needed for such facilities can be minimised by keeping all the services within the same zone at one edge of the adopted area. The service layout in the restricted space available should be carefully considered with the Public Utilities at design stage and early consultation is essential.

5.34 The highway authority will adopt and maintain the clear core area of the mews court and the vehicular turning head. In addition where visitor parking spaces are provided and these are clearly for communal use and not allocated to any specific dwelling, and are contiguous with the clear core area, the highway authority will adopt them and accept responsibility for their maintenance. Each parking bay should be 5.0m by 2.4m and with parking bays at right angles to the edge of the clear core area a manoeuvring width of 6m is required in the width of the clear core area.

5.35 In all cases there should normally be a clearly defined demarcation between the adopted and unadopted surfaces.

Parking

5.36 Each dwelling should normally have one car space within its curtilage and in addition one communal parking space per 2 dwellings should be provided within the mews court but separate from the clear core area or one additional car space if located in a separate parking court.

5.37 If the dwellings are not provided with parking facilities within the curtilage then parking spaces should be provided within a separate garage or parking court which should have its entrance as near to the entrance of the mews court as possible, but avoiding conflict with the needs of vehicles entering the court.
5.38 The garage court will both be adopted by the highway authority for maintenance purposes and it is essential for the garage court to be convenient for residents to discourage them from parking outside their dwellings rather than in their garage or parking area. This will also reduce the number of vehicles using what is primarily a pedestrian area.

5.39 Designers should consider avoiding a visual emphasis on garage doors within the mews court itself by using a variety of solutions.

Landscaping

5.40 Generally soft landscaping in the mews court should be in private ownership. Existing mature trees however should be retained if possible as features but only after consultation with the highway authority; and due care should be taken to ensure an adequate water supply to the roots and to protect the trunk from damage by manoeuvring vehicles.

5.41 Essential characteristics of a Mews Court

1. Narrow entrances neck may be formed by buildings. Rumble area at entrance 4.5m wide by 2m.
2. 0.5m clearance strip required.
3. Residential parking spaces outside the adopted area.
4. Visitors parking for communal use may be within the adopted area but should be distinct from the ‘core’ area.
5. Adopted area defined by kerb.
6. 4.5m clear ‘core’ area.
7. Turning head required.
8. Unadopted garage courts may open off the mews court.
9. Footway not required.
5.42 Essential characteristics of a Housing Square

1. Landscaping is essential with this type of layout.
2. Houses may be related to footpath systems rather than the housing square.
3. Change to a less formal kerb material.
4. Parking areas must be clearly defined. All parking is communal no garages or drives within individual house sites. Garage courts may be served from the housing square.
5. Adopted area contiguous with the Type 4B road.
6. The ‘square’ proportions are essential to discourage any attempt to drive fast.
7. Extra kerbing may be useful to inhibit over-riding of landscaping.
8. Offset junction when used with car ways.
9. Rumble area at entrance 4.5m wide by 2m.

Housing Square

Concept Design

5.43 Housing square is a joint use pedestrian/vehicle cul-de-sac to serve up to 20 dwellings all of which are provided with parking facilities in conveniently situated parking areas.
5.44 Housing squares are particularly suitable for development by local authorities or housing associations. The overall plan form of a housing square may be varied but the proportions are important so that the parking area should have a basic “square” shape.

**Junction with Type 3/4 Road**

5.45 The junction of the housing square with the type 3A or 4A road is usually in the form of a standard road junction with footways on both sides to a point past the rumble area. The width of the rumble area at the inner tangent point of the kerb radii must be 4.5m and a strong physical definition of the changing character of the space is required. Housing squares are particularly suitable for use with type 4B car ways in which case the junction should be in accordance with the standard details, see Section 4B.

**Rumble Area** (change in surface material)

5.46 At the entrance of the housing square at the inner tangent point of the junction, a strong physical definition of the changing character of the space is essential in order to emphasise the change from conventional roads.

**Turning Head**

5.47 A turning head is not required within the open square when the access is off a type 4B car way but a standard turning head is required within the parking area when the access is off a type 3A or 4A road.

**Widths**

5.48 The width of the joint use pedestrian/vehicle surface at the entrance of the housing square shall be 4.5m and then open out into a width that will accommodate passing and manoeuvring vehicles.

**Surfacing**

5.49 The surface finish of the joint pedestrian/vehicle surface within the housing square gives one of the best opportunities to provide the essential physical and visual variations to indicate the change from a traditional vehicle priority carriageway and also to differentiate between the adopted and unadopted parts of the surface.

Block paving, setts or similar materials may be appropriate to housing squares but subject to the agreement of the Planning and Highway Authorities. In instances where the square is small and vehicle speeds can be physically restricted by the size of the square, macadam surfaces may be permitted. In these cases it is essential that a rumble area (change in surface material) not less than 2m in length and of approved materials and design shall be provided across the entrance of the square.

5.50 The section on surface materials gives examples of suitable materials for the surfacing of housing squares.
Edging

5.51 The edging material to the adopted surfaces should not be standard kerbs, and generally should have a vertical upstand of not more than 40mm. The edging should always be at least 0.5m from the face of any wall or building.

Drainage

5.52 The surface water should be drained by street gullies either alongside the edging with crossfalls or cambers, or central drainage.

Verges/Utilities/Adoptions

5.53 In housing squares, the public utilities may have to place their apparatus under the joint pedestrian/vehicle hard surface but every attempt should be made to avoid this if possible in the design of the layout and by prior consultation with the various Public Utilities. If verges are provided round the various parts of the housing square for the use of Public Utilities then they should be 2m in width. The highway authority will adopt such verges as in the case of access ways but once again maintenance by the highway authority will be minimal and the frontagers may wish to apply for a licence to maintain these areas.

5.54 Designers of housing squares should have regard to BS 5906 1980 which advocates a maximum 'bin-carry' distance of 25m.

5.55 As well as the clear joint pedestrian/vehicle hard surface and the verges necessary for the apparatus of public utilities, the highway authority will adopt the parking areas provided within the square for casual and visitor use and these should be clearly defined by a different surface material or delineated by a row of setts or other appropriate material.

5.56 Garage courts or parking areas off the main housing square will not be adopted.

Parking

5.57 It is essential that 1.5 parking spaces per dwelling be provided. These parking spaces should be clearly defined on the ground and if in garage courts they should be entered from the housing square. Garage courts or parking spaces for residents will not be adopted by the highway authority.

5.58 In addition a number, being not less than 25% of the number of dwellings, of additional parking spaces should be provided within the housing square for the use of casual callers or visitors, and these parking spaces should be contiguous with the adopted clear joint pedestrian/vehicle surface. This casual or visitor parking facility must be clearly defined on the ground. Each parking space or bay should be 5m by 2.4m, with parking bays at right angles to the clear joint pedestrian/vehicle surface and a manoeuvring width of 6m is required.

Landscaping

5.59 Housing squares should result in some savings to the developer but they could become unattractive hard areas. It is expected that the saving will be reflected in a high standard of planting around housing squares and along footpath networks. Earth mounding, shrub planting and the introduction of suitable trees, combined with
existing mature trees and hedges are essential in the creation of a satisfactory layout or environment. Such landscaping should always be in private ownership.

Access Drive

5.60 An access drive is a modified type 5A road, between 15m and 30m only in length and serving up to 5 dwellings, each having individual access off the access drive. This short informal cul-de-sac with a joint pedestrian/vehicular surface may be used by a developer as a means of serving small and odd shaped parcels of land, whilst providing a road which would be acceptable for adoption.

5.61 An access drive can take direct access only from a type 4A road or a type 5A road, but in the latter case the number of dwellings will form part of the 30 dwelling limit applicable.

5.62 The junction of an access drive with the type 4A road should be as for a type 5A road but when contiguous with a type 5A road the entrance bell mouth should have a radii of 4.2m.

5.63 The characteristics of an access drive as regards surfacing, edging, drainage, verges, utilities, adoption, parking and landscaping are as for type 5A roads. The minimum width of the access drive is fixed at 4.5m and as the traffic generation within it will be low, a reduced turning head which will allow only cars and small service vehicles to turn will only have to be provided at the head of the cul-de-sac. Larger vehicles will use the junction formed with the type 4A road or type 5A road as the turning area.

5.64 Turning Head
x = 4.5m
minimum radii 3m.
5.65 **Essential characteristics of an Access Drive.**

1. Overall length between 15m and 30m.
2. Minimum width carriageway 4.5m.
3. Verge 2m wide contiguous with private frontage gardens, may be used for services.
4. Verge with no services, minimum width 0.5m applicable where no frontage development.
5. Entrance bell mouth radii 4.2m.
6. Entrance from type 4A road, radii 6m and rumble area.
7. Amorphous turning head.

---

**Private Drive**

5.66 A private drive is a short informal single track cul-de-sac serving up to 2 dwellings, which will not be adopted by the Highway Authority.

5.67 In the event of a request for adoption being submitted to the Highway Authority at any time after the construction of a private drive, the Highway Authority will only consider adoption if the dedication of additional land and all works necessary to bring the
private drive up to adoption standards are carried out at the expense of the frontager(s) submitting the request for adoption.

5.68 A private drive may join any category of road but the design of the junction of the private drive with the major road in terms of width, kerb treatment, etc, will depend upon the classification, function and characteristics of the major road.

5.69 Each dwelling served by a private drive shall have a minimum of two car parking spaces located entirely within the curtilage of the dwelling. If both car parking spaces are in the form of garaging one additional car parking space shall be provided within the curtilage of the dwelling. The minimum unobstructed area for each car parking space shall be 5m by 2.4m.

5.70 In a private drive, vehicle turning facilities should normally be provided.

5.71 Designers of a private drive should have regard to BS 5906 1980 which advocates a maximum ‘bin-carry’ distance of 25m.

5.72 Where a private drive joins a type 5A road, the area of the drive between the carriageway of the accessway and the back of the verge service strip shall be built to pavement crossing standards and will be adopted. Markers should be used to delineate between the adopted highway and the shared private drive.

5.73 A private drive shall be constructed and drained in such a way that surface water therefrom does not discharge onto the public highway. Permission will not be given for drains taking surface water from a private drive to be connected to a highway drain in the adopted highway.

Footpaths

5.74 Any hard linear surface not following the route of a carriageway and intended solely for pedestrian use will be classified as a footpath and should generally be a minimum of 1.8m wide.

5.75 This guide has created a hierarchy of roads in which the vehicle routes become progressively more tortuous. This is a deliberate attempt to reduce vehicle speeds. People travelling in vehicles are in comfort, protected from the weather and moving at a reasonable speed without effort, so the slight extra journey time will not be an inconvenience. But pedestrians are not sheltered from wind and rain and their journeys involve physical effort, especially if carrying shopping, pushing a pram and controlling children.

5.76 It is expected that large developments will have a footpath network linking pedestrian focus points. The design of a footpath network which follows pedestrian desire lines is of primary importance in the layout of housing areas. The Highway Authority will adopt properly constructed footpaths lit and drained where necessary, which are of some use to the public and which connect public spaces. Footpaths serving one property or of limited public use will not be adopted. Public footpaths should not pass through land in one private ownership, nor should they create small isolated areas of soft landscaping requiring public maintenance.
5.77 This guide allows footways to be omitted form the higher categories of road when a separate footpath system is provided. This can only be successful where the footpath route is more attractive to pedestrians than the vehicle route. To ensure this success it is advisable to identify at the earliest design stage those features which will generate or attract pedestrian traffic, for example the school, local shops, bus stops, play areas, clinic or library. The network created by linking all these features with direct routes should become a major constraint on the layout of houses and roads and should be safeguarded as far as possible.

5.78 It is not sufficient, however, to provide these routes merely as footpaths between houses or alongside roads. Although the pedestrian should feel that he is making obvious progress towards a definite goal he should also be visually pleased by a series of contrasting well-designed spaces. In places a narrow footpath, perhaps between brick walls, may be suitable but this may open into a landscaped area with trees and shrubs or a hard surfaced play area. Sometimes it may be advantageous to run a footpath along the line of an existing hedgerow. When footpaths link together with the heads of access ways, mews courts or housing squares these open spaces will contrast well with the essentially narrow linear character of most of the footpath network.

5.79 It is recommended that developers should clearly indicate the footpath network on the application drawings. This will help to make apparent those parts of the road hierarchy where footways may be required as part of the estates footpath network.

**Cycle Ways**

5.80 Consideration should be given in the design of a residential development to the existence of any cycle network in the area or of any cycle network proposals prepared by the local authority.
SECTION 6

6.1 The standard details illustrated in this design guide as with the design standards are intended to be considered as a flexible design tool, but it is essential that new roads and footpaths should be constructed so that they are suitable for adoption.

6.2 The standard details should be used in conjunction with the Lancashire County Council publication ‘Specification for Construction of Estate Roads’.

6.3 These standard junction details are included for ease of reference and to avoid repetition in the detailed requirements for each road type.

<table>
<thead>
<tr>
<th>Junction Type</th>
<th>Radius (metres)</th>
<th>Minimum Junction Spacing (metres)</th>
<th>Sightlines (metres)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Road A</td>
<td>Road B</td>
<td>Adjacent</td>
</tr>
<tr>
<td>Type 3A Local Distributor</td>
<td>Any other road *</td>
<td>10</td>
<td>80</td>
</tr>
<tr>
<td>Type 4A Collector Road</td>
<td>Type 3B Transitional road</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Type 4A Collector Road</td>
<td>Type 4A Collector road or Type 4B Car Way</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Type 4A Collector Road</td>
<td>Any Type 5 road *</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Type 4B Car Way</td>
<td>Any Type 5 road *</td>
<td>8 &amp; 6 Offset</td>
<td>30</td>
</tr>
<tr>
<td>Any Type 5 road</td>
<td>Any Type 5 road *</td>
<td>4.2</td>
<td></td>
</tr>
</tbody>
</table>

* Rumble area (change in surface material) required at junction with Type 5 roads.

At the termination of a Collector Road a turning area should be provided from which any Type 5 road can form a T-junction.

Turning Heads

6.4 Minimum turning head dimensions and typical amorphous examples. ‘A’ = minimum width for road type, either 5.5 metres or 4.5 metres. Amorphous turning heads are preferred in Type 5A access ways with minimum radius 4.2 metres.

Turning circles are permitted but are not preferred. Careful though must be given to the central reservation to avoid maintenance problems and damage by over-riding.
Kerb Details

6.5 The following kerb details to be read in conjunction with the Lancashire County Council publication ‘Specification for Construction of Estate Roads’.

All diagrams are to a scale of 1:10.

6.6 Standard kerb treatment on Type 3 and Type 4 roads.

6.7 Alternative kerb details on Type 4B roads, particularly useful where over-riding may occur.
6.8  Suggested kerb treatment on Type 5 roads. Bullnose precast pressed concrete block.

6.9  Suggested kerb treatment on Type 5 roads. Granite sett edging. Single granite sett edging only to be used on straight lengths of carriageway.

6.10 Stone kerb.
6.11 Engineering brick edging.

6.12 Dished setts or bricks.
6.13 A Rumble Area is specified at the inner tangent of junctions to Type 5A, 5B, 5C and 5D roads.

6.14 Rumble area position at junction between Type 4A and Type 5 roads.
Surfacing Materials for Type 5 Roads

Concrete Block Paving

6.15 Concrete block paving consists of small individual high-strength concrete units manufactured to accurate dimensional standards and locked into place between edge restraints. Horizontal interlock is provided by a proprietary shape on plan or in the case of rectangular blocks by an interlocking herringbone laying pattern, the edge restraint being provided by precast kerbs, flush edge strips or channels. Interlock is completed by vibrating sand into the cracks between the blocks.

6.16 Laying is a dry process and the pavement is ready for trafficking as soon as completed. The sub-base and base are laid as for conventional road, the thickness depending on the nature of the ground and the amount of traffic. The laying course consists of a layer of carefully screeded sand, 50mm deep.

6.17 At present there is no British Standard for concrete paving blocks. The attention of developers is drawn to the Lancashire County Council publication “Specification for Construction of Estate Roads”, the “Specification for Precast Concrete Paving Blocks” produced by the Cement and Concrete Association and the need to give consideration to obtaining replacement blocks for future reinstatement works. If a non-rectangular block is used the Highway Authority may require a number of blocks depositing with them for future maintenance purposes.

Rolled Asphalt

6.18 Rolled asphalt complying with the Lancashire County Council document “Specification for Construction of Estate Roads” may be used for the surfacing of type 5 roads. In order to provide a visual distinction from other roads, colour must be introduced and advice on this aspect will be given by the highway authority.

Natural Stone Setts

6.19 Natural stone setts may be used at the discretion of the highway and planning authorities and attention is drawn to Paragraph 5.13 of the Lancashire County Council document “Specification for Construction of Estate Roads”.

Precast Concrete Paving

6.20 In type 5 roads which carry vehicular as well as pedestrian traffic precast concrete paving may be used provided that the units are of suitable size and thickness to withstand the normal vehicle loading. 450mm x 450mm x 70mm units are sufficiently strong to withstand vehicular loading without the addition of any reinforcement.

6.21 Precast units should be laid fully bedded on a laying course of screeded sand over a prepared sub-base which should comply with the relevant clauses contained in Lancashire County Council document “Specification for Construction of Estate Roads”. The laying course and levelling layer of sharp sand should be compacted and screeded. Joints should be not more than 3mm and sand filled.
SECTION 7

The Adoption of Highways, Public Open Space and Parking Places

7.1 Highways for Adoption. The highway authority will adopt as highways maintainable at the public expense those roads and footpaths which are necessary for public access or passage. Such highways include carriageways, footways and verges, and also footpaths which are constructed in accordance with these standards and which are of real use to the general public.

7.2 Footpaths for adoption should form a link on a pedestrian route.

7.3 Highway verges, whether they are between the footway and the carriageway or adjacent to private gardens, will be adopted as part of the highway, although this does not mean that every highway needs to have a verge. Generally highway verges should not be more extensive than is suggested in this document, although verges which make a contribution to the appearance or character of a layout will be considered sympathetically, providing suitable landscaping obviates costly maintenances.

7.4 Public Open Space. Amenity areas, play space and landscaped areas which are proposed for adoption by the local authority must be agreed with the District Council, who may wish to adopt such areas on the basis of a commuted sum agreed with the developer before approval of the site layout.

7.5 Areas of soft landscaping other than highway verges are not acceptable for adoption as highway and should be in private ownership unless the local authority agrees to accept them as amenity areas.

7.6 Parking Places. Private parking provision requirements must be met other than on the highway. Parking spaces provided in lieu of garages or private drives for the regular parking of residents’ cars will not be adopted by the highway authority.

7.7 Communal visitors parking spaces in type 5 roads which are contiguous with the highway and which are clearly not for the regular use of any specific dwelling may be adopted by the highway authority for agreement.

7.8 Where communal forecourts and parking spaces are located immediately adjacent to carriageways it will normally be sensible for them to become part of the public highway. It should be borne in mind that such spaces would then be subject to highway law and as such the vehicles using them would have to be taxed and insured.

7.9 Adoption Procedure. It is hoped that developers will make an agreement with the council under Section 18 of the Public Health Act 1936 and 38 of the Highways Act 1980. With this agreement sewers, roads and footways can be automatically adopted as public highway on satisfactory completion and in accordance with such agreement.

7.10 Immediately a development receives building regulations approval the District Council as agent for the Lancashire County Council, requires a statutory guarantee that the roads, footways, footpaths, verges and street lighting will be completed to the satisfaction of that authority.
7.11 Before construction begins the developer should either:

- complete payment of the estimated cost of highway works under The Advance Payments Code (Section 219 of the Highways Act 1980)
- or
- enter into a Section 38 Agreement under the Highway Act 1980 and provide a bond for due completion.

7.12 If a developer wishes to construct an estate in distinct phases, the phasing should be clearly shown on his submission for approval.

7.13 If an early start to construction is essential, developers should make an Advance Payment and replace this as soon as possible with a Section 38 Agreement. In this case, the APC payment is refunded with interest.

7.14 Developers are required to notify the highway authority of the commencement of any work on prospective highways so that inspection and approval can be arranged. This applies to work under both APC and Section 38 Agreements. Works not so inspected will not be adopted until proven at the developer’s expense.

7.15 District Councils have a standard form of Section 38 Agreement. The plan accompanying the agreement shows the roads, footways, footpaths and verges to be adopted as public highway and also the land to be adopted by the district council as public open space or amenity areas. This plan may be modified by mutual agreement during construction until, on completion, it becomes the adoption plan.

7.16 Land for highways or public open space should be dedicated to the highway authority and local authority respectively although the latter may require conveyance in certain instances.

7.17 Verges on the Edge of Highways. A verge or service verge which is contiguous with private gardens and which the highway authority agree to adopt, but which will normally be maintained by the adjoining occupier, will require special attention to ensure that the rights of the highway authority and the statutory undertakers are fully understood by the purchaser of the adjacent property. It is suggested that a permanent notice be fixed inside the meter cupboard of properties on new estates, such notices to warn occupiers of the service verge, its location and limitations of use. Much can be done by careful landscaping to indicate that such a verge is part of the highway. Sett or cobble patches to contain stopcocks, hydrants, etc, will be required.

7.18 One objective of the open plan type of estate using access ways or housing squares on which peripheral verges may occur is that householders will be encouraged to maintain to the edge of the joint use surface and whatever measures are taken to define the verges should militate against this.

7.19 However purchasers should be made aware of the prohibition of building walls or fences and planting of hedges or trees on the verge and that the statutory undertakers may excavate their services at any time.
7.20 Street lighting forms part of the highway and only those roads complete with lighting to the appropriate standard will be adopted by the highway authority. Developers may at their own expense submit for approval proposals for street lighting, although the highway authority will choose the type of lighting from the alternatives given in the Lancashire County Council publication ‘Specification for Construction of Estate Roads’. Alternatively, the highway authority will prepare a lighting scheme for the roads and footways to be adopted. This will show the number, type, siting and height of columns or brackets and lantern and lamp type and wattage. Developers may choose lanterns and columns from long term production models of reliable manufacturers, but these must be of the type chosen by the highway authority and in accordance with the Specification.

7.21 Type of columns. The road hierarchy creates two basic road types for which Group A lighting is appropriate for Type 3 and 4 roads where vehicular traffic is dominant and Group B lighting for Type 5 roads where there is joint use pedestrian/vehicular. The following table sets out the type, height and location of columns appropriate for each situation.

<table>
<thead>
<tr>
<th>Type of Road</th>
<th>Lighting Group</th>
<th>Height and Lantern Type</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>3A Local Distributor Road</td>
<td>A</td>
<td>10m (or occasionally 8m) – side entry</td>
<td>Rear of footway</td>
</tr>
<tr>
<td>3B Transitional Road</td>
<td>B</td>
<td>5m – side entry</td>
<td>Rear of footway</td>
</tr>
<tr>
<td>4A Collector Road</td>
<td>B</td>
<td>5m – side entry</td>
<td>Rear of footway</td>
</tr>
<tr>
<td>4B Car Way</td>
<td>B</td>
<td>5m – side entry</td>
<td>Rear of verge</td>
</tr>
<tr>
<td>5A Access Way</td>
<td>B</td>
<td>5m – post top</td>
<td>Rear of verge</td>
</tr>
<tr>
<td>5B Mews Court</td>
<td>B</td>
<td>5m – post top</td>
<td>Rear of verge or adoption of area with LC or wall bracket</td>
</tr>
<tr>
<td>5C Housing Square</td>
<td>B</td>
<td>5m – post top</td>
<td>Rear of verge or adopted area</td>
</tr>
<tr>
<td>5D Access Drive</td>
<td>B</td>
<td>5m – post top</td>
<td>Rear of verge</td>
</tr>
</tbody>
</table>

7.22 Position of columns. The standard column position is at the rear of the footway or service verge as illustrated in the following diagram. For type 4B and 5 roads an alternative column position giving 0.5m clearance to the front face is also acceptable.
7.23 Where in the absence of frontage development in type 5 roads a 0.5m verge is permitted and it is considered necessary to install street lighting within the verge, it will be necessary for a local widening of the verge to 0.8m to be provided, as illustrated in the following diagram, in order to accommodate the lighting column.

7.24 In mews courts, type 5B roads, where there is no adopted area other than the shared surface, satisfactory arrangements must be made to site columns with adequate clearance, 0.5m, or the fixing of lighting wall brackets to buildings. This will entail either adopting the area of verge containing the lighting column or arranging a wayleave agreement with the developer. The latter must be in a form which cannot be rescinded by a subsequent purchaser, to ensure the permanence of those brackets and cables on private property.

Public Utilities Services

7.25 The provision of public utilities services is an essential part of any development. The layout, economical installation and future maintenance of service apparatus should be considered in the design of an estate. Developers must establish liaison with statutory undertakers as part of the initial design process.

7.26 Statutory undertakers have rights to lay apparatus in public highways and other public land. The Public Utilities Street Works Act and other specific enactments stipulate these rights. Statutory undertakers prefer to maintain their rights by laying their services in land adopted by the highway authority. However, the highway and local authorities are not able to bear the cost of maintaining land solely to provide a service track for public utilities and developers should cater for service space needs in highways, highway verges and other land acceptable to the highway or local authority and public utilities.

7.27 The highway authority will adopt by agreement carriageways, footways, footpaths and verges which are essentially or prospectively a public highway. This includes any length of street, highway, road, land, footway, alley, passage, square, court, verge or piece of land which satisfies the requirements of these standards.

7.28 The local authority may adopt by agreement public open space, amenity and play areas, certain footpaths, linear parks, land laid out as a way and such other areas acceptable to them. The local authority are the ‘Street Managers’ of these areas within the terms of the Public Utilities Street Works Act.

7.29 If the adopted highway or public open space are insufficient for statutory undertakers’ needs then developers should provide service routes with secure easements with the statutory undertakers concerned.

7.30 When selecting routes for services, developers should bear in mind that services usually follow the side of the road with most properties and serve the opposite side with branch crossings. It is the developer’s responsibility to provide cross carriageway ducts in positions required by the statutory undertakers and to mark temporarily the location of the ducts for easy access during construction. On collector roads, with direct access on both sides, dual mains may sometimes be used.
7.31 It is preferable for services to be laid in amenity areas or footways to minimise installation, repair costs and disruption. However, if no other route is possible then services may be sited in the carriageway. With mews courts, housing squares and some types of access ways this is clearly unavoidable but with the much reduced traffic load of these areas services can be laid at a shallower depth.

7.32 Where services are to be laid in a highway verge which is contiguous with open plan gardens the statutory undertakers may wish to draw attention to the status of the verge as highway and to take additional measures to protect their apparatus. Appropriate reference to the service verge should be made both in the text of property deeds and in their accompanying plan, in order that initial and subsequent occupiers are aware of their liabilities.

7.33 It is particularly important that the boundary of the verge as a service strip is defined by markers such as a granite sett or brick laid at each side of the private drive and at the boundary of properties. Each service has particular requirements which should be kept in mind during the design process: reference should be made to Appendix 1 of “Specification for the Construction of Estate Roads” for the location of services.

7.34 Sewers. Sewers should be laid in straight lines between manholes which should be sited in adopted areas.

7.35 Electricity. Cable ends to electricity supply in culs-de-sac should be avoided wherever possible. Emergency links between culs-de-sac heads can overcome this problem.

7.36 Aggressive root growth around cables can reduce heat dissipation and shorten cable life. Only grass and ground cover with limited root systems should be planted over cables.

7.37 Substations should be conveniently sited for access with a 6-tonne lorry. Occasionally a major substation will be required which should be accessible with a 30-tonne low-loader.

7.38 Water. Large diameter rigid pvc standard straight water pipes will only accommodate a radius of 280m and asbestos cement and ductile iron pipes a minimum of 70m radius. Although small diameter pipes have some flexibility, bends will normally be needed to tighter radii. At turning heads, water mains should pass under the carriageway.

7.39 Dead ends in culs-de-sac can cause dirty water. Links between cul-de-sac heads, following footway links, can overcome this problem.

7.40 Water valve boxes are required for each dwelling at or near the boundary, and are best sited at the edge of the private drive.

7.41 Hydrants must be sited where required by the Fire Service. Normally type 5 Roads will be adequately served by one hydrant at the entrance.

7.42 Gas. Where ductile irons pipes are laid in standard straight 5.5m lengths the minimum curvature negotiable without the use of bends is 157m radius. Where plastic pipes were laid the minimum curvature negotiable without the use of bends can be considerably reduced with smaller pipe diameters. In certain circumstances it
will be necessary for the gas pipe to pass under the carriageway at turning heads. The laying of gas mains close to property should be avoided. Tree roots can damage gas mains and create difficulties with emergency access.

7.43 Suitable locations may be required for gas governor house installations with lorry access.

7.44 Telephones. Whilst every effort is made to provide underground services British Telecom reserve their right to serve a development by overhead lines, in which case the discreet siting of poles is of paramount importance. Developers may reduce the costs of undergrounding by providing suitable pipe ducts from the main cable run to the lead-in point at each dwelling. On large developments a site for a call box may be needed.

7.45 Co-ordination. The estate layout design should reconcile the sometimes conflicting requirements of highway authority, public utilities and local authority always bearing in mind that the main objective of these standards is to create a better housing environment.

7.46 The emphasis on curving road alignments to reduce speed, make roads safer and improve appearance may conflict with the radii of pipework. Undulating mounding or banks in landscaped areas could cause problems since most services prefer to be at a consistent depth, therefore verges to contain services should ideally be level with the adjacent kerb. Trees and shrubs in close proximity to public utilities services should be avoided since their roots will cause damage and the trees themselves will be damaged by access excavation. In addition the layouts of several services should be co-ordinated, the joint trench principle is an ideal which is not often practicable. However, care should be taken to ensure that services do not conflict.

7.47 Developers should provide the public utilities with their proposals at the earliest possible stage and designers should consider services as a basic design element. Each statutory undertaker will need copies of plans, sections, drainage and sewerage details including particulars of any underground structures or apparatus. These plans should show ‘start’ and ‘finish’ dates of construction phases. Street names and house numbers are needed as soon as possible.
7.48 Agreement between the developer and the undertakers should be reached on essential aspects of servicing, for example:

- Programming cut-offs from any existing premises to be demolished.
- Protection and diversion of existing services.
- Access to, siting and connection of substations, governors, etc.
- Wayleaves and easements.
- Service layouts, particularly construction and siting of carriageway crossings and ducts.
- Providing services when routes from supply points cross undeveloped land.
- Termination points in dwellings, entry details and meter reading facilities.

7.49 The National Joint Utilities Group have produced several publications, three of which:
- No. 2 – ‘Provision of Mains and Services by Public Utilities on Residential Estates’,
- No. 5 – ‘Model guidelines for the planning and installation of utilities supplies to new building developments’ and
- No. 6 – ‘Service entries for new dwellings on residential estates’, will be particular benefit to developers. Copies of the above publications can be obtained from any of the statutory undertakers.
SECTION 8

Landscaping

8.1 The first and perhaps the most lasting impression of any housing area is created by the public and semi-private spaces between the houses. The elements of these spaces are the gardens, boundaries, roads, and footpaths. These standards have created opportunities for designers to achieve a better balance between these elements by reducing the visual dominance of the road and by making it easier to group the houses. This change in emphasis means that the landscape design becomes more important and has a greater influence on the character of the space between the houses. High design standards in these spaces can be a valuable sales feature which is of lasting and increasing benefit to the residents. It is strongly recommended that developers seek the advice of a qualified landscape designer.

8.2 These standards define two broad groups of roads, each having distinct types of problem for the landscape designer.

8.3 Type 3 and 4 roads which are basically linear in character will be the introduction to the housing area and it is essential that an interesting, attractive appearance should be created. Landscaping is an essential part of this interest. Most of these roads will have a verge, a property boundary and perhaps a footway. If this was treated with flat grass and, for example, woven board fencing 2 high on each side of the road the effect would be dull and unattractive. The success of these areas will depend very much on providing a variety of spatial and visual experiences along the length of the road. The variable verge width helps to provide variety and space for tree planting.

8.4 On these roads trees should generally be more than 2m from the kerb although this requirement may be waived in the case of existing mature trees. In visibility splays trees will only be acceptable if they are of slender girth and free from lateral growth between 0.75m and 1.8m above ground level. They should be carefully sited in relation to other planting to avoid causing an obstruction to visibility. Ground cover in visibility splays should be of a species which will not exceed 0.75m in height when fully grown.

8.5 The local authorities have limited resources for the maintenance of grass or planting. Landscaping proposals which use low maintenance grass species, shrubs and ground cover are therefore likely to be the most successful solutions.

8.6 In type 5 roads each space will have its own character, dictated by the site, the existing planting and the surrounding environment. In access ways the soft landscaping will be the dominant feature and, although it should all be in private ownership (except service verges), a comprehensive planting strategy for the space can reinforce its identity as a group of houses and set a generally high standard for the residents. In mews courts, although the hard surfaces will dominate, there is still scope for the landscape designer and for the use of key trees, shrubs or climbers to give an individual character to the court. Extensive landscaping is essential around housing courts to counteract the large area of hard surface.

8.7 Wherever possible soft landscaping related to type 5 roads should be in private ownership (except service verges) as local authorities do not have the resources to carry out extensive maintenance of complex landscaping to the high standard desirable in housing areas.
8.8 There will be some areas of soft landscaping which also contain public utilities services. Only restrained planting of grass or ground cover with weak root growth is acceptable over services. This is because aggressive root systems can damage services, reduce cable capacities and planting will be damaged if maintenance is required.

**Conservation Areas**

8.9 The highway authority will accept special treatment in and around conservation areas. One of the primary objectives of any new development associated with conservation areas should be to ‘conserve’ and enhance the character of the older buildings. This does not necessarily impose the need to copy the style of the buildings but special attention should be paid to the scale and variety of spaces which the buildings create. These older buildings are often terraced, which gives a greater sense of enclosure than individual units, and the three-dimensional spaces between the buildings are much more clearly expressed. The variety of spaces is particularly emphasised by the narrow entrances to streets with varied building lines. Tight bends also allow buildings to enclose a view until one turns the corner where a contrasting vista is revealed.

8.10 The materials and details vary from place to place and these too help to create character which is worth conserving. Designers should try to reflect traditional treatment in their proposals.

8.11 The following examples illustrate the type of non-standard proposals which the highway authority may approve in development related to conservation areas:

- Reduced road widths over short distances
- Wider roads
- Reduced centre line radii
- Reduced visibility splay requirements
- Varied surface treatment eg stepped footways or footways level with the carriageway
- Street lighting using wall brackets mounted on buildings or special columns.

8.12 Each conservation area has its own character so proposals for special treatment should be considered individually and will only be approved after consultation with the highway and planning authorities.
SECTION 9

Bibliography


