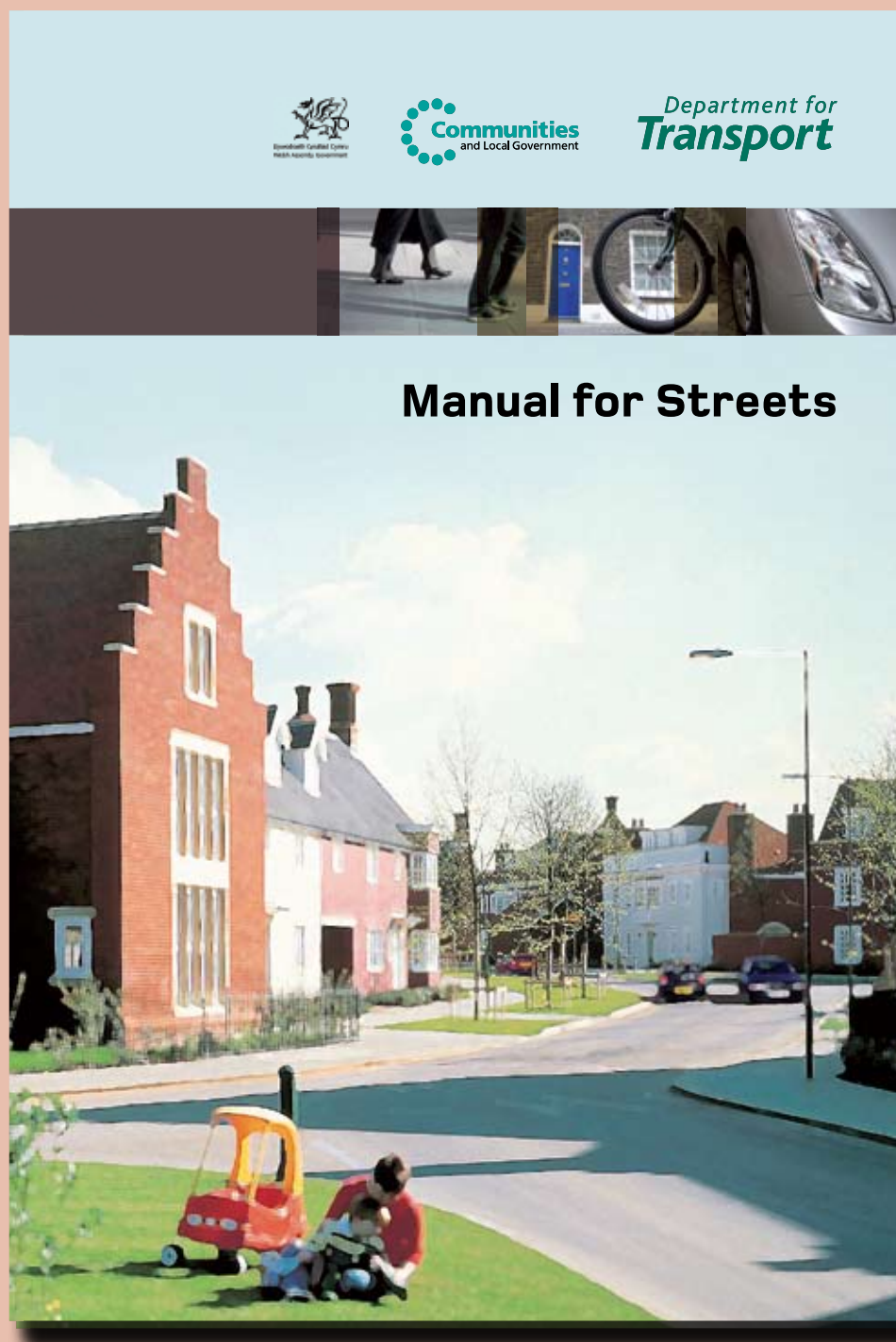


Manual for Streets: a summary



Manual for Streets, published March 2007, gives new advice for the design of residential streets in England and Wales. It represents a strong Government and Welsh Assembly commitment to the creation of sustainable and inclusive public spaces.

1

Introduction

There is a need to transform the quality of residential streets, and this requires a new approach to their provision. The Manual is aimed at any organisation or discipline with an interest in residential streets, ranging from access officers to the emergency services. The importance of joint working among practitioners is a key feature of the Manual.

Its scope is limited to residential and other lightly trafficked streets, although some of its principles may be applied to other road

types where appropriate. It is not, however, meant to be used for trunk routes of any description, as these roads are covered by the Highways Agency's *Design Manual for Roads and Bridges*.

Streets should not be designed just to accommodate the movement of motor vehicles - a prime consideration is that they meet the needs of pedestrians and cyclists.



Countryside Properties

2

Streets in context

The key recommendation of the Manual is that increased consideration should be given to the 'place' function of streets. This function is essentially what distinguishes a street from a road, where the main purpose is to facilitate movement. Streets have five principal functions in all. In addition to those of place and movement, streets need to allow for access, they often need to provide room for parking, and they must accommodate drainage, utilities and street lighting.

Risk and liability are major concerns for some highway authorities when considering innovative designs. However, such designs can achieve high levels of safety. Risk can be managed by designing to clearly established objectives and reviewing the result using a quality audit.

Highway and planning authorities must comply with the Disability Equality Duty under the Disability Discrimination Act 2005. The Manual lists six principles to adhere to in order to help ensure compliance.



Andrew Cameron, WSP

3

The design process - from policy to implementation

The life of a scheme, from conception to implementation and beyond, can be broken down into a process of seven key stages. The process is a general one, and it should be applied in a way appropriate to the size and importance of the proposal. Of key importance throughout is the need for collaborative working among the various disciplines involved.

The Manual introduces a user hierarchy in which pedestrians are considered first in the design process to ensure that all the user

groups are properly considered at an early stage.

A new type of audit is recommended - the quality audit - where auditing for safety forms but one component. Safety is of paramount importance, but safety-related issues need not dominate the overall assessment of the scheme at the expense of other audit considerations.



Llewelyn Davies Young

Layout and connectivity

The underlying theme when designing street networks (as opposed to designing individual streets) is catering for movement. The movement framework is important for a number of reasons. It can affect how much people walk or cycle, the level of public transport use, the sustainability of the community and its environment, and quality of life.

Walkable neighbourhoods are typically characterised by having a range of facilities available to residents that can be accessed comfortably on foot. Making the local environment convenient and attractive to walk in can help enhance the vibrancy of a community and reduce reliance on motor transport.

In addition to the user hierarchy, the Manual introduces hierarchies of provision for pedestrians and cyclists. These provide a basic approach to the design of improvements to existing infrastructure and encourage designers to consider how the impact of traffic might be reduced before looking at other solutions.

It is important that pedestrian- or cycle-only routes are designed properly. Inappropriate provision can lead to anti-social behaviour and increased levels of crime.



Tim Pharoah, Llewelyn Davies Yeang

Quality places

Good design is fundamental to achieving high-quality, attractive places that are socially, economically and environmentally sustainable. Places often fail because of poor relationships between dwellings and streets. It is therefore important to ensure a high level of co-operation among the disciplines involved in various elements of design.

The width between buildings is key to how well streets work and their aesthetic qualities. Widths should relate to building heights and the proposed characteristics of the streets. The backs and fronts of

buildings need to be treated differently. The basic tenet is 'public fronts and private backs', and it is important to get this right in order to make streets work as places. High-quality open space is a key component of successful neighbourhoods.

Making space for planting introduces a number of potential advantages. Planting helps to soften the urban street-scene, creates visual and sensory interest, and improves the air quality and microclimate. It can also be used to limit forward visibility to help reduce vehicle speeds. Further advice on planting is given in Chapter 11.



Llewelyn Davies Yeang

Street users' needs



Of crucial importance is the need to provide for everyone regardless of age or ability – the concept of inclusive design. This does not necessarily mean that every element of infrastructure has to accommodate the needs of all users – if any aspect of a street unavoidably prevents its use by particular user groups, providing them with a suitable alternative way of getting around will help ensure that the overall design is inclusive.

The propensity to walk is influenced not only by distance, but also by the quality of the walking experience. This will depend on how stimulating and attractive the environment is, together with how safe and secure people feel within it. Design that accommodates the needs of children and disabled people is likely to suit most, if not all, user types.

Of particular importance to pedestrians is the ease with which they can cross a street, and route continuity. Designers should aim to keep pedestrian paths as straight as possible to minimise diversion from desire lines. Low traffic speeds, together with wide and unobstructed routes whose alignments minimise the need to change level, also serve to enhance the environment for pedestrians.

Cyclists should generally be accommodated in the carriageway. In areas with low traffic volumes and speeds, there should be little need for dedicated cycle infrastructure. Cyclists generally prefer lightly trafficked routes that enable them to keep moving with minimum deviation from their desire lines. In general, the surfaces employed on carriageways are suitable for cyclists, as is the geometry recommended for residential streets.

Bus routes should be identified during the design process, working in partnership with the operators. High development

densities make it easier to provide a good level of service without the need for long-term subsidies. Routes and stops should form key elements of the walkable neighbourhood.

Streets need to accommodate vans and lorries (including, for example, refuse collection vehicles), but the larger of these do not generally require frequent access in residential developments. Streets that are not on bus routes can therefore be designed with more emphasis on the needs of pedestrians. In some circumstances, it may mean that large vehicles need to execute multi-point turns for the relatively small number of times they need to gain access, rather than being able to turn in one movement. This is preferable to allowing their requirements to dominate the design of the street.

The requirements for emergency vehicles are generally dictated by those for large fire appliances. Providing for these will cater for police vehicles and ambulances. The requirements for access by the Fire Service are specified in Building Regulations, and additional information can be provided by the Association of Chief Fire Officers.

On streets with low traffic flows and speeds, and in order to optimise the street layout for pedestrians, it may be assumed that service vehicles will have to use the full width of the carriageway to manoeuvre. Well-connected street networks have significant advantages for service vehicles. A shorter route can be used to cover a given area, and reversing may be avoided altogether.

Building Regulations contain the requirements for waste collection points, such as the maximum distance residents have to walk to bins, and the distance between bins and waste vehicles.

Street geometry

The design of streets should take into account their function, and the type, density and character of the development. Width need not be constant over the length of a street. In addition, localised narrowing to single lane working can be used to calm traffic.

Generally, layouts of buildings and spaces should be considered first, and not be dictated by carriageway alignment.

Shared surface streets are those in which there is no kerb to separate the carriageway from the footway. They work best in relatively calm traffic environments, and, among other things, are meant to encourage low vehicle speeds and promote social interaction. However, they can be problematic for visually impaired people unless specific provision for these users is incorporated into the design. It is important to have early consultation with organisations representing these and other vulnerable groups.

On quieter streets it may be acceptable to omit signs and markings indicating priority at junctions. Staggered junctions, compared with crossroads, can reduce vehicle conflict but may reduce directness for

pedestrians. Mini and compact roundabouts can be suitable junctions in residential developments, but larger sizes are generally inappropriate. Junction spacing is usually determined by the size of the blocks of buildings. It tends to reduce as building density and pedestrian activity increase.

A key aim of residential street design should be to naturally encourage low traffic speeds, ideally without having to rely on vertical or horizontal deflection measures. The design speed should normally be a maximum of 20 mph.

One of the most significant changes to conventional design practice introduced by the Manual is that of considerably reduced minimum stopping sight distances (SSDs). SSDs are used to determine the visibility requirements when designing junctions and links.

Connected street networks will generally eliminate the need for drivers to make three-point turns, but sometimes cul-de-sacs may be required to make the best use of land available. If so, turning spaces should relate to their surroundings, not specifically to vehicle movement requirements.



Andrew Cameron, WSP

Parking

Accommodating parked vehicles is a key function of most streets. The greatest parking demand is usually for cars, but there is also a need to consider provision for cycles and motorcycles. The amount and location of parking have a significant influence on the way people choose to travel.

Providing sufficient convenient and secure cycle parking is essential if levels of cycling are to increase. Cycle parking can be in a shared facility or within dwellings.

The availability of car parking is a major determinant in the choice of travel mode.

The amount of provision needs careful consideration. Provision below demand can cause problems, although it can work successfully when adequate on-street parking controls are present and where it is possible for residents to reach day-to-day destinations without the car. Car clubs can reduce parking demand through encouraging reduced car ownership.

Parking can be allocated to individual properties (in-curtilage or otherwise), but unallocated parking provides a common resource that helps to ensure space is used efficiently. Footway parking should be avoided.



Design for Homes

Traffic signs and markings

The Traffic Signs Regulations and General Directions 2002 (TSRGD) details every traffic sign and road marking prescribed for use in the UK. Compliance with TSRGD is mandatory but it only sets out what is required of a sign if it is to be installed. There is a statutory duty to sign restrictions or prohibitions, but it is for the designer to determine how they should be signed, and whether each sign is necessary to comply with that duty. The amount of signing should be no more than is necessary.

Designers should begin by assuming a total absence of signs and introduce them only where they serve a clear function. To be most effective, signs should be used

sparingly. Some common situations arise where there may be an opportunity to reduce sign clutter:

- The use of centre lines is not an absolute requirement. On residential roads, there is little evidence to suggest they offer any safety benefits.
- There is no statutory requirement for priority to be specified at junctions. On lightly trafficked streets, it may be appropriate to dispense with priority and the attendant signing.
- For information signs, the size of lettering should be no larger than is appropriate for the traffic speed.



Street furniture and street lighting

Street furniture and lighting should be integral to the overall design. Furniture on a footway is best aligned along its rear edge. Guard railing should not be provided unless a clear need for it has been identified.

Lighting can provide a number of benefits, but it is not always appropriate in locations

such as historic towns or conservation areas. Adequate lighting helps reduce crime and can encourage pedestrian activity. Reducing the height of lighting columns can make for a more intimate and less 'urban' environment, but the reduction in coverage from each unit will mean that more of them are required.



Materials, adoption and maintenance

Sustaining the quality of a new development requires good initial design and construction, followed by proper management and maintenance. Developers and local authorities should consider materials, processes and techniques that do not lead to excessive maintenance costs in future.

Planting should preferably be an integral part of street design. The potential for tree roots to cause damage to buried services can be reduced by the use of tree pits. Vegetation growth should not be allowed to obstruct pedestrian or driver sightlines, although it can be used to avoid excessive forward visibility and so encourage lower traffic speeds.

Foul water is usually discharged through sewers located in the street. Sewers for Adoption provides guidance on the procurement, design, maintenance and adoption of sewers.

Dealing with surface water runoff is more complex. Government strategy places an emphasis on the sustainable management of surface water, and this is set out in Making Space for Water. The management of surface water from buildings and highways requires a co-ordinated approach for evaluating flood risk and developing a drainage strategy, although flood risk assessment is ultimately the developer's responsibility. Sustainable Drainage Systems (SUDS) are the preferred way of dealing with surface water and should be applied wherever practicable. SUDS comprise a wide range of techniques, such as the use of permeable paving, detention basins, ponds and wetlands.

Most residential streets provide routes for the apparatus of statutory undertakers and other service suppliers. Where possible, the apparatus should be laid in 'corridors' throughout the site to facilitate installation.

Streets that follow reasonably straight alignments help to simplify utility runs and reduce the number of inspection chambers required.

If the streets are to be adopted, layouts and materials have to be acceptable to the local highway authority. Streets can remain unadopted, but the authority will require legal certainty that they are going to be properly maintained in perpetuity by any private arrangements. Section 38 of the Highways Act 1980 is usually used to create new highways maintainable at the public expense. In the absence of a Section 38 Agreement, the Advance Payments Code in the Highways Act 1980 provides for payments to be made to the authority to cover future maintenance.

Where streets are to remain unadopted, some highway authorities enter into planning obligations under Section 106 of the Town and Country Planning Act 1990. These require the developer to construct new streets to the authority's standards and maintain them properly, thus obviating the need for payments under the Advance Payments Code.

The highway authority has considerable discretion in exercising its powers to adopt under a Section 38 Agreement. In the event of an authority refusing to enter into such an agreement, Section 37 of the Act provides an appeal mechanism. If the developer is unable to dedicate land as highway because he does not own it, it can be adopted using the procedures under Section 228.

Where improvements are made to an adopted highway that convey benefit to a private body, a Section 278 Agreement can be used, but the highway authority will need to be satisfied that it also benefits the general public.



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Manual for Streets (low resolution version) may be downloaded free of charge at:
<http://www.dft.gov.uk/pgr/sustainable/manforstreets/>

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