

C.07 Integrating Cycling Into Development Proposals

Key Principles

All new developments should be accessible by bicycle. Their highway infrastructure should focus on on-road provision for cyclists with roads designed to deliver low speeds whilst at the same time creating permeability and advantage through the use of connections and links not available to motor traffic.

New developments should also provide for, and fund, links to the wider cycle network including quality cycle routes to such destinations as town centres, schools, employment sites, transport interchanges etc; i.e. works remote from the site.

Design Guidance

Introduction

New developments offer unique opportunities to achieve a different balance in the use of urban space by putting more emphasis on walking and cycling. A number of Government and official publications identify the generally desired elements of urban design (this particularly applies to [Manual for Streets](#) which contains significant new guidance in relation to cycling issues – too many to include here). This chapter summarises the most important ones in relation to cycling.

Manual for Streets:

1.6.1 The main changes in the approach to street design that MfS recommends are as follows:

- 🚲 designing to keep vehicle speeds at or below 20 mph on residential streets unless there are overriding reasons for accepting higher speeds;

2.2.5 Streets that are good quality places achieve a number of positive outcomes, creating a virtuous circle:

- 🚲 attractive and well-connected permeable street networks encourage more people to walk and cycle to local destinations, improving their health while reducing motor traffic, energy use and pollution;

5.8.1 The layout of a new housing or mixed-use area will need to take account of factors other than street design and traffic provision. They include:

- 🚲 the potential impact on climate change, such as the extent to which layouts promote sustainable modes of transport or reduce the need to travel;

6.4.1 Cyclists should generally be accommodated on the carriageway. In areas with low traffic volumes and speeds, there should not be any need for dedicated cycle lanes on the street.

6.4.3 Cyclists prefer direct, barrier-free routes with smooth surfaces. Routes should avoid the need for cyclists to dismount.

6.2.4 Cyclists are more likely to choose routes that enable them to keep moving. Routes that take cyclists away from their desire lines and require them to concede priority to side-road traffic are less likely to be used. Anecdotal evidence suggests that cyclists using cycle tracks running adjacent and parallel to a main road are particularly vulnerable when they cross the mouths of side roads and that, overall, these routes can be more hazardous to cyclists than the equivalent on-road route.

Cycling, as the most sustainable vehicular form of transport, should play an important part in local authority land-use and transport policies, especially in urban areas. In most small to medium sized towns (under 200,000), the town centre will be accessible by cycle from all residential areas within a typical maximum 20 minute journey. In northern Europe, cycling can make up around 20-40% of intra-urban journeys except in the hilliest areas.

Residential developments can have a significant impact on local journeys. Long distance work journeys are mostly influenced by regional transport connections and the location of the workplace, although good transport links to and cycle parking at railway stations will encourage bike-rail options. Good cycle links to and cycle parking at local shopping facilities, town centre facilities and schools should be a high priority in view of their potential to lead to an increase in cycle journeys.

Street design in new developments

Low vehicular speeds and flows within new developments should be achieved principally through design. Such an approach can encourage cycling, and in particular create an environment where even young children may cycle and play in the street. This may lead to a fundamental shift in travel patterns.

An important element of this approach is that the location and grouping of buildings should be designed initially to create areas of public space. Transport links should then be fitted around the buildings. The purpose is to create a sense of place, by means of lively streets and squares, rather than just roads for motor vehicles. This approach, advocated in the new Manual for Streets, has rarely been followed and contrasts with the previously common practice of basing developments around curving estate roads leading to culs-de-sac.



Squares, buildings and variable width vehicle routes lead to lower speeds. Poundbury, Dorchester, Dorset.

Picture: Patrick Lingwood

Some important features of successful streets in new developments include:

- Not standard carriageway widths and alignments.
- Carriageway markings kept to a minimum. Central lane markings in particular often omitted.
- Surface materials and gateways used imaginatively to mark out significant spaces
- Junctions at frequent intervals (less than 50m spacing) with no priority indicated and often with very tight corner radii.
- Fitting the road layout around the buildings will result in various patterns/shapes, such as culs-de-sac, grid patterns, squares, crescents, courtyards and ovals.

Such streetscapes should lead to low vehicle speeds where motorists adapt their behaviour to the environment. Where this is achieved, it is usually not necessary, nor appropriate, to introduce specific cycle facilities.

Street design and traffic calming features reinforce low speeds and shared space: Oxford

Picture: Patrick Lingwood



Permeability for cyclists

Many new developments have only one or two entry points from the general road network with barriers to the movement of motor vehicles within the site e.g. culs-

de-sac. It is important that cyclist and pedestrian movement requirements are treated differently with the aim of creating maximum permeability for these modes.

Manual for Streets:

6.4.2 Cycle access should always be considered on links between street networks which are not available to motor traffic. If an existing street is closed off, it should generally remain open to pedestrians and cyclists.

Cyclists should generally be able to travel around and through the site relatively freely. To create this level of permeability, they should generally be able to use all access ways, courts, links between culs-de-sac etc. It is important that cycle links are made as direct as possible. For short trips, these can give cyclists significant advantages over car users in terms of convenience and journey time. When planning any major development, cycle links should be negotiated to connect it to key facilities such as schools, local shops, public transport, and employment areas. Most cycle journeys for non-work purposes and those to rail stations are between 0.5 and 2 miles, but many cyclists are willing to cycle much further. For work, a distance of 5 miles should be assumed.



Cycle tracks link a new development directly to shopping and leisure facilities: Wiltshire.

Picture: Patrick Lingwood

Cycle networks within major developments should connect with surrounding strategic cycle routes and facilities. Where possible they should be based on the normal street pattern, but may require additional cycle-only links. Where cycle tracks are implemented these should accord with best practice in terms of widths and sight lines. Where strategic off-road cycle routes cross other roads within the development, consideration should be given to providing the cycle track with priority over the road. Any such cycle tracks must be placed on a flat-topped road hump to be lawful (see: [B02 Road Crossings – Side Roads](#) and [B03 Road Crossings – Mid-link](#)).



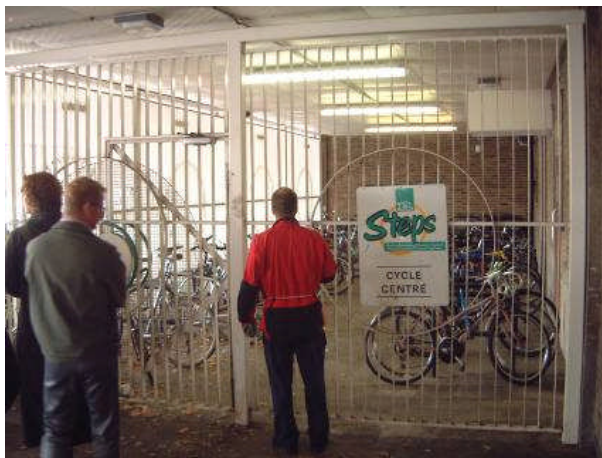
A cycle gap linking two
culs-de-sac: Oxford

Picture: Patrick Lingwood)

Cycle parking

All developments should have adequate secure cycle parking for residents and visitors. This should apply not only to flats but also to housing, especially with the greater likelihood of resident families and children. This will generally mean both secure cycle parking within the building and external cycle parking for visitors.

A range of measures should be provided at new workplaces. These include, cycle parking, lockers, drying facilities and showers.



Swipe card operated staff cyc
parking, Nottinghamshire CC

Photo: Tony Russell

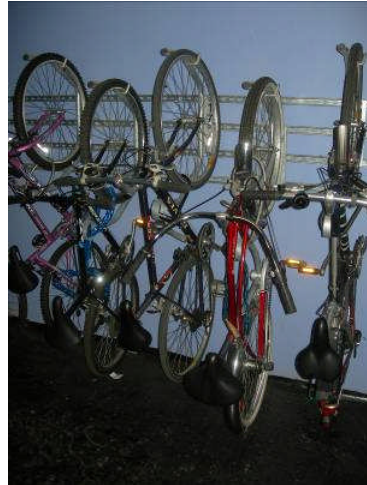
Staff changing areas with lockers and
showers,
Great Western Hospital, Swindon

Photo: Tony Russell



Secure internal cycle parking for residents of flats: Hackney

Picture: Tony Russell



Secure external cycle parking cage for use by residents of flats: Portsmouth

Picture: Tony Russell

The convenience of cycle parking is crucial. Cycles hidden away in inaccessible garages or sheds are unlikely to be used. The choice of mode for many urban journeys can depend on marginal time differences. Many surveys have found that cycling is generally the fastest and most reliable mode door-to-door for intra-urban radial journeys, but the difference between car and cycle is often marginal (e.g. 5 minutes in London travel surveys). In such cases, the presence of a cycle ready and available at the front of a house, as opposed to it being locked away in a garage, can be a significant factor for people choosing whether to cycle or go by car. For similar reasons, in some developments in the Netherlands, no space is provided for cars on forecourts. They have to be parked inside garages and are therefore less convenient to get to.

Visitor and residents' cycle parking outside new town houses: Oxford

Picture: Patrick Lingwood



Convenient cycle parking in front of houses: Oxford

Picture: Patrick Lingwood)

More advice on cycle parking at new developments, including examples of local authority standards, is included in [C04 Cycle parking](#).

Other options

Car-free developments are likely to lead to even more sustainable travel patterns, including increased cycle use, where the development is sited to benefit from local urban services and longer distance public transport links. These developments are especially popular where space is given over to safe areas for children to play. One survey found that around 40% of households in large urban areas do not have access to a car and the majority do not aspire to own one, suggesting a potential market for such developments in these areas.

To further encourage sustainable modes, other restrictions may be applied to non essential vehicles. Examples include bus gates, or bus-only roads through developments where use is made of rising bollards to exclude through traffic. In one instance, bollards have been introduced to prevent non-residential motorised vehicular access to a new estate and school during school start and leaving times. In all cases, cycling should be permitted through these restrictions.

Personal security and crime prevention

There is a difference in schools of thought between people who advocate security and crime prevention by limiting access to local residents, and those who argue that encouraging people activity by creating routes past houses leads to greater security. In general, research suggests that well used and well designed cycle and pedestrian routes will lead to greater security.

Personal security is enhanced in public spaces which enjoy high levels of natural surveillance and have good visibility. Traditional streets overlooked by housing and having a large amount of street activity generally have good levels of personal security. To make the best of the benefit to security arising from human activity, cycle routes should generally follow the road network. Where this is not possible, personal security becomes a significant design consideration. The designer should, therefore, try to maximise natural surveillance along the route by ensuring that houses face outwards onto public open space e.g. parks, through which pedestrian and cycle routes may pass, rather than have back-garden fences next to open space. Security is further improved if the route has a high standard of forward visibility with hiding places designed out.

Manual for Streets:

4.5.1 Streets are the focus of movement in a neighbourhood. Pedestrians and cyclists should generally share streets with motor vehicles. There will be situations where it is appropriate to include routes for pedestrians and cyclists segregated from motor traffic, but they should be short, well overlooked and relatively wide to avoid any sense of confinement. It is difficult to design an underpass or alleyway which satisfies the requirement that pedestrians or cyclists will feel safe using them at all times.

4.6.2 To ensure that crime prevention is properly taken into account, it is important that the way in which permeability is provided is given careful consideration. High permeability is conducive to walking and cycling, but can lead to problems of anti-social behaviour if it is only achieved by providing routes that are poorly overlooked, such as rear alleyways.

4.6.3 [*Safer Places, The planning systems and Crime Prevention*](#) highlights the following principles for reducing the likelihood of crime in residential areas ... cars, cyclists and pedestrians should be kept together if the route is over any significant length – there should be a presumption against routes serving only pedestrians and/or cyclists away from the road unless they are wide, open, short and overlooked ...

Publications

[*LTN 2/08 Cycle Infrastructure Design*](#) DfT 2008

[*Manual for Streets*](#) DfT, Communities & Local Government 2007

[*Planning Policy Statement 6: Planning for Town Centres*](#) DCLG 2005

[*By Design: Urban design in the planning system: towards better practice*](#) (CABE)
DETR 2000

[*Better streets, better places: Delivering sustainable residential environments*](#)
ODPM 2003

[*Safer Places: the planning system and crime prevention*](#) ODPM 2004

[*Cycling by Design*](#) Transport Scotland 2010

[*Cycling England Gallery*](#) pictorial examples

[*London Cycling Design Standards – A guide to the design of a better cycling environment*](#) (Sections 3.4, 3.5, and 3.6) TfL 2005

Lancashire - The Cyclists' County ([part 1](#), [part 2](#)) – creating pleasant road conditions Lancashire County Council, 2005 (Section 3)

[*CTC Benchmarking*](#) – Best practice case studies

[*National Cycle Network – Guidelines and Practical details*](#), Issue 2 Sustrans
1997

Other references

[*Cycle Friendly Infrastructure - Guidelines for Planning and Design*](#) Bicycle
Association et al 1996

Car free housing in European cities: A survey of sustainable residential development projects. Scheurer J 2001

Journey times in London DfT 1999

Cycling in Urban Areas ECF 1998

The Location of New Residential Development: its impact on car-based travel
Curtis C & Headicar P 1994