B

Design principles
Layout and connectivity
Chapter aims

- Set out design concepts for the structuring of towns and cities.
- Set out principles for walkable neighbourhoods.
- Illustrate appropriate layouts and street forms.
- Consider internal permeability and external connectivity.
- Give advice on crime prevention.

4.1 Planning for things you cannot easily change later

4.1.1 The way streets are laid out and how they relate to the surrounding buildings and spaces has a great impact on the aesthetic and functional success of a neighbourhood. Certain elements are critical because once laid down, they cannot easily be changed. These issues are considered in the masterplanning and design coding stage, and need to be resolved before detailed design is carried out.

4.1.2 This chapter highlights the issues likely to be encountered in developing detailed designs, and ways of dealing with them. There are also tips on avoiding unwanted consequences of particular design decisions.

4.2 The movement framework

4.2.1 A key consideration for achieving sustainable development is how the design can influence how people choose to travel. Designers and engineers need to respond to a wide range of policies aimed at making car use a matter of choice rather than habit or dependence. Local transport plans and movement strategies can directly inform the design process as part of the policy implementation process (Wales: Regional Transport Plans and Local Development Plans).

4.2.2 It is recommended that the movement framework for a new development be based on the user hierarchy as introduced in Section 3.6. Applying the hierarchy will lead to a design that increases the attractiveness of walking, cycling and the use of public transport. Delays to cars resulting from adopting this approach are unlikely to be significant in residential areas. The movement framework should also take account of the form of the buildings, landscape and activities that form the character of the street and the links between new and existing routes and places (Fig. 4.1).

4.2.3 Street networks should, in general, be connected. Connected, or ‘permeable’, networks encourage walking and cycling, and make places easier to navigate through. They also lead to a more even spread of motor traffic throughout the area and so avoid the need for distributor roads with no frontage development. Research shows that there is no significant difference in collision risk attributable to more permeable street layouts.

Figure 4.1 Integrating new developments into the existing urban fabric is essential (source: The Urban Design Compendium”).

4.2.4 Pedestrians and cyclists should generally be accommodated on streets rather than routes segregated from motor traffic. Being seen by drivers, residents and other users affords a greater sense of security. However, short pedestrian and cycle-only links are generally acceptable if designed well. Regardless of length, all such routes in built-up areas, away from the carriageway, should be barrier-free and overlooked by buildings. Narrow routes hemmed in by tall barriers should be avoided as they can feel claustrophobic and less secure for users.

**Connecting layouts to their surroundings**

4.2.5 Internal permeability is important but the area also needs to be properly connected with adjacent street networks. A development with poor links to the surrounding area creates an enclave which encourages movement to and from it by car rather than by other modes (Fig. 4.2).

4.2.6 External connectivity may often be lacking, even where layouts generally have good internal permeability. Crown Street, Glasgow, is shown in Fig. 4.3, with an indication of where connectivity was not realised as may have been intended in the masterplan.

4.2.7 The number of external connections that a development provides depends on the nature of its surroundings. Residential areas adjacent to each other should be well connected.

4.2.8 To create a permeable network, it is generally recommended that streets with one-way operation are avoided. They require additional signing and result in longer vehicular journeys.

**The hierarchies of provision**

4.2.9 If road safety problems for pedestrians or cyclists are identified, conditions should be reviewed to see if they can be addressed, rather than segregating these users from motorised traffic. Table 4.1 suggests an ordered approach for the review.

4.2.10 These hierarchies are not meant to be rigidly applied and there may be situations where it is sensible to disregard some of the solutions when deciding on the optimum one. For example, there would be no point in considering an at-grade crossing to create a pedestrian/cyclist link between developments on either side of a motorway. However, designers should not dismiss out of hand solutions in the upper tier of the hierarchy.

4.2.11 It is recommended that the hierarchies are used not only for a proposed scheme but also for connections through existing networks to local shops, schools, bus stops, etc.

4.3 **Building communities to last**

4.3.1 Good design is a key element in achieving the Government’s aim to create thriving, vibrant, sustainable communities. Sustainable communities meet the diverse needs of existing and future residents, are sensitive to their environment by minimising their effect on climate change, and contribute to a high quality of life. They are safe and inclusive, well planned and promote social inclusion, offering equality of opportunity and good services for all.
Consider first

- Traffic volume reduction
- Traffic speed reduction
- Reallocation of road space to pedestrians
- Provision of direct at-grade crossings, improved pedestrian routes on existing desire lines

Consider last

- New pedestrian alignment or grade separation
- Conversion of footways/footpaths to adjacent-\* or shared-use routes for pedestrians and cyclists

\* Adjacent-use routes are those where the cyclists are segregated from pedestrians.

Figure 4.3 Crown Street, Glasgow: (a) the Crown Street development in the background is separated from the main road to the city centre; and (b) map.

Table 4.1 The hierarchies of provision for pedestrians and cyclists
4.3.2 Areas of local amenity should be more evenly distributed, with good connectivity, so that the overall layout encourages access by walking or cycling, and shortens the distances travelled by car (Fig 4.4).

4.3.3 When considering a site there needs to be a broad understanding of its historic development and its relationship with other communities, whether at the village, town or city scale (Fig 4.5).

4.3.4 The provision and viability of facilities needs to be assessed in relation to the location and scale of proposals. In many cases, it may be better for a new development to reinforce existing centres and facilities rather than providing alternative facilities. The greater the density of development, the more facilities can be supported.

Figure 4.4 (a) dispersed and car-dependent versus (b) traditional, compact and walkable layout.

Figure 4.5 The plans of many UK villages, towns and cities illustrate different patterns of development over time, from (1) historic cores, through to (2) experimental ‘Radburn’ layouts from the 1960s, to (3) recent cul-de-sac/DB32-type layouts.
4.4 The walkable neighbourhood

4.4.1 Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes’ (up to about 800 m) walking distance of residential areas which residents may access comfortably on foot. However, this is not an upper limit and PPS13\(^*\) states that walking offers the greatest potential to replace short car trips, particularly those under 2 km. MFS encourages a reduction in the need to travel by car through the creation of mixed-use neighbourhoods with interconnected street patterns, where daily needs are within walking distance of most residents.

4.4.2 By creating linkages between new housing and local facilities and community infrastructure, the public transport network and established walking and cycling routes are fundamental to achieving more sustainable patterns of movement and to reducing people’s reliance on the car. A masterplan (or scheme layout for smaller-scale developments) can help ensure that proposals are well integrated with existing facilities and places.

4.4.3 Density is also an important consideration in reducing people’s reliance on the private car. PPS3\(^*\) encourages a flexible approach to density, reflecting the desirability of using land efficiently, linked to the impacts of climate change. It sets a national minimum indicative density of 30 dwellings per hectare. Residential densities should be planned to take advantage of a proximity to activities, or to good public transport linking those activities. Better Places to Live: By Design\(^*\) advises that a certain critical mass of development is needed to justify a regular bus service, at frequent intervals, which is sufficient to provide a real alternative to the car.

4.5 Layout considerations

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.

4.5.2 The principle of integrated access and movement means that the perimeter block is usually an effective structure for residential neighbourhoods. A block structure works in terms of providing direct, convenient, populated and overlooked routes. In addition, it makes efficient use of land, offers opportunities for enclosed private or communal gardens, and is a tried and tested way of creating quality places (Figs 4.6 and 4.7).

4.5.3 Several disadvantages have become apparent with housing developments built in the last 40 years which departed from traditional arrangements. Many have layouts that make orientation difficult, create left-over or ill-defined spaces, and have too many blank walls or façades. They can also be inconvenient for pedestrians, cyclists and bus users.
4.5.4 Within a block structure, the designer has more freedom to create innovative layouts. The layouts in Fig. 4.8, and variations on them (such as a ‘broken grid’ with the occasional cul-de-sac), are recommended when planning residential and mixed-use neighbourhoods.

**Geometric choices and street pattern**

4.5.5 Straight streets are efficient in the use of land. They maximise connections between places and can better serve the needs of pedestrians who prefer direct routes. However, long, straight streets can also lead to higher speeds. Short and curved or irregular streets contribute to variety and a sense of place, and may also be appropriate where there are topographical or other site constraints, or where there is a need to introduce some variation for the sake of interest. However, layouts that use excessive or gratuitous curves should be avoided, as they are less efficient and make access for pedestrians and cyclists more difficult.

4.5.6 Geometric choices and street pattern should be based on a thorough understanding of context.

4.5.7 Cul-de-sacs may be required because of topography, boundary or other constraints. Cul-de-sacs can also be useful in keeping motor-traffic levels low in a particular area, but any through connections for pedestrians and cyclists should be well overlooked with active frontages. Cul-de-sacs can also provide the best solution for developing awkward sites where through routes are not practical (Fig. 4.9). Caution must, however, be exercised when planning for cul-de-sacs, as they may concentrate traffic impact on a small number of dwellings, require turning heads that are wasteful in land terms and lead to additional vehicle travel and emissions, particularly by service vehicles.

**4.6 Crime prevention**

4.6.1 The layout of a residential area can have a significant impact on crime against property (homes and cars) and pedestrians. Section 17 of the Crime and Disorder Act 1998 requires local authorities to exercise their function with due regard to the likely effect on crime and disorder. To ensure that crime prevention considerations are taken into account in the design of layouts, it is important to consult police architectural liaison officers and crime prevention officers, as advised in *Safer Places*.

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** highlights the following principles for reducing the likelihood of crime in residential areas *(Wales: also refer to Technical Advice Note (TAN) 12)*:

- the desire for connectivity should not compromise the ability of householders to exert ownership over private or communal ‘defensible space’;
- access to the rear of dwellings from public spaces, including alleys, should be avoided – a block layout, with gardens in the middle, is a good way of ensuring this;
- 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;
- routes should lead directly to where people want to go;
- all routes should be necessary, serving a defined function;
- cars are less prone to damage or theft if parked in-curtilage (but see Chapter 8). If cars cannot be parked in-curtilage, they should ideally be parked on the street in view of the home. Where parking courts are used, they should be small and have natural surveillance;
- layouts should be designed with regard to existing levels of crime in an area; and
- layouts should provide natural surveillance by ensuring streets are overlooked and well used (Fig. 4.10).

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Figure 4.10 Active frontage to all streets and to neighbouring open space should be an aim in all developments. Blank walls can be avoided, even on the return at junctions, with specially designed house types.
4.7 Street character types

4.7.1 Traditionally, road hierarchies (e.g. district distributor, local distributor, access road, etc.) have been based on traffic capacity. As set out in Chapter 2, street character types in new residential developments should be determined by the relative importance of both their place and movement functions.

4.7.2 Examples of the more descriptive terminology that should now be used to define street character types are

- high street;
- main street;
- shopping street;
- mixed-use street;
- avenue;
- boulevard;
- mews;
- lane;
- courtyard;

4.7.3 The above list is not exhaustive. Whatever terms are used, it is important that the street character type is well defined, whether in a design code or in some other way. The difference in approach is illustrated by Figs 4.11 and 4.12.

Figure 4.11 Alternative proposals for a development: (a) is highways-led; while (b) is more attuned to pedestrian activity and a sense of place.
Figure 4.12 (a) Existing development in Upton turns its back on the street; while (b) a later development has a strong presence on the street. The latter was delivered using a collaborative workshop design process and a design code.
Quality places
Chapter aims

- Promote the place function of streets and explain the role that streets can play in making better places.
- Stress the importance and value of urban design as a framework within which streets are set out and detailed.
- Set out expectations for the design of quality places, as well as routes for safe and convenient movement.
- Discuss local distinctiveness.

5.1 Introduction

5.1.1 The previous chapter described how to plan sustainable communities, covering issues such as the need to plan for connected layouts, mixed uses and walkable neighbourhoods. This chapter develops those themes by demonstrating the importance of quality and encouraging the use of three-dimensional urban design.

5.2 The value of good design

5.2.1 Good design plays a vital role in securing places that are socially, economically and environmentally sustainable (see ‘Gateshead case study box’). Planning Policy Statement 1: Delivering Sustainable Development (PPS1) emphasises this. It states that ‘good design ensures attractive, usable, durable and adaptable places and is a key element in achieving sustainable development. Good design is indivisible from good planning ... and should contribute positively to making places better for people’ (Wales: refer to Planning Policy Wales, Section 2.9, and Technical Advice Note (TAN) 12).

5.2.2 This message is also reinforced by Planning Policy Statement 3: Housing (PPS3) which states that ‘good design is fundamental to the development of high-quality new housing, which contributes to the creation of sustainable, mixed communities’. (Wales: refer to Ministerial Interim Planning Policy Statement 01/2006: Housing).

5.2.3 There is growing evidence of the benefits of a public space, development or building that improves people’s sense of well being, although these benefits can often be difficult to quantify. However, evidence is also growing of the economic, social and environmental benefits of good urban design. Good design should not be considered as an optional or additional expense – design costs are only a small percentage of construction costs, but it is through the design process that the largest impact can be made on the quality, efficiency and overall sustainability of buildings, and on the long-term costs of maintenance and management (Fig. 5.2).

5.2.4 CABE has collated a supporting evidence base, which includes the following:

- compact neighbourhoods that integrate parking and transport infrastructure, encourage walking and cycling, and so reduce fuel consumption;
- properties adjacent to a good-quality park have a 5–7% price premium compared with identical properties in the same area but that are away from the park; and
- the benefits of better-designed commercial developments include higher rent levels, lower maintenance costs, enhanced regeneration and increased public support for the development.

5.3 Key aspects of urban design

‘Urban design is the art of making places for people. It includes the way places work and matters such as community safety, as well as how they look. It concerns the connections between people and places, movement and urban form, nature and the built fabric, and the processes for ensuring successful villages, towns and cities.’

By Design: Urban Design in the Planning System: Towards Better Practice

5.3.1 It is important to appreciate what this means in practice. It is easy to advocate places of beauty and distinct identity, but it takes skill to realise them and ensure they are fit for purpose. A number of key documents and initiatives provide an introduction, including the Urban Design Compendium, Better Places to Live: By Design and Building for Life (see box) (Wales: see also Creating Sustainable Places and A Model Design Guide for Wales).

5.3.2 These basic aspects of urban design, however, are not being realised in many new developments. All too often, new development lacks identity and a sense of place. In these cases, it lets communities and users down, and undermines the aims of the sustainable communities agenda.

5.3.3 Frequently, it is in the interaction between the design and layout of homes and streets that attempts to create quality places break down. In the past, urban designers sometimes felt that their schemes were compromised by the application of geometrical standards to highways that were current at the time. Highway engineers, in turn, have occasionally raised concerns about layouts that did not comply with the design criteria to which they were working.

5.3.4 MFS advocates better co-operation between disciplines, and an approach to design based on multiple objectives.

5.4 Street dimensions

5.4.1 Most neighbourhoods include a range of street character types, each with differing characteristics, including type of use, width and building heights. These characteristics dictate how pedestrians and traffic use the street.

Width

5.4.2 Width between buildings is a key dimension and needs to be considered in relation to function and aesthetics. Figure 5.3 shows typical widths for different types of street. The distance between frontages in residential streets typically ranges from 12 m to 18 m, although there are examples of widths less than this working well. There are no fixed rules but account should be taken of the variety of activities taking place in the street and of the scale of the buildings on either side.
The principles of urban design

The fundamental principles of urban design are described more fully in By Design: Urban Design in the Planning System: Towards Better Practice. They involve expressing the main objectives of urban design through the various aspects of the built form.

The objectives of urban design can be summarised as follows:

• Character – a place with its own identity.
• Continuity and enclosure – a place where public and private spaces are clearly distinguished.
• Quality of the public realm – a place with attractive and successful outdoor areas.
• Ease of movement – a place that is easy to get to and move through.
• Legibility – a place that has a clear image and is easy to understand.
• Adaptability – a place that can change easily.
• Diversity – a place with variety and choice.

The aspects of the built form are described as follows:

• Layout: urban structure – the framework of routes and spaces that connect locally and more widely, and the way developments, routes and open spaces relate to one another.
• Layout: urban grain – the pattern of the arrangement of street blocks, plots and their buildings in a settlement.
• Landscape – the character and appearance of land, including its shape, form, ecology, natural features, colours and elements, and the way these components combine.
• Density and mix – the amount of development on a given piece of land and the range of uses. Density influences the intensity of development, and, in combination with the mix of uses, can affect a place’s vitality and viability.
• Scale: height – scale is the size of a building in relation to its surroundings, or the size of parts of a building or its details, particularly in relation to the size of a person. Height determines the impact of development on views, vistas and skylines.
• Scale: massing – the combined effect of the arrangement, volume and shape of a building or group of buildings in relation to other buildings and spaces.
• Appearance: details – the craftsmanship, building techniques, decoration, styles and lighting of a building or structure.
• Appearance: materials – the texture, colour, pattern and durability of materials, and how they are used.

Figure 5.3 Typical widths for different types of street.
5.4.3 The public realm is defined by height as well as width – or, more accurately, the ratio of height to width. It is therefore recommended that the height of buildings (or mature trees where present in wider streets) is in proportion to the width of the intervening public space to achieve enclosure. The actual ratio depends on the type of street or open space being designed for. This is a fundamental urban design principle. The height-to-width enclosure ratios shown in Table 5.1 and illustrated in Fig. 5.4 can serve as a guide.

Table 5.1 Height-to-width ratios

<table>
<thead>
<tr>
<th></th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor streets, e.g. mews</td>
<td>1:1.5</td>
<td>1:1</td>
</tr>
<tr>
<td>Typical streets</td>
<td>1:3</td>
<td>1:1.5</td>
</tr>
<tr>
<td>Squares</td>
<td>1:6</td>
<td>1:4</td>
</tr>
</tbody>
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5.4.4 The benefits of taller buildings, such as signifying locations of visual importance, adding variety, or simply accommodating larger numbers of dwellings, must be weighed against the possible disadvantages. These include an overbearing relationship with the street, overshadowing of surrounding areas, and the need to provide more parking. Design mitigation techniques, such as wider footways, building recesses and street trees, can reduce the impact of taller buildings on their settings (Fig. 5.5).

5.4.5 Street length can have a significant effect on the quality of a place. Acknowledging and framing vistas and landmarks can help bring an identity to a neighbourhood and orientate users. However, long straights can encourage high traffic speeds, which should be mitigated through careful design (see Section 7.4 ‘Achieving appropriate traffic speeds’).

5.5 Buildings at junctions

5.5.1 The arrangement of buildings and footways has a major influence on defining the space at a junction. It is better to design the junction on this basis rather than purely on vehicle movement (Fig. 5.6). In terms of streetscape, a wide carriageway with tight, enclosed corners makes a better junction than cutback corners with a sweeping curve. This might involve bringing buildings forward to the corner. Double-fronted buildings also have an important role at corners. Junction treatments are explored in more detail in Chapter 7.
Figure 5.5 Two streets demonstrating different levels of enclosure. Street (a) has a height-to-width ratio of approximately 1:3, enabling a pleasant living environment to be shared with functionality in the form of traffic movement and on-street parking, some of it angled. Street (b) has a height-to-width ratio of about 1:1.5. Again, this works well in urban design terms, but the need to accommodate on-street parking has meant that traffic is restricted to one-way movement.

Figure 5.6 Wide, curved junctions reduce enclosure. In this example, the relationship between the buildings and the amenity space at the centre of the circus is diminished.
5.6 Backs and fronts

5.6.1 In general, it is recommended that streets are designed with the backs and fronts of houses and other buildings being treated differently. The basic tenet is ‘public fronts and private backs’. Ideally, and certainly in terms of crime prevention, back gardens should adjoin other back gardens or a secure communal space. Front doors should open onto front gardens, small areas in front of the property, or streets.

5.6.2 The desirability of public fronts and private backs applies equally to streets with higher levels of traffic, such as those linking or providing access to residential areas. If such streets are bounded by back-garden fences or hedges, security problems can increase, drivers may be encouraged to speed, land is inefficiently used, and there is a lack of a sense of place (Fig. 5.7). Research carried out for MFS\(^{15}\) shows that streets with direct frontage access to dwellings can operate safely with significant levels of traffic.

![Cul-de-sacs surrounded by a perimeter road that is fronted by back fences - no sense of place, no relationship with its surroundings, no quality, with streets designed purely for vehicles.](image)

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5.7 Designing streets as social spaces

5.7.1 The public realm should be designed to encourage the activities intended to take place within it. Streets should be designed to accommodate a range of users, create visual interest and amenity, and encourage social interaction. The place function of streets may equal or outweigh the movement function, as described in Chapter 2. This can be satisfied by providing a mix of streets of various dimensions, squares and courtyards, with associated ‘pocket parks’, play spaces, resting places and shelter. The key is to think carefully about the range of desirable activities for the environment being created, and to vary designs to suit each place in the network.

5.7.2 High-quality open space is a key component of successful neighbourhoods. Local Development Frameworks, often supplemented by open space strategies and public realm strategies, should set out the requirements for provision in particular localities. As with streets, parks and other open spaces should be accessible and be well overlooked\(^\text{16}\) (Wales: Refer to TAN 16\(^\text{17}\)). Open spaces can aid urban cooling to help mitigate the effects of climate change.

5.8 Other layout considerations

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;
- climate and prevailing wind, and the impact of this on building type and orientation;
- energy efficiency and the potential for solar gain by orientating buildings appropriately;
- noise pollution, such as from roads or railways;
- providing views and vistas, landmarks, gateways and focal points to emphasise urban structure, hierarchies and connections, as well as variety and visual interest;
- crime prevention, including the provision of defensible private and communal space, and active, overlooked streets (see Chapter 4); and
- balancing the need to provide facilities for young children and teenagers overlooked by housing, with the detrimental effects of noise and nuisance that may result.

5.9 Where streets meet buildings

5.9.1 The space between the front of the building and the carriageway, footway or other public space needs to be carefully managed as it marks the transition from the public to the private realm. Continuous building lines are preferred as they provide definition to, and enclosure of, the public realm. They also make navigation by blind and partially-sighted people easier.

5.9.2 For occupiers of houses, the amenity value of front gardens tends to be lower when compared to their back gardens and increased parking pressures on streets has meant that many householders have converted their front gardens to hard standing for car parking. However, this is not necessarily the most desirable outcome for street users in terms of amenity and quality of place, and can lead to problems with drainage. Where no front garden is provided, the setback of dwellings from the street is a key consideration in terms of:

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• defining the character of the street;
• determining a degree of privacy;
• security space, providing a semi-private buffer which intruders would have to pass through, thus reducing opportunities for crime (Fig. 5.8);
• amenity space for plants or seating, etc.; and
• functional space for rubbish bins, external meters or storage, including secure parking for bicycles.

5.9.3 Keeping garages and parking areas level with, or behind, the main building line can be aesthetically beneficial in townscape terms.

5.10 Reducing clutter

5.10.1 Street furniture, signs, bins, bollards, utilities boxes, lighting and other items which tend to accumulate on a footway can clutter the streetscape. Clutter is visually intrusive and has adverse implications for many disabled people. The agencies responsible for such items and those who manage the street should consider ways of reducing their visual impact and impediment to users.

5.10.2 Examples of reducing the impact include:18
• mounting streetlights onto buildings, or traffic signals onto lighting columns;
• locating service inspection boxes within buildings or boundary walls;
• specifying the location and orientation of inspection covers in the footway;
• ensuring that household bins and recycling containers can be stored off the footway; and
• designing street furniture to be in keeping with its surroundings (Fig. 5.9).

5.10.3 Where terraced housing or flats are proposed, it can be difficult to find space for storing bins off the footway. In these circumstances, sub-surface or pop-up waste containers may be a practicable solution (Fig. 5.10).

5.11 Local distinctiveness

5.11.1 Local identity and distinctiveness are important design considerations and can be strengthened by:
• relating the layout to neighbouring development (if it satisfies the basics of good urban design);
• involving the community early on in the design process;

Figure 5.9 Trees, bollards, benches and the litter bin have the potential to clutter this residential square, but careful design means that they add to the local amenity.
• using local materials (which may also be better environmentally);
• using grain, patterns and form sympathetic to the predominant vernacular styles (Fig. 5.11), or as established in local supplementary planning documents and/or Character Assessment documents;19
• retaining historical associations; and
• engaging with utility companies to ensure that the design, quality and setting of their street furniture does not detract from the overall street design, view points and vistas.

5.12.2 Planting adds value; it helps to soften the urban street-scene, creates visual and sensory interest, and improves the air quality and microclimate. It can also provide habitats for wildlife. The aromatic qualities or contrasting colours and textures of foliage are of value to all, and can assist the navigation of those with visual impairment. Flowers and fruit trees add seasonal variety.

5.12.3 Planting can provide shade, shelter, privacy, spatial containment and separation. It can also be used to create buffer or security zones, visual barriers, or landmarks or gateway features. Vegetation can be used to limit forward visibility to help reduce vehicle speeds.

Figure 5.10 Sub-surface recycling bins for communal use.

Figure 5.11 The Orchard, Lechlade – new housing sympathetic to the local context.

19 For region-specific guidance, see English Heritage’s Streets for All series at www.english-heritage.org.uk.
5.12.4 Existing trees can occupy a substantial part of a development site and can have a major influence on layout design and use of the site, especially if they are protected by Tree Preservation Orders. Layouts poorly designed in relation to existing trees, or retaining trees of an inappropriate size, species or condition, may be resented by future occupants and create pressure to prune or remove them in the future. To reduce such problems, specialist advice is needed in the design process. An arboriculturalist will help determine whether tree retention can be successfully integrated within the new development, specify protection measures required during construction, and recommend appropriate replacements as necessary (Fig. 5.12).

5.12.5 Sustainable planting will require the provision of:

- healthy growing conditions;
- space to allow growth to maturity with minimal intervention or management;
- species appropriate to a local sense of place and its intended function, and site conditions; and
- well-informed proposals for new planting (or the retention and protection of existing plants) and longer-term maintenance. These proposals should be agreed with the adopting local or highway authority, trust, residents’ or community association or management company.

5.13 Standing the test of time

5.13.1 Places need to look good and work well in the long term. Design costs are only a small percentage of the overall costs, but it is the quality of the design that makes the difference in creating places that will stand the test of time. Well-designed places last longer and are easier to maintain, thus the costs of the design element are repaid over time. The specification for materials and maintenance regimes should be written to provide high standards of durability and environmental performance. Maintenance should be straightforward and management regimes should ensure that there are clear lines of responsibility. These themes are covered further in Chapter 11.