Introduction to RESIDENTIAL LAYOUT

Mike Biddulph

Architectural Press

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Preface

I have always felt that the design of residential areas offers more potential than any other aspect of urban design, but that this potential is rarely reflected in practice. Where they are well done, residential areas are some of the most diverse and stimulating environments that have been created, but too often they are simply dull and one-dimensional; offering few opportunities for the people that live there. As a result, I have set out to draw together the whole range of themes and issues that might be considered in the design of a residential scheme, and tried to provide advice about the ways in which designs might be influenced by them.

A number of books exist on the design of residential areas. This book is different because I have tried to offer a comprehensive discussion about a whole range of design perspectives and issues, and I have tried to base design ideas firmly within existing theories about how to design, as well as the evidence from the schemes that I have visited. This approach is supplemented by links to other authors who have guided me in my thinking, and which could be used as a starting point in any further reading on the topics discussed here.

In travelling around looking at and thinking about housing schemes I have been struck by their diversity, and that the schemes often 'work' well in certain respects. In general, I would suggest that this book reflects upon three design traditions: north American, northern European and British. I don't distinguish between these traditions within the book, but instead I suggest that there is something to learn from all of them. The theory helps us to decipher what we might find interesting about any of these schemes, and I have used a wide range of illustrations to help the reader understand what makes these schemes interesting, as well as providing ideas for how we might design in the future.

When writing this book I have always been conscious about the different types of jargon used to discuss features of a housing scheme. In general, the UK jargon is used, although at times I have, for example, referred to *pavements* as *sidewalks*. I have tried to write for a wide audience, partly as I feel that each country has something to teach us all about this subject, but I am sorry if the language reflects my own heritage.

Mike Biddulph

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and Falk (1999) illustrate how Kowloon, north of the Hong Kong island, has a density of 1,250 units per hectare, whilst the average net density of Los Angeles is 15 units per hectare (Figure 1.1). This book will be of little interest to you if you are planning schemes at either of these extremes. Instead the book is concerned with the design of residential environments at a medium density of between about 30 and 450 units per hectare. This itself is a wide range, but for anything above 30 units per hectare many of the layout issues in this book become more pertinent, whilst densities of 450 units per hectare, despite being high, reflect common densities achieved, for example, in the centre of London (see Llewelyn Davies, 2000). High quality residential environments are still commonplace at such densities, even if they really do start to restrict the types of layout qualities that you might aspire to achieve.

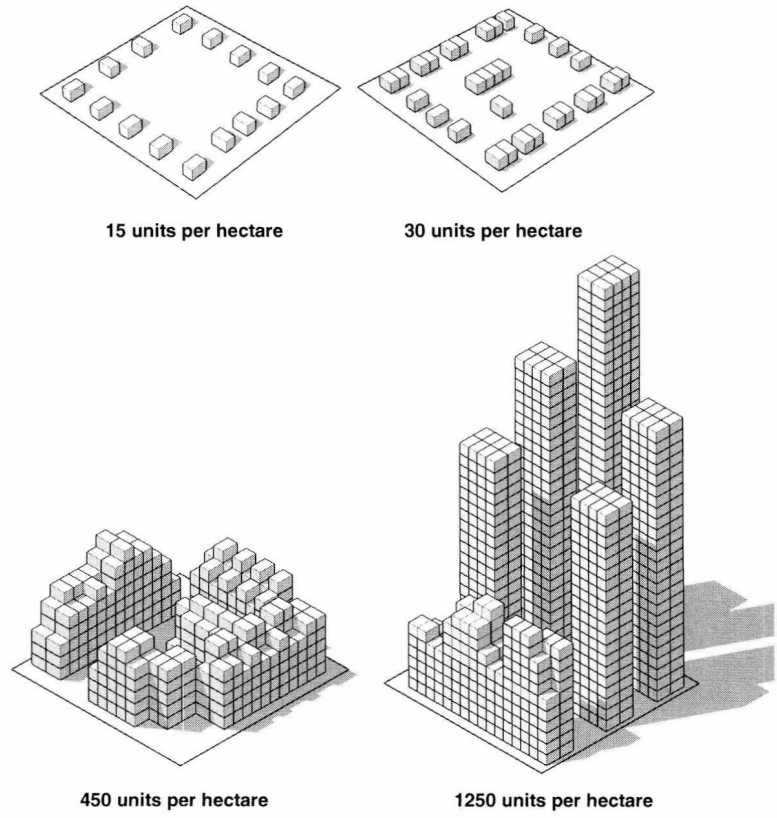

Figure 1.1 Visualising units per hectare

SUSTAINABLE SCHEMES

This book considers a range of issues associated with residential layout from a variety of perspectives, but all of the content is organised around the principle that the planning and design of new residential areas should create physical conditions where economically, socially and environmentally sustainable lifestyles become possible. Economically, this means that housing should form part of a wider environment that remains popular with not only the initial residents but also subsequent residents, while commercial and community uses should be designed and integrated into any plans so that they remain viable. Socially, this means that the designs should allow residents to have equity of access to housing, the wider environment or facilities and that all residents (whatever their relative affluence) should be able to enjoy a good quality of life. Environmentally, this means that the designs should create conditions where resource consumption can be minimised and biodiversity within or around the residential schemes are sustained or enhanced.

It is possible to design residential areas which favour economic, social or environmental concerns; for example, an exclusive residential area which is economically very successful and socially unmixed and which offers a wide range of facilities, but only for immediate residents. Such schemes would, however, exclude other people who may not have access to similar opportunities elsewhere. Equally, it is also possible to design commercial uses into a scheme that will be extremely viable but dependent exclusively on people who are auto-dependent. Such a plan would exclude residents without access to a car, and the scheme would also have poor environmental credentials. Ultimately it will be your, or your client's, choice as to how you respond to the challenge of creating sustainability, but the objective of this book has been to present an approach in which a

whole range of issues are considered in a balanced way. At least then it will be possible to critically appreciate the nature of the choices being made and the range of options available.

DESIGN CHOICES AND LIFESTYLE OPPORTUNITIES

The design of urban spaces won't determine how people will live within the residential area. However, as already suggested, it will create or limit opportunities for people. For example, it is possible to design a residential environment in which it would be difficult or unpleasant to walk (Figure 1.2). Even in situations like these, people may still choose to walk as they adapt quite successfully to their environment, and walking may be the only way they can get around. A better design, however, would have acknowledged the needs of the pedestrian and involved a design that would support that need.

However, maintaining these options involves difficult decisions, and to a certain extent the designers of residential areas must exercise value judgements in deciding which choices should be available to residents. Some choices might be obvious; for example, providing people with the opportunity to walk to local facilities would appear to be an obvious choice. Other choices, in contrast, might have an economic, social or environmental cost attached to them. Making it possible for residents to drive quickly through a residential area may be good for people who choose to drive, but it will encourage car use and probably make the residential area more dangerous. This in turn would limit the extent to which children would be allowed to play in the street, whilst elderly people might feel more insecure outside their home (Figure 1.3). Designers, therefore, must be conscious of the

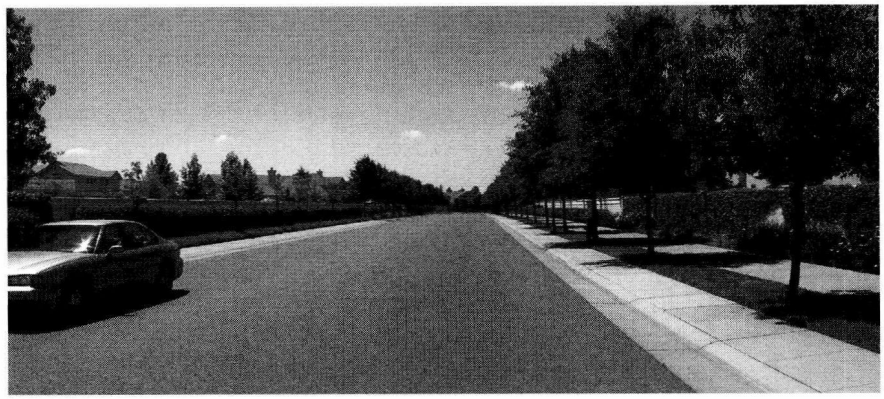

Figure 1.2 It is possible to design a residential environment in which people might not feel too comfortable about walking

Figure 1.3 Designers need to understand the implications of their design choices

consequences of their design decisions and the fact that creating opportunities for certain types of activity might directly limit the choices of some individuals. Again, this book tries to highlight in what ways design decisions might create or limit choices in how people might choose to live within an area, whilst it also considers the positive and negative consequences of the range of design solutions that are available.

BLAND HOUSING

A common criticism of many residential areas is that they are all fundamentally the same. This is far from the case, but there certainly is a tendency towards a standard form of suburban development in, say the USA and UK, for example.

In the USA and UK, residential development is often dominated, in particular, by detached houses 'strung out' along very standardised roads, and the miles and miles of these roads come to define what we collectively, and sometimes a little dismissively, call 'suburbia' (Figure 1.4).

There is actually a lot of variation within suburbia, and this form of housing remains very popular. It is *not* therefore, the purpose of this book

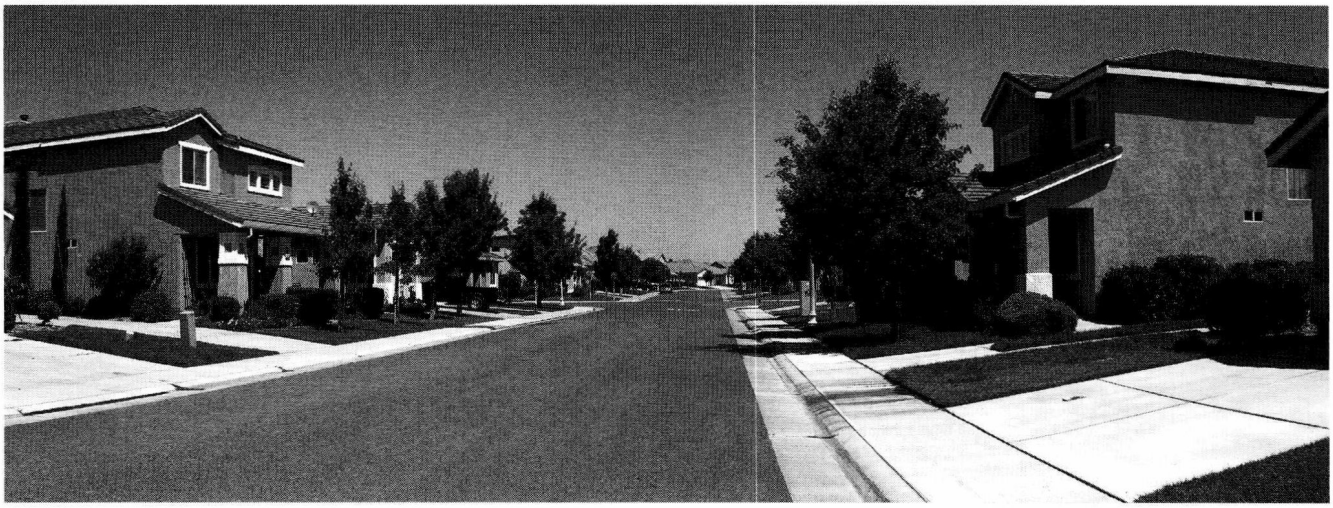

Figure 1.4 American suburbia

to be 'anti-suburban'. Its purpose is, however, to explore the variety that does exist in the form of both urban and suburban housing to illustrate what is actually possible for the forces of standardisation to be overcome. There are three main forces of standardisation.

Standard house types

Developers design and want to build standard, tried and tested, houses. This is actually quite a good idea. It keeps costs down, and the developers can guarantee the quality of the home to a greater extent. String the same houses unimaginatively out along a road, however, and soon everywhere

starts to look and feel the same. It is possible to use either individually designed or standard house types, but to use them in such a way that greater variety in a residential area is achieved (Figure 1.5).

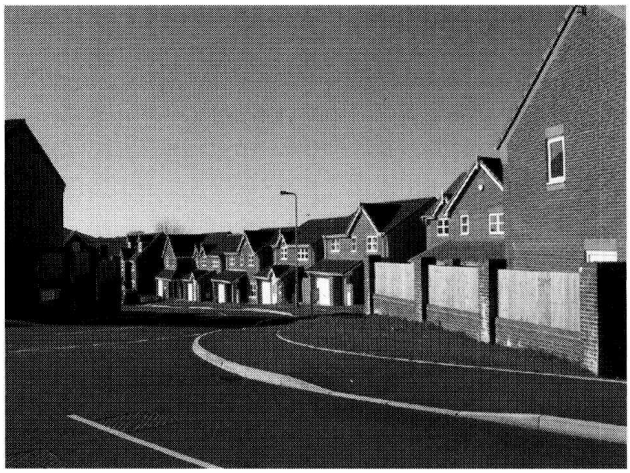

Figure 1.5 Standard house types

Standard roads

Engineers want to build and maintain a limited number of standard, tried and tested, roads. This is also a good idea. When roads are tried and tested their performance is more predictable. It is necessary to suggest, however, that some engineers may not be aware of the whole range of highway–or even parking–options that exist, or that other colleagues in other places may have adopted a greater variety of layouts (Figure 1.6).

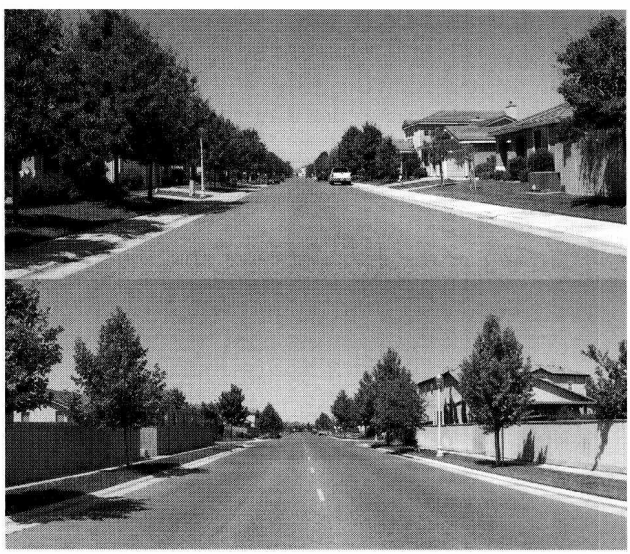

Figure 1.6 Standardised and excessively wide highways undermine the character of residential areas

Amenity standards

The third force for standardisation is what we call amenity standards. These are typically quantitative measures which try to ensure that existing and new residents gain adequate levels of light, privacy, and outdoor garden or balcony space (Figure 1.7). Planners and developers like amenity standards. They create certainty for both groups and developers know they will get planning permission quickly if they conform. Often, however, they conform too specifically and so houses are then the same distance apart and gardens are as small as possible. This creates little variation in the qualities of the spaces between buildings. Designers, on the other hand, want to create variation. Many designers would use architectural or landscape designs in order to create both light and privacy, or they would create a whole range of outdoor spaces (not just tiny gardens), if only developers and planners would let them.

Although standard solutions may work on only one level, they–instead of urban design–often tend to be adopted. As a result, residential areas can be quite bland because these stringent standards will have been vigorously adhered to, with its residents being denied the opportunity to live in a residential environment which they may have enjoyed more.

This book illustrates variety in the form of residential layouts that are now emerging. It is also meant to be a source book which highlights the range of design opportunities that exist. It tries not to dogmatically present and defend one particular perspective on how residential areas should be designed. Instead, it highlights the key issues that should be considered, and some of the design ideas that might form possible solutions. This reflects the fact that people are choosing to live in residential areas that, in turn, reflect a greater diversity of lifestyles–and housing developers are starting to be more responsive to this diversity of consumer preference.

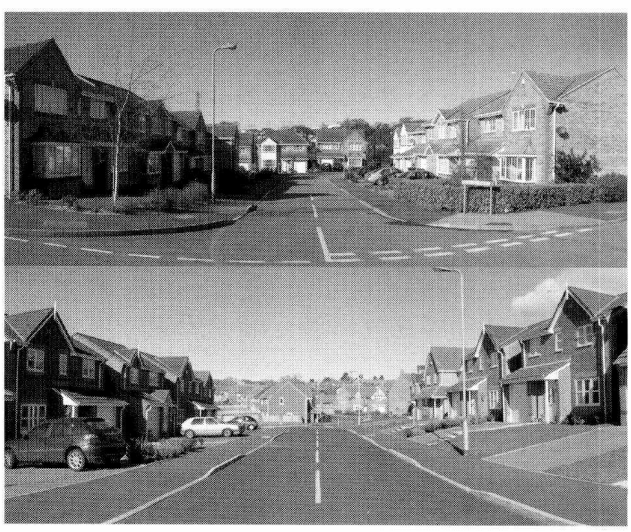

Figure 1.7 The inflexible use of amenity standards results in repetitive environments

APPROACHES TO RESIDENTIAL LAYOUT

If you are involved in the designing of a new residential area there are eight major issues that you need to address, and for each issue there are a range of approaches to design that might be considered appropriate.

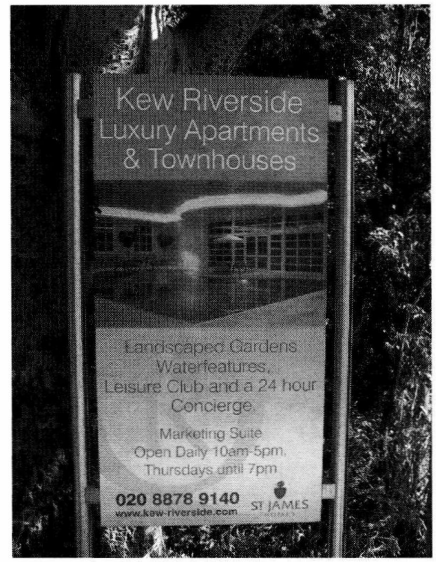

Figure 1.8 Creating commercially viable schemes

Is the scheme commercially viable?

Homes are very often built for profit and so it is important that any approach to design reflects consumer aspirations which, in turn, will create a demand for such houses (Figure 1.8). Some costs will relate directly to the price of building the private homes or businesses that people will buy or rent. But other costs will result from building and maintaining structures that the whole community may collectively benefit from–such as roads and footpaths, new facilities for children's play or community buildings that every neighbourhood expects. Taken together, the costs of a design solution must not be so high that a developer will be dissuaded from undertaking the scheme. Therefore, the commercial viability of any scheme needs to be carefully considered, and Chapter 2 explains how this should be done.

Building place and defining space

A common complaint against many residential areas is that the housing and its layout are monotonous and dull. This is because house builders often utilize standard house types repeatedly along a road has been planned using the inflexible standards referred to above. The result is 'anywhere' housing–as the same developer could build the same houses along the same form of road anywhere else. Chapter 3 discusses how to lay out housing so that more distinctive places and spaces are both considered and achieved within schemes (Figure 1.9).

Environmentally benign development and design

It is possible to design and build residential neighbourhoods in which residents have the opportunity to live in a way that does less damage to the environment. Chapter 4 therefore provides practical design advice for how this might be achieved. It discusses general approaches to using density when creating urban vitality, and therefore viability for a mixture of uses within a neighbourhood. It considers how existing land, buildings and other resources might be reused. It explores how energy might be generated and conserved, and how water might be used, conserved, treated and reused within schemes. It also looks at how waste might be collected

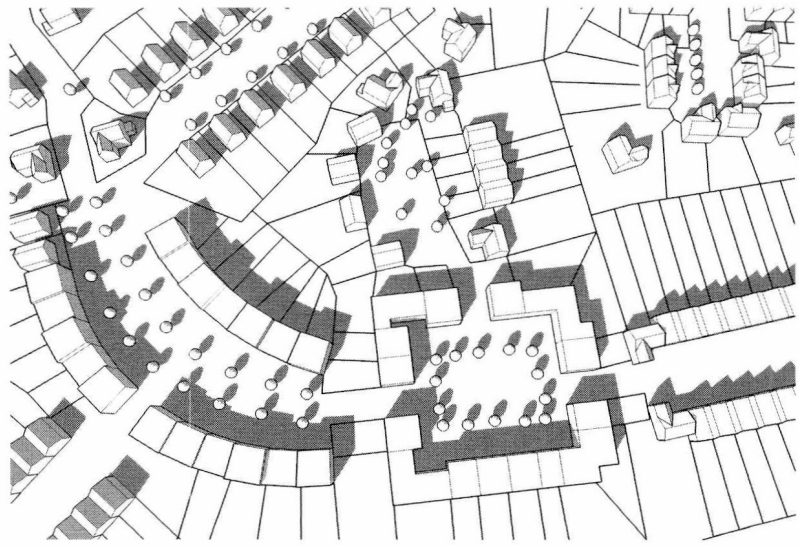

Figure 1.9 Designing distinctive places and spaces

and recycled; and, finally, how biodiversity might be maintained and enhanced (Figure 1.10).

Figure 1.10 Creating environmentally benign forms of development

Pedestrian and vehicular access and movement

Chapter Five looks at how to accommodate movement within schemes. How people choose to travel within an urban environment also has environmental implications–but there are so many issues and concepts to consider, and so many design implications that these will be discussed separately from the environmental issues considered in Chapter Four. Chapter Five looks, in particular, at how to support and encourage pedestrian activity within residential areas whilst also accommodating the safe circulation, stopping and parking requirements of cyclists, public transport and cars (Figure 1.11).

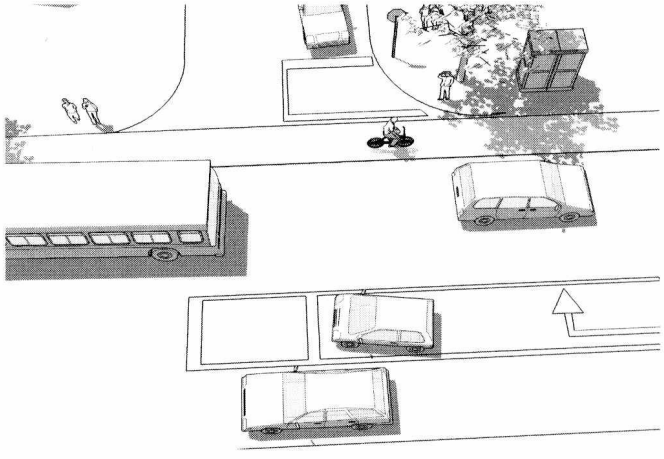

Figure 1.11 Designing for pedestrian and vehicular access and movement

Integrating other uses

Chapter Four will refer to how greater density might be used to support a mixing of uses in residential areas, and Chapter Six will look in more detail at how and why other uses can be accommodated within a layout. Neighbourhoods typically contain shops and services, pubs and restaurants, or religious and other community buildings. In addition, there is an increasing desire to accommodate other spaces for business use and, therefore, located near to where people live, so that they don't have to travel exclusively to remote offices or business parks. These chapters will consider the design concepts, development forms and building configurations that allow this mixture of uses to be achieved (Figure 1.12).

Figure 1.12 Integrating other uses

Safe, and easy to find your way around

Feeling safe where you live would appear to be a fundamental human right. The likelihood that people will be the target of criminal activity is relatively low and typically results from actions shaped by social or economic conditions, rather than anything to do with environmental design. Despite this, however, it is possible to create environments where people *feel* safe or where it may be more difficult to get away with criminal activity. Chapter Seven looks in more detail at how these qualities might be achieved (Figure 1.13).

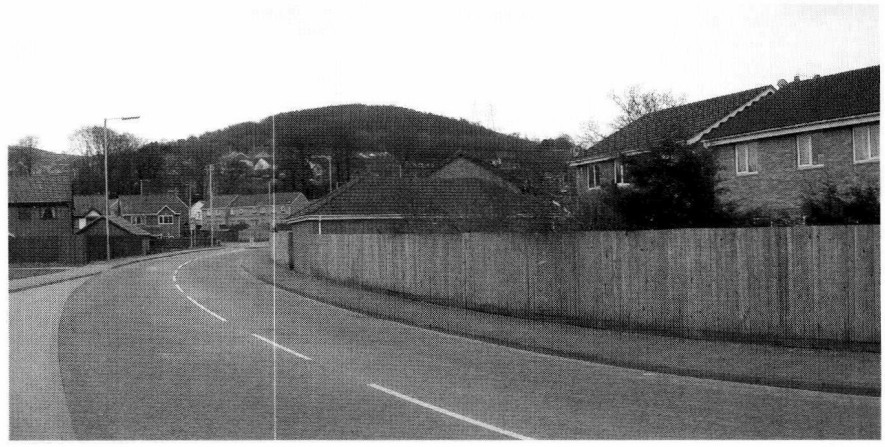

Figure 1.13 Understanding what makes environments disorientating and feel unsafe

Contemporary residential townscape

There is an important visual dimension to the design of residential areas, and people will enjoy a place if it looks right. Chapter Eight discusses, therefore, how we can compose well-designed housing together into distinctive places, and how we can then detail those places, so that the resulting environment both functions well and is attractive (Figure 1.14).

Figure 1.14 Designing a contemporary residential townscape

Social life in outdoor spaces

Residential areas are places for living, and in this respect the streets and other spaces within the scheme should allow a social and domestic life to flourish. Children need places to play. Youths need places to 'hang out'.

Figure 1.15 Designing for social life in outdoor spaces

Adults–including physically disabled people and the elderly–need attractive and safe outdoor spaces to sit and socialise with friends and neighbours. Chapter Nine will therefore consider how these and other aspects of socialising can be supported within housing schemes (Figure 1.15).

THE STRUCTURE OF EACH CHAPTER

Each chapter is organised roughly into three parts. Initially the theme of the chapter is introduced with reference made to the key concepts and debates surrounding the theme. Following this, a discussion of key design principles is presented and illustrated. It has not been possible to be completely comprehensive within the pages of this book, and on all of the themes covered here there is plenty more that can be found elsewhere. Therefore, at the end of each chapter there is a section of *Further reading* which lists other publications which might also be referred to.