Surrey Design

A strategic guide for quality built environments

SHAPING SURREY'S
FUTURE

Surrey Local Government Association (SLGA):

Elmbridge Borough Council

Epsom & Ewell Borough Council

Guildford Borough Council

Mole Valley District Council

Reigate & Banstead Borough Council

Runnymede Borough Council

Spelthorne Borough Council

Surrey County Council

Surrey Heath Borough Council

Tandridge District Council

Waverley Borough Council

Woking Borough Council
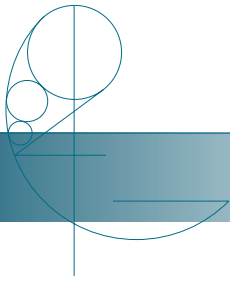
Foreword

Surrey is one of the most attractive, safest and popular places to live in Britain. It is also the most urbanised shire county and pressure for development is intense. The challenge is how to accommodate new development, whilst at the same time enhancing the qualities that make Surrey so attractive.

There is an ongoing debate about where to accommodate new development. *Surrey Design* moves this debate on to the issue of quality. What sort of places are we creating? Are they safe and attractive? Are they sustainable?

New development should stand the test of time. Over recent decades we have applied strong planning policies and have generally been successful in ensuring development is located in the right place within or adjacent to our towns and villages. However, little of the development during recent decades is held up as being of a quality that can rival our best historic heritage.

The agenda is changing. The Government is now committed to good design and sustainable development. The creation of quality environments within our towns and cities where people will want to live is seen as one of the most important planning goals of the 21st Century.

Surrey Design is Surrey Local Government Association's response to the national agenda. It gives a strong message that we are committed to improving the quality of our new development and ensuring that community safety is a key aspect of design, not just in our towns – but also in our villages. This means developing places that are safe, attractive, sustainable and well kept. We will need to promote the principles that have worked well in the past to produce our best historic vernacular and settlement forms. These need to be combined with principles which allow for genuine contemporary quality and innovation and help conserve resources, reduce waste and prevent pollution. To do that we need to change our approach to how we develop the built environment in response to quality design and sustainable construction. These changes won't happen overnight, but over the next decade we should begin to see a marked improvement to our environment and our quality of life.
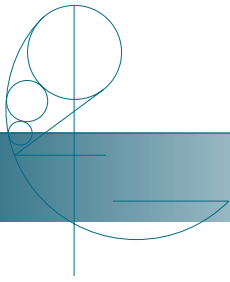
Surrey Local Government Association is committed to good design and *Surrey Design* is a significant and exciting step towards achieving this goal. However it can only be the first stage. Better design needs to be the goal of all those involved in the development process and I welcome the commitment of the public, private and voluntary sectors to achieving this. Together we can make a difference.

David Davis
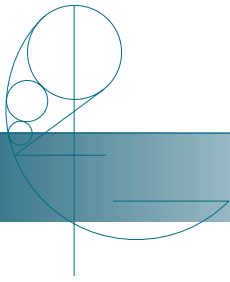Chairman
Surrey Local Government Association
January 2002

Contents

Supporting document:

Surrey Design: Technical Appendix

Introduction

1   The purpose of this design guide is to promote high quality design of new development in Surrey. It aims to supplement the principles in national and regional planning guidance, and guide the implementation of the Surrey Structure Plan. It will contribute to making Surrey a better place to live in the 21st century and further the objectives in *The Common Agenda for a Sustainable Surrey* and the Urban White Paper, *Our Towns and Cities: The Future.*

2   The guide has been produced on behalf of the Surrey Local Government Association (SLGA). Its preparation has been a collaborative effort between Surrey County Council, all eleven Surrey districts, the House Builders Federation (HBF), Royal Institute of British Architects (RIBA), the Landscape Institute, the Surrey Access Forum and Surrey Police.

Background

3   At the heart of national, regional and local planning strategy is a commitment to sustainable development – the integration of economic, environmental and social objectives. Part of the commitment is to focus new development in existing urban areas, and at the same time to improve the quality of life in cities, towns and villages.

4   The government's vision as set out in the Urban White Paper includes:

- **People shaping the future** – people must come first
- People living in **attractive, well kept towns and cities** which use space and buildings efficiently
- Good design and planning which makes it practical to live in an **environmentally sustainable** way

5   Quality design will play a crucial role in enhancing people's quality of life in urban areas. This is reiterated in *Regional Planning Guidance for the South East* (RPG9), national planning guidance *(PPG1 & PPG3)* and the emerging *Surrey Structure Plan.*

What is Good Design?

6   The outcome of good design should be economically vibrant, attractive, and safer places that use land and natural resources in an efficient way. Good design is therefore an holistic process that brings together social, environmental and economic needs with aesthetic concerns.

7   This guide brings together the following themes that will help achieve good design:

Leafy Surrey Suburb – An attractive environment but built in a time of plentiful and cheap land and not a solution for today

- The need for a coherent design process for new development based on local participation
- Creating attractive places with buildings and plants defining streets and public spaces
- Making efficient use of available land by promoting well designed, high density and mixed use development
- Designing for low energy and resource use
- Protecting and enhancing existing habitats to maintain diversity
- Creating places and streets for people rather than the motor car
- Creating integrated developments that are, and feel, safe
- Providing variety in terms of uses, buildings and tenure

8   The principles in the guide may be applied to any form and type of development whether housing, mixed use or commercial, although most of the photos and case study examples are of housing and mixed use development.

Why a Design Guide for Surrey?

9   There is much guidance available at national level, nevertheless there is a role for a county level document to:

- Provide a link between national and local guidance and policy in a form that can be adopted as Supplementary Planning Guidance
- Address the particular development pressures on land within Surrey which is already the most urbanised and densely populated shire county
- Promote higher quality design in Surrey
- Update and incorporate current Surrey design guidance relating to roads and footpaths to ensure that it conforms with the new principles
- Act as a framework in which to develop more detailed local guidance

Status of the Guide

10   *Surrey Design* and the *Technical Appendix* will be adopted by the County Council as Supplementary Planning Guidance (SPG). As such they will be a material consideration in determining planning applications. However, the documents will not take precedence over local design guidance. It will be open to the District Councils to decide whether or not to adopt the guidance as part of their own SPG or to support the documents as strategic design guidance.

Using this Guide

11 *Surrey Design* is relevant to all involved in the development process. It is not intended to be a textbook and cannot substitute for the use of qualified architects, planners and designers. Neither is the guide a rulebook to slavishly follow. Rather it sets out objectives and guiding principles within which genuine inspiration and design creativity can be encouraged.

Walnut Tree Close, Guildford

12 As a strategic document this guide focuses on design principles that have countywide relevance. It does not attempt to prescribe architectural detail and local style nor does it promote design solutions based on the historic vernacular at the expense of more modern design. The principles allow a wide variety of appropriate design responses whatever the context.

13 It is intended that this guide be read in conjunction with the DTLR's own publications on design. Reference should also be made to the wealth of good practice information listed in the bibliography and mentioned under specific sections of this document.

Reference should be made to the wealth of national design guidance and text books

Structure of the Design Guide

14 The themes identified in paragraph 7 are developed into seven key objectives, within which there are a number of design principles. These design principles are expanded upon with case studies or practical examples to indicate how the broad objectives can be achieved.

15 The detailed implications of the design principles on road, cycleway and footpath design, together with information relating to landscape design in the highway, are set out in the loose-leaf *Technical Appendix* to the guide.
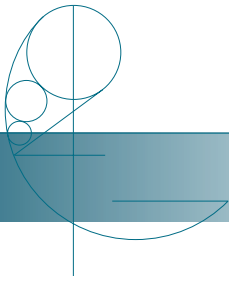
Implementation and Monitoring

Implementation

1   Local authorities will use the principles set out in this guide in reviewing their more detailed local plan policies, design guidance and site specific guidance. These will help provide a clear indication of the standard of design expected in new development. However, local authorities cannot achieve the objective of good design alone. Unless the principles in this guide are shared by all involved in the development process the objective of good design will prove elusive.

2   Developers and landowners should refer to these principles when commissioning design work. At the same time architects, urban designers and landscape architects working within the principles should feel more confident in influencing clients and in the likely success of their proposals.

3   The implementation of design principles will be encouraged through seminars and workshops that will address the following issues:

> • A fuller understanding of the design principles and their application
>
> • The relevance of principles to mainstream planning policy and development control
>
> • Best practice examples and lessons to be learnt

4   At the end of each chapter is an implementation checklist. This is intended to be an aide memoir for all those involved in the design process.

Monitoring

5   Good design will be achieved when the strategic principles set out in the guide and elsewhere have become widely established as part of mainstream policy and practice in Surrey. This guidance will form part of this process and its effectiveness in promoting good design will need to be monitored.

6　　In order to do this, feedback will be sought on a wide range of implementation issues based on the following checklist:

> • Is the design guide an effective tool for helping achieve quality design? How can its effectiveness be improved?
>
> • Are there other issues that need to be addressed by the guide?
>
> • Is the implementation checklist useful for designers and planners? How can it be improved?
>
> • Has the guide been used to support reasons for refusal and has it been given support at appeal?
>
> • Are local plan policies being developed based on the principles in the guide?
>
> • Are there best practice examples, which need to be incorporated in a review?
>
> • Has the information in the *Technical Appendix* helped the process of achieving good design?
>
> • Is the guide used as a tool for assessing design quality where district councils give design awards?
>
> Best practice comparisons:
>
> • Where schemes are acknowledged as being of high design quality, do the principles set out in the guide apply? If not, would their application result in further improvement or do the principles need to be reviewed?
>
> • How do the principles in the guide compare with acknowledged national principles of good design?

7　　The quality of outcomes is more difficult to monitor but the principles in this guide can be used as a catalyst for encouraging a more consistent and objective approach. Most monitoring will be based on judgement but more objective performance indicators can be encouraged where appropriate such as the Building Research Establishment's Environmental Assessment Method (BREEAM). The monitoring of design outcomes will be addressed in seminars and workshops as part of the general promotion of good design and examples of best practice.

Objectives and Principles

Chapter 1 - PROCESS

Objective: To promote good design through the development process

Principle 1.1 - A framework for development based on site appraisal should be established and agreed at the earliest opportunity

Principle 1.2 - Applicants should demonstrate that their proposal is the clear outcome of good design

Principle 1.3 - Good design requires collaboration between professionals and with the community

Chapter 2 - QUALITY

Objective: To create attractive and accessible places

Principle 2.1 - New development should be integrated within the existing settlement

Principle 2.2 - Public space should consist of places and streets, which are comfortable at a human scale

Principle 2.3 - Landscape design should be an integral part of new development

Principle 2.4 - Attention to detail is crucial to the quality of the public realm

Principle 2.5 - Open space should be an integral part of the built environment

Principle 2.6 - The function and maintenance responsibilities for all land and planting should be clearly identified

Chapter 3 - CHARACTER

Objective: To ensure that all development contributes to local distinctiveness and character

Principle 3.1 - Begin with an understanding of existing character

Principle 3.2 - The design of new development should evolve from Surrey's rich landscape and built heritage

Principle 3.3 - Distinctive local character and design quality should be protected and enhanced

Chapter 4 - RESOURCES

Objective: To conserve energy and water, maintain biodiversity and reduce waste and pollution

Principle 4.1 - All development should be designed to be energy efficient

Principle 4.2 - Water should be used efficiently

Principle 4.3 - Existing landscape and habitats should be retained and wildlife enhanced

Principle 4.4 - All development should prevent water pollution and flooding, conserve groundwater and improve water habitats

Principle 4.5 - Buildings and building materials should be reused and recycled

Principle 4.6 - Building materials should be sustainably sourced

Chapter 5 - PEOPLE

Objective: To encourage vibrant and mixed communities where people feel safe

Principle 5.1 - Good design should encourage a mix of uses appropriate to the location

Principle 5.2 - Good design should incorporate a mix of house types and tenure

Principle 5.3 - All public space should feel safe

Principle 5.4 - There should be a clear demarcation between public and private space

Chapter 6 - MOVEMENT

Objective: To create places for people that are safe and easy to move through and are accessible to all

Principle 6.1 - The emphasis in design will be on pedestrians, people with mobility impairments, cyclists and public transport

Principle 6.2 - The layout of the highway is only one design consideration

Principle 6.3 - Speed restraint should be incorporated into design

Principle 6.4 - Car parking should not dominate or overly influence urban form

Chapter 7 - LAND

Objective: To make best use of the available land

Principle 7.1 - The appropriate density of development will depend on accessibility and character of surrounding development

Principle 7.2 - Promote design quality in town centres

Principle 7.3 - Development in existing urban areas should create a high quality urban form

Principle 7.4 - Maximise the potential of internal building space

Process

Objective: To promote good design through the development process

Introduction

1.0.1   Principles of good design should be established early in the development process. By establishing clear design objectives for specific sites developers are able to take these into account before land is secured and values are fixed. However, this is not to imply that good design has a net financial cost. Good design adds economic, social and environmental value and does not necessarily cost more to deliver.

1.0.2   It is important to emphasise that design objectives and principles will not in themselves achieve quality. It is fundamental that the design process is carried out by suitably skilled design professionals within the framework of development plan policy, the principles set out in the guide and local design guidance.

FURTHER INFORMATION

CABE & DETR *The Value of Urban Design* Thomas Telford 2001

This research suggests that good urban design adds value by increasing the economic viability of development and by delivering social and environmental benefits

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PRINCIPLE 1.1   A framework for development based on site appraisal should be established and agreed at the earliest opportunity

1.1.1   Local authority development plans set out the overall design policy framework against which development proposals will be assessed. These may be supplemented by more detailed guidance to look at ways of applying policies to specific areas or sites. Where this is prepared in consultation with the public, businesses and interested parties and adopted as Supplementary Planning Guidance (SPG), it may carry considerable weight. Examples of SPG are given below.

Urban Design Frameworks/ Strategies

1.1.2   This design guidance is more than site specific. At a wider level, it can identify weaknesses in the built environment and transport system as well as promote design quality. It can be prepared by local authorities, landowners, developers, partnerships or regeneration agencies.

Key characteristics of urban design frameworks/ strategies:

• Set out comprehensive design principles and proposals for areas where there is a need to guide, promote or manage change such as in:

- Town centres (see Principle 7.2)
- Villages (see Village Design Statements, Principle 3.3)
- Neighbourhoods and districts
- Town extensions
- Special policy areas e.g. conservation areas

• Strategy for implementation and phasing of development opportunities

• Context for more detailed development briefs for specific sites

• Framework for development control purposes

• Non-prescriptive basis for discussion between all parties involved in that area

Civic Trust Regeneration Unit – Leatherhead Report

Development Briefs

1.1.3   Development briefs supplement development plan policies and proposals for specific sites. They can be prepared by a developer, landowner and/or local authority where they would help secure a higher standard of design than would otherwise be achieved through the development plan or existing SPG.

Briefs are particularly useful for:

• Large, complex or particularly sensitive sites

• Large brownfield sites likely to support mixed use development

• Town centre sites

• Strategic housing/employment sites

• Sites referred to as requiring SPG in local plans

Key characteristics of development briefs:

• Identify key development opportunities and constraints and access links with surrounding development

• May suggest alternative solutions that meet the design objectives

• Identify any significant concerns raised through public participation or consultation and possible responses

• Identify the scale and types of use required to ensure financial viability

• Allow scope for creativity in developing design solutions to meet objectives

• Avoid prescriptive detail

Waverley Borough Council has adopted an Urban Design Framework for a key Godalming town centre site. The framework sets out design principles and covers a range of development options for the site.
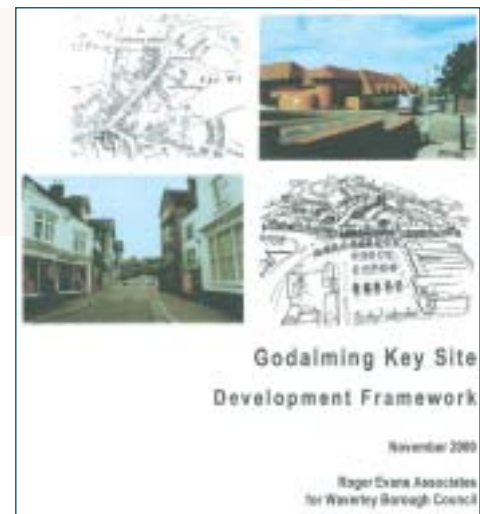
Godalming Key Site – Draft Development Framework
Roger Evans Associates August 2000

FURTHER INFORMATION
DETR *Planning and Development Briefs: A Guide to Better Practice* 1998
DETR Planning Officers Society & House Builders Federation *Housing Layouts - Lifting the Quality* 1998

PRINCIPLE 1.2   Applicants should demonstrate that their proposal is the clear outcome of good design

'Local Planning Authorities should reject poor designs....'
(PPG1, *General Policy and Principles;* paragraph 17)

1.2.1   Applicants must demonstrate how their proposals have taken account of, and support, design policies and guidance in local plans and SPG, as well as how the proposals relate to the site's character and context. PPG1 General Policy and Principles, paragraph A4 states that:

'Applicants for planning permission should, as a minimum, provide a short written statement setting out the design principles adopted as well as illustrative material in plan and elevation.'

15

Design Statements

1.2.2   A design statement is a tool to be used by applicants in response to the requirements in PPG1. The degree of detail will depend on the size and nature of the proposed development. Smaller incremental developments can have a significant cumulative impact. Therefore, it is just as important that smaller developments outline how the design principles have been applied.

> Key characteristics of a design statement:
> - Written statement accompanied by illustrative material relevant to the type and scale of the proposal
> - Should relate to the surrounding area as well as the site
> - Will show how the design solution is a clear outcome of site appraisal and the application of appropriate design principles
> - Will show how a planting scheme has evolved as an integral part of the design process

1.2.3   PPG1 encourages applicants to consult with local planning authorities early in the process, to establish the most important design considerations and address any likely conflicts, in the context of development plan policies and SPG.

PRINCIPLE 1.3   Good design requires collaboration between professionals and with the community

Professional Collaboration

1.3.1   The quality of the built environment will depend on a team approach to ensure that all issues are dealt with in an integrated way. This requires a team approach to assess larger or complex developments. Ideally a team would include highway engineers, planning officers and, as appropriate, other professionals such as architects, landscape architects, ecologists, access officers, police architectural liaison officers and archaeologists.

Community Involvement

1.3.2   Local communities have a legitimate interest in new development and can provide a wealth of local knowledge and insight that can help inform the design process. Local communities will not only include residents, but those who work in an area, local interest groups, disability groups and the voluntary/community sector.

1.3.3   Community participation is demanding of time and resources but can reap considerable benefits in terms of design quality, the effective provision of facilities and community acceptance. The type and scale of project will influence the stage of the design process at which public participation is encouraged.

1.3.4   Traditionally, consultation is carried out through the statutory planning process as part of the preparation of local plans, planning briefs or the processing of planning applications. Whilst this is a valid opportunity for consultation, proposals may be already well developed by the time the local community are able to have an input. Larger, potentially more controversial schemes may offer the opportunity for greater public involvement in the early stages of the process. This may encourage greater public support if communities feel they have contributed from the outset, rather than having a development imposed on them.

EARLY PARTICIPATION AND 'PLANNING FOR REAL'

Former Caterham Barracks Site, Caterham-on-the-Hill

Developer - Linden Homes

The former barracks for the Guards Regiment was purchased without the benefit of planning permission. A planning brief was under preparation by the District Council but had not been adopted. The future of the site was a matter of some concern to the local residents as a former hospital adjacent to the Barracks had been recently redeveloped, with little or no benefit to the wider community.

A planning weekend was organised to involve the community in drawing up a redevelopment scheme for the site and to enable them to have a say in the type of community facilities they wished to see provided. The event took place before the proposals were finalised and very much influenced the final outcome for a proposed development based on an 'urban village' with residential, commercial, retail and community uses.

Although there was some local opposition to the redevelopment proposals submitted, mainly from local retailers, the broader community seemed to be supportive. This was due to a large extent to their early involvement in the process. Following the granting of planning permission, the developer has distributed newsletters to keep the community informed.

FURTHER INFORMATION

The Community Planning Handbook 2000 is an easy to read best practice guide on public participation techniques

Princes Foundation *Sustainable Urban Extensions* Sept 2000 promotes a collaborative approach to developing sustainable town extensions through workshops known as Enquiry by Design. As well as giving insights into the process of running large collaborative workshops the publication promotes many of the principles set out in this design guide

The One Stop Shop Approach to Development Consents, the DETR Planning Research Programme can be viewed on the DTLR web site, www.dtlr.gov.uk

Implementation Checklist for the Process Chapter

- For larger schemes, what provision has been made to include the local community in the design process?
- Has a design statement been submitted with a planning application to demonstrate how the scheme design is a logical response to planning policy, design guidance and site context?

CHAPTER 2

Quality

Objective: To create attractive and accessible places

Introduction

2.0.1   What are the essentials of good design that make a place attractive? These apply universally whether to traditional or contemporary design and relate as much to the space created between the buildings as to the buildings themselves. Buildings should be laid out to create well defined spaces and prevent the creation of incidental areas that do little to contribute to the structure, function or visual appearance of the urban environment.

Greenwich Millennium Village – Creating quality streets and squares at a human scale is one of the objectives of the master plan

2.0.2   Designing for quality is not just about appearance. It is also about creating places that work and where people feel comfortable. Quality design therefore adds value to a scheme in terms of the quality of life of users and, as a result, in terms of the financial returns for investors. It is a truly win-win approach to development.

Space in the public realm needs to be:
- Well connected and accessible (Principles 2.1 & 6.1)
- Well defined and enclosed forming streets and places (Principle 2.2)
- Overlooked, safe and well used (Principle 5.3)
- Characterised by high quality materials and detail (Principle 2.4 & 3.2)
- Easy to navigate and interesting (Principle 2.1)
- Linked to a network of open space (Principle 2.5)
- Well landscaped (Principle 2.3)

FURTHER INFORMATION FOR AN OVERVIEW OF DESIGN PRINCIPLES

Bentley et al *Responsive Environments* 1985

DETR *By Design* 2000

DETR *Places, Streets & Movement* 1997

English Partnerships *Urban Design Compendium* 2000

DTLR *Better Places to Live* 2001

PRINCIPLE 2.1 — New development should be integrated within the existing settlement

'Priority must be given to the design of the public realm. From the front door to the street, to the square, the park and on out to the countryside, designs should create a hierarchy of public spaces that relate to buildings and their entrances, to encourage a sense of safety and community.'

(Urban Task Force, *Towards an Urban Renaissance;* **page 71)**

2.1.1 Public space (that is streets, squares, parks etc.) within new development should be designed as an integral part of a settlement. This will encourage opportunities for walking and cycling as well as use of the car. New estates based on cul-de-sacs may engender feelings of safety and community for the residents. However, many cul-de-sacs are linked by circuitous 'car friendly' roads often flanked by blank walls, planting or fences. Consequently they can make their surroundings feel less safe, discourage pedestrian movement and hinder the creation of a wider sense of community.

Disjointed settlement pattern of roads designed primarily for the car

2.1.2 Where existing street patterns are dominated by hierarchical layout and cul-de-sacs, new development opportunities should increase connectivity for pedestrians and cyclists rather than replicate the existing pattern.

Integrated settlement pattern based on a block structure and a network of inter-connected streets

Legibility

2.1.3   It is important to be able to easily navigate through a neighbourhood and this helps build a sense of place and community. The following will help improve how easy a place is to understand or its legibility:

- *Streets* – In general, highly connected lattice forms of layout with a greater number of route choices will tend to be far more legible than those based on cul-de-sacs which lead to dead ends and disorientation
- *Focus points or nodes* - Urban spaces at junctions of streets may be created that can aid orientation and act as a focus for higher density residential development, important buildings or local shops and services
- *Character areas* - A larger residential area can be divided into areas of distinct character with different space and building forms, materials and architectural style
- *Landmarks* - These can be buildings, trees, lighting, works of art or natural features. Corner buildings can provide important points of orientation
- *Historic patterns and features* – Where dominant these are part of local distinctiveness (see Chapter 3) but they will also aid legibility

Stoughton Barracks, Guildford
Historic features enhance local distinctiveness and legibility

FURTHER INFORMATION

Bentley et al *Responsive Environments* 1999 for a wider discussion on legibility

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PRINCIPLE 2.2   Public space should consist of places and streets, which are comfortable at a human scale

2.2.1   The character of traditional towns and villages is due to a large extent to the definition and enclosure of space.

2.2.2   A clear definition and enclosure of space is often missing from twentieth century suburbia. Housing is too dense to enable trees or hedges to dominate and yet the buildings are too loosely grouped to contain space satisfactorily. The grouping of buildings has in fact been far more influenced by the design requirements of roads and car parking which have come to dominate public space (see Principle 6.2).

Goldsworth Park, Woking – Design requirements of roads have dominated

2.2.3 The aim of good design should be to create quality built environments based on streets and places that feel comfortable at the human scale. Important characteristics are:

- **Active public frontages** – A traditional and practical approach to development based on buildings of any density being located at the perimeter of blocks. Buildings show their public (front) faces to the street, or other public space, with private space to the rear (see also Principles 5.3 & 5.4)

- **Streets** – Use strong building frontages, or a combination of buildings, trees and hedges, to enclose streets. The form of enclosure will give streets their character. Enclosure is not absolute and there should be glimpses of key landmarks both in the street and beyond

- **Diversity** - Use different approaches to urban form to create diverse streets and places such as mews courts, courtyards, squares, 'village' streets, shared surfaces and greens, boulevards and strong urban terraces

The perimeter block has proved to be an effective way of creating streets and places. The above is an example of rigid rectangular or square blocks but in most cases the layout will be more irregular

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FURTHER INFORMATION

DTLR *Better Places to Live* 2001 Chapter 5 for a discussion of layout of streets and buildings

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2.2.4 Most new developments will be at densities that result in a building dominated environment. Buildings should strongly define and enclose streets and public space as in the 'urban tradition' with blocks of buildings following simple building lines.

CHANCELLOR PARK, CHELMSFORD

The use of 'wide fronted' dwellings brought up to the pavement in the urban tradition which:

- Facilitate the creation of continuous street frontages to create a strong urban character
- Facilitate the use of traditional steeper pitched roofs
- Enable parking to be more readily accommodated both on-street and to the rear
- Allow extensions such as conservatories and porches to be more readily accommodated
- Ensure rear gardens are well proportioned

Chancellor Park, Chelmsford
Modern development in the urban tradition

House builders are developing a wide range of house types that can be adapted to suit a range of situations and produce continuous frontages. These include corner units, drive through units, single aspect dwellings, three and four storey dwellings   *Taywood Homes*

2.2.5 As well as buildings and other structures, trees and hedges help define and enclose space. This helps to provide variety where buildings dominate. Alternatively, trees and hedges can also dominate the street scene. A design approach which uses trees and hedges to define and enclose street space is termed 'Boulevard Planning' and corresponds to the typical leafy suburban avenues that are characteristic of much of inter-war Surrey.

Typical Surrey Boulevard
Here trees are located on a grass verge or in gardens. In high density schemes structural trees can be planted in a hard carriageway, verge or pavement
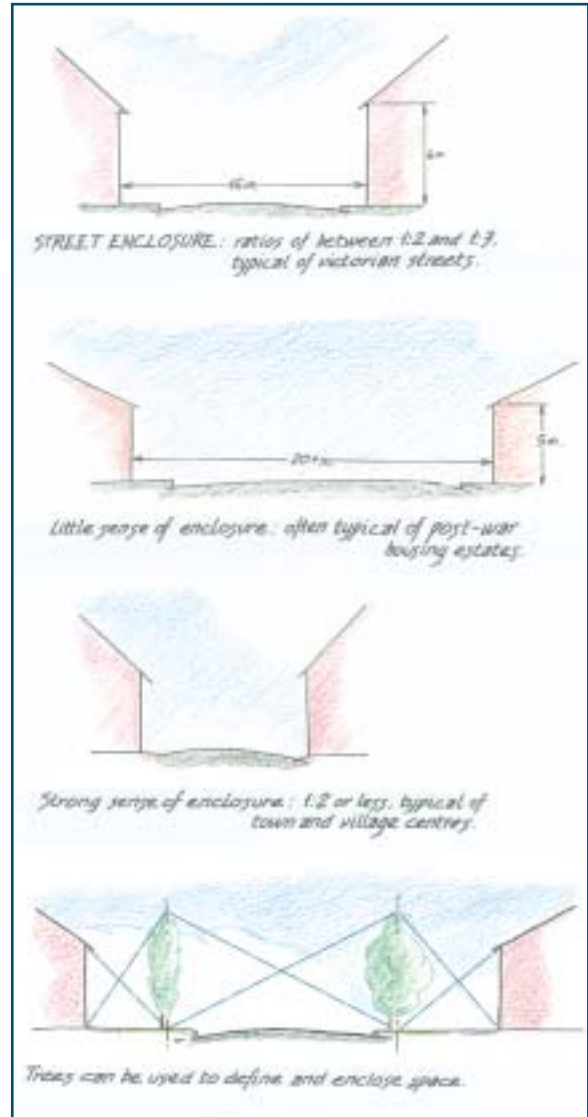
2.2.6 The boulevard approach will be particularly appropriate in the following situations:

- To provide a 'grander' character and improve amenity for dwellings fronting busier access and distributor roads
- Where it is justified as being appropriate in keeping with the special character of the surrounding area (see Principle 3.3)
- To add variety in an otherwise strong urban environment

2.2.7 If buildings, walls, hedges and trees are to define public space they must do this in a satisfactory way from the perspective of the pedestrian. One useful measure of enclosure is the ratio of the height of buildings (to eaves) against the distance between buildings across a street. Urban designers advise that a ratio of 1:1 is about the minimum for streets and mews courts. In streets this can be increased to about 1:3 without losing a sense of place. Deep open front gardens will generally not facilitate enclosure unless positively designed to accommodate trees and create boulevards. Squares can comfortably be 1:5 without losing spatial definition. The ratio for a village green may be much higher in order to achieve a greater sense of openness. It is the way in which spaces are defined and enclosed that creates a variety of experience for the user. It is not just the enclosure of space, but also the ebb and flow of alternating enclosure and openness, or the predominance of enclosed spaces punctuated by more open spaces and views, that can help to achieve this.

STREET ENCLOSURE: ratios of between 1:2 and 1:3, typical of victorian streets.

Little sense of enclosure: often typical of post-war housing estates.

Strong sense of enclosure: 1:2 or less, typical of town and village centres.

Trees can be used to define and enclose space.

Lion & Lamb Yard, Farnham

Victorian street character defined by the strong sense of enclosure created by the buildings

PRINCIPLE 2.3   Landscape design should be an integral part of new development

2.3.1   Landscape design is concerned with the integration of people's needs for development with the existing natural environment. The term 'landscape' not only applies to the countryside or rural areas, but to cities and towns (sometimes referred to as 'townscape'). It can be man made or natural and does not simply refer to plants (frequently but inappropriately referred to as 'landscaping'). Although important, landscape design is not just about aesthetics, but about the way in which people use and experience the outdoor environment in going about their daily business. Landscape analysis and design should be a key consideration at the beginning of any project, with sufficient resources allocated to achieve high quality schemes and to ensure adequate ongoing maintenance (see Principle 2.6).

Green Environment

2.3.2   The environmental, community and even psychological benefits of the 'green environment' cannot be underestimated. Particularly in areas where higher density development is promoted, it will be essential to provide quality open space and opportunities for interaction with the green environment.

2.3.3   Where existing landscape features make a positive contribution to local distinctiveness these should be retained and inform the layout of new development (see Principle 4.3). Existing trees and appropriate species can add considerable aesthetic and monetary value to the development. However, this will only be the case if the proper steps are taken to ensure that the trees to be retained are of good quality, well sited and appropriate to their surroundings.

Black Notley, Braintree
Existing tree retained as a feature

2.3.4   A survey of existing vegetation, its location, condition and whether it is to be retained should accompany development proposals. This should also include information on the likely impacts of site clearance, construction works and the development proposal. Excavations for foundations, changes to ground levels and surface water drainage, soil compaction, the location and space needed for services and access for construction vehicles, are all a potential cause of damage to existing trees. Fencing should define 'no go' areas around trees in order to ensure that the root system is protected and should be erected prior to any site clearance works being carried out on site and retained during the construction period.

2.3.5   New planting should be an integral part of any development proposal. The design must create the space required for plants to establish, whether this be part of an extensive planting strategy or an individual tree that may, in time, become a new landmark or focal point within its setting. Proposals should not simply include an indicative list of species to be used in a scheme, but should include details about the size, density and general arrangement of species to be used, as well as information on preparation of planting areas. This should be backed up with an outline specification covering implementation and maintenance operations.

2.3.6   The choice of species, age and location of new planting should be influenced by the following:

- Benefits of using native and traditional species
- Character and appearance of the locality (see Principle 3.2)
- Design intention and available space
- Ultimate height and spread of species – they should not outgrow their location, causing damage to structures, surfacing or underground services, overshadow buildings or require frequent pruning
- Visual appearance of plants in terms of their shape, seasonal interest, the way in which they will compliment or contrast with adjacent buildings and surface finishes
- Need to avoid compromising highway safety or creating obstacles to pedestrians or to people with mobility impairments
- Where relevant, the plant's ability to withstand vandalism, pollution and other damage e.g. salt tolerance
- Need for irrigation and the type of growing medium which may be suitable for a particular area
- Vulnerability of the plant and need for protection
- Future maintenance and replacement (see Principle 2.6)
- Future climate change - with wetter winters and drier, warmer summers
- Opportunities to enhance or create new habitats

FURTHER INFORMATION

BS 5837 *Guide for Trees in Relation to Construction* 1991 provides detailed advice on how to enable development to be successfully integrated with trees

Hard Landscape

2.3.7   Use of hard landscape can have a significant impact on the appearance of external spaces. More often than not they are characterised by poor design. A plethora of materials, street furniture, signing and lighting simply results in a cluttered, visually chaotic environment.

Onslow Street, Guildford
Street furniture as public art combined with planting helps to enliven this rather harsh urban scene

PRINCIPLE 2.4   Attention to detail is crucial to the quality of the public realm

2.4.1   Attention to the design of buildings, the public realm and the interface between them is essential if quality environments are to be created and maintained.

Building Design

2.4.2   The following interrelated design issues should be carefully considered (see Glossary for further definitions). These include some traditional rules that can serve as a useful guide to building design. However, where justified, major departures from these guidelines can be appropriate and make a positive contribution to local character.

Scale – the overall scale and the relative scale of individual elements (doors, windows etc.) both in relation to adjoining buildings and people.

Height – minor variations in height can add interest especially to a skyline. Larger variations can also create landmarks, which assist legibility.

Form – the shape of a building is largely determined by its floorplan and the profile of the roof and should visually express the way it is constructed.

Mass – the perceived bulk and weight of a building will be altered by the extent of window and other openings and architectural modelling. The traditional ratio between solids (masonry) to voids (window openings) is two thirds to one third, which is a useful guide.

St Saviours Church Centre, Guildford
Here a contrast in building mass shows that guidelines can be broken to good effect

Proportion & Rhythm – There should either be horizontal or vertical emphasis. Many buildings have a strong vertical rhythm in building elevations due to the fact that early construction methods and materials limited the widths of building bays and window openings.

Bridge Road, East Molesey
Vertical balance and rhythm

Colour – the majority of facing materials are self coloured. Generally white and all light colours are more conspicuous in appearance than darker shades, although traditionally both black and white have been used for painting joinery. Bright colours (those with high chroma) such as yellow, bright greens, pink etc. can look incongruous and should be used sparingly.

Texture – More naturally produced elements such as stone, brick, tiles, boarding and render have a distinctive pattern and grain and tend to draw attention away from the mass of a building. Flat (i.e. matt) finishes usually have a more acceptable appearance and sense of quality, than shiny ones.

Design Buildings to Turn Corners

2.4.3   Buildings at the apex of street corners should be designed as corner turn units that face two ways. This will maintain a continuity of frontage and visual surveillance (see Principle 5.3). Tailored designs may be needed particularly where corners are not at a convenient 90° angle.

Consider the setback from the street

2.4.4   The setback of dwellings from the street is an important design consideration. This will help define character and provide a degree of privacy to ground floor windows.

Corner turn building, Reigate

Design for public spaces

2.4.5   Buildings can create the structure of public space but it is the detail of materials, street furniture, lighting, security and use of planting that can help transform the space into a successful place. Some key aspects that need to be considered are:

- Accessibility
- Orientation – sunshine or shade are important to how the space is used
- Seating – where people can rest or socialise
- Places for children to play – not just in designated areas
- Design of pedestrian routes with paths that follow desire lines
- Use of quality and durable surface materials
- Co-ordinate and minimise street furniture and signage to reduce clutter
- Creative use of public art to add interest and quality
- Creative use of lighting and at a pedestrian scale

2.4.6   Useable, quality public space should not be cluttered, particularly bearing in mind the needs of people with mobility impairments. Careful thought should be given to how the design of the landscape will affect their independence and ability to gain access within public space. Tactile paving should be properly integrated into any scheme, so that it is both functional and co-ordinated with surrounding materials. Alternative materials to the traditional red tactile paving are available and should be considered.

LEATHERHEAD HIGH STREET

The enhancement of the public realm is a key element in the town centre revitalisation strategy. The scheme comprises:

- High quality surface materials and finishes

- Public art

- Co-ordinated and purpose designed street furniture

- High quality and imaginative lighting

Particular care has been taken to ensure the improved High Street is 'user friendly' to people with mobility impairments.

PRINCIPLE 2.5   Open space should be an integral part of the built environment

2.5.1   The design and location of open space should never be an afterthought and should be seen as a focus for streets and buildings in the same way as public squares. The emphasis must be on quality and a perception of safety as a result of activity and surveillance.

2.5.2   Open space should:

- Generally be fronted onto and not backed onto by buildings and visible to ensure that vulnerable groups do not feel insecure (unless the objective is to create informality and seclusion in keeping with a particular landscape character, see Principle 3.2, or to promote biodiversity)

- Be part of the circulation network for both the development and wider area

- Have a clear function serving the needs of the community

- Be robust and adaptable and suited to a number of uses

- Be accessible to people with mobility impairments

Guildford Park entrance, Guildford
Back garden fences and no through activity provides
a poor environment for this open space

2.5.3 Well located open space can also be seen as part of a wider framework or green space strategy that contributes to biodiversity. It can be built around natural elements such as watercourses and landscape features as well as features associated with Sustainable Urban Drainage Systems (SUDS) (see Principle 4.4).

Houses front onto open space,
former Caterham Barracks, Caterham

FURTHER INFORMATION

National Playing Fields Association *The 6 Acre Standard* (currently being revised) considers all recreational needs. It provides guidance on a hierarchy of playspaces and on the location and design of a variety of formal and informal children's play provision.

HOEBROOK GLADE, WESTFIELD, WOKING

A development of 20 houses adjacent to the Hoe Valley - a linear open space following the Hoe Stream. The development includes:

• Structural planting using native broadleaf species

• Footpath links to the adjoining open space

• A pond which acts as a hold for stormwater

• Commuted payments to the council to allow for ongoing maintenance costs

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PRINCIPLE 2.6 The function and maintenance responsibilities for all land and planting should be clearly identified

2.6.1 A management plan for landscape establishment and ongoing maintenance should be included with planning applications, together with details of funding arrangements. Maintenance regimes could include:

• Adoption by the highway authority under the Highways Act

• Adoption of the drainage and sewerage elements of the scheme (see Principle 4.4)

• Maintenance by the highway or local authority under a commuted sums arrangement

• Maintenance carried out separately by a bonded management company

• Maintenance carried out by residents through special arrangement

Relevant Regional and Strategic Policies
RPG 9: Q2
Surrey Structure Plan Deposit Draft, January 2001: SE3

Implementation Checklist for the Quality Chapter

- Does the design of new development indicate how it will be integrated into the existing and potential pedestrian movement pattern and the physical form of the neighbourhood?
- Does the form and layout of new buildings create well defined streets and places with active frontages?
- Does the site provide opportunities to introduce landmarks or create a particular character and form of development that will help people navigate through the local area?
- Is open space logically linked and related to other green space as part of a strategy for the development and enhancement of the green space network in the wider settlement?
- Is the function, ownership, long term maintenance and funding of all open space clearly addressed?

Character

Objective: **To ensure that all development contributes to local distinctiveness and character**

Introduction

3.0.1   A place with its own identity or character is memorable and appreciated. Surrey is no exception. Building on local distinctiveness is important if quality places are to be sustained and created.

3.0.2   We are now familiar with the standard housing layouts found all over the UK. The result is that everywhere could be anywhere. This happens when context is ignored.

New development that ignores local distinctiveness
is often monotonous and unimaginative

Onslow Village, Guidlford
Hedgerows reinforce a close knit street pattern and
contribute to local character

PRINCIPLE 3.1   Begin with an understanding of existing character

3.1.1   An understanding of the existing characteristics of the site and area and the features that help define its distinctiveness should be the starting point of good design. This is often referred to as site appraisal. A site appraisal should form the basis for preparing design options, possibly in a design statement or development brief, or may feed directly into detailed scheme design.

3.1.2   Site appraisal is not simply an inventory of existing features. The appraisal should describe the historical development of an area and identify the design qualities that will continue to influence the design of all new development.

3.1.3   Site appraisal can consist of the following:

- Overview of the site's historic background
- Assessment of the area's design qualities
- Site constraints
- Opportunities and capacity for development
- Assessment of uses likely to be viable

Queen Elizabeth Barracks, Guildford
Site Appraisal – Redevelopment offers the opportunity to
provide new routes based on a network of green space

3.1.4   Local knowledge and perceptions will be invaluable and it is at the stage of site
appraisal that the local community can first participate in the design process
(see Principle 1.3).

FURTHER INFORMATION

Urban Design Alliance *Placecheck: A user's guide* www.placecheck.com
Placecheck is a method of assessing the qualities of a place, showing what improvements are needed and
focusing people on working together to achieve them

Llewelyn-Davies *Urban Design Compendium* 2000 Chapter 2 'Appreciating the Context' including a Character
Appraisal Inventory

Site Appraisal Checklist

The following checklist is a guide and contains some key questions that should be asked regarding the site and its surroundings before design work progresses. Relevant issues will vary according to the scale and location of development. This list can be adapted and developed to suit circumstances.

Historic Influences

Local vernacular: Is this distinctive?

Development: How has the site and its surroundings evolved?

Landscape: Is the site part of a distinctive landscape (see paragraph 3.2.5)?

Settlement form: Is there a clear land use or street pattern?

Important features: Are there buildings or features of historic, architectural or townscape value?

Archaeology: Does the site contain archaeological features? (Check with County Archaeologist)

Existing Design Quality

General design: Does the surrounding area have any particular positive features relating to street patterns and width, plots, layout of buildings within plots, set backs, building scale and height, planting etc?

Detailed design: Are there important elements relating to vertical/horizontal rhythm, materials, corner treatment, windows and doors, distinctive art and craft and the like?

Development Plan: Is the character of the area recognised as being of special quality?

Local perceptions: How do local people perceive the quality and function of the place?

Constraints

Legal: Are there any wayleaves and easement strips that cannot be built on?

Ecology: Are there any features of importance including hedges, streams, ponds or woodlands that may act as wildlife corridors?

Vegetation: Are there trees, hedges or boundary features? Are they historic, what is their condition and should they be retained?

Water: Does the site contain watercourses and has the Environment Agency been consulted?

Development Plan: Are there policy constraints?

Viability: Are site conditions likely to impose unusually high construction costs? Is the proposed mix and density of uses likely to be the most economic bearing in mind local market conditions?

Surroundings: Is there a need to protect the amenity of surrounding housing or do surrounding uses pose particular problems?

Opportunities

Location: Where is the site located in relation to the settlement centre, local centres, public transport and schools and other amenities?

Movement patterns: Where are existing and potential access points to the site? Are there barriers to movement, particularly for pedestrians and cyclists, that need to be removed?

Focal points: Are there existing or potential focal points which could become important public space, sites for landmark buildings, or be used to locate other features or facilities?

Topography: Are there existing slopes, wind shelters, shaded areas which should be exploited to reduce energy consumption and to maximise the quality of the living environment?

Green networks: Is there any open space close to the site? Can it be linked to the site as part of a wider network?

Biodiversity: Are there opportunities for enhancing biodiversity by improving existing habitats or creating new ones?

Safety: Are there existing public spaces that could feel safer if overlooked by new buildings?

Policy: Does the Development Plan and Government policy offer new opportunities?

Views: Are there views into and out of the site that can be exploited?

PRINCIPLE 3.2   The design of new development should evolve from Surrey's rich landscape and built heritage

'New housing development of whatever scale should not be viewed in isolation. Considerations of design and layout must be informed by the wider context, having regard not just to any immediate neighbouring buildings but the townscape and landscape of the wider locality. The local pattern of streets and spaces, building traditions, materials and ecology should all help to determine the character and identity of a development, recognising that new building technologies are capable of delivering acceptable built forms and may be more efficient.'

(PPG 3, *Housing,* **paragraph 56)**

3.2.1   The design of all new development should take into account the character of the site and surroundings (the context). This will help ensure that the design of contemporary buildings evolves from the qualities that make many parts of Surrey so distinctive.

Genuine innovation and design quality will contribute to local character
Surrey Institute of Art and Design (SIAD), Farnham

3.2.2   Quality contemporary design can incorporate a wide variety of interrelated and legitimate responses to context:

- **Build on the positive.** The positive design features of an area should be reinforced such as building lines, scale, street patterns, massing and landscape. Using local historic details, style or use of materials will also add to character if done convincingly.

- **Continued evolution.** Character and local distinctiveness have evolved over time. This process of change should be encouraged in response to contemporary priorities such as lifestyle and sustainability issues and the opportunities afforded by modern materials and building techniques.

- **Creating new character.** Where there is little of positive significance to build on there may be opportunities to create a new local character.

- **Planned change.** There may be good planning reasons for justifying an occasional significant departure from context where this is combined with a comprehensive approach to land assembly (see Principle 7.3).

- **Copying the past.** This can be an appropriate solution but must be done in a convincing way. Often there is a lack of understanding of the design principles that have shaped Surrey buildings. The result is a variety of styles and superficial use of materials with no unifying features to give the development a sense of identity.

Mix of styles – New development should avoid a confused application of architectural styles or inappropriate historic interpretation

Surrey Landscape

3.2.3 Surrey's landscape is varied, reflecting underlying geology, land cover and land use. A character appraisal has identified 25 separate landscape character areas. These variations in local distinctiveness should be reflected in new development. The density of woodland and hedgerows in Surrey often creates a sense of small enclosed space and this is a feature which new development should respect. The retention of important trees and hedgerows, along with new planting, will help to enhance elements of the existing landscape structure.

3.2.4 The transition between new development and the countryside requires careful attention. Traditionally there would be a gradual transition between the settlement edge and open countryside. The boundaries of extensions to a settlement will be more clearly defined today but the harmful visual effect of abrupt settlement edges should be avoided, particularly where this is in the form of tall urban style fencing, conifer hedges and brick walls. Better integration can be achieved by a combination of planting to provide selective screening and by allowing some new development to face into the countryside with views in and out.

3.2.5 There will be benefits in using native plant species. They not only 'fit' with the local landscape but they also tend to be more resistant to plant growth problems with the added benefit of reducing long-term management costs. As well as native species a number of species have been introduced into the County and are now characteristic of the Surrey landscape.

3.2.6 As in the past, there will continue to be opportunities to introduce new species as part of a creative and more ornamental scheme. Climate change may also allow new species to more readily adapt to conditions in southern England than some native species.

View from Box Hill

FURTHER INFORMATION

Surrey County Council *The Future of Surrey's Landscape and Woodlands* 1997. The County has been divided into 25 landscape character areas. This document describes each of these areas and the features that make them distinctive including locally native tree and shrub species

Surrey Historic Landscape Characterisation Project County wide information on a GIS base which elaborates upon the above document and provides a valuable insight into how landscape types have developed (intended to be available on the Surrey County Council web site)

Historic Settlement Patterns

3.2.7 Older settlement patterns developed pre motor car. The presumption that most journeys would be made on foot resulted in highly interconnected street patterns. The return to a design ethos that seeks to encourage movement on foot or by bike will tend to result in similar interconnected streets. This will also help new development to integrate with, and reflect, the street pattern of the older established parts of settlements.

Surrey Building Form and Traditions

3.2.8 Traditional Surrey buildings, as elsewhere, have a simple rectangular form with a pitched roof and central ridge. Roofs span the narrower dimension, generally up to a maximum of 6.5 metres in width. Where deeper plan forms were used, the scale of the roof was typically reduced by using a double roof with a central valley gutter. The pitch and form of a roof follow the practice of relating pitch to material – e.g. not less than 47° for clay tiles and not less than 22° for natural slate. The simple form could easily be adapted and extended in a variety of ways and could be 'stepped down' a slope to follow the topography rather than require extensive earthworks.

Brockham
Traditional simple rectangular form with tile hanging, brick and clay tiles

3.2.9 In recent decades there has been a tendency to design buildings with deep floor plans. This is often appropriate – particularly close to town centres and when buildings are part of a continuous frontage and traditional roof pitches may be used as eaves, with a flat section in the centre. However, deep plans can result in overly dominant and shallow pitched roof forms that appear bulky and alien when viewed against traditional building materials and styles. This is one of the reasons why bungalows can often appear to be inappropriate in rural areas. Narrower plan buildings can often be designed without reducing density or roofs can be designed to span the narrower dimension.

Materials and Detailing

3.2.10. The following materials, and correct detailing, are those that are particularly associated with Surrey's character. It is not prescriptive. Such details are only one aspect of local character. On occasions they can be disregarded in favour of genuinely innovative design solutions. Attention to materials and detailing should be seen as an opportunity to enhance the quality and distinctiveness of new development. On the other hand a distinctive local character can be diluted or destroyed by the inappropriate use of materials and detailing, particular on smaller infill developments in villages. Heavier materials were usually used close to their origin and therefore a move towards sustainably sourced materials (see Principle 4.6) will tend to reinforce local character:

Stone – is the oldest surviving vernacular building material. Early examples may include parish churches and manor houses, but where it was available it became commonplace by the eighteenth century. Being heavy, its use was extremely localised. It is still available today and its continuing use for buildings, boundaries and hard landscaping close to its source will help reinforce local distinctiveness.

Exposed oak timber framing – with rendered panels has a history as long as stone within the county, but surviving examples are generally 16th or 17th century. There is a marked difference between the Kent style of framing in the east and the Hampshire form in the west, as well as between town and country. Timbers of unfinished natural oak are characteristic of historic Surrey with the blackening of timbers stemming from the 19th century.

Rendering – is a traditional method of weatherproofing timber-framed buildings and was once common in Surrey. Fashion dictated that it would have been more common in town locations than in the countryside but this distinction has now been blurred.

Tile hanging – belongs essentially to southern counties of England. It was used originally to weatherproof timber-framed buildings, especially outside towns, but by the 19th century it had become a decorative finish applied over new brick buildings. Walls commonly incorporated bands of shaped tiles, but roofs seldom did. The continued use of clay tiles in the countryside is a natural progression from traditional local building techniques. Surrey hanging tiles have a characteristic orange colour.

Timber framing – Charter Quay, Kingston upon Thames used in a convincing way on a new building

Weatherboarding – is found on older timber-framed houses in the east of the county where the Kent influence prevails and on later clap-boarded cottages related to railways. Weatherboarding was generally painted white on houses. Elsewhere its use was reserved for timber-framed buildings of lower status such as outhouses, barns and stables where surviving examples were generally tarred black.

Brick – has become the dominant building material in Surrey. This change took place in the 17th century in areas without good building stone such as the clay Weald, but was delayed until the 20th century in stone districts such as Waverley: brick still remains subservient to stone in such districts. Surrey clays

Modern design sits easily against the old in St. Catherine's conservation area, Guildford

traditionally produced red or orange bricks with individual bricks being of a single colour but with a range of hues. This is unlike modern 'multis' which have a darker core and with a lighter rind to the exposed face. A characteristic of east Surrey is the use of blue flared headers in Flemish bond brickwork. The use of Flemish or English bond can contribute greatly to any new development.

Horsham slab roof tiles – are the oldest commonly surviving vernacular roofing material to be found in Surrey. It should be retained where it survives but it is unlikely to feature in new developments.

Clay roof tiles – by the late 18th Century, clay roof tiles superseded thatch and Horsham Stone on all but the most humble or highest status houses.

Welsh slates – arrived with the canals and railways. Although not a vernacular building material, slate was extensively used in urban locations close to railways from the C19 but only on roofs with a shallow pitch. Slate, or its manufactured equivalent, should therefore be used with caution in rural areas if the traditional distinction between urban and rural Surrey is to be maintained.

Detailing of eaves and gables – is treated differently around the country. In Surrey they were traditionally simple with little use of bargeboards and no boxing in of rafter feet.

Windows – in timber or tile-hung buildings were flush to the outside face of the building, whereas in masonry buildings they were recessed. Windows themselves were traditionally side-hung casements in sub-frames so that fixed and opening lights have the same glazed areas. Later, double-hung sashes became common. Both of these forms are characteristic of not only Surrey, but also the British Isles as a whole. The use of top-hung fanlights or hinged sashes dilutes both the national and local character and should be avoided.

Mytchett Heath, Mytchett
Example of modern development using traditional Surrey materials

Merrow Place, Guildford
Appropriate use of flint on boundary walls. Often the material of boundary walls can be a practical and appropriate way to mirror the local vernacular

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FURTHER INFORMATION

Gradidge *The Surrey Style* 1991

A celebration of 'Surrey Style' based on the County's historic vernacular. This provides a reference for traditional Surrey building styles and detailing and how local vernacular was reinterpreted on a large scale in the 19th and 20th century

R. W. Brunskill *Vernacular Architecture* 2000

Chilterns Building Design Guide 1999 contains useful general principles about building in rural areas that can be applied to Surrey. Available from the Chilterns Conservation Board Tel: 01844 271300

PRINCIPLE 3.3   Distinctive local character and design quality should be protected and enhanced

3.3.1   Local design quality and character is an important and valued aspect of Surrey and can be identified as part of design guidance that focuses on a particular geographical area. Such guidance may take a number of forms. However, local quality should not be used to prescribe an historic style and form of new development. It is perfectly possible for modern architecture to be used in a way that builds on established local urban design quality.

SURREY HILLS JIGSAW PROJECT 2

The Jigsaw Project 2 aims to give people who live or work in The Surrey Hills Area of Outstanding Natural Beauty an opportunity to identify what they value about country lanes and the improvements that need to be made in the way they are designed and managed.

A best practice design guide will be produced during 2002 which aims to ensure that the management of country lanes is consistent and appropriate to the character of the area.

FURTHER INFORMATION   TEL: 01306 879365

Village Design Statements and Plans

3.3.2   Villages tend to be less dominated by 20th century development and the scale of development is smaller, more intricate and often characterised by locally produced materials. The existing design qualities tend, therefore, to be fragile and easily harmed by development that takes no account of local street patterns and building scale and form. For example, the 'bolt-on' cul-de-sacs in villages with standard 'anywhere' house designs have caused particular harm to village environments.

3.3.3   A Village Design Statement offers a positive way to manage change in a village. It should set out clear and simple guidance for the design of all development in a village, based on the characteristics and qualities that make it distinctive. Far from limiting designers to simply copying the past, it can identify the characteristics that should inspire new and locally distinctive design. Village Design Statements should be produced by the village community with help from the local planning authority and can be adopted as supplementary planning guidance.

3.3.4   The following objectives have been set out for Village Design Statements by the Countryside Agency:

- To describe the distinctive character of the village and the surrounding countryside
- To show how the character can be identified at three levels:
  - landscape setting of the village
  - shape of the settlement
  - nature of the buildings
- To draw up design principles based on distinctive local character
- To encourage the community to work in partnership with the local planning authority to implement and develop local plan policies

3.3.5 Village and Town Plans are now also proposed under the Rural White Paper, *Our Countryside: The Future*. These are intended to take a broader look at the issues that face local communities. They will consider not only the need for all new development to achieve a high standard of design, but also the local services and facilities required to safeguard the future of the community. Parish Councils will play a key part in drawing up these plans.

FURTHER INFORMATION

Countryside Agency *Village Design – Making Local Character Count in New Development* 1996

Rural White Paper *Our Countryside: The Future – A Fair Deal for Rural England* 2000

THE ELSTEAD VILLAGE DESIGN STATEMENT

The Statement highlights the qualities that resident's value. It aims to ensure that the design of future development and change in Elstead is based on an understanding of the village's past and present, that it contributes to the protection and improvement of Elstead's special character and maintains the high quality of its environment.

The Statement offers design advice to all those considering development in Elstead village regarding:

• Pattern of the settlement and open spaces

• Scale, height and proportion of buildings

• Detailing of buildings and architectural features

• Treatment of boundaries

• Materials and finishes

• Local highway considerations

• Trees and landscape context

Source: Elstead Village Design Statement; page 4

Stacey's Place, Elstead Village
New development in Elstead based on the Village Design Statement

Conservation Areas

3.3.6 Areas of special architectural or historic interest will be designated as Conservation Areas, and will receive statutory protection through the planning process. The definition of what gives them their special quality should be derived from an appraisal. This will include an assessment of the character and hierarchy of spaces and the quality and relationship of buildings, trees and other landscape features, together with a justification of the architectural and historic interest of the area. Where character appraisals have been prepared, they are available from the local authority.

High Street, Limpsfield
Historic Quality in Surrey

Suburban Character

3.3.7   Surrey's built environment is as much dominated by 20th century suburban development as historic buildings. It is important that the qualities of the best suburban areas are protected as one of the characteristics of Surrey that make it such an attractive place to live. Piecemeal development that cumulatively undermines this character should be avoided. The qualities of these areas can be promoted through local plan policies, designations or SPG to give a clear indication of the qualities that give an area its distinct character.

3.3.8   Density alone is not an indicator of design quality and it is important to identify those special qualities that make an area distinctive. In Surrey there are many areas of low density residential development where the spacious settings of individual houses, large gardens and mature landscapes contribute as much to the positive character of the area as the buildings themselves. In other suburban areas buildings may dominate and can provide their own, more urban, design quality. New development should not undermine these features.

SUBURBAN CHARACTER

Wonersh Park, Wonersh

Policies in the Waverley Borough Local Plan seek to preserve the special environmental quality of pre-war residential areas characterised by:

- Low density landscape setting

- Wide verges and street trees

Gordon Road, Camberley

This Area of Good Urban Character as defined in the Surrey Heath Local Plan 2000, aims to protect the built form and character of this predominantly Victorian and Edwardian part of Camberley. It is characterised by a distinctive street pattern and buildings that front onto the street.

Relevant Regional and Strategic Policies

RPG 9: Q2
Surrey Structure Plan Deposit Draft January 2001: SE3, SE4

Implementation Checklist for the Character Chapter

- Has the designer carried out a site appraisal?
- Is it clear how the design of the proposed development has responded to site appraisal?
- In what ways does the development help build local distinctiveness?
- Are local materials used in an appropriate way?
- Would the proposed development dilute or destroy locally distinctive and important design characteristics?

CHAPTER 4

Resources

Objective: To conserve energy and water, maintain biodiversity and reduce waste and pollution

Introduction

4.0.1 Our quality of life and that of future generations depends on the conservation of natural resources. Being wasteful with natural resources is uneconomic, produces pollution, reduces biodiversity and impacts on climate.

4.0.2 Climate change is considered one of the greatest environmental threats facing the world. Following the World Climate Conference at Kyoto, the UK Government committed itself to reducing carbon dioxide (CO_2) emissions by 20%. This cannot be achieved without a radical reduction in the energy wasted in our buildings and in transport.

4.0.3 There are also strong social and economic benefits in adopting a more sustainable approach to development. These include:

Manor Crescent, Woking – November 2000

- A better quality and healthier living and working environment
- Reductions in cost (particularly when whole-life costs are assessed)
- Improved efficiency and productivity in use
- Minimising the cost of ownership
- Improving corporate image
- Reducing fuel costs
- Providing greater housing choice

4.0.4 Resource issues cut across traditional areas of responsibility. Thus this chapter deals with issues that concern land-use planning, building control, pollution and environmental control. A sustainable approach to development has to be holistic and the planning system has to operate as part of an integrated development process and is well placed to take a strategic overview of all issues that effect resource use.

FURTHER INFORMATION

Somerset Trust for Sustainable Development (STSD) *Planning for Sustainable Development and Construction* 2001

This document provides a wealth of information on sustainable development and construction and how to promote it within the Planning Process

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PRINCIPLE 4.1   All development should be designed to be energy efficient

'An energy efficient pattern of development and energy efficient buildings will form an essential part of the UK's response to international climate change agreements and to sustainable development strategies.'

(PPG11, *Regional Planning,* paragraph 14.2)

4.1.1   British buildings are generally extremely wasteful of energy. In fact energy use in buildings accounts for over 50% of the UK's CO2 emissions. If CO2 emissions are to be reduced, new buildings must satisfy more stringent energy efficiency standards. Building regulations are setting higher requirements but even these fall far below what is considered the norm in mainland Europe. New buildings, including housing, can easily be designed to standards above those required by the regulations and this should be the norm for all those involved in the development process.

4.1.2   Changes in site layout, building design and the use of a mix of modern technologies, including combined heat and power, can all make significant contributions to overall energy efficiency. The planning system should therefore take a leading role as part of an integrated approach to energy efficiency together with building control and the development industry. This will depend on the extent to which the principles of sustainable construction are embodied in appropriate local plan policies.

4.1.3   Best practice and innovation should be encouraged. Design statements submitted with planning applications (see principle 1.2) could usefully include information showing how sustainability issues have been addressed during the design process. A statement could be based on a BREEAM assessment (see below) and include an assessment of some or all of the following:

- Energy conservation including layout, orientation and insulation of buildings
- Embodied energy and transport costs of materials including the use of local materials and methods
- Use of renewable energy through passive solar heating, photovoltaic cells and wind turbines
- An assessment of the feasibility of using community heating (CH) in conjunction with combined heat and power (CHP), particularly for larger developments
- How the development encourages walking, cycling and the use of public transport (see Chapter 6 Movement)
- An assessment of quality of life or 'health' of the buildings through utilising natural light and ventilation, sound insulation and non-toxic materials
- How water is conserved through the storage of rain water, grey water recycling and permeable storm water drainage systems (SUDS) (see Principles 4.2 & 4.4)
- How waste is to be minimised through the use of recycled material and the recycling of demolition waste

BREEAM – The Building Research Establishment's (BRE) Environmental Assessment Method

BREEAM, including its residential equivalent EcoHomes, is a voluntary scheme that rewards those developers of commercial and residential property who improve environmental performance through good design. BREEAM goes beyond Building Regulation requirements in order to encourage best practice and includes planning control issues such as building location, transport issues, ecology, health and building design. BREEAM results in the award of a certificate and detailed report and gives marketing advantages through a credible label promising energy efficiency, lower running costs and a healthy environment.

BREEAM is a very useful benchmark environmental assessment that could be used in support of planning applications.

Current publications :   Offices - *BREEAM 98 for Offices*
New Homes – *EcoHomes* April 2000

www.bre.co.uk

Layout

4.1.4   Changes in site layout (orientation, location on slope, landscaping) can reduce the energy requirements of a typical dwelling by 20%, through passive solar gain and microclimate improvements.

The Greenwich Millennium Village layout is designed to optimise solar gain and daylight through the careful placing of structures and planting

4.1.5   Passive solar gain takes advantage of natural light and heat from the sun and uses the wind to assist ventilation. The nearer the orientation is to due south, the greater the solar gain. In order to optimise solar gain, houses should be orientated within 30° of south. Clearly, this approach needs to be applied flexibly along with other design considerations relating to quality and character. The result may therefore often be shading or building orientations that do not optimise solar gain. The application of these principles can nearly always produce significant energy conservation benefits when applied in association with high levels of insulation.

4.1.6   The design of buildings and landscape should consider aspects of microclimate and acknowledge the potential for exploiting and influencing these to improve living conditions and reduce energy consumption. For example planting can be designed to provide shade in the summer months and provide shelter and allow light penetration in winter.

FURTHER INFORMATION

DETR Energy Efficiency Best Practice Programme General Information Report 27 *Passive Solar Estate Layout* and Good Practice Guide 73 *Energy Efficient House Design – Exploiting Solar Energy*

Littlefair et al. *Environmental Site Layout Planning* 2000

4.1.7   Detached housing is the least energy efficient form, especially bungalows. Terraced housing and flats are the most energy efficient. Therefore, higher density developments that use buildings to enclose space will be more energy efficient and at the same time meet other design principles.
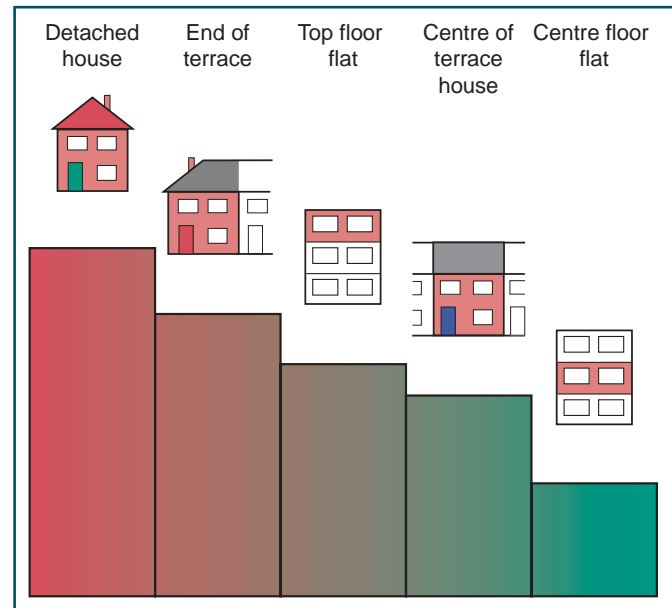
Energy use by house type (assuming equal floor area and orientation) BRE

Building Design

4.1.8   Modern building design should seek to exploit renewable energy resources. The following aspects of building design can have a significant effect on energy efficiency:

- Locate rooms that need higher temperatures on the southern side
- Utilise conservatories to maximise passive solar gain and the conservation of heat (it is important that they are unheated spaces and open into homes only when warmed by adequate sun)
- Maximise window areas to the south, with smaller window areas to the north
- Make provision for active solar systems (use of photovoltaics and solar panels)
- Aim for high levels of insulation, well in excess of minima required by the Building Regulations

Bill Dunster Architects, Hope House, East Molesey
A Surrey based example of a low energy dwelling making best use of passive solar energy through innovative design with a high quality living and home office environment

- Consider using thermally massive materials to store heat and release it slowly
- A building that is narrow fronted and deep in plan form (generally above 16 metres) will be difficult to light and ventilate naturally. This also affects the variety of uses that can be accommodated and in turn the building's robustness

INTERNATIONAL BUILDING, ROYAL HOLLOWAY COLLEGE, EGHAM

High level of insulation

Low tech temperature control system and no requirement for conventional air conditioning systems based on:

- Sliding external louvres over the windows that reduce glare AND unlike conventional blinds prevent heat build up

- Computerised system that allows for air to be drawn in - ventilates and cools concrete floor slabs during the night to allow them to absorb more heat during the day

- Fan assisted cooling system to cool large ground floor computer rooms - Air is drawn into the room through grills in concrete floor slabs and out through ducters

ECD Architects

FURTHER INFORMATION

DETR *Building a Better Quality of Life: Strategy for more Sustainable Construction* 2000

Developers should take account of this advice when designing and constructing schemes

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District or Community Heating Schemes and Combined Heat and Power Schemes

4.1.9   The use of combined heat and power (CHP) technology should be encouraged. CHP utilises the waste heat generated during the production of electricity to heat or cool buildings. Overall fuel efficiency can be increased to 70-90% compared to 30-50% with conventional heating and electricity generation.
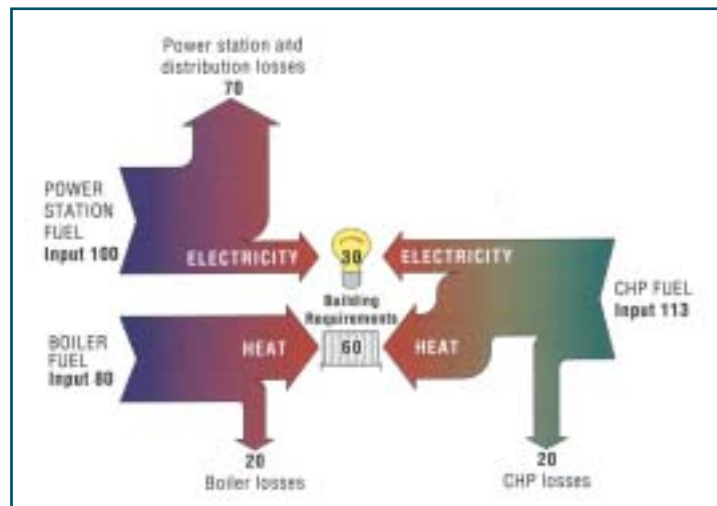
CHP uses the heat that is usually wasted when electricity is generated from fossil fuels

4.1.10 Most efficiency is possible when CHP is used to serve a number of local buildings as part of a community heating scheme. Residential only schemes are quite feasible and residents can benefit by lower heating/electricity costs. Nevertheless, community heating schemes will work most efficiently when supplying a mix of nearby residential and commercial buildings because of the diverse heating and electricity requirements throughout the day.

4.1.11 Despite the technology being widely available and long-term cost effectiveness, the use of CHP and community heating is not widespread in this country. This can be explained by our reliance on previously nationalised and now large scale power suppliers and the higher capital costs associated with community heating. Problems are therefore more to do with short-term budgeting and the conservative nature of the development industry rather than any technical difficulties.

FURTHER INFORMATION

DETR Good Practice Guide 234 *Guide to Community Heating and CHP*

DETR Good Practice Guide 240 *Community Heating – A Guide for Housing Professionals*

CHP Club - www.chpclub.com Tel:0800 585794

WOKING BOROUGH INNOVATIVE PROJECTS

Woking Borough is recognised as the most energy efficient local authority in the UK. Together with its public/private company Thameswey Energy Ltd, it is developing a series of innovative projects serving commercial and residential properties in and around the town centre:

- Use of CHP to generate heat, hot water and electricity to serve a variety of buildings

- Reducing heating costs for its social tenants through a range of energy efficiency measures including Community Heating and private wire electricity

- Linked to CHP, the use of absorption cooling to produce chilled water for 'green air conditioning'

- The first Local Authority to sell electricity as well as heat to local residents

The Pool in the Park, Woking
Uses a fuel cell combined heat and power system – the first in the UK – to supply valuable 'green' energy. The fuel cell combines hydrogen-rich gas and oxygen extracted from outside air to provide electricity, heat and chilled water to the complex in an electrochemical process, which is virtually pollution free. Highly capital intensive but cost-effective in the long term

Best Practice and Innovation

4.1.12 The design and marketing of new houses on the basis of their energy efficiency, or indeed a sustainable lifestyle, has generally yet to be taken up by house builders. There are notable exceptions, but there is an assumption that long-term sustainability issues are unlikely to be a major influence for buyers. Registered Social Landlords (RSLs) do however have a concern for whole life costs and are leading the way in innovative low energy and sustainable housing. The quality of life for many people can be improved by reducing heating costs. As well as being energy efficient, housing can be well lit with a high level of acoustical insulation.

THE BEDDINGTON ZERO ENERGY DEVELOPMENT (BEDZED), BEDDINGTON SUTTON

This is a collaboration between the Peabody Trust and BioRegional Development Group to develop a working example of urban sustainability. The development includes:

- High density housing that maintains high levels of amenity (including sunlight, external green roof terraces, gardens and conservatories)

- Office accommodation to encourage local economic development and reduce the need for commuting

- Energy efficient design and renewable energy supply to avoid consumption of fossil fuels

- CHP, rainwater collection and grey water recycling

- Provision of integrated transport for residents and workers to reduce dependence on the car

- Provision of advanced IT connections and telecentre

- Simple construction techniques and materials from local sources e.g. brickworks in Cranleigh and Surrey oak cladding from local sawmills (see Principle 4.6)

For more information contact
BioRegional Development Group
Tel: 020 8773 2878

www.bioregional.com or www.bedzed.org.uk

The architecture could be adapted to suit other locations in Surrey without significantly compromising on energy conservation objectives

Bill Dunster Architects

THE INTEGER MILLENNIUM HOUSE

The Integer project is a holistic approach to innovation in housing that has resulted in more rapid construction and better value. There was a high degree of off-site fabrication including pre-cast concrete, timber panel superstructure, commercial glasshouse conservatory and pre-fabricated bathroom modules. This reduced waste and the need to cut materials on site. The complete structure including bathrooms was erected on site in a period of less than a week, enabling trades people to carry out their work within a dry building shell.

www.integerproject.co.uk

FURTHER INFORMATION

Building Research Establishment (BRE) Energy Efficiency Office and the Association for Environment Conscious Builders (AECB)

The Somerset Sustainable Housing Study *The Why, What and How of Sustainable Housing* 1999 Available from The Somerset Trust for Sustainable Development Tel: 01458 274854

Managing Light Pollution

4.1.13 Light "spillage" is an increasingly recognised source of pollution and is wasteful of energy. The aim should be to light only the area required and to an intensity and quality fit for the purpose. It is important that sufficient light is maintained in the intended direction for visibility and security reasons but modern technology means that street lighting can be designed to minimise both light spill and energy use.

FURTHER INFORMATION

Guidance *Notes for the Reduction of Light Pollution* Available free from the Institute of Lighting Engineers www.ile.org.uk

PRINCIPLE 4.2   Water should be used efficiently

4.2.1 Peak demands for clean piped drinking water in Surrey will be increasingly difficult to meet as a result of increasing per capita consumption, more housing and the implications of climate change. The provision of piped water also requires expensive infrastructure and considerable storage provision.

4.2.2 New houses can easily include measures designed to reduce water use, reuse water and make use of rainwater. For instance, bath/washing machine/dishwasher ('grey') water can be recycled, stored in a reservoir and used for flushing toilets, in the garden or for washing cars. More recently the term "Green Water" has been developed. This is defined as waste water that has been treated. It has wider uses including toilet flushing, horticultural irrigation purposes, laundries, industrial processes or washing, heating/cooling functions.

4.2.3 New properties can also be fitted with a water butt/underground tank for collecting rainwater for use in the garden. There are also systems available that can supply up to 50% of household needs. Rainwater is collected, stored, possibly mixed with 'grey' water and, after filtration and cleaning, made available for a variety of domestic purposes as 'green water'.
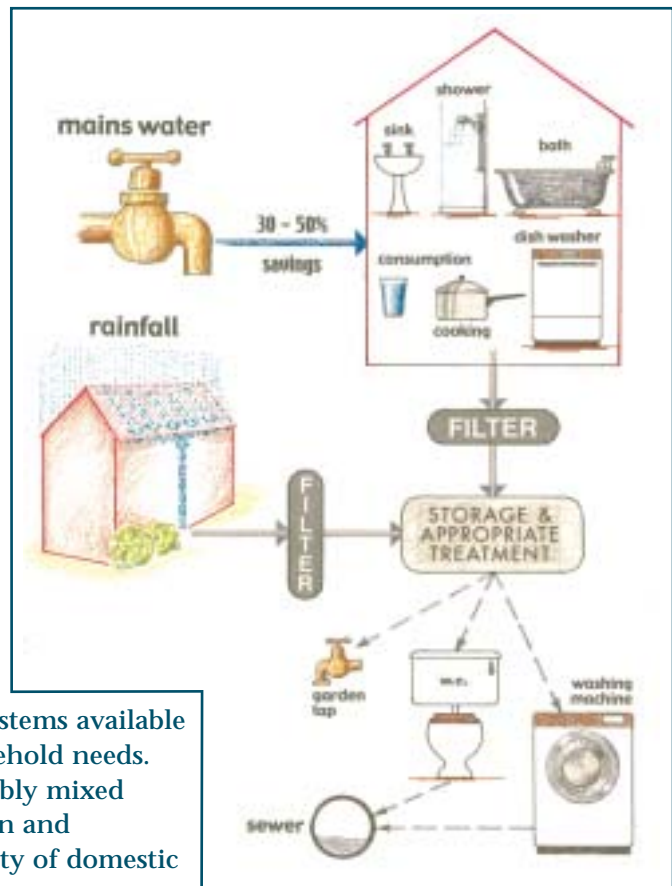
The reuse of water and use of rainwater can reduce tap water demand by up to 50%

PRINCIPLE 4.3   Existing landscape and habitats should be retained and wildlife enhanced

4.3.1   Existing watercourses and well-formed landscape features such as hedgerows and trees help to maintain local biodiversity and contribute to local character (see Chapter 3). First preference should always be to integrate new development around such features. 'Ancient Trees' and hedgerows are particularly important.

4.3.2   A site appraisal should identify landscape features to be retained. This should also include identification of Tree Preservation Orders, Planning Conditions and Conservation Area designations affecting the site as well as any legal obligations that relate to tree retention and replacement. A qualified arboriculturalist should carry out tree surveys.

4.3.3   Established urban environments can often be rich in plant species and wildlife and in all new developments opportunities should be sought to maintain and enhance biodiversity. Wildlife corridors can be provided as part of an overall framework of green space to include open space, water courses (including SUDS – see Principle 4.4), landscape features and transport corridors.

FURTHER INFORMATION

Surrey County Council *Wildlife on your Doorstep* A Biodiversity Action Plan for Urban Surrey 2000

Surrey is the most urbanised of English shire counties. Surrey County Council together with the Surrey Wildlife Trust, The Environment Agency, English Nature and others, have produced *Wildlife on your Doorstep* as part of the Surrey Biodiversity Action Plan. This plan aims to ensure that all new developments safeguard existing wildlife where possible and always create new provision for wildlife

PRINCIPLE 4.4   All development should prevent water pollution and flooding, conserve groundwater and improve water habitats

'Local planning authorities should work closely with the Environment Agency, sewerage undertakers, navigation authorities and prospective developers to enable surface-water run-off to be controlled as near to the source as possible by the encouragement of sustainable drainage systems.'

(PPG25, *Development and Flood Risk;* paragraph 42)

4.4.1   Sustainable Urban Drainage Systems (SUDS) is the term used to refer to a range of different drainage systems that provide an alternative to traditional piped surface water drainage systems. Surface water run-off from impermeable surfaces, draining directly to watercourses through pipes, produces considerable environmental damage:

- Water quality is harmed by surface contaminants such as dust, oil and litter
- Risk of flooding will be increased due to sudden peaks in water runoff. This may require large scale engineering solutions to reduce the risk
- Impermeable areas reduce water infiltration and can reduce groundwater levels to the detriment of established vegetation
- Habitats in watercourses can be damaged by sudden increases in water flow

4.4.2 SUDS reduce the potential for flooding and improve water quality, resources and biodiversity. There are a range of design options that can fit into almost any setting and should be considered by developers early in the design process:

> - *Source control techniques* - based on the principle of capturing water near to source and allowing direct filtration into the ground e.g. soakaways, porous pavements and infiltration trenches and basins
> - *Permeable conveyance systems* - move run-off water slowly towards a watercourse allowing storage, filtering and some loss through evaporation and infiltration e.g. French Drains and Swales
> - *Passive treatment systems* - use natural processes to remove and break down pollutants from surface water run-off e.g. detention basins, retention ponds and wetlands with or without reed beds. Reed beds can also be a reliable method for dealing with domestic sewage

Willow Bank, Westfield
Example of a storm water storage pond

4.4.3 By making water a feature rather than being hidden underground, drainage systems can be used to add to biodiversity, provide wildlife corridors and generally improve the visual quality of new developments.

FURTHER INFORMATION

For further information see CIRIA publications:

Sustainable urban drainage – design manual for England and Wales

Sustainable urban drainage – best practice handbook

The Environment Agency can provide site specific advice on the use of SUDS

Reigate and Banstead Borough Council *Horley Design Guide* This is a detailed design guide for the development of some 2,600 houses at Horley. It advocates grey water recycling and the use of rainwater butts, grass swales, porous paths and drives, ponds and storm water wetlands and reed beds for the treatment of run-off

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PRINCIPLE 4.5   Buildings and building materials should be reused and recycled
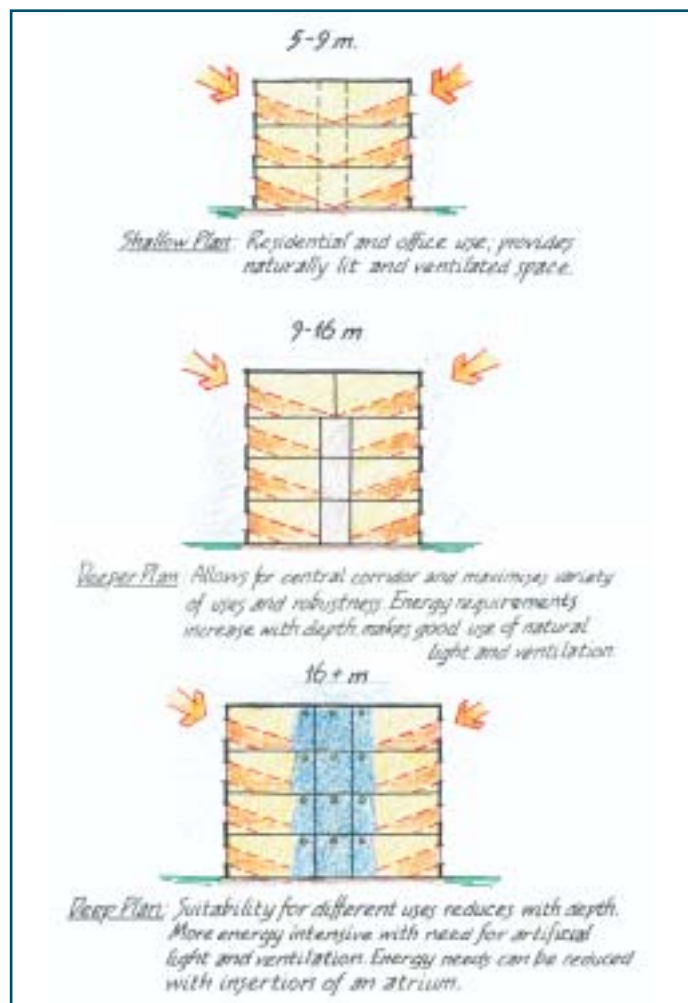
4.5.1   On redevelopment sites it is possible to reuse materials such as bricks and lintels in their entirety. Other materials can be crushed and used as hard-core in the construction of roads and other hard surfaces. Where materials are reused to create an historic effect, careful selection of materials and crafts people will be necessary. If it is not possible to reuse materials from the site, it is suggested that opportunities for using recycled materials are explored (refer also to the BRE Materials Exchange at www.cig.bre.co.uk/waste).

4.5.2   The Government has set a target for 60% of all new housing to be built on previously developed land, known as 'brownfield sites'. It is more sustainable to reuse previously developed land within urban areas than it is to develop on greenfield sites. It is also more sustainable to convert existing buildings, if they are capable of conversion, than it is to redevelop.

The Rodboro Buildings, Guildford
Older buildings are a valuable resource and can convert to completely new uses, in this case offices and a pub

4.5.3   With eventual reuse in mind, new buildings should be versatile or robust enough to cater for a number of different occupiers and be accessible and capable of conversion from the start. Offices that are deep in plan form are the least versatile of all buildings because they are not readily converted to other uses, especially residential use. The Building Research Establishment (BRE) defines 'deep plan' as having a total building depth of greater than 16 metres. Deep plan buildings tend to have insufficient natural light and ventilation to readily support conversion (see paragraph 4.1.8). The avoidance of load bearing internal walls will also facilitate future internal flexibility.

5-9 m.

Shallow Plan: Residential and office use, provides naturally lit and ventilated space.

9-16 m

Deeper Plan: Allows for central corridor and maximises variety of uses and robustness. Energy requirements increase with depth makes good use of natural light and ventilation.

16 + m

Deep Plan: Suitability for different uses reduces with depth. More energy intensive with need for artificial light and ventilation. Energy needs can be reduced with insertion of an atrium.

The relationship between plan form, ventilation and natural light

PRINCIPLE 4.6   Building materials should be sustainably sourced

4.6.1   The energy used in transporting materials is a major component of the overall energy and CO2 efficiency of construction. Materials should be sourced locally or regionally if at all possible. Locally sourced materials have the added benefit of helping the local economy and reinforcing local identity and character (see Principle 3.2).

4.6.2   Embodied energy is the energy used in obtaining the raw materials and manufacturing a product. Materials such as PVC and aluminium use up to 50 times as much energy to produce as wood. In general, materials with very high embodied energy should be avoided or their use minimised. However this will need to be assessed in conjunction with energy used in transport of a material, its maintenance costs and estimated life span.

4.6.3   Much greater use of sustainably managed and renewable organically grown timber and materials from plants (oils, fibres, etc.) is an important move towards sustainable construction.

4.6.4   Off-site fabrication uses less time and materials, can lead to better quality control and less construction waste. However, it can result in greatly increased delivery distances. There is potential for conflict here and the environmental benefits of using locally sourced materials as compared with the benefits of off-site fabrication need to be addressed, if appropriate as part of an environmental impact assessment and sustainability statement.

FURTHER INFORMATION

BRE *The Green Guide for Housing Specification* April 2000. A simple reference aid to the environmental impacts of materials and components commonly used in house building

Association for Environment Conscious Builders (AECB) – an excellent source of information

Kent County Council *Kent Design: The Directory* 2001 is a guide to sustainable construction products and services for Kent, but contains useful general information and will be of particular relevance to East Surrey

Relevant Regional and Strategic Policies

RPG 9: INF2 INF4
Surrey Structure Plan Deposit Draft January 2001: SE1 SE2 SE5 SE7 SE8 SE9

Implementation Checklist for the Resources Chapter

- Does the design statement required by PPG1 contain a 'sustainability statement' to show how the design has responded to the need to minimise the use of scarce resources including water and energy?
- Does the layout of the development and design of the buildings take account of the potential to exploit natural light, heat and ventilation?
- If buildings are close together can they be joined to improve energy efficiency?
- Has landscape design taken into account the benefits of modifying microclimate to improve living conditions and enhance energy efficiency?
- Has the feasibility of using combined heat and power and district heating schemes been assessed?
- Are existing landscape features and ecological resources retained and/or enhanced? Are there opportunities to improve biodiversity?
- Are Sustainable Urban Drainage Systems (SUDS) used in preference to piped drainage to watercourses?
- Is maximum use made of existing buildings and is demolition material to be recycled?

CHAPTER 5

People

Objective: To encourage vibrant and mixed communities where people feel safe

Introduction

5.0.1   Good design should always be about designing for people. In this section specific design issues are dealt with that can particularly help to build communities. The term community is used here to refer to a sense of local identity, 'neighbourliness' and shared ownership.

PRINCIPLE 5.1   Good design should encourage a mix of uses appropriate to the location

5.1.1   In recent decades there has been an over emphasis on zoning different uses, the effect being to discourage movement other than by car and create public areas that are often empty and unwelcoming to the pedestrian. Many modern uses are compatible side-by-side and can form part of a wide mix of activities within a perimeter block system. Uses can also vary over time. For example, an area or a building can cater for office uses during the day and social or cultural uses in the evening. A mix of uses can occur within the same building or within adjacent buildings, although it is important to ensure that it does not reduce the quality of life of residents.

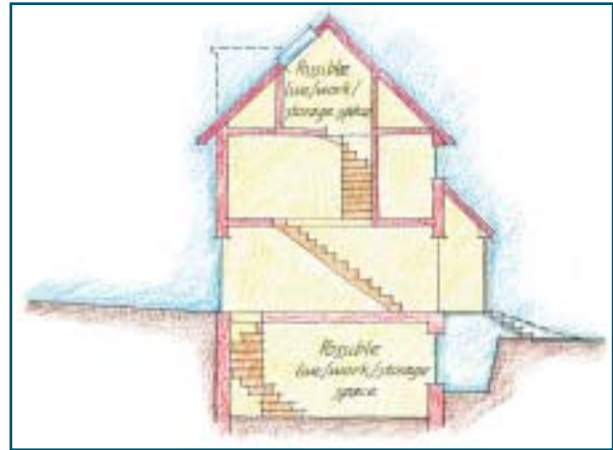5.1.2   A greater mix of uses in an area can have the following benefits:

- Encourage activity throughout the day and evening
- Reduce the need to travel by car to work and local facilities
- Encourage a greater mix of people and a feeling of safety with 'eyes on the streets'
- Encourage greater energy efficiency and more efficient use of space and buildings, due to the space requirements of different uses
- Provide more opportunity for social interaction
- Increase the vitality of local centres and town centres
- Increase shared use of car parking
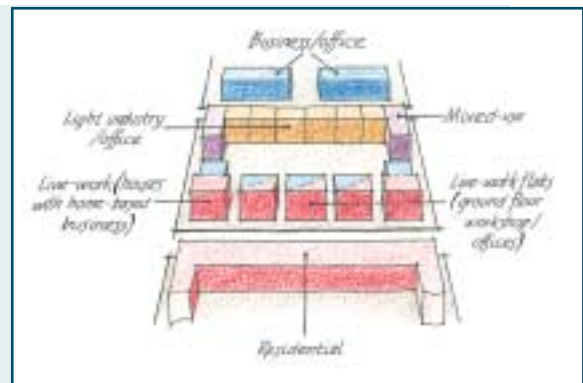
Mixed uses within a perimeter block
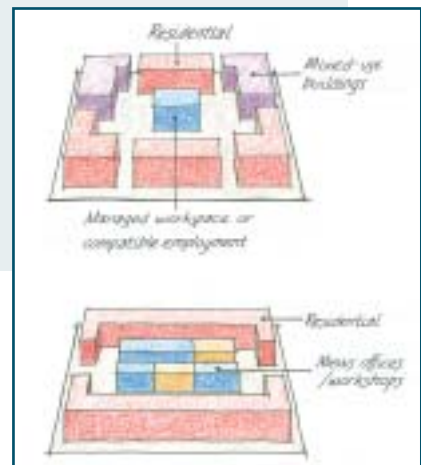
5.1.3 An appropriate mix of uses will clearly relate to location with, in general, a greater variety and scale of uses closer to town or neighbourhood centres.

5.1.4 Home working can help reduce commuting and encourage daytime activity and surveillance in residential areas. In new housing, purpose designed office accommodation can be provided. It may be better to provide flexible accommodation that allows for the adaptation of living or storage space for office use (such as roof space, garages, cellars – see Principle 7.4).

Flexible accomodation within a dwelling

PRINCIPLE 5.2   Good design should incorporate a mix of house types and tenure

'Local planning authorities should encourage the development of mixed and balanced communities: they should ensure that new housing developments help to secure a better social mix by avoiding the creation of large areas of housing of similar characteristics.'

(PPG3, *Housing*, paragraph 10)

5.2.1 New residential developments should include a range of house types and sizes that will be attractive to a broad cross-section of the community and appeal to a variety of future occupiers. Housing of mixed size and type will help encourage daytime and evening surveillance.

5.2.2 Mixed tenure is promoted by national policy to avoid social ghettos. Affordable housing should be integrated into new development and not be obvious through location, segregation or the design and style of buildings.

Caterham-on-the-Hill, Caterham
Affordable housing and market housing side by side

FURTHER INFORMATION

Surrey Local Government Association *Housing to Underpin Economic Success* September 2001

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5.2.3   A variety of house types may also help to achieve specific design objectives. For example, it may be possible to achieve a strong sense of enclosure (see Principle 2.2) through the use of smaller dwellings at corners and above archway entrances to rear parking courts.

PRINCIPLE 5.3   All public space should feel safe

5.3.1   The layout of any new estate is a fundamental issue in determining the susceptibility to crime. The emphasis should be on activity and visibility. In general, as activity, visibility and hence surveillance increase, crime and fear of crime decrease.

5.3.2   The following design objectives will help deter crime and increase the perception of safety:

- Permeability (i.e. the choice of routes) should be a paramount objective in the layout of new developments to encourage walking and reduce car dependency. Where they are incorporated into a new development, cul-de-sacs should be linear and not introduce 'internal' surveillance at the expense of surveillance of the main feeder street

- Dwellings and workplaces should be designed to front onto streets with entrances onto it and windows located to maximise overlooking (see Principle 2.2)

- Non-vehicular routes through an area should be designed so that they will be visible, clear, direct, busy and lit

- Neighbourhoods should be designed so that visitors feel they are entering an area that is watched over by residents and those working in local businesses

- Public or semi-public areas should be visible from nearby buildings or well used rights of way

- Open parking should be visible by owners of vehicles or neighbours

- Superfluous and secluded access and 'rear alleys' should be avoided

Central Dorking
Gated estates – Provide internal security but do little to promote wider feelings of safety and community or enable pedestrian links with the surrounding area

Poundbury, Dorset
Buildings, doors and windows should front access routes

5.3.3 The whole of the public realm within neighbourhood areas should be seen as a potential play and recreation area. However the safety of all users should be a paramount consideration. Historically, communities made great use of the outdoor environment. For example, street play was an important part of a child's development and understanding of the world. Spontaneous street play is now often confined to older children, if it happens at all, due to fears of crime or accidents. Given the opportunity, children will use the whole of an estate or neighbourhood for play including streets and informal spaces and not just special play facilities (see Principle 2.5).

FURTHER INFORMATION

Bill Hillier and Simon Shu *Crime and Urban Layout: the need for evidence*

In Ballintyne et al Eds *Secure Foundations: Key issues in Crime Prevention, Crime Reduction and Community Safety* 2000. This research questions the justification for the recent emphasis on cul-de-sacs in preference to the traditional street

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Police Architectural Liaison

The Police Architectural Liaison Officer will advise applicants and the planning authority during the design and planning application process. Early consultation is recommended.

Designing Out Crime at the planning stage is a comparatively recent development in crime prevention, but growing evidence shows that security can be incorporated into the design and layout of a project economically. Police crime prevention officers have extensive knowledge of criminal behaviour and can use this knowledge to provide advice to architects, planners and developers involved in new developments and in refurbishment of existing buildings.

Contact: Force Architectural Liaison Officer, Surrey Police, Tel: 01483 571212

PRINCIPLE 5.4   There should be a clear demarcation between public and private space

5.4.1   There should always be a clear demarcation between public and private space. This is best achieved by designing buildings with a public frontage facing the street. This approach leads to a layout based on perimeter blocks (see Principle 2.2), with a clear distinction between public and private areas.

5.4.2   At a more detailed level, effective demarcation can be achieved through the use of barriers ranging from buildings to walls, planting, railings and fences or through definite changes in surface treatment such as block paving and cobbles. Street surveillance is important (see Principle 5.3) so consider using railings, low barriers and low growth shrubs or changes in surface treatment, rather than high barriers, unless it is desirable as an exceptional design solution.

5.4.3   Private areas should be secure and not open to entry from secluded areas. It is generally safer for the rear gardens of houses to back onto other gardens rather than streets, service roads or footways. Where rear parking is provided this should be made as secure as possible through natural surveillance or by providing entrance gates.

Traditional street scene where there is a clear demarcation between public and private space

Relevant Regional and Strategic Policies

RPG 9: Q2, H4
Surrey Structure Plan Deposit Draft January 2001: DN11

Implementation Checklist for the People Chapter

- Has the Police Architectural Liaison Officer been consulted?
- Do all public spaces, including footpaths and cycle routes have natural surveillance from surrounding buildings?
- Is movement choice maximised particularly for cyclists and pedestrians?
- Is affordable housing integrated into the design and layout of the development such that it is not obviously set apart from market housing?
- Where provided, are cul-de-sacs a logical response to the site's development without compromising the choice of routes and wider surveillance?
- Is there a mix of residential building types and tenure that will encourage surveillance and activity throughout the day?
- Have a mixture of uses been encouraged appropriate to the location, including workspace linked to individual dwellings, to promote street activity and vitality and to reduce the need to travel?
- Is there a clear definition between public and private space?
- Are back gardens secure?
- In neighbourhood areas can children play safely in all public space?

Movement

Objective: To create places for people that are safe and easy to move through and are accessible to all

Introduction

6.0.1 The aim of good design is to ensure that development is accessible to all by a choice of transport modes. In all situations the emphasis must be on creating places and streets for people, rather than on design solutions that are rigidly tailored to the movement and parking requirements of vehicles. To ensure residential and mixed use streets are as safe as possible for all users they must be generally designed to keep vehicle speeds below 20mph.

6.0.2 This section is supported by a *Technical Appendix*, which contains detailed technical engineering information, including geometric design and pavement specifications. It will contain a range of options that can be applied, depending on the circumstances of a particular development.

FURTHER INFORMATION

Institute of Civil Engineers Designing *Streets for People* 2001 a report explores ways of designing streets for people in a co-ordinated way. www.icenet.org.uk/streets

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PRINCIPLE 6.1	The emphasis in design will be on pedestrians, people with mobility impairments, cyclists and public transport

'New development should help to create places that connect with each other sustainably, providing the right conditions to encourage walking, cycling and the use of public transport. People should come before traffic.'

(PPG 13, *Transport;* paragraph 28)

6.1.1 Previous design guidance in Surrey was written with the primary aim of safely accommodating the car by restricting traffic speeds. Cars will no longer have precedence. Access to developments should be considered with reference to the user access hierarchy.

User Access Hierarchy
1. Pedestrians and people with mobility impairments (e.g. using wheelchairs, buggies)[1]
2. Cyclists
3. Public Transport
4. Service Vehicles
5. Private Cars

6.1.2   All proposals are expected to follow this hierarchy, although public transport infrastructure will generally only be required on larger sites. Pedestrian and cycle links to existing bus routes, stations and facilities are important in all sizes of development.

Pedestrians and Cyclists

6.1.3   Pedestrians and cyclists should have a convenient and direct route to local facilities (such as schools, shops, surgeries etc.), respecting desire lines and surrounding movement patterns and taking into account the safe routes to school programme (see *Technical Appendix*).


Raised junctions

6.1.4   The preference should always be to design street patterns and building blocks around these routes with cars incorporated in a way that does not produce conflict. In this way the environment for pedestrians and cyclists will be safer and more pleasant and the advantage of the car, especially for local journeys, will be reduced. Pedestrians and cyclists should have priority at junctions and where appropriate this will be reflected in the use of raised junctions. Where separate routes are provided for pedestrians and cyclists, these should ideally be part of the street pattern, overlooked and well lit.
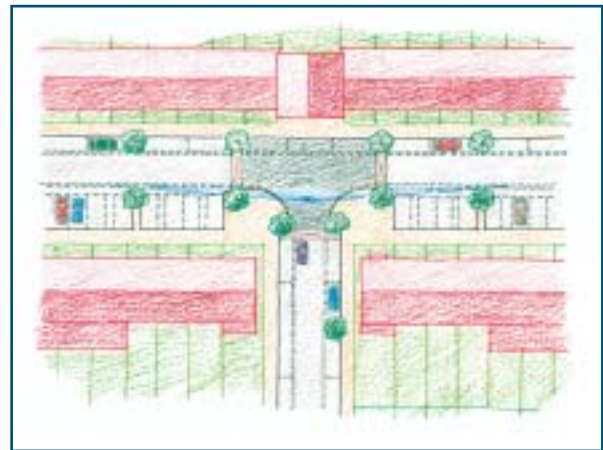
A Consider how site can be best connected with nearby main routes, public transport and local schools and facilities
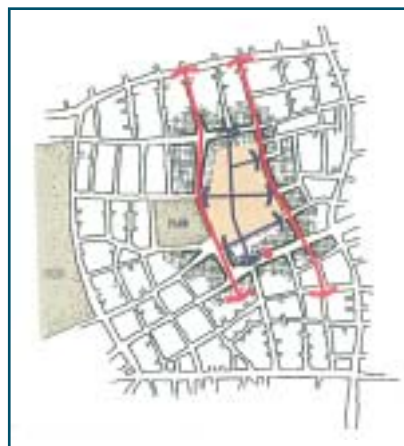
B Maximise integration and movement choice with direrct links particularly for pedestrians and cyclists

C Use this pattern as a basis for building blocks to create streets which will positively enhance the public realm (see principle 6.2)

Source: Urban Design Compendium

1. Subsequent reference to pedestrians and travel on foot includes people with mobility impairments

6.1.5   A lattice network of routes effectively divides an area into blocks (see Principle 2.2). The emphasis is on roads that lead somewhere and so improve movement choice, particularly for pedestrians and cyclists. Small blocks give a greater choice of routes than large blocks, and will be most appropriate where the need for interconnectivity is greatest near to town or local centres. Cul-de-sacs can be incorporated into good design but they should be added to a lattice form of layout and not be a substitute for it. However many smaller sites, cul-de-sacs and private drives are likely to remain the only practicable solution.

6.1.6   Secure convenient cycle storage is as important as providing safe cycle routes. Developers should therefore ensure that there are secure cycle storage facilities in all developments.

Public Transport

6.1.7   The DTLR suggests that no property should be more than 400m walking distance from a bus stop. This will not be applied rigidly, but developments should aim to connect to, or create, a good bus corridor linked into existing networks. The technology exists for the construction of bus-only links within developments. Cars can be prevented from travelling through a site (rat running) and forced to take a less direct route, whereas buses can travel directly through.

Caterham-on-the-Hill, Caterham
A bus service linking the site to Caterham station and other local facilities is funded through a service charge levied on new residents on the site

6.1.8   Provision of a bus stop does not consist of just a pole with a board on it. They must be accessible to people with mobility impairments, provide shelter and information and allow easy access to low floor buses. The trip to the bus stop needs to be considered as part of the whole journey and designed as such, with safe and convenient routes to bus stops accessible to all users.

6.1.9   Larger developments will provide opportunities for improvements to bus and rail services and infrastructure. These may include improvements to existing or provision of new bus stops and stations. Smaller developments may be expected to contribute towards CCTV, better lighting, improved timetable information etc.

FASTWAY, HORLEY

A new high quality bus route designed to provide an attractive, reliable and realistic alternative to the private car. The service will link new development planned in Horley with railway stations, Horley and Crawley town centres, and Gatwick Airport. 'Fastway' will include:

- Fully accessible, air-conditioned, low noise and low emission buses

- Bus lanes, bus priority and guided busways

- Real time passenger information

- Raised kerbs and comfortable bus shelters at stops

- High frequency service

PRINCIPLE 6.2 The layout of the highway is only one design consideration

6.2.1 Over recent decades, design of the highway and parking has taken precedence over other design considerations. These criteria cannot be ignored. However, the form and grain of the built environment, pattern of streets (rather than a road hierarchy based on the car) and the enclosure of space must also be given equal weight and considered at the outset of any new development.

6.2.2 Highways are laid out to achieve the objectives listed below. It is possible to achieve these objectives in a way that does not conflict with other aspirations of good design. This can be done by applying the highway design principles in a creative and flexible way. It is important to ensure, however, that safety standards are not compromised.

A typical cul-de-sac where the road system takes precedence and dictates the location of houses

Highway Design Objectives:

• Provide safe and convenient pedestrian and cycle routes and accessible public transport facilities

• Create safe routes for vehicles, including buses, minimising the danger and nuisance from through traffic

• Keep vehicle flows and speeds low near dwellings

• Accommodate on-street parking whilst reducing danger to pedestrians and enabling access to emergency and service vehicles

Highway Design Principles:

- Highway design should not dictate urban form. Designers should exploit the minimum appropriate technical highway solution for any given location

- Traffic speeds should not exceed 20mph. This can be achieved through the use of speed control features and through limiting straight lengths of road

- The pattern of streets is likely to resemble a highly interconnected lattice. Cul-de-sacs should be added to a lattice layout rather than being the predominant form

- Residential layouts should discourage through movement of private vehicular traffic unconnected with the site or immediate neighbourhood

- Layouts should allow for necessary direct pedestrian and cycle movement across the site, such as to schools, local shops, employment, public transport and community facilities

- Roads providing direct access to dwellings will generally be flanked by footways unless specifically designed as surfaces shared by vehicles, pedestrians and cyclists. Shared surfaces are preferred where vehicle speeds are low, pedestrians are few and design/layout considerations allow

- Minimum widths for vehicular passage are determined by traffic flow. The minimum width should not usually be exceeded

Master Plan,
Oakwood Hospital Site, Maidstone – PRP Architects
Highway design objectives and principles are used flexibly to create streets and squares based on:
- Perimeter blocks
- Lattice street system
- Built in speed restraint
- A mixture of on-street and rear parking courts

PRINCIPLE 6.3 Speed restraint should be incorporated into design

Highway Safety

6.3.1 Within neighbourhoods all development should be designed to ensure that traffic speeds do not exceed 20 mph. Within larger developments there will be exceptions to this general rule and streets that serve a wider traffic distribution function can have a design speed of 30mph.

6.3.2 Speed restraint is best achieved through layout design at the earliest stage in the development process. This can be achieved through a combination of buildings, landscape and junction design with the emphasis being as much on urban design as car use. The following methods can be used to reduce speed (for further details see Technical Appendix):

- Tight bends rather than sweeping curves
- More frequent junctions
- Reduce straight lengths of road for building up speed
- Buildings, walls, trees and hedges close to the road

Caterham-on-the-Hill, Caterham
Here an engineering solution dominates (speed control bend with forward visability) to control speed rather than junctions and buildings

6.3.3 Vertical features such as humps and tables should only be used to traffic calm existing streets or to solve specific problems that cannot be dealt with in other ways. For example, to provide pedestrian priority at junctions. In general avoid more obvious measures such as speed control islands and chicanes.

FURTHER INFORMATION

More detailed information is provided as part of the Technical Appendix

The Surrey County Council Highways experts will advise practitioners as to the adequacy and options for speed restraint within the highway

Built in speed restraint – junctions, squares and buildings can keep vehicle speeds low

Home Zones

6.3.4   'Home zones', broadly based on the Dutch Woonerf principle, may be considered as a way of encouraging an attractive and safe on-street residential environment where priority is given to pedestrians and cyclists. Home Zones will be most applicable in redevelopment areas where the existing road layout is to be retained. For more information see the *Technical Appendix*.

PRINCIPLE 6.4   Car parking should not dominate or overly influence urban form

6.4.1   The overall parking requirement will be set by the Local Planning Authority, who should be consulted on parking requirements before and during layout design. The aim should be to minimise parking provision in accordance with use, location and adopted standards. Where appropriate, parking should be designed so that it can be used by different user groups throughout the day. The needs of disabled drivers must always be taken into account and may require special design solutions.

6.4.2   As with the general highway layout, parking should not dictate urban form. The emphasis should be on using a range of design solutions to accommodate parking. Parking that is situated in front of buildings, such as in front of integral garages, will require buildings to be set back and therefore tend to make the enclosure of space more difficult. The solution is to bring buildings forward and locate parking between, beneath or to the rear of buildings. This does not preclude on-street parking and is the most space efficient solution. On-street parking can be designed into a scheme, often performing an additional traffic calming function.

Parking should not dominate

6.4.3.   The location of car parking is important to the success of a scheme. It is the general expectation of car owners that they should be able to park as close to their destination as possible, preferably within view. If there is not suitable space available, residents will often park on verges and even on footways.
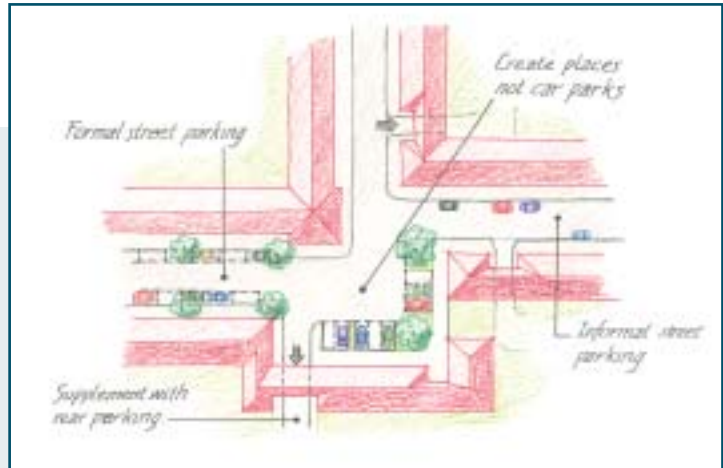
On-street parking

Benefits

- Good surveillance
- Flexible and efficient use of land

Design Issues

- Needs careful design to create streets and places rather than car parks
- Can conceal pedestrians so it is important that on-street parking is only introduced in an environment where traffic speeds will be low
- On-street parking can be accommodated in parking squares where the road opens out to incorporate parking at right angles to the carriageway and to allow other uses in the street. Care should be taken to ensure parked cars do not dominate the surroundings. Such an arrangement will not generally be appropriate for roads accommodating traffic generated by more than 200 dwellings

On-street parking in a new development

Parking within the curtilage

Benefits

- Control and security
- Can enable efficient use of land where a second open parking space is allocated to the rear garden and only provided when necessary

Design Issues

- Parking may be seen as an intrusion to rear garden of dwelling and therefore is best combined with wider gardens
- Inefficient use of space
- Needs to be combined with adequate visitor parking possibly on-street
- Integral garages should not dominate and thus 'deaden' a street frontage
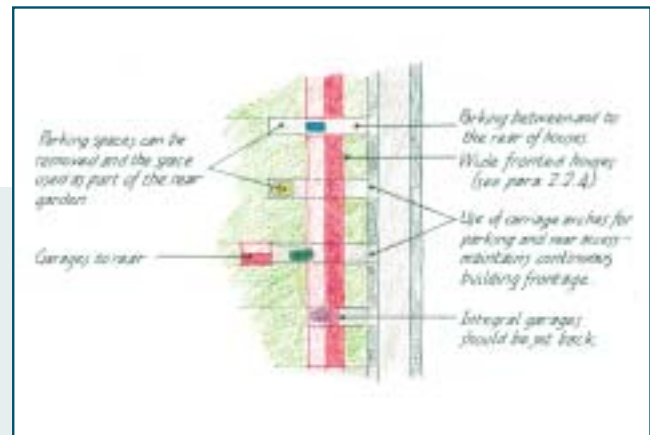
Different design solutions including flexible parking

Black Notley, Braintree
Entrance to rear parking through archway

67

Rear Parking Courts

Benefits

- Economical of street frontage and therefore enables buildings to dominate street with continuous frontages

Design Considerations

- In residential areas should be relatively small scale to avoid visual dominance and nuisance
- Maximise security through surveillance and/or gates within a street block
- Aim to create attractive places
- Front doors should face the street and not the parking court to maintain active street frontages
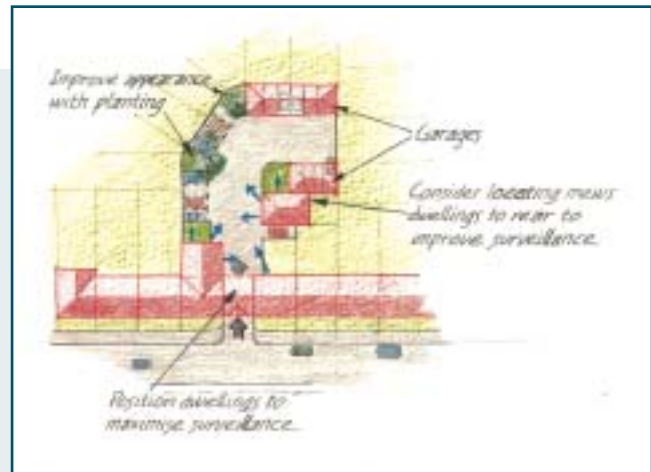
Rear court showing surveillance

Rear parking – Poor surveillance, poor quality

Parking court, Claygate Village, Esher
Surveillance and quality

Traffic Free Environments

6.4.4   The provision of traffic free environments should be encouraged in appropriate locations subject to provision for emergency vehicles and people with mobility impairments. In most situations parking will still need to be provided around the periphery of the development. This will only be manageable where overall parking provision is reduced to significantly less than the maximum standard in locations with good public transport accessibility.

Relevant Regional and Strategic Policies

RPG 9: T1, T3, T4, T5
Surrey Structure Plan Deposit Draft January 2001: DN2, DN3, DN4, DN5

Implementation Checklist for the Movement Chapter

- Is the development access layout based on the user access hierarchy?
- Do pedestrian and cycle routes directly connect the places where people want to go?
- In producing a layout, are movement requirements incorporated with all other considerations that need to be taken into account by the designer?
- For larger developments, are bus routes incorporated? Services should be provided at the very early stage of occupation of the development i.e. by the occupation of the 25th residential unit and the first business unit.
- Has particular attention been paid to the needs of disabled people?
- Has the opportunity been taken to reduce the requirement for residential parking provision particularly in town centres and sites well served by public transport, without impinging on disabled parking allocation?
- Is vehicle speed restraint a logical result of the design of buildings and street layout rather than being a solely highway engineering solution?
- Is parking accommodated through a range of design solutions so as not to dominate the development?
- Has consideration been given to enabling the flexible use of parking space in the future?

Land

Objective: **To make best use of the available land**

Introduction

'The problem with parts of English towns and cities - particularly the rebuilt areas of the 1960s and the car based suburbs of the 1980s and 1990s - is that densities are just too low.'

(Urban Task Force Report)

7.0.1   Land suitable for development is a particularly valuable and scarce resource in Surrey. The challenge is to achieve quality development whilst increasing net density. This will require a design-led approach to enable the benefits of urban living to be maximised and to ensure that:

- It is in the right location with access to jobs, shops, entertainment, services and community facilities
- It is firmly based on a strong urban design form
- Where the existing urban structure or local character is of value it is not harmed
- The potential space within buildings is used effectively
- The vitality and safety of urban centres is enhanced
- Car parking is reduced where appropriate
- Mixed uses are promoted, particularly in town centres

PRINCIPLE 7.1   The appropriate density of development will depend on accessibility and character of surrounding development

7.1.1   Good design will open up opportunities for quality higher density and mixed use development. However, the designer must make decisions regarding the form and scale of development based on location of the site. This will be influenced by consideration of the site's accessibility and on the character of surrounding development.

Accessibility considerations

'By shaping the pattern of development and influencing the location, scale, density, design and mix of land uses, planning can help to reduce the need to travel, reduce the length of journeys and make it safer and easier for people to access jobs, shopping, leisure facilities and services by public transport, walking and cycling.'

(PPG13, *Transport;* **Paragraph 3)**

7.1.2 Town centres with good public transport access and a mix of facilities offer the best opportunities to accommodate higher density development whilst reducing the need to travel by car. A 5-10 minute walking time to facilities is generally accepted as reasonable, depending on the destination. It is within this area close to town centres that a range of mixed use higher density development can make most efficient use of land and maximise access to services and facilities for all users and residents.

FURTHER INFORMATION

Llewelyn-Davies *Sustainable Residential Quality in the South East – Final Report* October 1998 and *Sustainable Residential Quality: Exploring the Housing Potential of Large Sites* 2000 for more information on pedestrian accessibility to facilities (the 'ped-shed')

Central Dorking
High density residential development acts as a focus on this prominent corner site

7.1.3 In urban areas more remote from public transport routes and interchanges or on the periphery of settlements, progressively lower densities may be appropriate. Lower density development at the settlement edge can also help integrate development into the wider landscape.

HORLEY DESIGN GUIDE

This advocates at least three different character areas for the new neighbourhood areas depending on distance from the neighbourhood core:

- Neighbourhood core: buildings tightly enclose space (min. 40 dpha net)

- Transition area: buildings and trees enclose space (min. 35 dpha net)

- Countryside edge: larger houses, buildings and trees enclose space (20-25 dpha net)

7.1.4 Where alternative means of transport are available, particularly close to centres, reductions in provision for car parking will help to achieve development at higher densities. The use of maximum parking standards for all types of development, including residential, is now encouraged.

High density residential development Northampton (68 dwellings per hectare) – PRP Architects/Wilcon Homes
• Perimeter blocks
• Reduced Parking accomodated on street and within blocks
• Secure cycle storage

The Character of Surrounding Development

7.1.5   In reality settlements will rarely comprise high density cores surrounded by progressively lower density suburbs. The geography and historical development of Surrey settlements has produced a complex mixture of urban character with quality low density development often located close to the centre of towns. Hence there may be situations where the safeguarding of a locally distinctive character is paramount and an appropriate form of new development may result in densities of less than 30 dwellings per hectare (see Principle 3.3).

Low density character area in Esher, a 'stones throw' from the town centre

PRINCIPLE 7.2   Promote design quality in town centres

7.2.1   It is essential that the potential of our town centres to deliver high density mixed uses is maximised in order to drive forward an urban renaissance. Well designed higher density and mixed use development can improve sustainability and vitality by:

- Connecting the built fabric in a more logical way
- Creating quality public space
- Improving movement choice for pedestrians
- Helping the economic vitality of centres
- Improving personal security by increasing evening activity and by removing 'dead' frontages to public space


Charter Quay, Kingston upon Thames
High density mixed use creating quality public space and new pedestrian connections

7.2.2   Higher density residential and mixed use development in town centres can be encouraged as part of a coherent strategy. Such a strategy, setting out a vision for an area and a plan for achieving this, can be part of community planning. The strategy can be endorsed by the community and local businesses (see Principle 1.3) and could be part of the Local Plan or developed as Supplementary Planning Guidance.

HORLEY MASTER PLAN

The study prepared by consultants for Reigate & Banstead Borough Council as part of the Horley Master Plan includes the redevelopment of key sites at higher densities as a major element in the design-led revitalisation strategy.
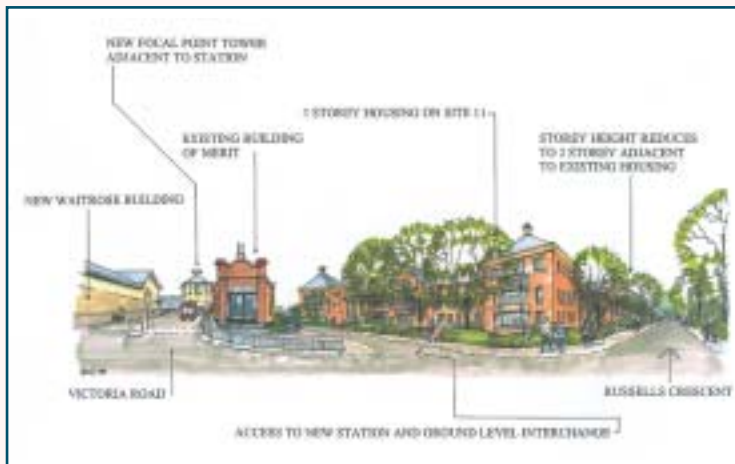
7.2.3   In or close to town centres, the following design principles are particularly important:

- Exploit height with tallest buildings restricted to widest streets to afford maximum sunlight penetration at street level

- Be flexible with building form to maintain active street frontages at a pedestrian scale. Wrap smaller scale buildings around large boxes such as cinemas and car parks

- Use building modules with narrow fronts (5-7 metres) and depths of between 9 and 13 metres to maximise flexibility of use, maintain active frontages and utilise natural light and ventilation

- Mix uses horizontally and vertically to maximise vitality and promote evening activity with residential and leisure uses

- Maximise movement choice with a network of interconnected streets

- Provide minimal parking for residential and operational uses only, as part of a wider parking strategy

Guildford Town Centre – Active street frontages

PRINCIPLE 7.3   Development in existing urban areas should create a high quality urban form

7.3.1   Pressure to build on previously developed land can only increase and this pressure is reinforced by policies that promote higher density development. However, higher density development must also be judged against policies that emphasise design quality. Proposals for infill development will therefore only be acceptable if consistent with creating or maintaining a high quality urban form and should:

- Not prejudice a more comprehensive and efficient redevelopment appropriate to the area's location and character
- Fit into the existing street patterns and building grain or create logical new street patterns and urban forms (see Principle 2.1)
- Respond to local character (see Principle 3.1)
- Maintain or create streets with active building frontages (see Principle 2.2)
- Ensure rear gardens back onto each other and not onto the street (see Principle 5.4)
- Make use of corner sites (see paragraph 2.4.3)
- Address the capacity of existing infrastructure to accommodate additional demand (see Infrastructure SPG Surrey County Council 2002)

7.3.2   Land assembly is often the key to achieving successful infill development. Infill development will fail where the application site area is too restricted to achieve the above design objectives. For larger sites, particular attention needs to be given to movement choice, which may require additional land.

Acceptable infill development based on comprehensive land assembly

Unacceptable piecemeal backland development

Privacy and Amenity Issues

7.3.3 Higher density development raises issues of amenity and privacy both within the development and in relation to existing adjoining properties. The rigid application of minimum planning standards relating to housing layouts has been justified by a desire to protect amenity – but the effect has rarely been to enhance design quality. A more flexible approach is desirable to issues such as privacy, garden size, daylight and sunlight taking into account the following:

- Remoteness can achieve acceptable privacy but there are other acceptable design solutions based on providing visual barriers or considering the location of rooms and windows in upper-storeys
- Privacy expectations are lower on the public or street side of a dwelling
- Dwellings can be brought to, or close to, the back edge of a footway without compromising privacy expectations by using narrow, vertically proportioned windows
- Minimum garden size criteria should be used flexibly with the use of balconies and roof terraces as appropriate
- Layouts should be designed to maximise daylight and sunlight but not at the expense of considerations such as an attractive streetscape and privacy
- Ground floor windows can be raised above street level to facilitate the use of basements

7.3.4 Sound insulation between neighbours is an issue where buildings and dwellings are joined. The Building Regulations recommend various forms of party wall which, when tested, achieve a minimum level of sound insulation between neighbouring premises. Designers should aim to increase the noise insulation of party walls, and floors, above levels set by the Building Regulations.

FURTHER INFORMATION

Essex County Council & Planning Officers Association *Essex Design Guide* 1997 page 27 onwards for further information on designing for privacy

BRE Report BR 358 *Quiet Homes* 1998

PRINCIPLE 7.4   Maximise the potential of internal building space

7.4.1   An extreme increase in building height, is not a suitable option for Surrey. However, a flexible approach should be taken where promoted by good design arguments. Three and four-storey developments (and higher in central areas) will make far better use of urban land than traditional two-storey development and are particularly suited to the creation of strong building frontages to enclose space. Four-storey development is the maximum storey height before the installation of lifts is required.

Thorley Lane, Bishops Stortford
Houses fronting onto the street, a layout not dominated by roads and attention to detail, help to create a well-designed 3-storey development

7.4.2   Increasing heights and densities should not be used as a means of providing exclusively larger dwellings. The local authority's policy of mixed uses will still be applicable to such sites and will need to be agreed before design work starts.

Use of Roof Space

7.4.3   Developers have largely neglected the potential use of roof space other than for storage. Steeper pitched roofs, in keeping with the traditional Surrey vernacular, enable efficient use of roof space thus maximising internal space without the need for excessive building height. Developers should consider building living space into roofs or alternatively using a form of roof construction and design that allows for future adaptation.
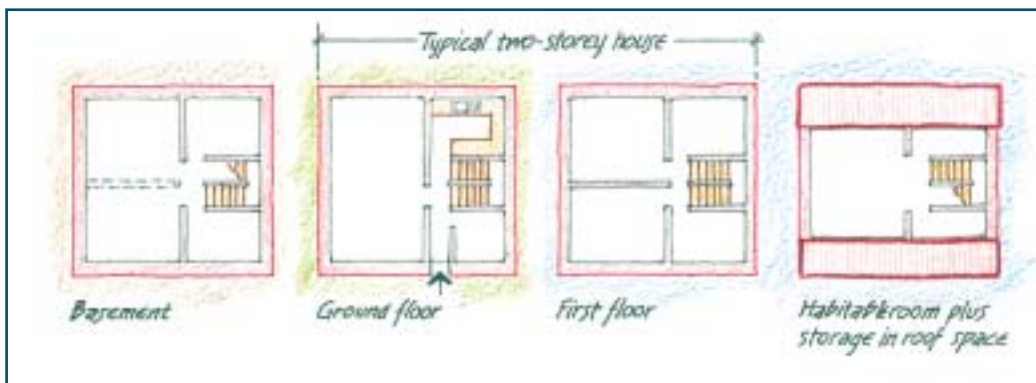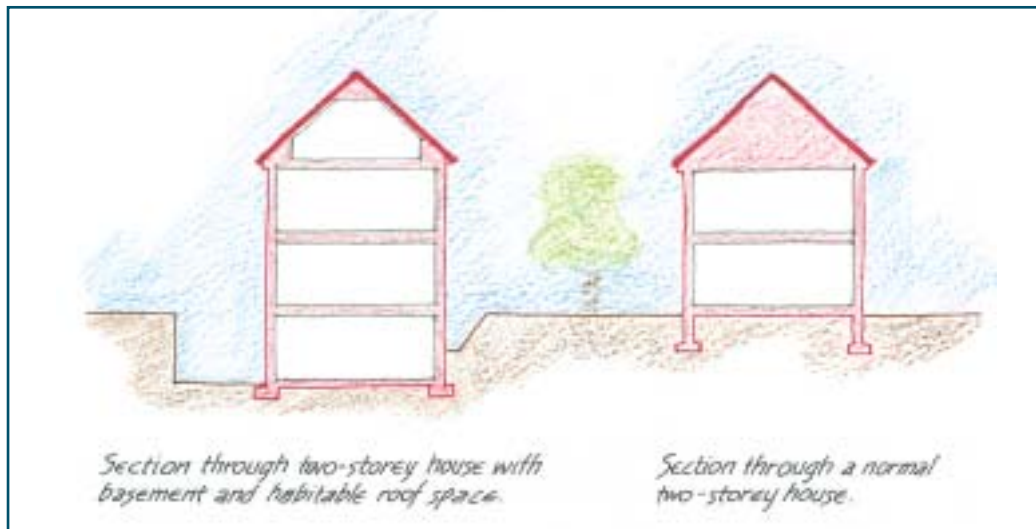
7.4.4   Making maximum use of roof space should not be at the expense of building design. Dormer windows at an appropriate scale are common in older buildings and are the traditional way to provide light and additional headroom in an attic. Other features, such as raised eaves and the use of roof lights, should be used with care so as not to produce an unbalanced and alien building form.

Basements

7.4.5   The potential for including basements within new housing developments should also be considered. They have a number of advantages:

> • Efficient use of land
>
> • Provision of storage, workshop, office and general living space, or an additional option for providing parking
>
> • Reduced energy consumption
>
> • Improving the economics of building on land where deep foundations are required

The risks of future flooding and higher water tables have to be taken into account in designing for basements.

Section through two-storey house with basement and habitable roof space.

Section through a normal two-storey house.

Typical two-storey house

Basement Ground floor First floor Habitable room plus storage in roof space

By combining a basement with habitable roof space, the useable floor area of a 2-storey house can be increased by about 70%. Alternatively, the same floor space can be provided on a reduced building footprint

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FURTHER INFORMATION

A number of advisory and technical documents are available from the British Cement Association (BCA), which include guidance on costing, obtaining adequate water-resistance and case study examples. Also available is an *Approved Document – basements for dwellings* which gives guidance on how to meet the Building Regulations. These publications were progressed through the Basement Development Group (BDG) which can also provide information on companies specialising in basement design and construction

Comprehensive information about basements and specialist services and a summary of available publications can be found on the BDG website www.basement.org.uk
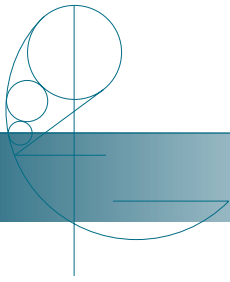

Relevant Regional and Strategic Policies

RPG 9: Q2, Q3, Q5, T3
Surrey Structure Plan Deposit Draft January 2001: SE3, DN1, DN3, DN12

Implementation Checklist for the Land Chapter

- Can the density of development be increased without compromising the quality of the built environment, sustainable transport objectives and important amenity considerations?

- Would continuous frontages be more appropriate to the context and give a more pleasing and stronger enclosure of public space, whilst also making better use of the land?

- Is the amount of parking justified bearing in mind the availability of public transport and accessibility of local amenities?

- Does the development make maximum use of internal space through appropriate variations in building height and use of loft space?

- Have basements been considered?

Glossary

Adoption
The process by which land for open space, landscaping or highway use is transferred to a local authority to maintain.

Amenity
A pleasant or useful feature or facility. It can also relate to the quality of life enjoyed by occupants, for example the quietness of their environment.

Ancient Trees
Trees that by virtue of their great age, size or condition are of exceptional value both culturally and ecologically. Also known as veteran trees.

Best Practice
To pursue the best approach.

Biodiversity
A term used to describe the variety of species on earth, from the simplest bacterium to the most highly developed primate. Effectively it is synonymous with the term "variety of wildlife" where wildlife means all plants and animals.

Boulevard
A broad main street which is usually lined with trees and can be dedicated to a range of different users.

Brief
This guide refers to site-specific briefs as development briefs. Site-specific briefs are also called a variety of other names, including design briefs, planning briefs and development frameworks.

Bulk
The combined effect of the arrangement, volume and shape of a building or group of buildings. Also called massing.

Combined Heat and Power (CHP)
A system which generates electricity and heat in a cost effective and environmentally responsible way. CHP uses a machine to drive an electricity generator, or a fuel-cell to produce electricity directly, and makes practical use of the heat which is an inevitable by-product. This heat can be used for space heating, domestic hot water and for cooling using absorption chillers, and is distributed widely between buildings or within an urban district.

Community Heating System (CH)
A number of buildings or dwellings heated from a central source usually by means of piped hot water. Can be linked with CHP to produce private use electricity. Also known as District Heating.

Conservation Area Character Appraisal
A published document defining the special architectural or historic interest which justifies designation of the area.

Context
The setting of a site or area, including factors such as traffic, activities and land uses as well as landscape and built form.

Defensible Space
"Public and semi-public space that is 'defensible' in the sense that it is surveyed, demarcated or maintained by somebody. Derived from Oscar Newman's 1973 study of the same name, and an important concept in securing public safety in urban areas, defensible space is also dependent upon the existence of escape routes and the level of anonymity which can be anticipated by the users of the space." DETR By Design 2000.

Density
The floorspace of a building or buildings or some other unit measure in relation to a given area of land. Built density can be expressed in terms of a plot ratio (for commercial development); number of units or habitable rooms per hectare (for residential development); site coverage plus the number of floors or a maximum building height; or a combination of these.

Design Assessment
An independent assessment of a design usually carried out for a local authority by consultants, another local authority or some other agency.

Design Principle
One of the basic design ideas at the heart of an urban design framework, design guide, development brief or a development.
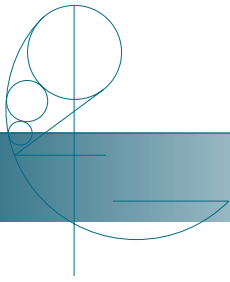
Glossary

Design Statement — A planning application design statement sets out the design principles that the planning applicant has adopted in relation to the site and its wider context, as required by PPG1.

Desire Line — An imaginary line linking facilities or places that people would find it convenient to travel along.

Development Brief — A document that sets out the key issues to be taken into consideration when producing detailed proposals for a site. It can give an indication of potential uses for a site and detailed design matters including identifying relevant constraints. It may be prepared by a local planning authority, a developer, or jointly, providing guidance on how a site of significant size or sensitivity should be developed. Site-specific briefs are sometimes known as planning briefs, design briefs and development frameworks.

Embodied Energy — The amount of energy consumed in the extraction, manufacture, transport, assembly on site and eventual removal/demolition of building materials.

Enclosure — The use of buildings, trees and hedges to create a sense of defined space.

Energy Efficiency — The extent to which the energy consumption of a building or group of buildings is reduced through the way in which buildings are designed, constructed and arranged on site.

English Bond — A pattern of bricks where a course of headers is alternated with a course of stretchers.

Environmental Impact Assessment — A comprehensive method of assessing the relevant environmental factors in a systematic manner so as to advise on appropriate action.

Flemish Bond — A pattern of bricks where a course of stretchers alternate with a course of headers, each header being placed centrally over a stretcher.

Form — The layout (structure and urban grain), density, scale (height and massing), appearance (materials and details) and landscape of development.

Fuel Cell — A device that generates electricity directly via an electro-chemical reaction.

Grain — See 'urban grain'.

Green Water — Rain water and waste water from washing that has been filtered and treated.

Grey Water — Rain water and waste water from washing that has been filtered but not treated.

Home-zone — A mainly residential and pedestrian area where speeds are regulated to around 10mph - making existing streets into multi-use spaces.

Human-scale — The use within development of elements which relate well in size to an individual human being and their assembly in a way which makes people feel comfortable rather than overwhelmed.

Landmark — A building or structure that stands out from its background by virtue of height, size or some other aspect of design.

Landscape — The character and appearance of land, including its shape, form, ecology, natural features, colours and elements and the way these components are combined. Landscape character can be expressed through landscape appraisal, and maps or plans. In towns 'townscape' describes the same concept.

Layout — The way buildings, routes and open spaces are placed in relation to each other.

Legibility — The degree to which a place can be easily understood and moved through.

Local Distinctiveness — The particular positive features of a locality that contribute to its special character and sense of place. Distinguishes one local area from another.

Microclimate — Localised climatic conditions within, or part of, a site.

Mixed use — A mix of uses, usually complimentary, within a building, on a site or within a neighbourhood. 'Horizontal' mixed uses are side by side, usually in different buildings. 'Vertical' mixed uses are on different floors of the same building.

Natural Surveillance — The discouragement to wrong-doing by the presence of passers-by or the ability of people to be seen out of surrounding windows. Also known as passive surveillance (or supervision).

Glossary

Neighbourhood   A district of distinct character usually on a scale that makes internal movement easy for pedestrians.

Nodes   Points at which routes for public transport and other modes of movement intersect. Places where activity and routes are concentrated. Often used as a synonym for a junction.

On-curtilage Parking   Parking within a building's site boundary, rather than on a public street or space.

Passive Solar Gain   The collection of solar radiation to meet a building's heating needs using the fabric of the building rather than solar panels which are active solar systems.

Ped-sheds   A pedestrian catchment area around a particular place. The outer extent being the limit of a 5 or 10 minute walk, of average pace.

Permeability   The degree to which an area has a variety of pleasant, convenient and safe routes through it.

Photovoltaics   Special cells which generate electricity directly from sunlight.

Planning Brief   This guide refers to site-specific briefs as development briefs. Other names include planning briefs, design briefs and development frameworks.

Planning For Real   A participation technique (pioneered by the Neighbourhood Initiatives Foundation) that involves residents and others with an interest coming together to make a model of their area and using it to help them determine their priorities for the future.

Planning Policy Guidance Notes (PPGs)   Documents embodying Government guidance on general and specific aspects of planning policy to be taken into account in formulating development plan policies and in making planning decisions.

Private Wire Electricity   Local electrical distribution system not owned by the local electricity company.

Public Art   Permanent or temporary physical works of art visible to the general public, whether part of the building or free-standing, it can include sculpture, lighting effects, street furniture, paving, railings and signs.

Public Realm   The parts of a village, town or city (whether publicly or privately owned) that are available, without charge, for everyone to use or see, including streets, squares and parks. Also called public domain.

Reedbed Technology   An alternative system to conventional sewage treatment that uses wetland areas containing reed beds to treat waste water. Also used to remove pollutants from surface water runoff.

Robustness   The ability to use a building for a variety of uses throughout its lifetime.

Scale   The impression of a building when seen in relation to its surroundings, or the size of parts of a building or its details, particularly as experienced in relation to the size of a person. Sometimes it is the total dimensions of a building which give it its sense of scale, at other times it is the size of the elements and the way they are combined. The concept is a difficult and ambiguous one: often the word is used simply as a synonym for 'size'. See 'Human scale'.

Sense of Place   Local characteristics which give a place identity.

Settlement Pattern   The distinctive way that the roads, paths and buildings are laid out in a particular place.

Sight Line   The line of sight from a travelling vehicle or person. Sight lines will help to determine how fast vehicles are likely to move and how safe other road users are likely to be.

Site Appraisal   An assessment of an area's land uses, built and natural environment, historic development and social and physical characteristics. This may focus on a single site or wider areas.

Solar Panels   Sometimes referred to as 'solar collectors'. Devices which convert solar radiation to heat. Heat is transferred by a fluid – usually water.

Speed Restraints   Design features applied to new streets and roads to keep traffic speeds low. These can be highway features such as bends or junctions or 'incidental' features associated with the wider urban form.

Superinsulation
A term used to describe very high levels of insulation achieved by eliminating thermal bridges, achieving high standards of airtight construction, using high efficiency, low emissivity, double or triple glazing and a minimum of 300 mm of rockwool insulation (U value 0.1 Wm2/degC or the equivalent).

Sustainable Construction
An aspect of sustainable development relating more specifically to building design and the construction process.

Sustainable Development
Defined by the Brundtland Commission (1987, and quoted in PPG1) as 'development which meets present needs without comprising the ability of future generations to achieve their own needs and aspirations'. The UK's strategy for sustainable development A *Better Quality of Life* (May 1999) highlights the need for environmental improvement, social justice and economic success to go hand-in-hand.

Sustainable Urban Drainage System (SUDS)
A range of different drainage systems that are designed to promote the filtration and evaporation of water as close to the source as possible and to break down pollutants. SUDS are an alternative to drainage through pipes directly to a watercourse and will help enhance water quality and biodiversity, maintain groundwater levels and reduce the risk of flooding.

Townscape
Landscape not only applies to the countryside or rural areas, but also to cities and towns. Here it refers to the way in which buildings relate to each other and the space around them.

Traffic calming
Measures applied to existing roads to keep traffic speeds low.

Urban Design
The art of making places. Urban design involves the design of buildings, groups of buildings, spaces and landscapes, in villages, towns and cities, and the establishment of frameworks and processes which facilitate successful and sustainable development.

Urban Design Framework
A document which sets out in detail how development plan policies are to be implemented in a particular area where there is a need to control, guide and promote change. Area development frameworks are also called a variety of other names, including urban design strategies, area development frameworks, spatial masterplans, and planning and urban design frameworks.

Urban Grain
The pattern of the arrangement and size of buildings and their plots in a settlement; and the degree to which an area's pattern of street-blocks and street junctions is respectively small and frequent (fine), or large and infrequent (coarse).

Urban Village
A mixed-use neighbourhood maximising community involvement and movement on foot.

Vernacular
The way in which ordinary buildings were built in a particular place, making use of local styles, techniques and materials and responding to local economic and social conditions of the past.

Village Design Statement
An advisory document, usually produced by a village community, suggesting how development might be carried out in harmony with the village and its setting. A village design statement can be given weight by being approved as supplementary planning guidance. The use of village design statements is promoted by the Countryside Agency.

Whole-life
The overall impact or cost of a development from sourcing of materials to the end of the building's lifespan.

Zero Energy Development
One definition is: "Development which over the course of a year takes no more power than it returns to the National Grid."

A more rigorous definition has been applied to the term at the Beddington Zero (fossil) Energy project: "Development, which on balance, over the course of a year, has met all of its thermal and electrical energy requirements from renewable sources." This effectively makes the development 'carbon neutral' - resulting in zero CO2 emissions.

Bibliography

Useful General References

Bently, Ian et al; **Responsive Environments – A Manual for Designers**; Architectural Press; Oxford; 1999

Birmingham City Council; **Places for Living**; Birmingham City Council; Birmingham; 2001

Department of the Environment, Transport and the Regions (DETR); **Places, Streets and Movement – A Companion Guide to Design Guide Bulletin 32: Residential Roads and Footpaths**; HMSO; London; September 1998

DETR; **By Design – Urban Design in the Planning System: Towards Better Practice**; DETR; London; 2000

DETR; **Living Places – Urban Renaissance in the South East**; URBED; UCL; December 2000

DTLR and CABE; **Better Places to Live** – A companion guide to PPG3; DTLR & CABE; 2001

Llewelyn-Davies; **Urban Design Compendium**; English Partnerships; The Housing Corporation; 2000. This is available free and can be ordered from English Partnerships

Other Useful General References

Civic Trust and OVE Arup; **Sustainable Renewal of Suburban Areas**; Joseph Rowntree Foundation; 1999

Cowan, R; **The Connected City – A New Approach to Making Cities Work**; Urban Initiatives; London; 1997

DETR; **Housing Layouts – Lifting the Quality**; House Builders Federation; London; August 1998

Edwards & Turrent; **Sustainable Housing Principles and Practice**; E & FN Spon; 2000

Essex Planning Officers Association; **The Essex Design Guide for Residential and Mixed Use Areas**; Essex County Council; Essex; 1997

Gwilliam, M et al; **Sustainable Renewal of Suburban Areas**; York Publishing Services; Layerthorpe; 1998

Has-Klau, Crompton, Dowland & Nold; **Streets as Living Space**; Landor Publishing Ltd.; July 1999

Kent County Council; **Kent Design: A Guide to Sustainable Development**; Kent County Council; Maidstone; 2000

Lucas et al; **Implementing Sustainable Property Development**; Landor Publishing; June 2000

Rudlin, D & Falk, N (URBED); **Building the 21st Century Home: The Sustainable Urban Neighbourhood**; Architectural Press; London; 1999

Williams et al; **Achieving Sustainable Urban Form**; E&FN Spon; 2000

Policy Background

DETR; **Design Bulletin 32: Residential Roads and Footpaths – Layout Considerations**; Second Edition; HMSO; London; April 1992

DETR; **Planning Policy Guidance 1: General Policy and Principles**; HMSO; London; February 1997

DETR; **Planning for Sustainable Development: Towards Better Practice**; HMSO; London; October 1998

DETR; **A Better Quality of Life: A Strategy for Sustainable Development for the UK**; The Stationary Office; May 1999

DETR; **Planning Policy Guidance 3: Housing**; HMSO; London; March 2000

DETR; **Our Towns and Cities: The Future (Urban White Paper)**; The Stationary Office; November 2000

DETR; **Planning Policy Guidance 13:Transport**; HMSO; London; March 2001

DTLR; **White Paper; Our Towns and Cities : The Future – Delivering an Urban Renaissance,** July 2001

Bibliography

Government Office for the South East; **Regional Planning Guidance for the South East (RPG9)**; GOSE; March 2001

Surrey Local Government Association; **Housing to Underpin Economic Success,** Surrey County Council, September 2001

Surrey County Council; **Roads and Footpaths: A Design Guide for Surrey (Vols.1, 2 & 3);** Surrey County Council; Kingston-upon-Thames; 1981

Surrey County Council; **Roads and Footpaths: A Design Guide for Surrey Vol.4;** Surrey County Council; Kingston-upon-Thames; 1989

Surrey County Council; **Surrey Structure Plan 1994;** Surrey County Council; Kingston-upon-Thames; May 1995

Surrey County Council; **The Surrey Structure Plan- Deposit Draft 2000;** Surrey County Council; Kingston-upon-Thames; January 2001

Urban Task Force; **Towards an Urban Renaissance – Final Report;** DETR, London; July 1999

Process

Beer, A R; **Environmental Planning for Site Development;** E & F N Spon; 1990

Llewelyn-Davies; **Planning and Development Briefs: A Guide to Better Practice;** DETR; April 1998; ISBN 1 851120 69 6

Planning Officers Society; **Planning and Design;** Local Government Association; London; June 1999

Prince's Foundation; **Sustainable Urban Extensions: Planned Through Design;** English Partnerships; September 2000

Wates, N; **The Community Planning Handbook;** Earthscan Publications; 2000

Mixed use/higher density development

Llewelyn-Davies; **Sustainable Residential Quality in the South East – Final Report;** GOSE; London; October 1998

Llewelyn-Davies; **Sustainable Residential Quality: Exploring the Housing Potential of Large Sites;** LPAC; London; January 2000

Urban Villages Group & Aldhous, T; **Urban Villages;** Urban Villages Group; London; 1992

Sustainable Construction

Anderson J & Howard N; **The Green Guide to Housing Specification;** Third Edition; BRE; April 2000

DETR; **General Information Reports & Good & New Practice Case Studies;** BRE; Watford

DETR; **Building a Better Quality of Life: A Strategy for more Sustainable Construction;** DETR; Free Literature; April 2000

Kent Architecture Centre and Kent County Council; **Kent Design: The Directory;** Kent County Council; Maidstone; May 2001

Littlefair et al; **Environmental Site Layout Planning;** BRE; 2000

Somerset Trust for Sustainable Housing; **The Somerset Housing Study: The Why, What and How of Sustainable Housing, A Step by Step Guide;** Somerset Trust for Sustainable Development; November 1999

Somerset Trust for Sustainable Development; **Planning for Sustainable Construction and Development: A Guide to Positive Planning for 21st Century Buildings and Development;** Somerset Trust for Sustainable Development;2001

Woolley, T; **Green Building Handbook;** Bliss Books; 1997

Landscape & Ecology

British Standard 5837; **Guide for Trees in relation to Construction.** Second Edition; 1991

Surrey County Council; **The Future of Surrey's Landscape and Woodlands;** Surrey County Council; Kingston upon Thames; 1997

Surrey Biodiversity Partnership; **The Surrey Biodiversity Action Plan;** Surrey County Council Kingston upon Thames; September 1999

People and safety

Ballintyne et al; **Secure Foundations – Key Issues in Crime Prevention, Crime Reductions and Community Safety;** IPPR; 2000

Centre for Accessible Environments; **Designing for Accessibility – An Essential Guide for Public Buildings;** Centre for Accessible Environments; London; September 1999

DETR; **Personal Security Issues in Pedestrian Journeys;** HMSO; London; November 1999

Home Office Crime Prevention College; **Police Architectural Liaison – Manual of Guidance;** HOCPC; York; 1994

Millward, A & Wheway, R; **Child's Play: Facilitating Play on Housing Estates;** Chartered Institute of Housing; 1997; ISBN 1 900396 26 2

National Playing Fields Association; **The Six Acre Standard – Minimum Standards for Outdoor Playing Space;** NPFA; London; 1992; ISBN 0 946085 31 5

Local Identity

Brunskill R.W; **Vernacular Architecture;** 4th Edition; Faber & Faber; March 2000

CABE & DETR; **The Value of Urban Design;** Thomas Telford; 2001

Chilterns Conservation Board **Chilterns Building Design Guide – A Countryside Design Summary;** Chilterns Conference; 1999

Countryside Agency; **Village Design;** Countryside Agency CCP 501; 1996

DEFRA; **Rural White Paper; Our Countryside: The Future – A Fair Deal for Rural England;** November 2001

Gradidge, R; **The Surrey Style;** Surrey Historic Buildings Trust; Kingston upon Thames; 1991

Urban Design Alliance; **Placecheck : A User's Guide;** Urban Design Alliance; 2000

Movement

Institution of Civil Engineers; **Designing Streets for People: Pre-consultation Draft;** UDAL/ICE; 2001

Surrey County Council; **Cycle Facility Design Guide – First Edition;** Surrey County Council; Kingston-upon-Thames; November 1996

Surrey County Council; **Manual of Policies and Standards – Volume 3, Transportation Planning;** Surrey County Council; Kingston-upon-Thames; March 1997

Surrey County Council; **A Parking Strategy for Surrey – Interim Report;** Surrey County Council; Kingston-upon-Thames; November 1999

Surrey County Council; **Surrey Local Transport Plan 2001/02 to 05/06;** Surrey County Council; Kingston-upon-Thames; July 2000

The Institution of Highways and Transportation; **Transport in the Urban Environment;** IOHT; London; June 1997

The Institution of Highways and Transportation; **Guidelines for Planning for Public Transport in Developments;** IOHT; London; March 1999

List of Useful Websites

Association for Environment Conscious Building	www.aecb.net
Basement Development Group	www.basements.org.uk
Beddington Zero Energy Development	www.bedzed.org.uk
BioRegional Development Group	www.bioregional.com
Building Research Establishment	www.bre.co.uk
Commission for Architecture and the Built Environment (CABE)	www.cabe.org.uk
Centre for Alternative Technology	www.cat.org.uk
Civic Trust	www.civictrust.org.uk
Construction Best Practice Programme	www.cbpp.org.uk
Construction Industry Board	www.ciboard.org.uk
Construction Industry Environmental Forum	www.ciria.org.uk
Countryside Agency	www.countryside.gov.uk
Department of Transport Local Government and the Regions	www.dtlr.gov.uk
English Partnerships	www.englishpartnerships.gov.uk
Energy Efficiency Best Practice Programme	www.energy-efficiency.gov.uk
English Nature	www.english-nature.org.uk
Environment Agency	www.environment-agency.gov.uk
House Builders Federation	www.new-homes.co.uk
Institution of Highway Engineers	www.ile.org.uk
Integer Project	www.integerproject.co.uk
Placecheck Initiative	www.placecheck.com
Planners Web	www.planweb.co.uk
Planning Magazine	www.planning.haynet.com
Quality of Life Capital	www.qualityoflifecapital.org.uk
Resource for Urban Design Information	www.rudi.net
Royal Institute of British Architects	www.architecture.com
Royal Town Planning Institute	www.rtpi.org.uk
Secured by Design	www.securedbydesign.com
Somerset Trust for Sustainable Development	www.sustainablehousing.org.uk
Surrey County Council	www.surreycc.gov.uk
Sustainable Development Commission	www.sd-commission.gov.uk
The Landscape Institute	www.landscape.institute.org.uk
Transport Research Laboratory	www.trl.co.uk
UK Government and related web sites	www.ukonline.gov.uk
Urban Design Alliance	www.udal.org.uk