Residential Design Guide

Local Development Framework
Supplementary Planning Document

Sunderland City Council

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Residential Design Guide


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Supplementary Planning Document

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Images on front pages

1 Thomas Hawksley Park
2 Prodema Lignum Case Study
3 Urban Splash
4 Campaign for Architecture and the Built Environment
5 Design for Manufacture

Contents

Java Eiland, Amsterdam

Foreword

Where people live has a major effect on their lives. The quality of life that individuals enjoy can be directly related to the quality of place they live in. In recent decades the process of mass housing construction has led to increasingly bland and standardised solutions. Whilst technically there is little doubt that the houses we build have improved, this has often been at the expense of aesthetic values.

One of the main issues house builders and developers must address is making residential development more sustainable. All too often new residential development is not well connected to local services and promotes dependency on the car. We need to encourage walking, cycling and the use of public transport and allow easy access for everyone - including people without a car.

The purpose of this guide is to ensure the delivery of sensitive and appropriately designed sustainable development. The guide is not a manual to be applied by rote or a substitute for using skilled designers, architects and planners. The guide should be used by everyone involved in the housing development process to assist in achieving high quality and sustainable 'places for living'.

This guide, adopted as a Supplementary Planning Document, will be used by Sunderland City Council as the Local Planning Authority in the determination of planning applications for residential development.

Executive Summary

Where people live has a major effect on their lives. The quality of life that individuals enjoy can be directly related to the quality of place they live in. In recent decades the process of mass housing construction has led to increasingly bland and standardised solutions.

The purpose of the Residential Design Guide is to ensure the delivery of sensitive and appropriately designed sustainable development. The guide is intended for use by everyone involved in the housing development process to assist in achieving high quality and sustainable 'places for living'.

Applicants are expected to follow the design process described within the document and provide evidence to show that a Project Brief, Policy Review, Site Appraisal, Design Concept and Access Statement have been done.

Content of the Residential Design Guide

Chapters 2-8 explain the principals upon which good residential design is based and identify key criteria against which applications for residential development will be judged.

Chapter 9 provides a series of case studies which explain how the principals of good residential design have been applied on various sites.

Chapter 10 provides specified standards for residential development.

Context

Context is the character and setting of the area within which a project will sit. Context also includes people, the individuals living in or near an area and how communities are organised so that citizens become real participants in the proposed development. Chapter 2 encourages site analysis to help assess the context, access to facilities and the site and its immediate surroundings. The development must respond to the context of the site.

Movement

All places rely on movement. The success or failure of new developments depend on how well connected they are to existing areas especially in terms of access to local facilities, services and amenities. Chapter 3 encourages developers to create convenient routes within the development and consider the wider area. Opportunities for walking and cycling should be provided as well as access to public transport. Access for everyone should also be provided.

Mix and neighbourhood

New housing development should address the needs of the whole community. The main aim should be to build accessible places that offer a choice of housing and complementary activities nearby. Chapter 4 explains the complex issue of density and the importance of mixed use neighbourhoods. The chapter also encourages a mix of housing types and tenure to help build communities and avoid social exclusion and stigma. The importance of sub-dividing development sites particularly where it is a local characteristic is also stressed. New residential developments should provide facilities and services which build on and enhance those already available and should establish a sequence of high quality and connected public realm spaces and focal points.

Layout and urban form

Getting the right structure of any residential environment is critical in ensuring success. Chapter 5 provides a checklist of requirements for the built form of new residential developments. Information is also presented on the use of block structures and block dimensions as well as access to back of block areas and design for corners. Setbacks and building heights should also be considered. It is suggested that layouts should be designed to exploit the potential for solar radiation which can help contribute to heating needs in homes

Space around the home

Residential streets and the public spaces between buildings should include a public realm strategy in their design to make them safe, attractive and usable. Chapter 6 presents public open space as one of the key elements of good housing layout. Information is also provided on the street in section, defining public and private realm, integrating movement space, homezones, parking, landscaping and safe places and private spaces.

Complete and thorough Design

It is not just simply house types and their arrangement and configuration which creates good places. Equally important is the detailing. Information is provided on building elements, elevation treatment, garages and ancillary buildings, front entrances and porches, extensions, signage, hard landscape, local vernacular and character, boundaries, management and maintenance plans and considering future change.

Energy and resources efficiency

Residential developments should be designed to control heat loss to reduce long term fuel consumption and to make the best use of renewable energy sources. Information is provided on minimising energy in construction and design, natural ventilation, passive solar design and natural daylight/active solar design, re-use of existing buildings and sustainable urban drainage.

1.0 Introduction

1.1 Objectives

1.2 Other relevant documents

1.3 How to use this guide

1.4 The design process

1.5 Presentation

1.6 Requirements for all residential development

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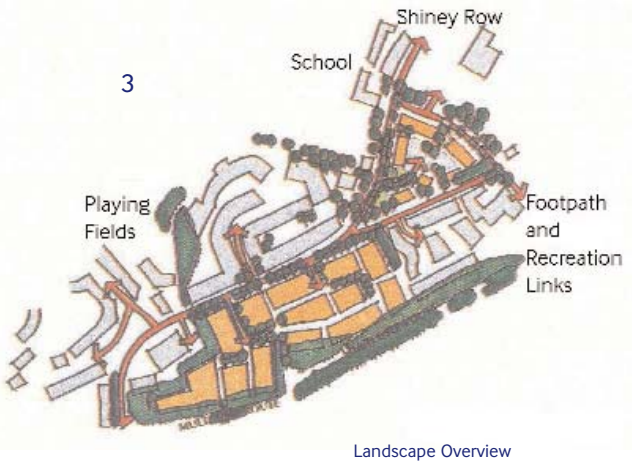


Landscape Overview

1.0 Introduction

Cabinet adopted this document as Interim Planning Policy on the 12 July 2006. Following commencement of part 2 of the Planning and Compulsory Purchase Act 2004, Local Planning Authorities are required to produce Supplementary Planning Documents (SPDs) instead of Supplementary Planning Guidance. Preparation of the Residential Design Guide began before Part 2 of the Planning and Compulsory Act came into force.

The Residential Design Guide has been taken forward through the statutory planning process in order to become a Supplementary Planning Document. The guidance supplements the requirements of the Unitary Development Plan, and UDP Alteration No2 (Central Sunderland). It provides advice and guidance on design principles, which should be reflected in any proposed development submitted for consideration by the City Council. Paragraph 10.28 of the UDP states that the degree to which a development conforms with supplementary guidance will be a material consideration in the determination of the planning application (see Appendix A for Policy References).

Relevant design policies

1.1 Objectives

B2 Scale, Massing, Layout and Setting of New Development - Adopted UDP

B2A Sustainable Urban Design - UDP Alteration No 2

The council and Central Government is committed to achieving the highest possible standard of design in all new residential development. This document sets out the criteria against which new residential development shall be judged. The aim of the guidance is to encourage good design rather than stifle experimentation, originality or initiative.

"Good Design is fundamental to the development of high quality new housing which contributes to the creation of sustainable, mixed communities. Good design should contribute positively to making places better for people. Design which is inappropriate in its context or which fails to take the opportunities available for improving the character and quality of an area and the way it functions should not be accepted." (Para 12 & 13 PPS3).

Policy B2 A (UDP Alteration No 2) 'Sustainable Urban Design' seeks to secure the highest possible quality of built environment and the creation of desirable places to live. All new residential developments are required to:

- Ensure the arrangement of buildings defines the enclosure of the street, with street frontages as continuous as possible with the minimum of gaps between buildings
- Contribute to a safe and secure environment by providing surveillance for paths, streets and public spaces
- Conform to the Council's Supplementary Planning Guidance including design criteria set out in this S.P.D.
- Be accompanied by a design and access statement for all significant forms of development, setting out the design principles of a proposed development

1.2 Other relevant documents

This guide should be read in conjunction with a range of other documents produced by the government and Sunderland City Council which relate to design in new development, including:

- Planning Policy Statement 1
- Planning Policy Statement 3
- Design Review (CABE)
- By Design - Urban Design in the Planning System (DTLR)
- By Design - Better Places to Live, A Companion Guide to PPG3 (DTLR)
- Manual for Streets (DCLG/DFT)
- Car Parking What Works Where (English Partnerships)
- Building in Sustainability; A guide to sustainable construction and development in the North East (Sustain)
- Urban Design Compendium- English Partnerships
- 'Design and Access Statements' Supplementary Planning Document, (Sunderland City Council) 2008
- Unitary Development Plan - Adopted Plan 1998 (City of Sunderland)
- Unitary Development Plan - Alteration No 2 - Central Sunderland 2007
- Homezones - Challenging the future of our streets (Department for Transport) 2005

1.3 How to use this guide

This chapter sets out what information planning applications for residential development will be required to provide. The design process that applicants should follow is explained in more detail further in the guidance. Chapters 2 - 8 explain the principles upon which good residential design is based and identify key criteria against which applications for residential development will be judged. Chapter 9 provides a series of case studies which illustrate how the principles of good residential design have been applied on a variety of sites in Sunderland and across the UK. A checklist is provided in the appendices, (chapter 11) to assist applicants evaluate whether proposals comply with the guidance.

1.4 The design process

Applicants are advised to consult with the City of Sunderland Planning and Engineering Services at the earliest possible opportunity before formulating housing development proposals and submitting a planning application. Applicants will be expected to follow the design process described below and provide evidence to show that this has been done.

A - Project Brief

The project brief should clearly set out the aims and aspirations of the client and demonstrate how the principles of good design will be applied. Generally it will include a series of statements relating to the following issues:

- Development proposals
- Method of procurement
- Sustainability
- Design Statement
- Functional requirements
- Accessibility
- Community

B- Policy Review

The design statement should identify relevant planning policies and guidance and demonstrate how they have informed the development proposals. Relevant policy or guidance may be contained within:

- National and Regional Policy Guidance
- Planning Policy Statements
- Planning Policy Guidance Notes
- Regional Spatial Strategy

The requirements and guidance of other public bodies may need to be taken into account. Relevant bodies may include:

- Regional Development Agency (One North East)
- Countryside Agency
- English Heritage
- English Partnerships
- Environment Agency
- Police Authority
- English Nature

Development Plan Polices

All areas within Sunderland are covered by the Unitary Development Plan (the UDP will be replaced with the Local Development Framework) which was adopted in 1998. A design statement should refer to or quote the relevant planning policies which apply to the development. Relevant policies may cover, among other things:

- Land use
- Interim uses
- Listed Buildings
- Ancient Monuments
- Archaeology
- Sites of Special Scientific Interest
- Local nature reserves and other designated Ecological sites
- Protected flora and fauna
- Nature conservation, countryside and green strategies

C - Site Appraisal and Survey

The starting point for every development is a detailed study of its physical context.

A site appraisal will involve the collection of qualitative and quantitative data to establish a comprehensive profile of the site and its context through a process of data collection, survey and analysis.

Typically a site appraisal and survey will involve two key stages:

1. Desktop study - A desktop study will include the collection of data such as plans showing the site and its surrounding area, aerial photographs and other relevant information e.g. the identification of land contamination, public transport, listed buildings, sites of archeological importance and sites of nature conservation interest etc. It will also involve identification of relevant land use planning policies contained within the UDP and SPG.

2. Site Survey - A site survey will involve the collection of data, such as townscape character, context, views and vistas, and patterns of movement (a comprehensive checklist can be found in Appendix B). The survey will include a comprehensive photographic record of the site and its context.

Checklist for site survey:

Context

- What land use does the development site have?
- What are the adjacent land uses?
- What are the local land use policies on the site and the surrounding area?
- What type of infrastructure exists on and around the site?
- What is the capacity of existing services available such as gas, electricity, water etc?
- What facilities are within close proximity of the site such as schools, shops, public transport etc?

Geology, Contamination and Pollution

- What are the soils, sub-soils and rocks?
- Is the ground contaminated or has the site had a previous use that may have resulted in ground contamination? Is a ground contamination survey required?
- Is there a history of mining in the area? Has the site been undermined?
- Is the proposed development in an area where there are unacceptable levels of air or water pollution?
- Do any parts of the area or site suffer from noise? Is a noise survey required?

Landscape Character

- What are the physical characteristics of the site e.g. topography, existing buildings and structures, watercourses and boundary etc?
- Is the site of archeological interest? Is an archeological assessment or survey required?
- What is the ecology of the site and the surrounding area?
- What is the microclimate of the site?
- What boundaries and barriers are there at the edge of (or within) the area or site?

Built Form

- How did the site and the surrounding area develop? What are the ages of buildings and structures?
- What sort of street layout does the area have?
- What distinctive architectural features and building techniques contribute to the character of the area?
- Is any part of the site in a Conservation Area?
- Are any buildings or structures listed for their architectural or historic value?

Movement

- What is the pattern of pedestrian movement in and around the site?
- What is the area's road network?
- What public transport routes and stops serve the area?
- What facilities for cycling are there?
- What current proposals for roads, footpaths or public transport might be relevant to future development?
- Will a green travel plan be required?

Views and Vistas

- What is visible from particular points within or around the site?
- Are there any notable narrow views or landmarks?
- What buildings or structures (on or visible from the site) stand out from the background buildings?

D - Design Concept

This section should include a written statement and illustrations in sketch form to demonstrate how the project brief, policy review and site appraisal have informed the principal design concepts of the development. Particular emphasis should be given to demonstrating how the key objectives of good urban design have been translated into the development proposals. These may include:

Character:

- How does the development respond to and reinforce positive elements of the local townscape and landscape character?
- How does the development establish a strong sense of place?

Built form

- How does the development respond to and reinforce the built form character of the area?
- How does the scale, form, layout, continuity and enclosure establish an appropriate structure to the development?
- How does the development relate to the street and areas of public realm?
- What measures are in place to make movement safe and attractive for all users?

Public realm

- Does the development provide safe, attractive and clearly defined public and private spaces?
- Does the development provide high quality amenity areas?
- What measures have been adopted to avoid the public realm being dominated by parked vehicles?
- Does the development include high quality landscape proposals? Is the landscaping easily maintained?

Movement

- How does the development promote accessibility and permeability by making places connect and easy to move through?
- What measures are in place to make movement safe and attractive for all users?

Legibility

- Does the development include gateways, landmarks, identifiable nodes etc?

Safety and security

- How has safety and security been addressed?
- Does the development provide natural surveillance of public and private spaces?

Sustainability

- How does the development minimise resource consumption?

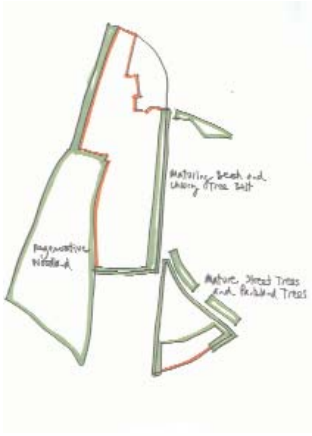
1.5 Presentation

The applicant should choose the most effective form of presentation, as the contents of a design statement will vary according to the nature of the development and the site's characteristics. A design statement need not be an elaborate and lengthy document.

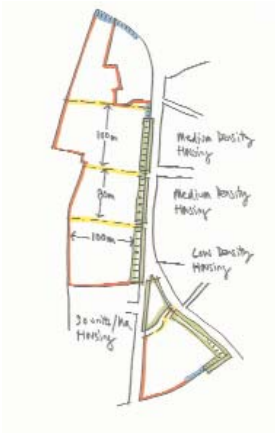
Illustrations must be easy to interpret and clearly support the text. They may consist of photographs, sketches, figure / ground diagrams, photomontages,

concept diagrams, computer based images and artists impressions. The applicant may also submit models or photographs of models. The illustrations should aim to explain the design approach rather than duplicate planning application drawings. Irrespective of the scale of development, the design statement must be supported by good graphics. Additional supporting information may include case studies and illustrations of similar developments. These may be local, national or international examples.

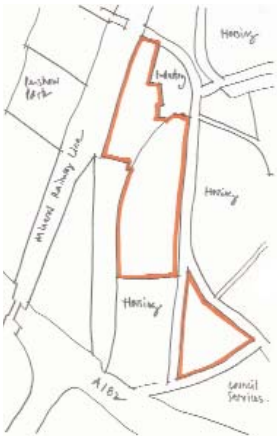
The diagrams below are from a design statement for a proposed residential development. The diagrams and illustrations indicate what should accompany a planning application.



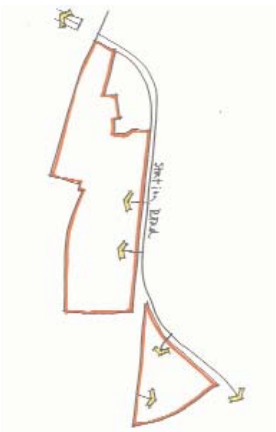
5 Landscape



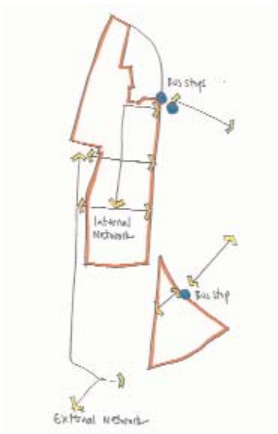
6 Landform Constraints



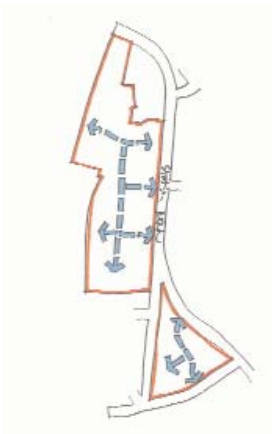
1 Site Components



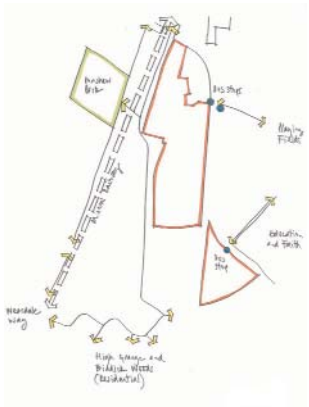
2 Site Access



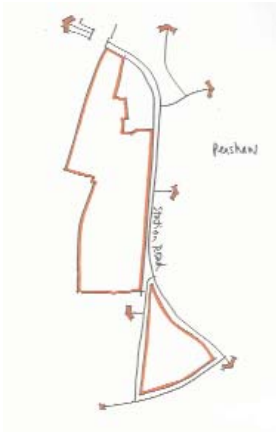
7 Potential Links



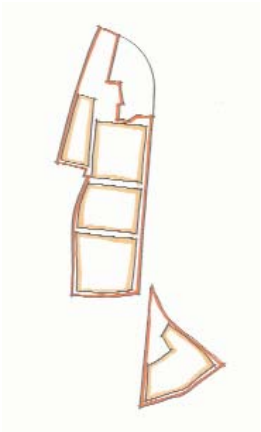
8 Potential Internal Movement



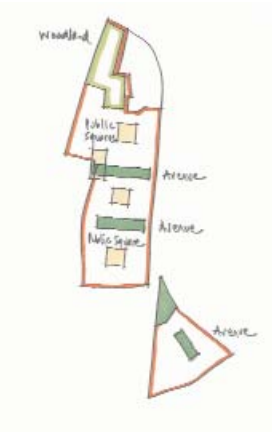
3 Movement One



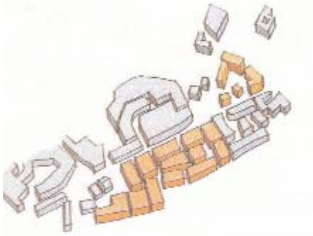
4 Movement Two



9 Potential Development Blocks



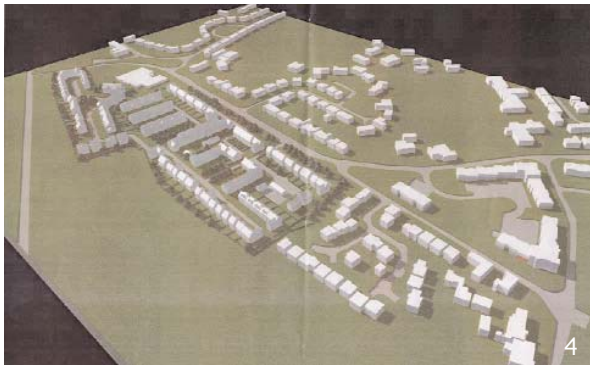
10 Potential Landscape



11 Built Relationships

12 Landscape Overview

13 Concept layout plans



14 Virtual image of proposed development

E - The Planning Application

1.6 Requirements for all residential developments

1 It should be demonstrated that applications have conformed with this guidance.

2 A design statement will be required for all residential development sites. The level of detail required depends on the scale, context and impact of the development. An applicant for outline or full planning permission is required to submit a planning application design statement setting out the design principles of the proposed development.

3 An applicant may be required to submit a pre-application design statement to explain the design principles on which the proposed development is based. This will enable the local authority to give an initial response to the main design and planning issues.

4 The design and access statement should be prepared following the structure set out in 'Design and Access Statement' Supplementary Planning Document (Sunderland City Council) 2008.

Typically a design statement will include the following sections:

- Project Brief
- Policy Review
- Site Appraisal
- Design Concept

5. All applicants must address the sustainability of the proposal i.e. use of resources and environmental impact.

6 Schemes must be designed with crime prevention in mind.

7 Accessibility, particularly for the disabled, should be a major consideration in all developments.

8. All development should be designed with safety in mind.

9 All applications should be accompanied by the following information:

- A location plan showing the location of the site in relation to neighbouring properties
- A site layout drawing showing the arrangement of new dwellings including information such as where open space has been provided
- Elevation plans of all proposed new dwellings
- A design statement including a written statement, concept illustrations, illustrative photographs of proposed dwellings and illustrations of similar developments, plans showing the proposed movement framework in relation to the proposed development and existing patterns of movement, plans or diagrams to illustrate the proposed built form

2.0 Context

2.1 Study the context

2.2 Access to facilities

2.3 The site and its immediate surroundings

2.4 Respond to the context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8

2.0 Context

Relevant design policies

B2A Sustainable Urban Design - UDP Alteration No. 2.

Context is the character and setting of the area within which a proposed scheme will sit. It includes natural as well as human history: the forms of the settlements, buildings and spaces; its ecology and archaeology; its location and the routes that pass through it. Context also includes people, the individuals living in or near an area and how communities are organised so that citizens become real participants in the projected development. A thorough appreciation of the overall site context is the starting point for designing a distinct place.

Many new housing developments in recent years have ignored the local context of an area. For example all too often the road is designed first with standard house types arranged around it.

These types of developments can be seen across the country. Often street patterns are confusing with dead ends and separated vehicular and pedestrian routes. This can undermine the character of an area and make places less legible. Proposals should therefore demonstrate that they have considered the local context and the legibility of the layout. This does not necessarily mean that standard house types should not be used, but it does require types that can be adapted more easily to suit the situation.

The successful integration of new housing with its surrounding context is fundamental to achieving a successful development. The first step in achieving this is developing a thorough understanding of the context within which new housing will sit and then of the nature of the site and its immediate surroundings. This analysis will inform a range of subsequent design decisions including;

- Scale and massing of development
- Mix of dwelling types
- Orientation of dwelling types
- Mix of uses and provision of community facilities.

In certain circumstances character may conflict with other principles and in such cases solutions will be judged on their own merits. For example, particularly high quality developments may depart from an established character or context. There may also be areas which have few positive features to build on, in which case it may be appropriate to create a new place with a distinctive character.

Terraced housing, Fatfield Washington

2.1 Study the context

Where development is considered appropriate the positive and negative characteristics of the site and the local context should be analysed to determine special qualities. General features to consider include existing routes and uses, nodal points, landmarks, edges, barriers, topography, existing trees and natural features.

- A careful analysis of the local character will inform the best response to the context and help produce a better and more appropriate development.
- Popular places are often familiar and distinctive. Local distinctiveness is what helps people find their way around a city.
- Building height, massing and housing types should vary according to the context.

Roker, Sunderland - Pre 1919 terraced properties

Sunderland cottages Inverness Street Fulwell

West Sunniside Georgian townhouses

Distinctive 'New Town' style housing found in Washington

2.2 Access to facilities

Having established a site's setting in terms of its relationship with the surrounding area, town or city a useful exercise is to examine the area within 10 minutes walking distance of the site. This can help identify whether there are particular services or facilities within close proximity that residents could access on foot or by public transport.

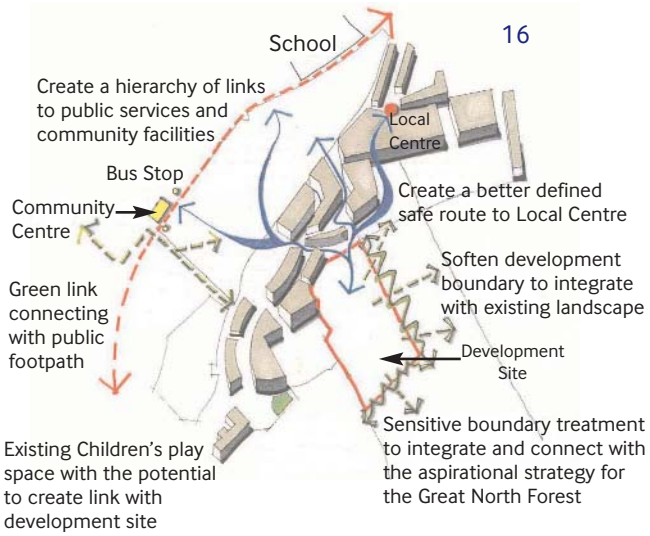
Analysis of the provision of local facilities and services in an area around a site is also an important first step in considering the opportunities to provide new community facilities as part of the development.

The diagram below shows a basic analysis of a site's relationship to local facilities and the public transport network.

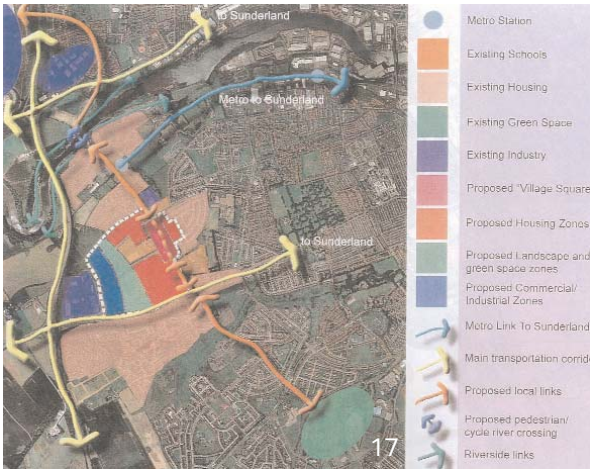
Site Analysis - Access to local facilities, Dubmire, Sunderland

2.3 The site and its immediate surroundings

Understanding the opportunities and constraints presented by a site and its immediate surroundings is a well established aspect of development appraisal. New development should ensure it relates to good quality conditions around the site. The existing settlement pattern whether it is landscape or building dominated should be reflected in proposals. A full understanding of the site and its surroundings encourages design which respects local context.



Example Site Constraints



Example area analysis

2.4 Respond to the context

Responding to the context can help ensure that the identity of a place is not harmed and that adverse impacts on neighbouring buildings and landscapes are avoided.

Design should reinforce and evolve local characteristics that are positive. New residential development should not have a negative impact on the features within the townscape and landscape which positively characterise the area. Buildings and other features which are considered poor in terms of urban design and which do not contribute to the character of an area should not be used as the benchmark for new development.

New housing set within a special historic context - Juniper House, King's Lynn, Norfolk.

Poor response to context. New housing in the foreground fails to respond to the strong character and context of the existing terrace. The development does not respect the existing roofline, is devoid of detailing and neither harmonises or complements the original Victorian buildings.

◀ Century Court, Cheltenham - Located in a sensitive Conservation Area and immediately opposite Cheltenham College the scheme demonstrates how a modern design approach can work successfully in a historic setting.

The Bars, Chester - Well designed reinterpretation of local vernacular for a volume housebuilder on a complex inner city site. ▶

◀ The Piggeries, Frome - contemporary but sensitive design and clear urban design principles in a historic setting.

Sunderland has a rich and varied landscape containing a wealth of habitats and sites of nature conservation and geological importance.

Maintaining the distinctiveness of Sunderland's landscape is an important factor in safeguarding the quality of its environment. The spaces around buildings and the wider landscape setting are just as important to consider as the buildings themselves

Biodiversity and Ecology.

The Council recognises that maintaining biodiversity is an essential element of sustainable development. UDP Policies CN13-23 seek to protect valuable wildlife habitats and corridors, including hedgerows, roadside verges, the natural watercourse system, water bodies, wetland areas, and woodlands against diverse forms of development.

Existing natural features such as ponds and trees can become an integral part of a site, adding character and softening the impact of development.

Where such features exist in a site, developers will be expected to design their developments around these features in a sympathetic manner. Providing buffers of unintensively managed land around key habitats will help in their protection.

Important wildlife habitats should not be removed without reasoned justification. Translocation of species and habitats should only be considered as a last resort.

It must also be ensured that the surrounding biodiversity and ecology outside a site boundary is not harmed by new residential development, for example through the effects of surface water run-off and waste management.

Applicants should also consider opportunities for habitat creation. These can include:

- Creating ponds with gently sloping bank profiles to encourage colonisation by native flora and fauna.
- Increasing tree planting with native species
- Creating hedges on banks to act as natural boundary treatments.

Protected Species

The possible presence of various species must be taken into account when considering development proposals. Protected species most likely to be affected are great crested newts in spaces to be developed either green or brownfield, and bats within existing properties. Where such protected species exist all development will be required to meet the legislative requirements as set out in PPS9, ODPM circular 06/2005 and the Habitats Regulations, as amended 2007. For further guidance see /www.naturalengland.org.uk/conservation/wildlife-management-licensing /default.html

In order for a full assessment to be made of the effects of a development on protected species, a detailed species survey may be required with a planning application or as a condition if planning permission is granted. Seasonality is very important. The time of year when a survey can be undertaken may vary according to the species. This may give rise to a lead-in time before development can begin, whilst waiting for the appropriate time to undertake the survey. To be accepted by the Council, the surveys must be undertaken:

- At the correct time of the year
- By a suitably experienced surveyor
- Using the correct methodology
- Properly and fully reported

A Checklist: Character / context

- Does the development take into account the surrounding area and in particular the character, identity and density of nearby buildings.
- Does the scheme feel like a place with a distinctive character?
- Does the scheme exploit existing buildings, landscape or topography?
- Does the development demonstrate a commitment to innovative housing design? or:
- Demonstrate the built form, materials and detailing has been informed by an understanding of the local vernacular qualities that make a significant and positive contribution to character of the wider area?

3.0 Movement

3.1 Create convenient routes

3.2 Routes and functions

3.3 Consider wider area

3.4 Walking and cycling

3.5 Provide access for everyone

3.6 Public Transport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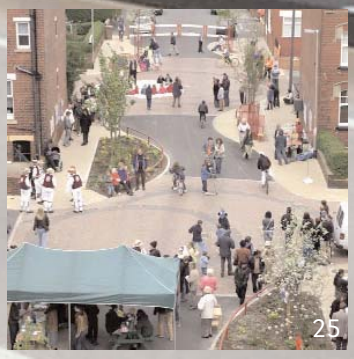
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3.0 Movement

Relevant design policies

B2A Sustainable Urban Design - UDP Alteration No. 2.

All places rely on movement. It is no use having local facilities and a good bus route if you cannot get to them easily, particularly on foot. The success or failure of new developments depends on how well connected they are to existing areas especially in terms of access to local facilities, services and amenities. Safe, adoptable roads, streets and connections must be provided to achieve good quality design.

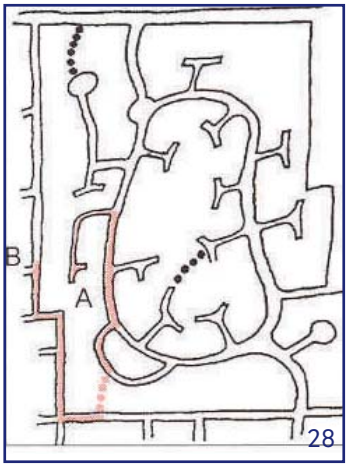
3.1 Create convenient routes

Routes should lead to where people want to go. Dead end layouts limit people's choice of how to travel, especially if they want to walk, cycle or use the bus. Public routes should be connected, short, direct, well lit, overlooked by frontages and related to desire lines. Good public transport links and easy access for pedestrians and cyclists should be inherent in developments.

Pedestrian routes should not be isolated as in the example above, they should be overlooked by properties to provide natural surveillance.

Well connected layouts offer a number of advantages, for example:

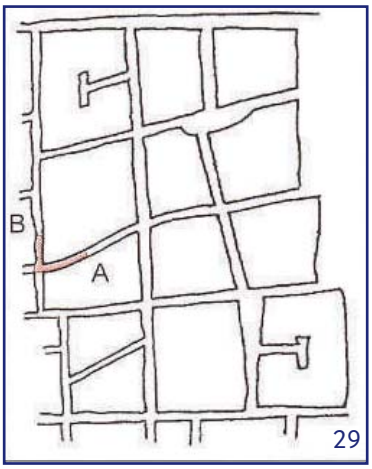
- More connections to places like shops, leisure facilities and parks make routes between places shorter thereby encouraging more people to walk and cycle
- Linked streets make it easier to find your way around and allow a greater choice of routes
- Connected streets encourage greater activity which makes people feel safe and secure whilst avoiding over concentration of traffic
- Linked streets can avoid wasted space such as turning circles for refuse vehicles.
- Linked streets allow more flexibility for change in the future.



Existing Layout A

In this layout the journey from A to B is long and convoluted. The dotted lines represent alleyways which are often introduced in cul de sac developments. These are often unsafe because they are not overlooked. The large block and cul de sac layout offers 3 alternative routes from A - B, but none are short or direct.

In this layout the similar block sizes with connected streets make the journey from A to B short and direct.



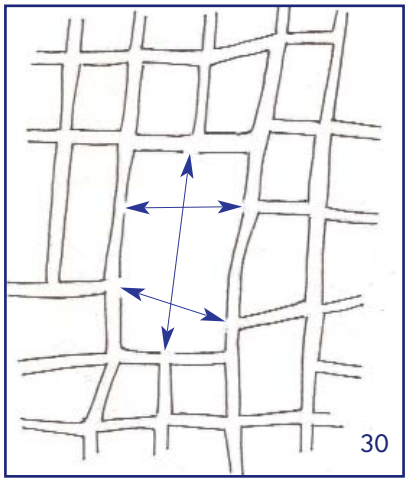
Existing Layout B

3.2 Routes and functions

The types of road and street which form the movement framework are an important factor in determining the character of a development. Traditional roads servicing residential areas have been based on estimates of vehicle capacity rather than on their overall multi-functional role. As well as disadvantaging other street users, especially pedestrians and cyclists, this has resulted in the segregation of users.

3.3 Consider the wider area

Proposals should consider a far larger area than the site itself, particularly on larger developments. New development not only needs to be well linked within the site, it should also be connected with existing routes and with the wider area. The diagram below illustrates how a site should be linked to its locality. A site should use the most connected and direct routes to the main streets and facilities (not all routes have to be for vehicular traffic).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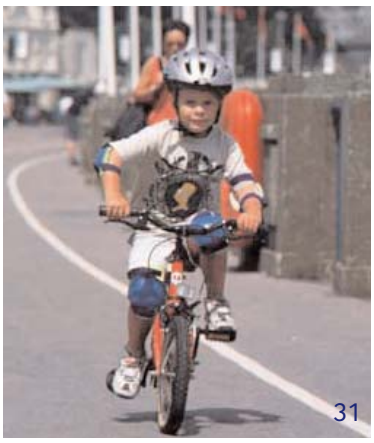
People generally use the most connected and direct routes to the main streets and facilities.

- Analysis of the wider context can determine the wider movement patterns, informing which links would be beneficial to open up such as a route to improve access to local facilities or public transport.
- A development well connected with existing routes provides more convenient routes that encourage walking and cycling. It also makes it easier for people to find their way around.

3.4 Walking and cycling

Streets should not be designed purely for the motor vehicle. They must also accommodate pedestrians and cyclists. If walking and cycling is pleasant it can help encourage more people to leave their cars. Generally, streets designed for low speeds such as those in 'Homezones' are safe for cycling and walking.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3.5 Provide access for everybody

Developments must provide for the needs of everyone including those with disabilities and those with prams and pushchairs. This includes considering the approach and access to buildings and providing convenient parking for disabled people. The use of tactile materials and colour should also be considered to assist the visually impaired.

3.6 Public Transport

When it is too far to walk or cycle the best alternative to the car within an urban area is generally the bus. The movement framework for new residential development should provide for a direct bus route, or failing that easy access to an existing route.

Putting to one side issues of subsidy, a certain critical mass of development is needed to justify a regular bus service at frequent intervals, sufficient to provide a real alternative to the car. This will vary with context and route characteristics, but assuming stops at every 200-300 metres, ideally this means densities above 40 dwellings per hectare, preferably with higher densities around the stops. The planning of the routes and location of stops are also crucial. Even if there are potentially enough people in an area to make a service viable it still needs to be attractive. What matters most is:

- routes which follow principal roads or streets through the heart of the area
- stops located where activity is concentrated, near shops or a road junction
- clear walking routes to the stops, including road crossings.

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New urban extensions in Harlem, Netherlands, served by a guided bus superoute. The route has journey generating uses at each end and an established residential area in between. This generates a two-way peak flow and off-peak usage.

B Checklist: Movement

- Do the buildings and layout make it easy to find your way around?
- Does the development establish a legible environment that is easy to move and find your way around, including gateway features and identifiable nodes?
- Are the streets pedestrian, cycle and vehicle friendly?
- Does the scheme integrate with existing roads, paths and surrounding development?
- Are public spaces and pedestrian routes overlooked and do they feel safe?
- Does the proposed development encourage access by all forms of travel including walking, cycling and public transport to local facilities?
- Does the development have easy access to public transport?

4.0 Mix and neighbourhood

4.1 Density

4.2 Mix of uses

4.3 Mix of house types

4.4 Sub-divide development sites

4.5 Supporting the local community

4.6 Providing a focal space


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4.0 Mix and neighbourhood

New housing development should address the needs of the whole community. There is a need to avoid building new housing which has few facilities and a limited choice of built form and tenure. The main aim should be to build accessible places that offer a choice of housing and complementary activities nearby.

4.1 Density

PPS3 encourages residential densities greater than 30 dwellings per hectare. The North East's adopted Regional Spatial Strategy and the City Council's Draft Core Strategy suggest overall densities of 30 -50 dwellings per hectare, with consideration given to higher densities in locations close to the City Centre and public transport routes. Densities lower than 30 dwellings per hectare may be considered acceptable where providing executive dwellings or where necessary to protect an area's characteristics. While it's useful to have such densities as a guide, the issue of density is complex. There are other factors which need to be considered such as the form of development, the catchment population, the degree of connectivity and the measure of density. Two key themes are context and character (see chapter 2).

Some sites and locations will be more suited to high density development than others. In such locations higher densities should be encouraged. However where a higher density would lead to the loss of buildings and landscape that reinforce the character of an area, such densities may not be appropriate.


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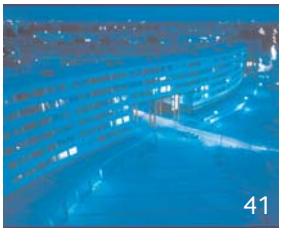
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High density development can help sustain a high number and range of local services. High density does not imply sacrificing design quality as these examples illustrate

In practice it should be possible to achieve densities above 30 dwellings per hectare whilst still allowing for a variety of built forms which suit a particular site context. It should be noted that high quality 'executive type' housing can be provided at higher densities and does not necessarily imply large detached dwellings. The key issue regarding density is providing the best design solution for the site whilst striking a balance between the efficient use of the land and ensuring new development does not detract from the character of the surrounding area.

- High density forms are not appropriate everywhere and PPS3 recognises that densities lower than 30 per hectare, if properly justified, may be appropriate in certain circumstances
- Merely upping the density of suburban forms and layouts by squeezing standard house types closer together and reducing space is not an appropriate solution

Illustrated below and on the following pages are two award winning schemes, each of five mews houses, on similar backland sites. Although both exploit the same basic housing typology, there are instructive differences in approach, stemming logically from their varying site orientation and dwelling size. Highly compact planning means that virtually no space is wasted on circulation.

At an equivalent density of 83 dwellings per hectare Crown Place Mews represents a model approach to a difficult site for family housing - one with important messages about achieving the government's target of 60% brownfield usage.


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Crown Place, Camden, London

At the equivalent of 128 dwellings per hectare, Mildmay Grove is a car-free scheme that exploits every scrap of space available. This is an urban intervention of considerable ingenuity and, like Crown Place Mews, it demonstrates that design skills of a very high order are required if the potential of similar derelict sites in city centres are to be properly exploited.

Mildmay Grove, Camden, London

4.2 Mix the uses

Mixed neighbourhoods with a range of different housing types, uses and people are important in any new development because they can:

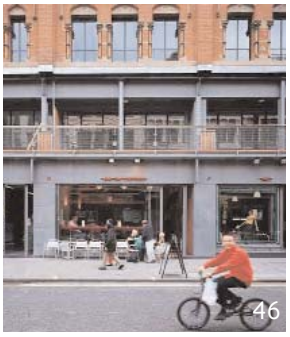
- Lead to a better balance of demand for community services and facilities
- Improve surveillance of an area with people coming and going throughout the day and evening
- Provide opportunities for 'lifetime communities' where people can move home without leaving an area

Living over shops - Example of mixed use Hetton, Sunderland.

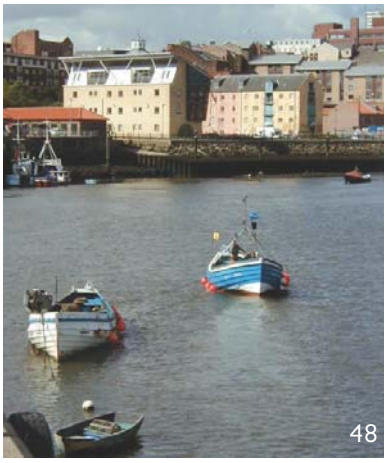
People should have easy access to facilities such as shops, leisure and work opportunities. The benefits of mixed use include:

- The opportunity to walk, cycle or use public transport rather than drive
- People are able to work in the area, and support a good range of facilities
- Opportunities to address shortfalls in current provision of uses and facilities

Mixed use developments can assist in achieving high densities and provide more sustainable patterns of development that support a variety of different groups of people. For example, the Old Sunderland Riverside Area comprises workshops, offices, restaurants and residential accommodation.



Smithfield Warehouse Conversion, Manchester. Mixed use block of apartments and offices with shops on the ground floor.



Mixed use development, Old Sunderland Riverside.

4.3 Mix of house types

Larger development proposals should consider a mix of housing type and tenure providing a design approach which is consistent with the positive aspects of local character. A variety of housing type and tenure which is of the same quality offers the opportunity to build communities which avoid social exclusion and stigma, making places more physically and socially accessible.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These examples show how high quality contemporary and traditional design can be used to add interest and diversity to a scheme.


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4.4 Sub-divide development sites

When developing larger sites consideration should be given to subdividing the site into narrower development plots to be designed and/or developed individually.

- Narrow plots can add a greater variety of uses and entrances encouraging more activity and diversity
- Small plots also help to avoid blank walls when stepping up a slope

4.5 Supporting the local community

Consideration of the existing facilities and services which are close to the site is an important starting point in considering the need for community facilities and services in an area and whether it is appropriate to provide these as part of an overall development of the site. The analysis of local services will help build up a clear picture of what services and facilities are readily accessible. Any new facilities and services should build on and enhance the range and quality of facilities available.


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Borneo Houses, Amsterdam, Netherlands

Meeting a quantitative standard does not guarantee a quality result. In some cases it may be more beneficial to improve a nearby existing facility or provide a smaller space of an exceptional quality and usefulness. Occasionally a larger space than the standard may be beneficial. Creative solutions may also be appropriate such as designing the street as amenity space.

C Checklist: Density,diversity and community

- What is the density of the development?
- Does it meet the density requirements of a development brief / PPS 3?
- Is there an accommodation mix that reflects the needs and aspirations of the local community?
- Is there a tenure and accommodation mix that reflects the needs of the local community?
- Does the development create a mixed neighbourhood with a range of homes suitable for people of all ages and economic status?
- How successfully have the different housing types been integrated in the overall development?

4.6 Providing a focal space

In larger developments it may be necessary to provide high quality focal spaces such as squares and parks to complement new residential areas. New residential developments should establish a sequence of high quality and connected public realm spaces and focal points.

Small communal garden, City of Tomorrow, Malmo, Sweden


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Courtyard landscaped area for residents at the renovated Brittannia Mills, Manchester provides visual and recreational amenity space.


54

Open space at the heart of a community provides a sense of identity and a safe place to play.


55 Ashbrooke, Sunderland.


56 Thorley Lane, Bishop's Stortford.


57
Landscaping can improve the setting of new residential development.


58

Parks can enhance the quality of the living environment and are a valuable recreation facility - Thames Barrier Park, London.

5.0 Layout and urban form

5.1 Built form

5.2 Block structure

5.3 Block dimensions

5.4 Access to back of block areas

5.5 Design for corners

5.6 Setbacks

5.7 Building heights

5.8 Design of tall buildings

5.9 Passive solar design


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5.0 Layout and urban form

Relevant design policies

B2A	Sustainable Urban Design - UDP Alteration No 2
B2B	Tall Buildings - UDP Alteration No 2

Getting the right structure of any residential environment is critical in ensuring success. The structure of a residential area is concerned with the arrangements and inter-relationships of streets, homes, gardens, open space and parking.

5.1 Built form

The City Council will seek to achieve the highest possible standard of design quality for all new residential development.

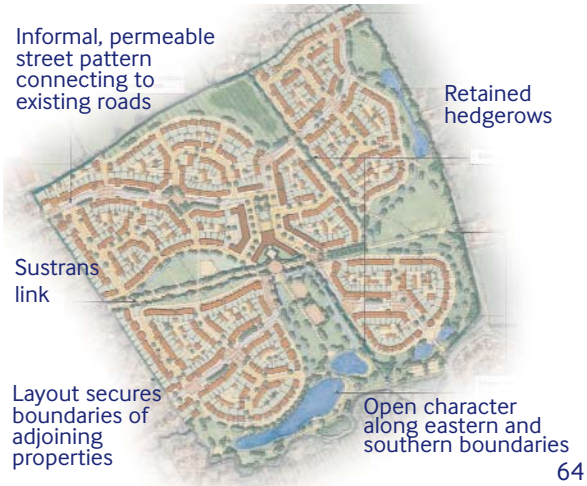
All new residential development shall:

- Respond to and where appropriate reinforce the scale, form, character and pattern of townscape which make a positive contribution to the area
- Demonstrate a high level of architectural ambition
- Be constructed in high quality, durable and aesthetically pleasing building materials
- Be constructed using efficient building techniques and using materials from sustainable sources
- Be accessible, easy to move around, flexible, adaptable and comfortable, attracting a favourable response from all its users
- Provide public spaces and routes that are attractive, safe, uncluttered and work effectively for all
- Promote accessibility by making places that connect with each other and are easy to move through
- Extend and bind with the townscape, where appropriate.

5.2 Block structure

Many of the best residential environments display a clearly defined and coherent structure. This is characterised by a framework of interconnected routes which define 'blocks' of housing. The 'blocks' can be viewed at different levels. For example a large block would be defined by the main movement routes. This would then be subdivided by a network of local streets.

Urban Extension - Lambton Cokeworks, Sunderland, creating a new block structure



Osbaldwick, York. Joseph Rowntree Foundation. Example of new sustainable urban extension.

The urban form of Sunderland varies considerably with a wide variety of building types arranged around different block structures. The plans and aerial photographs below illustrate some of the different block structures.

Ashbrooke, Regular Blocks

Easington, Lane Linear Settlement

Fulwell, Irregular Blocks

Newbottle, Irregular Linear Settlement

Seaburn, Regular Blocks

Roker, Regular Blocks

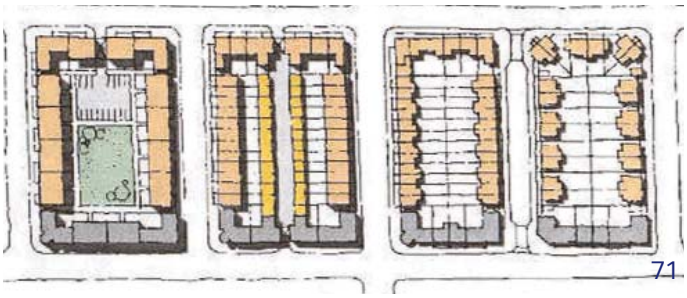
Block size is determined by the building types that occupy it. Where buildings are detached, the size of the building in conjunction with the desired set back will give a minimum plot size and the block can then be subdivided accordingly. Some building types may be suited to specific block types for example terraced or row houses are better suited to narrow long blocks. The spaces inside or within a block are particularly important. They may form a garden or may be shared between all the buildings in a block, for example as a car park. These outdoor spaces are essential to the functioning of the buildings as they provide light as well as usable space. The size of the block is a simple addition of the typical depth of the buildings plus the minimum size of the desired spaces around them.

The 'perimeter block' is one of the more common block structures found within the city. A perimeter block is essentially derived from an arrangement which makes a clear and consistent distinction between private space at the back of the house and public space at the front, with all dwellings facing the street. Whilst houses within a perimeter block may display common characteristics, this is not essential. In some cases a variety of different buildings and uses can create a lively and positive residential environment. In particular perimeter blocks can provide for:

- Good connections to the surrounding area
- Efficient use of land
- A clear distinction between the public and private realm

- A legible environment
- Good natural surveillance of the street with windows and doors facing outwards

The perimeter block approach is useful when considering new residential development. It should be stressed that there are a number of ways in which new dwellings can be arranged to create a structured development. Many successful developments usually have a common theme including an ordered and consistent layout of properties providing interconnecting blocks of development. The plans below illustrate the range of ways in which a successful block structure can be created.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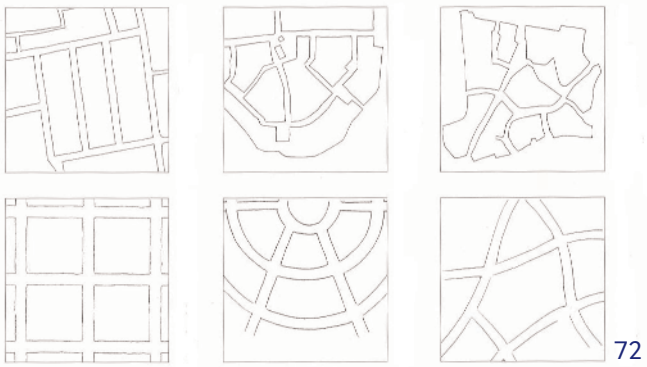
Perimeter blocks can work at different scales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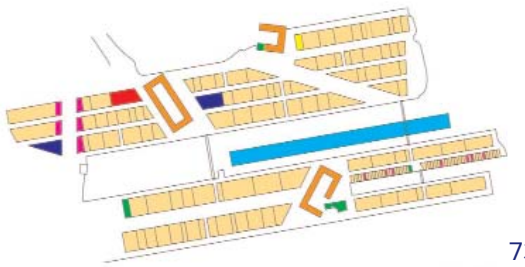
Blocks can be arranged in a variety of different ways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Java Eiland, Amsterdam. Creating a new block structure in a riverside setting.

New residential development should reinforce and respond to the built form qualities that make a positive contribution to the character and appearance of an area. Particular attention should be paid to how new development will reinforce an established block structure, plot size and quality of street enclosure. In areas where there is no distinctive or established urban form new development should seek to create a legible block structure which creates a network of connected streets.


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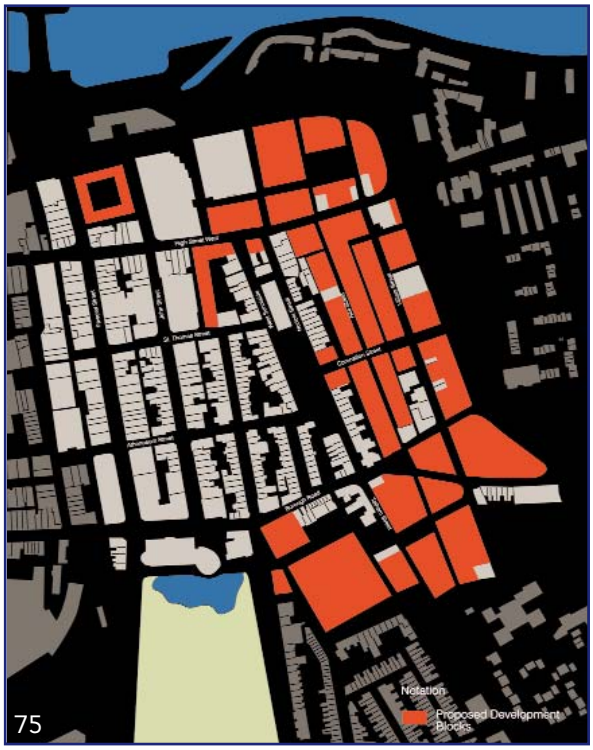
New Hall, Harlow, England. Creating a new block structure on a greenfield development.

D Checklist: Built form /design and construction / layout

- Do buildings exhibit architectural quality?
- Are the built form, materials and detailing informed by an understanding of the local vernacular qualities that make a significant and positive contribution to the character of the wider area?
- Are streets defined by a well-structured building layout with continuous frontages to streets and a varied sense of street enclosure?
- Is the design specific to the scheme?
- Do buildings or spaces out perform statutory minima, such as Building Regulations?
- Has the scheme made use of advances in construction or technology that enhance its performance, quality and attractiveness?
- Do internal spaces and layout allow for adaptation, conversion or extension?



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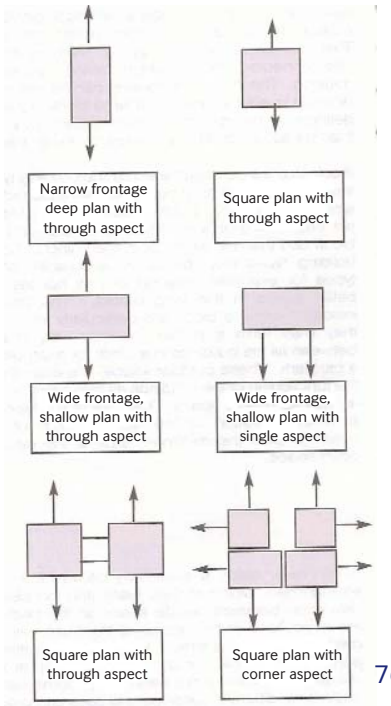
Sunniside, Sunderland. Re-establishing the historic block structure.

The arrangement of dwellings within a block structure and their relationship to the street and to other building elements are influenced by the plan form of the dwellings themselves (for example, wide frontage/shallow plan; narrow frontage/deep plan; or square plan). The orientation of windows is also an important consideration particularly in relation to block corners.



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Different dwelling plans

5.3 Block dimensions

As mentioned above the size of a block will be determined by the building types occupying it. There are no specific rules for the optimum size of a block however key considerations should include:

- Balancing land efficiency with the need to provide convenient pedestrian routes through an area
- Traffic management in controlling vehicle speeds and discouraging rat runs
- The spatial needs of activities which are to be accommodated within the block.

5.4 Access to back of block areas

A key issue which should be addressed in the design of residential blocks is the level of public access provided within the block. There are often tensions here which can be difficult to resolve for example balancing the need for security with the requirements of access and servicing dwellings. The block structures described above help illustrate the tensions. For example enclosed blocks to the rear of dwellings give security and provide space for gardens but this means parking and servicing has to be accommodated to the front. Rear service alleys often associated with thin blocks can provide access to rear gardens and enable service vehicles to remove bins etc from the street. However they also raise serious issues in terms of security. Again there are no specific rules regarding access to the back of block areas. However it is important to try and ensure that safety and security is not compromised by allowing access for servicing.

5.5 Design for corners

Corners are often forgotten in new residential development but if treated well they can help increase natural surveillance and maintain a continuity of frontage. A common problem associated with terraced housing is blank gable ends which create an area that is not overlooked and which can become a focus of anti-social activity.

Modern example of good corner treatment in a residential environment - Murray Grove, Hackney.

Example of high quality contemporary design which gives prominence to the corner, - Focus Foyer, Birmingham

5.6 Setbacks

The setback of a building relates to the distance between the building and the pavement and road. Setbacks often take the form of small front gardens. They are important in helping define the character of a street. They also determine the level of privacy that ground floor rooms have. It is common to find setbacks in many successful residential streets. Indeed even a small setback of 1 or 2 metres can be a positive visual feature and can accommodate bins or cycle storage.

A zero setback on an apartment block (Albany, Washington)

A small front garden provides privacy and a buffer to the street. (Ashbrooke, Sunderland)

5.7 Building heights

Building heights should relate to the forms and proportions of the surrounding buildings. In Sunderland many residential areas are characterised by terraced houses of 2 and 2.5 storeys high. However this is not to say that tall buildings do not have a role to play especially in visually prominent locations or focal points. As a general rule:

- The character and function of the individual buildings and their relationship to the street or public spaces should determine building heights
- Buildings can be arranged to assist in the variation of building height, creating visual interest and breaking up the overall mass of the development
- Building silhouettes and profiles can also have an important effect therefore careful consideration should be given to secondary elements such as chimneys.

5.8 Design of tall buildings

Cities and their skylines evolve. In the right place, tall buildings can make positive contributions to city life. They can be first rate works of architecture in their own right. Individually or in groups they affect the image and identity of a city as a whole. In the right place they can serve as beacons of regeneration, and stimulate further investment. The design and construction of innovative tall buildings can also serve to extend the frontiers of building and environmental technology.

However by virtue of their size and prominence, such buildings can also harm the qualities that people value about a place. Where tall buildings have proved unpopular, this has generally been for specific rather than abstract or general reasons. In many cases one of the principal failings is that many were designed with a lack of appreciation or understanding of the context in which they were to sit.

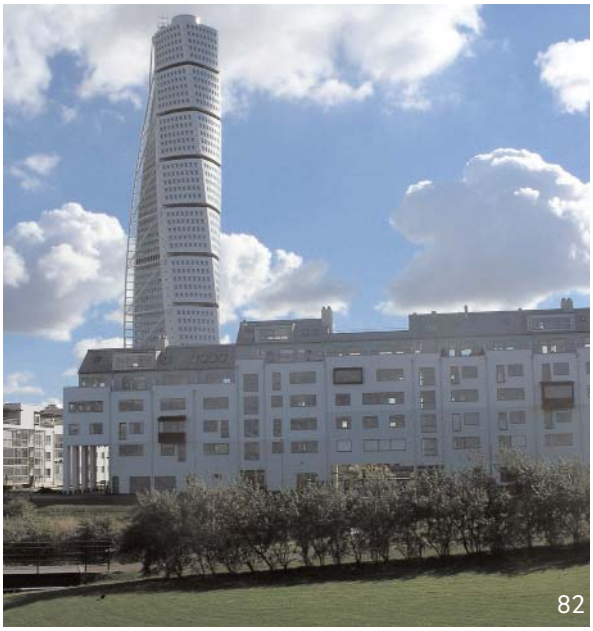
Many of the arguments used to support proposals for new tall buildings, including design quality, were also put forward in favour of examples which are now regretted. That is why projects which come forward will be subject to very close scrutiny and the highest design standards should be applied.

Sunderland has few tall buildings but recent developer interest along the river corridor has led to proposals for a series of buildings that are taller and larger in scale than the established built form. It is not necessary to define rigorously what is and is not a tall building. It is clearly the case that a ten storey building in a mainly two storey neighbourhood will be thought of as tall by those affected, whereas in a city centre it may not.

Tall buildings that respond to context and are appropriate in terms of scale and height can make a positive contribution to townscape.

Applicants seeking planning permission for tall buildings should ensure that the following issues are addressed:

- The relationship to context, including natural topography, scale, height, urban grain, Streetscape and built form, and the effect on the skyline
- The architectural quality of the building including its scale, form, massing, proportion and silhouette, facing materials and relationship to other structures
- Contribution made to external and internal public spaces and facilities in the area, including provision of a mix of uses
- The contribution made to the permeability of a site and the wider area; opportunities to offer improved linkages on foot and, where appropriate, the opening up or effective closure of views to improve legibility of the city
- The sustainability of any proposal



Tall buildings that respond to context and are appropriate in terms of scale and height can make a positive contribution to townscape.

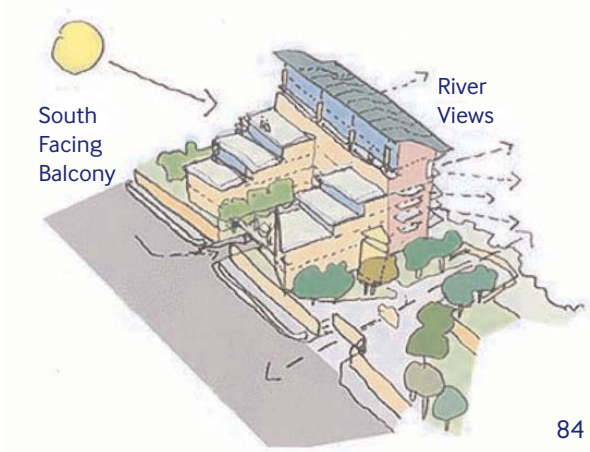
Dusseldorf Germany. Tall buildings with an unusual block shape create a unique Riverside Development.

5.9 Passive solar design

The consideration of layout and urban form is central to the development of passive solar housing. Designs are informed by the site's relationship with the local climate and natural environment.

Passive Solar Design takes into account factors such as wind, topography and natural vegetation and considers possibilities for cooling, overshadow and natural shelter. Building designs and site layouts are intended to harness the sun's energy to provide natural means of heating, cooling and lighting. Passive solar design can reduce energy demand and maximise energy efficiency.

With increasing importance placed on reducing carbon emissions from housing, more detailed guidance on passive solar design and other sustainable building techniques can be found in the Energy Efficiency and Resources chapter 8 page 73.



Buildings and layouts should be designed to maximise the opportunities and potential for solar radiation. In this example roof top gardens are all south facing, optimising solar gain.

5.10 Backland Development

Backland is land which lies behind existing properties which front one or more roads. It may be land comprising large garden areas, neglected land, land in other uses or a mixture of these.

"Tandem Development" usually refers to the building of one house behind the other (usually in the rear garden) sharing a single access.

Backland development refers to the development of one or more houses on an area of land to the rear of surrounding properties, usually with their own access.

The existence of large gardens does not necessarily point to scope for development. The size and appearance of gardens and other open land can be of great importance to the character of a neighbourhood which should be preserved. This is particularly true for example in Ashbrooke and The Cedars where it is important to maintain the established character of these areas.

Backland development can present a range of planning problems. These centre around access, the impact on existing development and the pressure for development in a piecemeal manner. Such development is generally considered to be undesirable, as it produces uncoordinated development which can result in difficult relationships between development on adjacent sites within the backland. A coordinated approach to the development of such areas where more than one plot is available will normally be required.

Applications for backland or tandem development will be assessed on their own merits and assessment of issues specific to that particular site.

Where comprehensive development of a site would be clearly preferable, applications for development of only part of a backland area will be refused on the grounds of undesirable piecemeal development.

The relationship between the new development and existing houses should conform to the space, light, outlook and privacy guidelines set out in Chapter 10 of this Guide.

Any proposed new plot within the garden of an existing property or to the rear must:

- Be of an appropriate scale, size and shape to allow development to be in a manner in keeping with existing properties in the locality and to reflect the character of the surrounding area
- Include a meaningful area of private (i.e. rear) garden ground, which is comparable to the size of the proposed dwelling
- Have adequate road frontages including unshared vehicular access to each plot
- Have adequate car parking and vehicle access arrangements in compliance with the Council's Highway Standards
- Be capable of development without significant loss or damage to trees

Plots must not:

- Deprive an existing house of adequate and reasonable private garden space
- Be heavily wooded
- Have an adverse impact on the amenity of the surrounding properties in terms of noise and disturbance created by access and parking arrangements or through overlooking and/or overshadowing of an existing property

Any proposed building(s) must:

- Be of a form and scale appropriate to the existing character and amenity of the area
- Have adequate distance between dwellings

Buildings, which materially infringe on the daylight or privacy of the adjacent properties, will be resisted by the Council.

6.0 Space around the home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6.0 Space around the home

Relevant design policies

B2A	Sustainable Urban Design - UDP Alteration No 2

6.1 Designing attractive streets and spaces

Residential streets and the public spaces between buildings should include a public realm strategy in their design to make them safe, attractive and usable. Public open space is one of the key elements of good housing layout. Well designed open spaces are the easiest way to create variety and contrast, and they provide a visual structure for the layout. With proper maintenance arrangements they can also be a valuable resource for passive recreation and children's informal play, as well as creating wildlife corridors and contributing to habitat conservation.

General aspects to consider when incorporating public space within a residential development include:

- Local character; existing landscape features; the size of space; location and prominence; connections to the wider area; circulation patterns and desire lines; variety of uses surrounding the space; ratio of building height to width; and design of surrounding buildings

Good public space enhances residential development

Poor quality open space benefits no one

- Good public space enhances the city's image, provides a valuable amenity and improves the setting of surrounding buildings. It requires careful design and thought

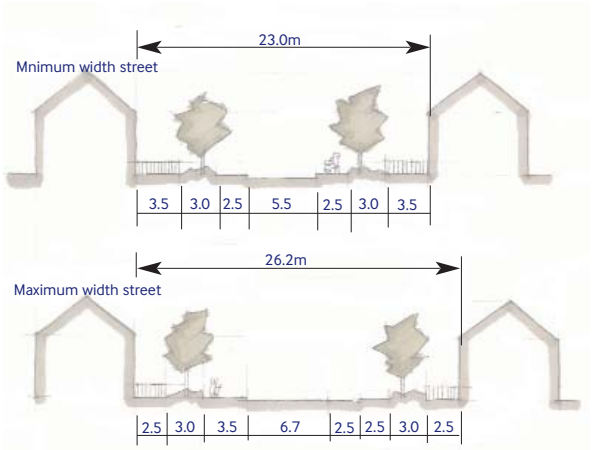
- Good quality boundary treatment contributes to the visual character of an area, provides a good transition between public and private areas and offers security and a defensible space

6.2 The street in section

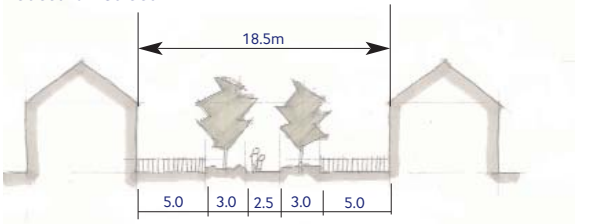
Streets are three dimensional spaces but one dimension is typically dominant - the length. Streets are generally formed by rows of buildings which face onto them. Street widths can also have a dominant effect on the character of an area.

There are no particular rules governing exactly how wide a street should be as a variety of widths can work depending on the type and scale of buildings on either side. Frequently the design of a residential street is based around the requirements of cars, service vehicles and utilities with little attention given to pedestrians or objects which can enliven the street, such as trees and street furniture. The most important consideration is that the space between buildings is considered in relation to the scale of dwellings and activities taking place in the street.

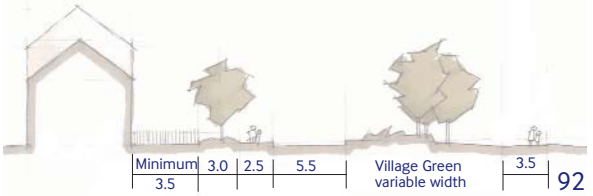
Green Character Access Street



Pedestrian Street



Rural Edge - Streets and Footways



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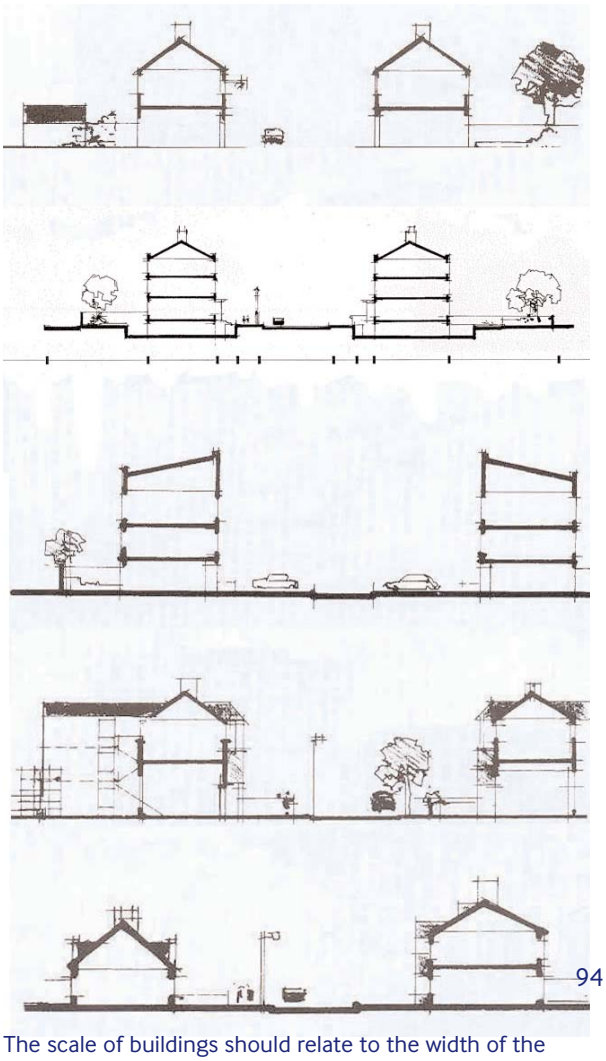
Extract from City of Sunderland S.P.G. Easington Lane Development Framework street design code. Different street widths have an important effect on the character of a street.

In this example the scale of residential dwellings is appropriate to street width.



The scale of buildings should relate to the width of the street

6.3 Defining the public and private realm

Most residential environments comprise a mix of public, private and communal spaces. There should be a clear definition of the public and private realm. Building fronts should overlook public space, including streets and parks. In many cases public space in front of dwellings should also be defined by low front boundary walls/hedging rather than an open front garden area (exact boundary treatment will often be set by the context).

Houses backing onto public space detracts from the public realm and can compromise security and privacy

A clear definition between public and private space is a fundamental tenet of good urbanism

Backs should be private and face other backs within a development block allowing secure spaces such as courtyards or gardens to be formed. Backing onto public space should be avoided. Generally:

- Fronts facing public space provide natural surveillance so streets feel safer
- Fronts improve the visual character of the public realm
- Backs facing backs within a block increase security and privacy and can provide a quiet amenity space
- Low front walls provide definition to the public realm as well as defensible space.

In the past children's play provision on development sites has caused problems of anti social behaviour for nearby residents and resulted in the request for removal of the equipment. As a result, where possible, council policy now requires financial contributions from developers to upgrades existing off - site formal equipped children's play areas, which allows for a more comprehensive, better managed and useable play areas.

Nevertheless on larger housing developments it may be appropriate to provide equipped play areas. On such sites equipped play areas should be established before adjoining dwellings are occupied. Amenity and playspace should be well integrated with the overall housing layout and not positioned on land which is left over after other elements of the layout have been determined.

Century Court, Cheltenham. High quality amenity open space which is overlooked by adjoining properties.

6.4 Integrating movement space

Creating places which are not dominated by the car requires careful and innovative solutions. It is important to promote a pedestrian friendly environment that provides safe, functional and attractive walking routes free from barriers. However this should not be at the expense of allowing vehicular access. Consideration of how to accommodate both forms of movement should start at the bottom of the street hierarchy e.g. street corners, cross roads and T-junctions, the places where pedestrians want to cross roads on foot. The diagram below shows how, by creating small courtyards or informal squares at junctions without kerbs delineating the route, vehicular traffic is forced to slow down and pass with care.

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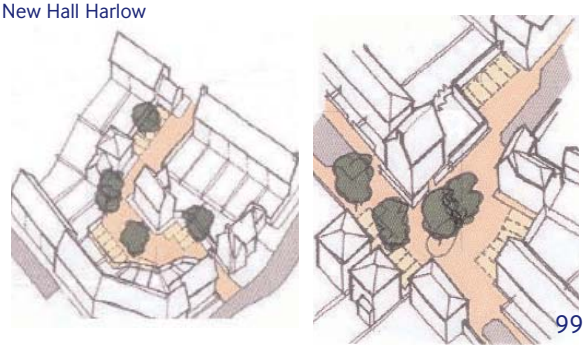
Public realm space can fulfil a number of functions including parking, areas for play and public amenity space.

This chapter should be read in conjunction with Manual for Streets (Dft 2007) which replaces DB32 and People, Places and Movement. One of the main principles of Manual for Streets is the creation of a sense of a place so that a layout reflects all its functions, not only that of moving vehicles.

New Hall Harlow



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Above - parking integrated within a mews. On each mews court a minimum of two dwellings provide surveillance to all aspects.

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Small courtyard at junction creates environment, which forces vehicles to slow down.

6.5 Home Zones

A homezone is a residential street where people come before vehicles. The design provides space for motor vehicles, but fully accommodates the wider needs of residents. This is achieved by adopting approaches to street design, landscaping and highway engineering that control how vehicles move without restricting the number of vehicular movements. Home Zones were first developed in the Netherlands where they were referred to as 'A living Street'.

The benefits of homezones include:

- Increased social activity
- Wider ranging activity and children's play
- More efficient use of carriageway space
- A more attractive and visually diverse street scene
- Increasing levels of communication between drivers and pedestrians
- Reduced driving speeds
- Greater levels of safety

In a homezone, people and vehicles share what would have formerly been carriageway and pavement. If well designed, maximum vehicle speed is only a little faster than walking pace. This means that other things can be introduced into the street, for example areas for children to play, larger gardens or planting (including street trees), cycle parking and seats where residents can meet. Home Zones can be designated under the terms of section 268 of the Transport Act.

For further information see:

- 'Home Zones Planning and Design' (October 2001)
- 'Home Zones - Public Participation' (August 2002)
- 'Home Zone Design Guidelines' - Institute of Highways Incorporated Engineers' (June 2002).

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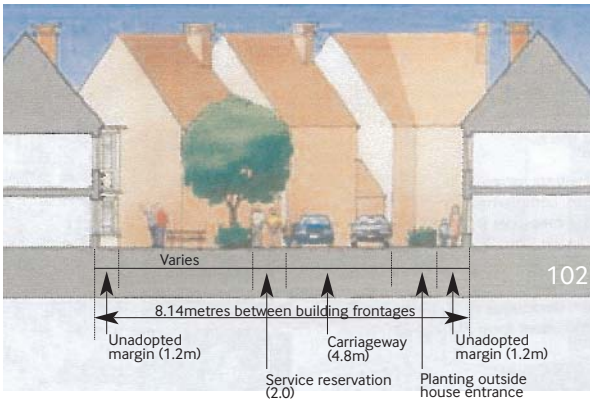
Perspective of typical Home Zone



Typical section through Home Zone

6.6 Parking

One of the most difficult balancing acts is between the need for convenient safe parking and the need to create a coherent set of areas between buildings where space is not wasted and the locality is not broken up and shapeless.

Car parking should not dominate developments. The manner and level of car parking will be judged on the merits of each situation and context. Car parking should be conveniently located where it can be supervised, in an area that is well lit and has good natural surveillance from the main elevations of nearby buildings.

Where and how cars are parked is crucial to the quality of a housing development. Car owners normally want to be able to park as close to their homes as possible, in locations where they can see their car. In meeting this aspiration all too often new developments become a car dominated environment with 'car platforms' in front of houses or integral garages facing the street. This is not to say that such solutions might not be appropriate in some cases.

In residential areas a very careful balance has to be struck between the expectations of car owners - in particular the desire to park as near to their houses as possible - and the need to maintain character.

New residential development should provide car parking which takes into account the needs of those who will be living in associated houses. Developers will be expected to provide an appropriate combination of parking solutions. These may include a combination of on street-parking and communal parking (courtyard, in curtilage, basement and underground). Parking should be well integrated and not treated as an afterthought.

All new residential developments will be required to:

- Avoid the establishment of an environment that is dominated by parked vehicles. Parking on hardstanding areas to the front of dwellings and other buildings or garages fronting the street should be avoided. Preferred options include parking to the rear of individual dwellings, within shared courtyard areas to the rear of individual dwellings, or within high quality landscaped areas within the public realm
- Ensure that openings within street frontages of new developments are kept to a minimum in order to retain continuity of built form
- Avoid integral garages fronting the street. In- - curtilage parking and integral garages may be acceptable on wider frontage housing if a reasonable area for soft landscaping is provided.

Parking set in a landscaped environment

E Checklist: Layout / Parking / Public realm

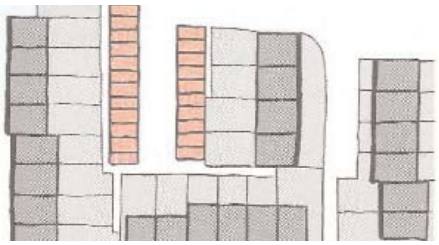
- Does the building layout take priority over the roads and car parking, so that highways do not dominate?
- Does the development establish a sequence of high quality and connected public realm spaces, focal points and routes?
- Does the development establish a public realm which is not dominated by parked vehicles and includes the provision of imaginative landscaped areas and routes for use of residents and visitors?
- Is the car parking well integrated and situated so it does not distract from the street scene?
- Has parking been provided within courtyard areas to the rear of dwellings or in high quality landscaped areas within the public realm?
- Does the development make a positive response to the landform of the site, taking into account significant changes in levels?
- Has the use of house types with integral garages and areas of hard-standing for parked vehicles that front the street been avoided?
- Is the amount of car parking appropriate?
- If there is on street parking, is it broken up and interrupted at regular intervals with landscaping?
- Is there any conflict between pedestrians and proposed car parking?

6.7 Basement and courtyard parking

Whilst basement or courtyard parking can avoid dominating the frontage with parked cars, it should be secure, well designed and properly managed. In the 1960s and 1970s communal parking gained a poor reputation because it was usually located away from dwellings and therefore lacked any natural surveillance (see example below). But more recently it has been shown that secure rear courtyards can be a useful addition to dedicated spaces in front of dwellings. Courtyards which work well will exhibit three common characteristics:

- They are not car parks but places which have parking in them
- They are overlooked by adjoining houses, or by buildings entered from the parking area
- They normally include at most ten parking spaces. If there are more spaces the courtyard layout should be broken up.

However in the case of family dwellings there should be good justification for rear courtyard parking, as it can be difficult to achieve a satisfactory result.



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A typical 1970's development with parking totally segregated from housing and not overlooked.

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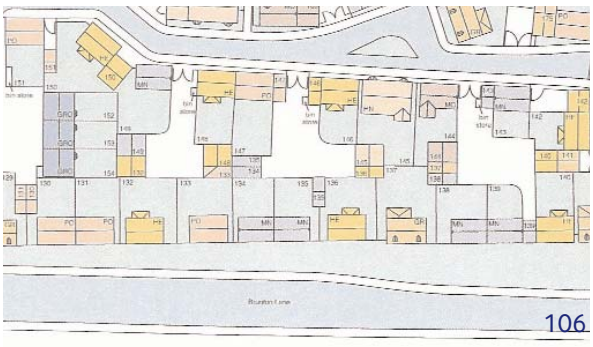


Great North Park, Newcastle. parking set behind properties.

Parking concealed to the rear of dwellings through small alleyways.

6.8 On street parking

Much traditional terraced housing accommodates car parking with on-street parking. Although such streets are not designed for the car they can be adapted to provide convenient, safe and efficient parking. In new housing developments consideration should be given to on street parking solutions. For example on-street parking bays can be incorporated into the overall width of the street, demarcated by paving, trees and planting.

There are two main types of on-street parking:

1. Parallel parking against the kerb

2. Angled parking bays. These have a greater capacity but can be dangerous because cars reverse onto the road. This type of parking is only suitable for streets with low traffic speeds

On street parking can work for several reasons:

- It is convenient and extremely efficient in terms of space requirement
- It is well overlooked from surrounding houses
- It maintains street activity and can have a traffic calming effect
- These advantages rely on streets that are well designed to incorporate parking.

With large areas of parking it is particularly important to ensure quality landscaping to reduce the impact of cars and create attractive spaces.

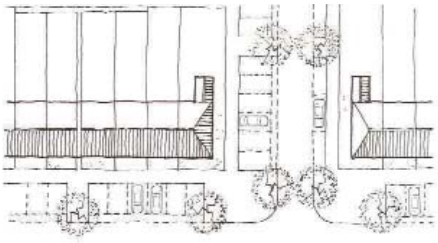
6.9 In-curtilage parking

Car owners want to be able to park near their own homes and to be able to see their car. Meeting this aspiration often results in a car dominated environment with car platforms in front of houses or integral garages facing the street. This has a number of negative consequences including:

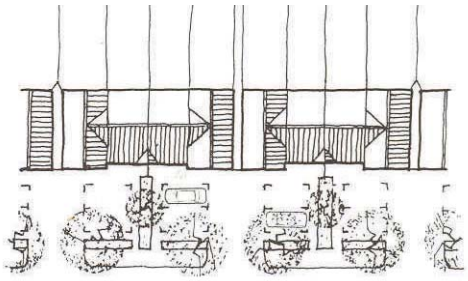
- Eliminating front garden space and the opportunities for landscape and planting
- Blurring the distinction between public and private space by preventing traditional boundary treatments
- Removing the opportunity to park on the street
- Introducing potential conflicts between pedestrians and cars which have to cross the footway to park

In addition, dedicating car parking spaces to individual dwellings does not provide the same flexibility towards variation in car ownership between households as communal arrangements do. (*'By Design: Better Places to Live' A Companion Guide to PPG3.*)

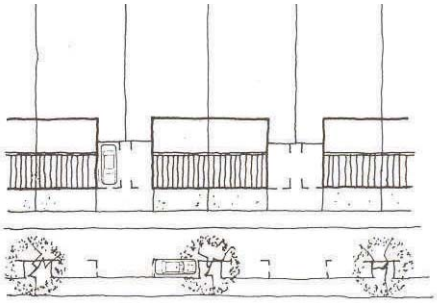
Abode, New Hall, Harlow. Parking located in landscaped courtyard to the rear of properities.



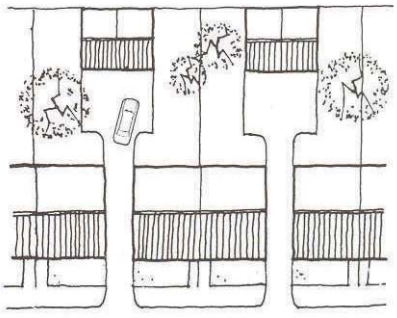
On-street parking between pavement build outs.



Frontage parking with shared drives - useful where it is desirable to limit pavement crossovers eg. fronting main roads or to avoid existing trees.



Parking to the side can allow the housing to be set forward, containing the street.



A shared drive to garaging at the rear allows the housing to be set forward and closely spaced, maintaining street enclosure.

For further guidance on parking see 'Manual for Streets' (DfT 2007) and 'Car Parking What Works Where' (English Partnerships 2006)

6.10 Landscaping

Existing trees, hedgerows and other natural features that make a positive contribution to the area should be incorporated into the layout concept as part of the strategic open space and planting that forms the structure of the design. Wherever possible these features should be in the public realm and related to footpaths, cycleways and open space areas.

Before considering what open space should be provided it is necessary to assess the quality of existing provision in the wider context (particularly for a larger site or area) and use this as the basis for deciding on the elements of a proposed open space hierarchy.

Often the provision of open space is determined by standards and involves a fixed percentage. Whilst this may ensure that open space is provided it does not guarantee high quality open spaces. There needs to be adequate green spaces in residential environments to take a pleasant stroll, have a kickabout and provide habitats for wildlife to thrive.

Park Rock, Castle Boulevard, Nottingham.

Queen Elizabeth Park, Guildford.

6.11 Public access to open space

It is important that space for children's play, nature conservation and sports are provided within walking distance. Local parks should ideally be within 3-5 minutes (250 - 400m) walk of the majority of homes. It is also important that ease of access is considered. For example the needs of people with restricted mobility must also be considered as an integral part of the design process.

Chirton Dene, North Shields

F Public open space / facilities

- What is the amenity open space provision within the development?
- Is the open space provided in an appropriate location?
- Does it benefit local residents and does it properly relate to the surrounding dwellings?
- Is the public space well designed and does it have suitable management arrangements in place? Is it well maintained?
- Do the dwellings relate to open space in terms of their frontage and scale?
- Does the development provide for (or is it close to) community facilities, such as a school, parks, play areas, shops, pubs or cafes?
- Are amenity and play areas positioned so that they are overlooked by nearby houses?

6.12 Playspace

Play areas for all age groups should be considered within amenity areas ranging from equipment suitable for toddlers to formal provision of larger play areas and kickabouts. There are no set design rules for playspace provision but the following elements should be considered:

- Varied and challenging range of equipment
- Equipment should meet BSI and European standards
- Should be safe for the age group using it
- Coloured rubber, wet pour surfaces can be used to increase the visual stimulus of the play area
- Sensitively located to take into account the need for sunshine, level access, noise reduction, security and safety from vehicles
- Located away from windows of habitable rooms of residential development but within sight
- Landscaping to provide shelter, seating and nature conservation interest for adults and children. Planting should not become a screen for undesirable behaviour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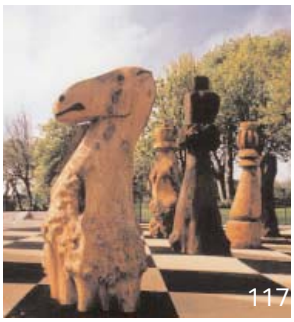
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6.13 Safety and security through design

As well as being able to move around the home easily people should feel safe in the place they live. Streets and residential areas should be designed so that as many people as possible want to use them. However at the same time people also need to feel that they have privacy in their homes.

Security can be achieved through careful design. Fortress like gates can raise the fear of crime and prevent natural surveillance therefore gated developments should generally be avoided.

Safe and Sustainable Communities

Safety and security are essential to successful, sustainable communities. Designing out crime and designing in community safety should be central to the planning and delivery of new development. Section 17 of the Crime and Disorder Act 1988 requires all local authorities to exercise their functions with due regard to their likely effect on crime and disorder, and to do all they reasonably can to prevent crime and disorder. The prevention of crime and the enhancement of community safety are matters that a local planning authority should consider when exercising its function under the Town and Country Planning legislation. This does not mean the planning and design alone is expected to solve the problem of crime, or that crime prevention should be the sole concern of the designer when developing a residential layout. However informed, positive planning, particularly when co-ordinated with other measures, can assist in reducing crime. Designing for safer places can present the need to deal with competing priorities. Conflicts can arise for example between the desire to create well connected places and places where access is 'restricted' and 'ownership' increased.

When faced with competing priorities, design decisions must be made in consultation with all partners and based on policies for crime prevention which reflect the local situation. One way of envisaging how the layout of a residential development might affect crime is to 'think criminal' - or, more formally, to think how criminals or disorderly people might react to, or exploit, the use, layout and development of land.

'Safer Places - The Planning System and Crime Prevention' - ODPM identifies seven attributes of safer places.These are access and movement; structure; surveillance; ownership; physical protection; activity; and management and maintance. Each is discussed in more detail below.

Access and movement - The success or failure of a place as part of a sustainable community is influenced by the nature and quality of its connections, particularly to local and wider services and amenities. Too few connections can undermine vitality; too many particularly under-used or poorly thought out connections can increase the opportunity to commit crime. The right level and type of access, resulting in places that are well connected and secure can be achieved through careful and creative design based upon local assessment.

Structure - The layout and structure of a place affects its safety and sustainability. A safe urban structure has few blank aspects of buildings exposed to the public realm, provides 'active frontages' of overlooked streets and creates a regular movement framework that focuses people onto a small number of principal routes.

Surveillance - Many of the other attributes referred to - particularly access and movement - are underpinned by the theory that places are safer if they are overlooked. Places that could be vulnerable to crime should be overlooked by buildings or uses that are busy.

- Windows and doors should face onto the street
- Open, bright spaces reduce the number of potential hiding places and allow people to be aware of what is happening around them
- Parked cars can be particularly vulnerable to crime and should be overlooked or located in secure areas
- In addition, well designed lighting increases the opportunity for surveillance at night and sends out positive messages about the management of an area

Oakridge village, Basingstoke - high levels of natural surveillance have been achieved throughout the development. Parking and the area of open space are overlooked and windows on gable ends provide surveillance to the shop.

However natural surveillance should not be relied on as the sole strategy for tackling crime and disorder.

A buffer zone between the street and the house can be created by planting and paving.

Ownership - New residential developments should create places that promote a sense of ownership, territorial responsibility and community. Uncertainty of ownership can reduce responsibility and increase the likelihood of crime and anti-social behaviour going unchallenged. There should be a clear distinction between public, semi private /communal and private space.

Clarence Mews, Hackney - the built environment can generate feelings of ownership through the use of a common, distinctive design throughout a development.

Sensitive placement and appropriate selection of physical barriers - gates, fences, walls and hedges - create safe places that are also attractive. Fortress like gates can raise the fear of crime and prevent natural surveillance. Gated developments should generally be avoided. Gates effectively privatise areas and reduce permeability. Gated developments can also be 'anti community' and it is widely accepted that it is preferable for new development to be integrated into the wider community and that the gating of developments should only be considered as a last resort.

- Demarcation of territory without physical barriers may be appropriate to some settings, provided that the intention is not to impede access physically
- Design techniques most people respond to include changes in paving, surface texture and colour, landscaping, planting and signage

Adequate private space should be provided. However this does not mean delineating gardens with unattractive high boundary fencing, above.

▲

Security gates to developments and individual dwellings should be avoided.

Gates as sculpture, - Leith, Edinburgh

▼

Access to the rear of properties should be incorporated in new residential developments without compromising security. Security does not necessarily imply 'fortress' style gates, fencing and walls. In appropriate circumstances gates are acceptable.

For example in unbroken terraced housing gated 'tunnel backs' can be used. If there has to be a security fence or grille it can be designed as a piece of art or sculpture. Security can be achieved without the need for visually intrusive measures such as barbed wire, bollards or gates.

New dwellings are frequently built where proper consideration has not been given to rear access. It is important that a dwelling is designed to accommodate this (e.g. a straight passage via a hallway and kitchen / utility room).

- Secure rear access allows occupants to use the space at the rear of properties more easily

Physical Protection - One of the most effective ways to prevent property crime is to make the property itself as secure as possible. Target hardening measures, for example doors, windows and gates, as set out in Secured by Design should be selected to be appropriate for the dwelling and the crime risk in the area.

Crime prevention measures that adversely affect the way a place looks and feels can undermine the aim of safe and sustainable communities. Some measures such as grilles and bars are often unattractive and increase the fear of crime.

Activity - Crime can be deterred through increased levels of human activity on the street and within open spaces. Within residential areas, there can be advantages for crime prevention of attracting a mix of people of different ages, lifestyles and economic status. This avoids concentrations of social groups that may be more likely to offend or be targeted as victims, or create areas devoid of occupation, activity and surveillance at particular times. Providing a range of housing types in terms of dwelling size, type, tenure and affordability can enable this.

Management and maintenance - New residential development should be designed with management and maintenance in mind to discourage crime in the present and the future. A good quality public realm can stimulate the desirable level of human activity and influence the behaviour of users:

- Proper attention to the design quality and attractiveness of the street increases its safety and use and promotes greater respect towards the environment
- A programmed regime of a high level of cleaning and maintenance, be it undertaken by public, private or voluntary organisations, is more likely to achieve sustainable environments, partly by sending out a strong message about not tolerating vandalism or other abuse

G Checklist: Safety and security

Does the development:

- Provide a safe and secure environment for residents and visitors?
- Maximise overlooking and natural surveillance of the public and private realm?
- Adopt measures and design features to reduce traffic speed?
- Create a layout appropriate for the identified crime risk as well as to meet wider planning objectives?
- Ensure all public space serves a purpose and supports an appropriate level of legitimate activity?
- Eliminate 'inactive' frontages and corners?
- Provide a high standard of lighting and adequate maintenance regime?

Furture guidance on safety and security is provided in 'Safer Places the Planning System and Crime Prevention' (ODPM 2004)

6.14 Designing for privacy

Privacy is an important design objective in ensuring that residents feel at ease within their home. Street design can influence the relationship between facing dwellings. The layout of a development should aim to balance the need for internal privacy of the home from overlooking and the need to retain good natural surveillance of the public realm.

Depending on the context, streets should provide a sense of enclosure and/or follow the existing building line. Features such as bay windows, balconies and roof terraces should be encouraged as long as they relate to the context and do not significantly compromise the privacy of neighbouring occupants (e.g. by allowing direct overlooking of neighbouring back gardens).

It is important for residents to enjoy privacy to safeguard their amenity and allow their private space to be useable. Distance separation (particularly for family houses with gardens), screening, window size and style, orientation and location of rooms and circulation space are some of the factors to consider.

6.15 Active fronts and private backs

Frontages should be as 'active' as possible particularly at ground floor levels. Rooms such as living rooms and kitchens provide the most natural potential level of surveillance. Bathrooms, bin stores and garages do not provide surveillance and deaden the street.

The main access to buildings should be attractive and clearly defined. More entrance points can encourage more life and activity on the street. With well thought out design there are devices which can be incorporated into a facade so that a building reaches out onto the street (e.g. balconies, bay windows and canopies).

7.0 Complete and thorough design

7.1 Building elements

7.2 Elevation treatment

7.3 Garages and ancillary buildings

7.4 Front entrances and porches

7.5 Extensions

7.6 Signage

7.7 Hard Landscape

7.8 Local vernacular and character

7.9 Respond to and enhance local vernacular

7.10 Boundaries

7.11 Management and maintenance plans

7.12 Consider future change


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7.0 Complete and thorough design

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It is not just simply house types and their arrangement or configuration which creates good places. Equally important is the detailing. What is meant here is the design of the buildings and public realm, and most particularly, the interface between them. The public realm elements include elevations, corner treatments, rooflines, doors and windows, materials, and floorscape colour and texture.

Detailing can:

- Make or break a place
- Stimulate the commitment of the developer, the community and the authorities involved to the maintenance of high standards
- Allow all the users of a place to enjoy it, in a balanced and efficient way
- Create and retain value
- Ensure distinctiveness, whether a central square or great avenue, a quiet street or mews

The key messages of this chapter are firstly that detailed design is a key element in the creation of places of enduring quality and secondly that regardless of the design guidance given and especially in relation to matters of detail, highly skilled designers are required.

7.1 Building elements

The quality of an overall scheme can be spoilt by poor attention to detail. The individual elements of a building e.g. the bricks, windows etc are an integral part of the overall quality of the building. To achieve quality, these individual elements need to be well designed and arranged in a way which is coherent and relates to the rest of the building.


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The quality of windows and doors has an important impact on the final appearance of the development.


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Careful consideration should be given to location and size of windows. In these examples windows are arranged in an unconventional random way. Nevertheless the schemes work as they reflect part of a larger coherent and contemporary design.

External materials for individual buildings should be selected on the basis of the characteristics of the site and its surroundings and as appropriate to the detailed design of house types. Traditional materials such as brick, natural stone, natural slates and tiles should be used where appropriate. However in some circumstances it may be possible to use other materials provided they are integrated within a high quality and innovative housing development.


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There are a wide variety of traditional building materials which have been used in and around Sunderland. Magnesian limestone is a distinctive building material of local architecture found in the Sunderland coalfields area.


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Proposals should also consider how easy it is for the dwelling to be personalised by the occupier without detriment to the individual building and the streetscape:

- Personalising properties allows people to identify with their house, accommodate their needs and can add vibrancy and variety to the street

The relationship of building elements to one another (e.g. the placing, sizing and proportions of the windows and door openings) contributes to the overall appearance of a new building. Traditionally most medium to wide frontage dwellings have their openings arranged symmetrically around an opening placed centrally, generally the front door. Irregular compositions or asymmetrical elevations should have a strongly emphasised axis made up of a grouping of secondary elements.

In terraces of more than 3 properties and narrower frontage elevations the requirement for strongly centralised compositions is reduced, unless the design concept is to produce a formal composition. In such cases patterns and repetitive elements become important and asymmetrical arrangements can look attractive.


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Windows should be sized for the room they serve, for example high level windows for toilets and bathrooms, raised cills for kitchen and utility rooms and patio doors to living rooms. A coherent approach to the pattern of the elevational openings should be adopted, with vertical heights of openings at each floor level the same, especially on primary elevations. Randomness of window sizes can form part of a coherent pattern, however, if applied to secondary elevations and/or contained in secondary elements.

7.2 Elevational treatment

The size and configuration of a building, and its scale in relation to the surrounding context, has a bearing on its:

- Sustainability (in terms of energy consumption and ability of the space to change use)
- Relationship with the surrounding urban structure (such as the impact on legibility)
- Contribution to neighbouring public space

It is important that new residential development takes account of the forms and proportions of the local area. Confused applications of architectural styles or inappropriate historical imitation can create new developments which are visually unappealing to the eye. The use of "stuck-on" elements should also be avoided.


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New and old development which produces rhythm, colour and profile silhouette changes. (left cottages at Fatfield; below Thorley


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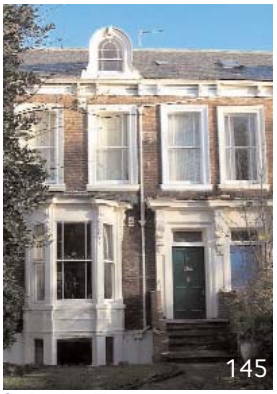
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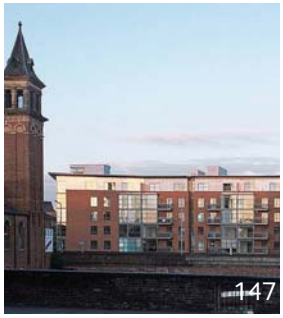
St Bedes Terrace, Ashbrooke. Bay windows, timber framed sash windows and doorcases with classic detailing combine to create a vernacular unique to Sunderland.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A modern approach to the arrangement of building elements which respects and enhances locally important historic buildings- Deansgate Quays, Manchester.


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Traditional symmetrical elevation composition. Newbottle, Houghton Le Spring.

Lacuna West Malling, Kent. Use of high quality modern materials combined with features such as balconies creates visual emphasis to elevations.

Traditional arrangement of fenestration - Hetton Le Hole,

Angel Town, Brixton, London.

Bishops Walk, Ely, Cambridgeshire.

Successful articulation, rhythm and symmetry of balconies, windows and gables. (Above Leith, Edinburgh).

High quality modern window fittings successfully arranged to create elevation with a vertical emphasis.

Irregular arrangement of window openings in this contempary design

Interface Elements

The interface elements include doorways, thresholds, gardens and enclosures at the front and rear of buildings. These should be given attention as they also contribute to the overall quality of a building and the space surrounding it.

7.3 Garages and ancillary buildings

The effect of homes which are designed primarily for the car are discussed in more detail in chapter 4. This section deals more specifically with garages and other ancillary buildings which relate to residential development. The provision of integral garages can significantly detract from the visual quality of the house. The garage door can dominate the front of the house, its size and scale impacting on the proportions of windows and doors. It can also greatly weaken the visual link between the dwelling and its external space.

In designing garages or outbuildings, the following principles should be taken into account:

- flexibility in location, either by turning in various directions as a free standing structure or combining to form larger secondary structures
- avoid the use of flat roof and double width doors
- avoid rows of garage doors or open forecourts which can visually dominate the residential environment
- ensure that numbers and the design of garages remain in scale and architecturally sympathetic

Repetition of garages destroys quality of street and relationship between dwellings and public realm. There is no boundary definition in this example and projecting garages reduce security of adjacent footpath.


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Freestanding garages can contribute to enclosure and help protect privacy


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Avoid garages within main mass of buildings

Carport maintains surveillance of entrance


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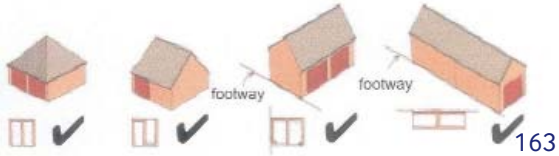
If garage is integral, use as subordinate element to dwelling mass



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Variations on form of freestanding garages

7.4 Front entrances and porches

The addition of a porch on an entrance can enhance or detract from the appearance of a building. Front entrances should be located directly overlooking the public street.

Where porches do occur they are generally associated with larger individual dwellings. Careful consideration should be given to the inclusion of porches as follows:

- Porches and hoods are more associated with urban terraces and paired entrances
- Projecting porches clearly identify the entrance. They should be designed as an integral part of the building fabric to avoid the impression as an afterthought
- Fully enclosed porches should be designed carefully so that they do not become over obtrusive. As a general rule they are less acceptable appearing as "stuck on" boxes
- The design of porches should ensure they do not provide easy access to upper level windows thereby reducing security of the dwelling


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Hooded entrances are generally associated with urban terraces and paired entrances.


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Attractive entrance to property.

7.5 Extensions

The option of creating additional living space or making existing space meet needs better can enable a household to adapt to changing circumstances without the occupants needing to move home. Some key points to consider with extensions are:

- The overall impact of the extension with regard to overshadowing and loss of light to rooms
- Terraced houses are difficult to extend without ruining the elevation or creating disproportionate and inappropriate extensions

In narrow terraced frontages front or rear extensions can block light to the original rooms. In such dwellings opportunities for loft conversions become important.

- Terraced housing provides an opportunity for rear extension provided the original design permits access
- Semi detached houses can provide opportunities for extension to the rear and side of the property. For side extensions, a space should be allowed to permit pedestrian access past the extension

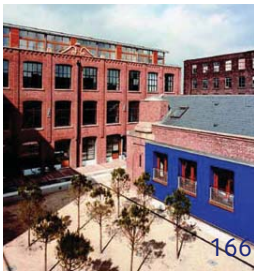
7.6 Signage

Signs should be used to make a place legible and should not be provided solely for vehicles. Pedestrians also require signs to navigate especially in large scale residential developments:

- Consistent and co-ordinated design of these elements over a wide area is required
- Make the structure of the place legible so as to minimise the need for signs
- Concentrate pedestrian signage in a well designed locality at specific nodal points
- Implicit routing defined by paving types and introduction of other imaginative means of easing orientation

7.7 Hard Landscape

Good design, layout and quality of hard landscape can help contribute to the overall quality of new development and help reinforce a sense of place. In urban areas the hard landscape should attempt to reflect the architectural character of buildings. Materials should be chosen which reflect the age and quality of the site e.g. natural stone, reconstituted stone etc. Patterns of floorscape can be used to enrich the urban form and enhance architectural character. These days the suburban context is the most widely developed. Hard landscaping in such locations can be used to add amenity and "sense of place" to new development and assist in integrating new development to the existing built form and create uniqueness within a scheme.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Brittania Mills Manchester - High quality communal landscaped area.


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Beaufort Court, London. The high density site achieves significant open space between the blocks, unifying the new estate with the older adjacent site.

7.8 Local vernacular and character

Sunderland's urban character varies considerably in its age, style and scale of its built form and open spaces. Some of the best residential environments in Sunderland are found in areas with older housing dating back to the Victorian period. The individual dwellings and house types in these areas display unique features and qualities. It is important that any new residential development takes into account and complements Sunderland's local vernacular.

Example of the architectural styles found in the coalfields area ▶

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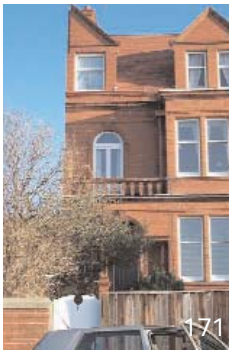
The following are examples of local vernacular that help make up Sunderland's urban character.

Ashbrooke

Ashbrooke is a large Conservation Area with a diverse range of fine, largely terraced houses. The area is characterised by tree lined streets which provide an exceptional setting for buildings. The most dominant form of housing in Ashbrooke is terraced dwellings which have special and unique architectural qualities. Many of the terraces in Ashbrooke are typical of the Victorian period. Common materials used throughout Ashbrooke include red brick, welsh slate roofs and timber elements in bay windows, door casings and guttering, a legacy of the city's shipbuilding heritage.

Typical features of terraced housing in Ashbrooke include:

- Six panelled wooden doors
- Wrought (and also cast) iron handrails leading to entrances
- Bay windows at ground floor levels
- Uniform colour schemes along whole terraces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Some of the typical features and building elements found in Ashbrooke.

Sunderland Cottages

The Sunderland cottage is a distinctive form of housing not found elsewhere in the country. Whilst there are similar dwellings in the North East they do not exist in such large numbers or cover such a large area. These first appeared in the 1840s and were built for the next seventy years up to 1910.
The typical Sunderland Cottage is single storey, either single or double fronted with a steep pitched roof. Accommodation did vary in size but typically consisted of a front parlour, one or two bedrooms and a living room. Original architectural features include bay windows, brickwork details, window and door details. Some of the exteriors of the cottages have flat stone lintels, projecting stone sills and pointed arched heads to renewed end windows. Many of the cottages have been altered over time. This often takes the form of inappropriate 'improvements' for example:

- Large dormer extensions to the front of property
- Enlargement or alteration of window and door openings
- Removal of original architectural features e.g. doors, door surrounds, windows and stained glass
- Natural slate roofs replaced with alternative materials

Appropriate repairs and improvements can be carried out which ensure the original character is retained. For example:

- Dormer extensions to the front of the property are best avoided. However, rear dormers can be sympathetic to the scale and design of the cottage
- Original window and door openings should remain unaltered or be reinstated
- Original windows and doors were constructed from good quality timber that can be repaired and draught proofed rather than replaced
- Original slate roofs should be replaced with the same type of slate


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Illustration of a good example of a Sunderland Cottage

Illustration of inappropriate alterations to Sunderland Cottages


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7.9 Respond to and enhance local vernacular

New development should respect and enhance local vernacular in areas with a strong and unique identity. It can often be difficult to strike the right balance between superficial echoing of historic features, which can erode character as much as development which shows no regard for the context in which they sit. Poor results often occur when these two approaches are forced to compromise, often as a result of an attempt to change the architecture of a proposal into a more contextual form.

The right approach can be found by examining the context for any proposed development in great detail and relating new development to surroundings. Whether the formula consists of 'fitting in' or contrasting the new with the old, a successful project will:

- Relate well to the geography of the space and the lie of land
- Sit happily in the pattern of existing development
- Respect important views
- Respect the scale of neighbouring buildings
- Use materials and building methods which are as high in quality as those in existing buildings
- Create new views and juxtapositions which add to the variety and texture of the setting

The new development at Gwynne Road lies between 19th century terraced housing and high rise housing in disparate surroundings. However the new building is robust enough to create its own context

Abbots Cottages, Dorset - In design, materials and quality the new cottages (forming the right hand properties) relate closely to their older neighbours.

The Piggeries, Frome Dorset

7.10 Boundaries

Boundary treatment is often largely ignored in new residential development. However enclosures and boundaries provide a very strong link between landscape and building. They are also important in terms of providing privacy and security. Boundaries can be classified in five ways:

1. See through boundaries - aid permeability and safety e.g.. railings, trellis, decorative screens
2. Solid boundaries - can be extensions to buildings and contribute to the streetscape e.g. brick walls, timber fences, hedges and stone walls
3. Combinations - To provide semi-permeable screening and facilitate daylight and restricted views. Boundaries can be enriched by designing in a combination of solid and see through elements
4. Natural boundaries - Earth mounding accompanied with planting or acoustic screens can provide means of screening and sound attenuation
5. Hedges - Natural boundaries can be created with hedges which also encourage biodiversity. Hedges can often grow rapidly therefore care should be taken to plant the right species and to allow sufficient space away from the built form to accommodate them at their maturity

Brockwell Gate, Tuswell Hill - The type of boundary treatment has a significant impact on street scene and appearance of buildings

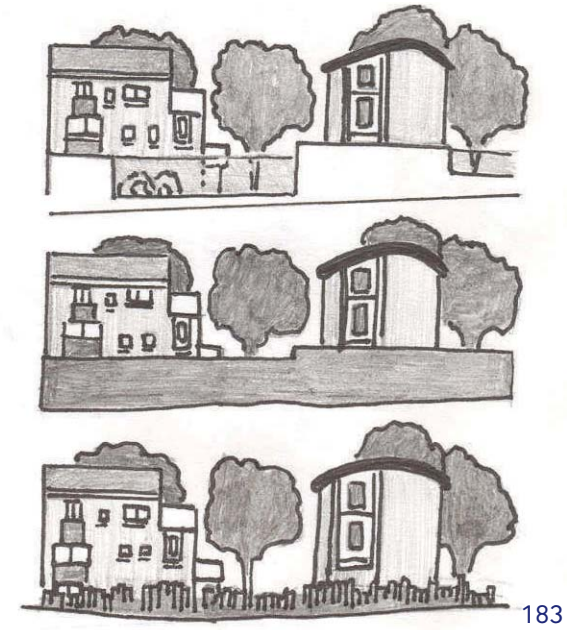
Colour adds variety to brick-wall, Ashbrooke,

High quality boundary treatments, Houghton le Spring

7.11 Management and maintenance plans

All schemes which include landscaping elements should be accompanied with a management plan, which shows how maintenance will ensure the integrity of the scheme is maintained. Maintenance is essential to the continued success of a development. There are various measures that can be incorporated to ensure that maintenance requirements are minimised, for example hardy manageable shrubs can be planted. Below is a list of all measures that should be incorporated:

- Appropriate and well sited trees
- Maximum natural planting and meadow grass areas
- Good quality robust street furniture, lighting and play equipment
- Adequate mowing access/maintenance access



The diagram above illustrates different boundary treatments. Top: see-through boundaries. Middle: solid boundaries. Bottom: combination of see-through and solid boundaries.

7.12 Consider future change

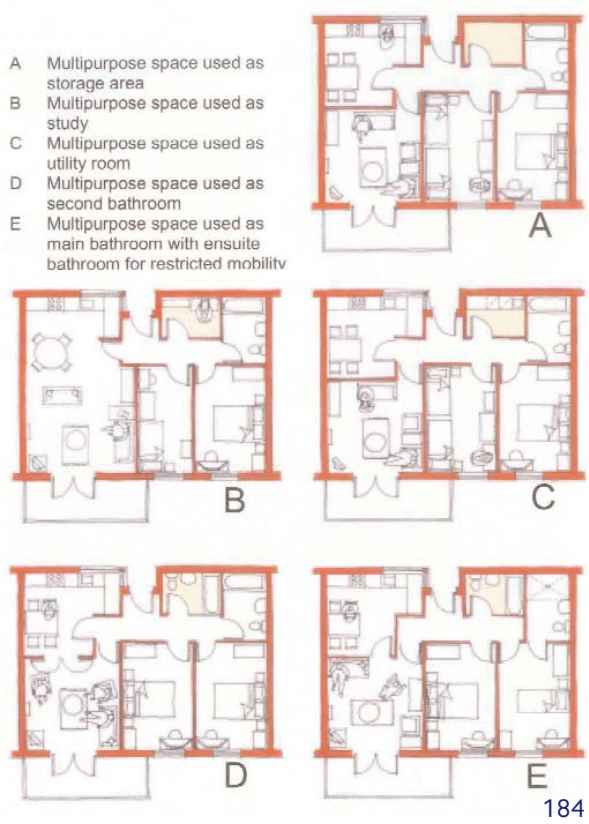
Buildings should be flexible to accommodate changes in the occupant's lifestyle and aspirations over time. The most important consideration in designing a robust and adaptable home is the area of space it provides and can potentially accommodate in the future by providing options for conversion or extension.

The important design principle which flows from this is that dwellings and residential neighbourhoods which are designed to be adaptable will prove more robust over time than those tailored tightly to a particular need.

'Lifetime homes' are designed to be adaptable to residents' changing requirements. They allow for easy and cost effective adaptation. Such an approach benefits all members of the community, for example parents with young children or elderly relatives, or disabled people and their families.

Internal Conversions

The following example shows how existing space in a flat can be customised to suit individual needs. A multi-purpose space (4 Sq M area) can be used as a second bathroom, utility or storage room. A large balcony can be used as a patio or converted into a winter garden.



Example of how a multi-purpose space can be converted for a variety of uses.

H Checklist: Building elements / interface elements / landscape elements

- Is an appropriate boundary treatment provided to the frontages of dwellings?
- Have the following building elements been given careful attention:

  doors,windows, porches, roof structures, lighting, flues and ventilation, gutters, pipes and other rainwater details, iron mongery and decorative features, flashings:
- Have the following interface elements been given careful consideration:

  bin storage, cycle storage, external lighting, service entries, inspection boxes, windows and glazing, walls, hedges, fences and gates?
- Have the following landscape elements and their future maintenance been given careful consideration:

  trees, flowers, grass and other planting, carriageways, footways and hard landscaping, cycleways and footpaths, kerbs and channels, steps and ramps, fences, walls, hedges and gates, street signage, street lighting, seats, bollards, railings, public art.?

8.0 Energy and resources efficiency

8.1 Introduction

8.2 Minimising energy consumption in construction and design

8.3 Solar gain

8.4 Cooling

8.5 Shelter

8.6 Renewable/Low Carbon technology

8.7 Other Resource Efficiency techniques

8.8 Resources



Relevant design policies

B2A	Sustainable urban Design - UDP Alteration No 2

8.1 Introduction

As part of its drive to reduce carbon emissions the Government has launched a package of ambitious measures that will result in significant implications for the planning and development industry. Buildings are by far the biggest cause of CO2 emissions in the UK and hence it is through the development of energy efficient buildings that the greatest reduction can be made. New national and regional policy is geared towards shaping places with low carbon emissions that are resilient to climate change.

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Code for Sustainable Homes

In particular, through the launch of the Code for Sustainable Homes, the Government has set a single national standard for addressing the sustainability of new homes. From April 2008, the Government will require all new homes to be given a mandatory rating against the Code. To enforce this, the energy efficiency requirements of UK Building Regulations will be brought in line with those set by the code.

Sunderland's Core Strategy sets out Sunderland City Council's approach to sustainable design and construction and renewable technology. In Response to national and regional policy, Core Strategy policy CS15 requires:

i) All development to meet minimum Target Emission Reduction TER) levels, prescribed by Building Regulations.
ii) Major developments to supply 10 percent of the site's energy consumption from renewable sources located on site. This can count towards Building Regulations TER. If site constraints mean that renewables are not feasible, the 10 percent renewables requirement can be discharged if the development demonstrates an additional 10 percent reduction in overall energy consumption, on top of the current TER.
iii) Major developments to meet Level 3 of the Code for Sustainable Homes for housing, or BREEAM Very Good construction standards for all other developments, or higher as dictated by future legislation.
iv) Major developments to provide evidence of feasibility work into the potential for on-site renewable energy and combined generation of heat, power and cooling (including on-site distribution networks). This evidence should include consideration of potential energy users and sources adjacent to a development site. If renewables or combined heat and power are not included in development proposals, applicants are required to provide justification for this.
v) Renewable energy developments will be considered favourably and in regard to their contribution to, and beyond, Tyne and Wear's renewable energy targets Preference will be given to developments that provide energy to local consumers.

Evidence of the above criteria (i-iv) should be provided within an overall Energy Statement, to be submitted alongside any planning applications.

In addition Core Strategy Policy CS16 requires that:

v) All developments should assess and manage risk from other climate impacts, including surface water flooding and extreme heat.
vi) Developments must demonstrate a positive contribution to managing or reducing flood risk through the inclusion of Sustainable Drainage Systems and other techniques.

The Council's intentions are clearly laid out in emerging local level policy and will be enforced through the Planning and Building Control system. In light of this, the following section outlines approaches to housing layout, design and energy generation that will need to be considered to meet the increasingly high energy efficiency standards required.

8.2 Minimising energy Consumption in construction and design

The reduction of energy demand is the starting point for reducing carbon emissions. Housing design and the layout of residential estates can play a significant role in reducing energy demands. A number of techniques are available that often entail no extra capital costs, provided they are decided upon in the design stage. At the site planning stage, the detailed study and analysis of a development site's natural characteristics may inform opportunities to reduce the energy demand of buildings and improve energy efficiency.

Energy efficient housing need not be significantly different in construction or appearance to conventional housing

8.3 Solar gain

Passive solar design harnesses the sun's energy through building design techniques and careful site planning to provide natural means of heating and lighting by capitalising on daily and seasonal movements of the sun. The greatest energy savings arise when site layout that optimises passive solar gain is combined with building designs that take advantage of solar energy. In all cases, when harnessing solar gain, careful consideration needs to be given to changing heat loads expected over the lifetime of a development, to factor in temperature increase expected from climate change.

Passive Solar Gain - Site Layout

In order to achieve passive solar gain the site layout should be informed by the local climate and sun's position. Buildings can be oriented towards or away from the sun according to whether heating or cooling is the primary concern.

At street and block scale there will inevitably be areas where the layout, block structure and permeability of sites designed for maximum solar gain may not conform to conventional urban design thinking. It is important that a balance is struck between the principles of passive solar design and the commonly understood principles of good urban design.

Orientation

The careful orientation of buildings has a significant impact on the amount of passive solar gain available. Buildings should generally be oriented so that the principal rooms such as living rooms, dining rooms and main bedrooms have a southerly aspect. A south easterly orientation is generally optimal, however it is not essential for all buildings to be orientated due south and variations of up to 30° can be accommodated whilst still benefiting from passive solar gains.

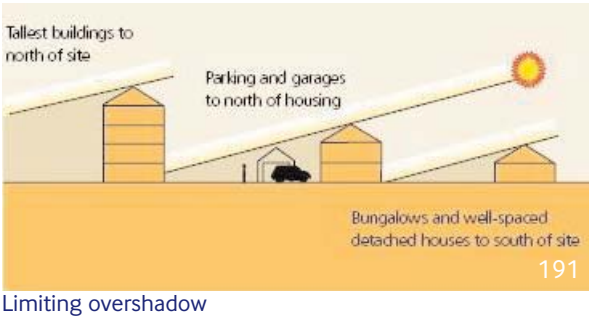
Passive solar housing estates.

Spacing

Depending on where a development is to be located, the spacing requirements for effective passive solar gain will differ. In more northern locations such as Sunderland, the sun sits lower in the sky and as such wider spacing will be required between buildings in order to allow sufficient solar access. If the spacing cannot be achieved, overshadowing will lead to higher heating bills and reduced energy efficiency.

Limiting overshadow

Ideally, to optimise passive solar gain, the building's southern exposure should be clear of large obstacles that may reduce or block the sunlight. Clearly it is impossible to avoid all overshadowing, but designs should seek to minimise the impact by locating taller, higher density buildings to the north of the site with smaller lower density buildings to the south. Functional aspects of a site such as car parking areas or garages can be located to the north of buildings. Thought should be given to landscaping and planting schemes that do not result in excessive shading to southern elevations



Limiting overshadow

Direct Solar Gain

Direct solar gain is radiant heat resulting from sunlight admitted to the living spaces, which warms the interior surfaces. Passive solar housing designs should locate the main glazed elements on the southern elevation. Usually between 60 and 75 % of glazing in a passive solar house is located on the southern elevation. Sloping roof lights facing the sun will also increase the solar radiation received.

Passive solar energy does not require especially large south-facing windows. Likewise, if the windows on the north, east and west facing elevations are too small to achieve reasonable internal light, occupants will resort to daytime use of artificial lighting, eroding energy savings.

Developers should also maximise potential for direct solar gain by ensuring that as much roof space as possible has a south facing aspect. This increases opportunity for use of solar panels. Even where solar panels are not proposed as part of the development, it increases the potential for future retrofitting of solar panels.

Design of the internal layout should ensure the main living rooms and other frequently used rooms are on the south side and rooms that benefit less from sunlight (bathrooms, utility rooms) on the north side. Large, south-facing kitchen windows should be avoided to avoid excessive heating from solar and internal heat gain.

Passive solar house internal layout

Indirect solar gain

Trombe Wall - A Trombe wall is a sun-facing masonry wall covered with glass spaced a few inches away. The trombe wall acts as a thermal mass that absorbs and stores heat. The glazed area and airspace in front of the wall increases heat collection by reducing convective heat loss and focusing the sunlight. Air in front of the wall is warmed and transferred slowly to the rest of the building through upper air vents. Cool room air takes its place through the lower vents. In the winter, thermal mass allows saved solar energy to heat the house at night or on cloudy days.

Trombe Wall, Rychenburg

Sunspaces - Sunspaces can be incorporated into the internal layout of a building to distribute solar energy gains. These may take the form of open plan through rooms or glazed elevations within conventional walls. Sunspaces can create warm and light spaces within buildings. They are particularly useful in flats and apartments where they can throw light further back into deep plans and can provide an attractive internal space where no private garden space is available.

Sunspaces, St. Matthews Estate, Brixton

8.4 Cooling

Whilst achieving solar gain is vital, schemes incorporating the principles of passive solar design must also seek to avoid the risk of excessive solar gain, which can cause discomfort or heat stress, and increase the demand for cooling systems that are highly energy inefficient.

Natural landscaping features are important to complement passive solar energy gains. Design should take into account existing trees and possibilities for new landscape planting materials to reflect or absorb heat and create summer shading. For example deciduous trees can be useful for providing shading from glare and overheating in summer, whilst the bare branches would allow solar access in the winter.

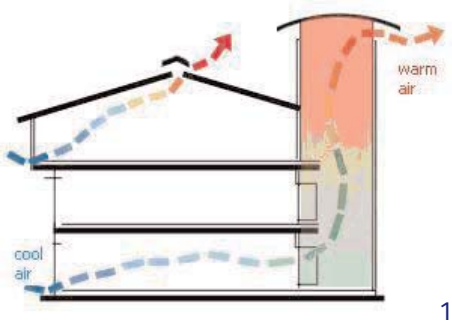
Urban green spaces designed as an integral part of housing schemes (trees, grass and shrubs) can moderate urban heat through the creation of daytime shade and evaporative cooling at night. Green spaces can also reduce storm water run off, and help to lower the risk of flooding.

Urban green space, Wohnsinn, Darmstadt

Natural Ventilation

Effective means of cooling can be provided by natural ventilation. Naturally ventilated buildings consume approximately half as much energy as mechanically ventilated and air conditioned buildings. The design utilises the stack effect and wind pressures to supply outdoor air to building interiors for ventilation and/or space cooling purposes.

In the design of buildings internal ventilation stacks projecting above the general roof level can be used to vent rising warmer air. Colder, denser air from the exterior can be drawn into the building through lower level intakes in the building façade. This approach reduces the need for air conditioning and makes for a more healthy and pleasant building environment.



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Natural Ventilation through the stack effect

Shutters, brise-soleil or overhangs can be used to prevent excessive solar gain on large glazed solar oriented elevations. Designed correctly, these measures ensure sufficient shading in summer yet in winter allow sunlight to pass through the window to warm the interior.

Brise-Soleil

8.5 Shelter

Vegetation can be used as a shelter belt to provide protection from prevailing wind, reducing excessive wind speeds, yet allowing enough air flow through external spaces. Dense planting around narrow openings in the urban fabric will also mitigate wind-tunnel effects, impede the movement of dust and improve thermal comfort within surrounding buildings by reducing fabric heat transfer and infiltration.

Study of the prevailing winds may also inform the configuration of development to provide wind protection. Careful analysis of the wind pattern of a site may also enable the careful design and location of taller buildings to avoid creating unpredicted areas of high wind speed.

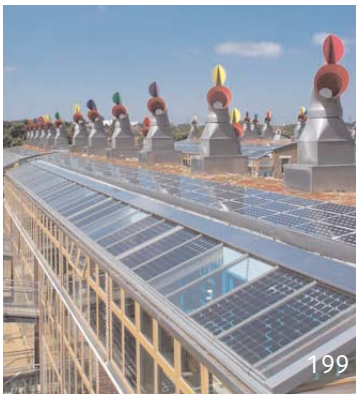
8.6 Renewable/Low carbon technology

The inclusion of renewable and/or low carbon technology should be considered at the earliest stages of new development. The suitability of some technologies will be dependent on both the natural characteristics of the site and the type of development proposed. It is essential therefore that a feasibility study be carried out on a site-by-site basis. Below is a summary of some low carbon/renewable technologies that may be suitable for new residential development:

Photovoltaic Panels

Photovoltaic cells consist of two or more thin layers of semi-conducting materials that are capable of converting daylight into electrical charges. These can then be conducted away by metal contacts as direct current electricity. PVs are suitable for any wall or roof that faces within 90 degrees of the sun and can be incorporated on most buildings as tiling or cladding.

South facing Photovoltaics Oxford.



Photovoltaics in combination with a passive solar layout are used at BedZed, Surrey.

Solar Thermal Hot Water

This simple system uses roof mounted solar collectors to harvest the sun's energy. These contain small pipes through which water is pumped and heated by the sun's rays. Solar water heating performs best in the summer, however the solar thermal collectors can still produce energy with diffused sunlight and are therefore ideally suited to the UK climate.

Solar themal hot water system

Ground-Source Heat Pumps (GSHP)

Ground-source heating systems involve pumping water through a network of underground pipes. The water absorbs the natural heat in soil, which can then be converted into thermal energy for heating and hot water. In summer, the system can be reversed to provide cooling. Ground-source heat pump technology is best suited to housing, which may require longer periods of heating and /or cooling. The system works best with under floor heating.

Ground-Source Heat Pump System

Air-source heat pump

Combined heat and power (CHP)

In order to satisfy the requirements of the City Council's Core Strategy, at the site planning stage developers must undertake feasibility work to ascertain whether the heat and power demand profiles of the development would suit Combined Heat and Power. This should also include consideration of whether CHP could provide heat and power via a site-wide distribution system (see above) and how this may impact upon site layout.

Community/District Energy Systems

In addition the City Council's Core strategy requires the developer to consider whether surrounding energy users or energy supply systems may benefit from in corporation into energy supply of the proposed development. In the case of new mixed use developments or where there is a variety of neighbouring uses there may be scope to combine energy needs through Community/District Energy systems. These provide heat and/or power from one central source to multiple buildings and work best when serving a range of homes, public and commercial buildings.

The benefits of CHP district energy systems are:

- Lower cost heating and power.
- Improved energy efficiency - a centralised plant uses energy more efficiently, significantly reducing carbon dioxide emissions and fuel costs.
- Reduced management costs and increased reliability.

When developing the layout of the site, it is vital to factor in the optimum layout criteria for a district energy system in order to optimise heat and power distribution and allow for centralised boiler plant.

Wind turbines

Wind turbines convert the power in the wind into electrical energy using rotating blades that drive a generator. They can be connected to the national grid to export electricity, used directly for electricity or used to charge batteries for on-site use. Optimum results are achieved at wind speeds of 12.5 metres per second. When considering the layout of the site it is also important to maximise clear airflows from the south west and to allow sufficient separation of wind turbines

Biomass

Biomass is a generic term that describes the use of organic matter to produce energy. It is a simple and proven technology, widely used across mainland Europe. Biomass boilers burn the chipped or pelleted products of forestry operations or short rotationcoppice and can be use for space heating or hot water production. The boilers operate in much the same way as simple manually fed domestic stoves. There is a range of boilers of differing scale to suit any development, whatever its size.

8.7 Other Resource Efficiency techniques

Water Conservation

A number of simple and relatively inexpensive steps can be taken to reduce water consumption in housing, for example fitting spray taps saves up to 80% of the water and energy used in filling hand basins. Other options include installing dual-flush and low-flush toilets, which can save more than half the water used for flushing toilets and cut household water use by up to 20%. Fitting water-saver showers, can create finer drops or aerate the shower.

Mains water and power consumption savings with water conservation measures

	Mains water consumpions (litres/person/day)	Power consumption (kwh/person/year
Standard construction	170	55
Water conservation measures only	1	5
Water conservation measures + treated rainwater for personal washing laundry, dishwasher and outdoor use	55	29
Water conservation measures + treated rainwater for personal washing, laundry and dishwashing + untreated greywater (toilet and outdoor use)	21	22

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Water Recycling

There are many opportunities for incorporating water recycling into new development at little cost. Facilities for collection and re-use of rainwater can be designed into a new building relatively easily. Rainwater can be collected in a water butt for garden use and more advanced rainwater harvesting systems can provide water supply for a range of domestic uses, including personal washing, laundry and toilet flushing. Systems to collect, cleanse and re-use greywater can operate on a single dwelling scale or on a development-wide scale. Greywater from baths, showers and hand basins is usually clean enough for flushing the toilet with only basic disinfectant or microbiological treatment.

Sustainable Urban Drainage Systems (SUDs)

By mimicking natural drainage patterns, Sustainable Urban Drainage systems can help moderate flows and filter run off, delivering significant reductions in impacts on our water resources. SUDs can also recharge groundwater and provide significant amenity and wildlife enhancements, especially in river corridors. Water quality can also be protected by employing pollutant trapping and degradation processes.

It is important to consider using SUDS early in the design process, when site planning. Wherever possible, SUDS should be integrated within the layout of the development site. PPS 25 Development and Flood Risk advocates the role of SUDS and introduces the general presumption that they will be used. All applications for planning permission should demonstrate how SUDS will be incorporated into development proposals. Where appropriate the Council will use planning conditions to secure the implementation of SUDS.

All drainage systems must be designed to cope with increases in rainfall amounts over the lifetime of a development, in order to take account of increased rainfall intensity as a result of climate change.

Re-use of existing buildings

Good quality existing buildings should always be considered for re-use rather than demolition and replacement. Reusing buildings avoids energy and resource depletion associated with providing a new building. It can also help avoid wholesale clearance and demolition of areas which may already have special qualities or character. Re-using buildings may also prevent communities from being fragmented or dispersed. Older buildings have an important part to play in many areas and can contribute to the community as they have historic and townscape importance.

Sustainable construction materials

n order to satisfy the requirements of the Code for Sustainable Homes, developers must ensure that the use of sustainable construction materials is considered at the design and delivery stages.

Environmental Impact of materials

Developers must refer to the BRE Green Guide to Specification. This guide was prepared in line with the Code for Sustainable Homes and catalogues potential materials that are used in the construction of new housing. The guide rates materials in accordance with their effect on the environment in construction use and capacity to be recycled.

Materials are given a rating between A* - E, with A* representing the best environmental performance and E having the most negative effect on the environment. In order to meet Code level 3 or above as required by the City Council's Core Strategy, developments must use materials classed between A* - B only.

Responsible sourcing of materials - building/ finishing elements

In addition to considering the environmental impacts of materials, developers will also be expected to achieve additional points under the Code. To fully satisfy the Code for Sustainable Homes it must also be demonstrated that materials have been responsibly sourced.

The consequences and impacts of using materials must be considered from their raw state, through manufacture and processing, through use, reuse and recycling, until their final disposal as waste. Certification by auditable independent, licensed bodies confirms compliance with the required standards.

Waste management

Waste management is a minimum standard in the Code for Sustainable Homes. As a minimum, proposals for new development must incorporate a Site Waste Management Plan (SWMP). In order to meet Code level 3 of the Code for Sustainable Homes as required by the City Council's Core Strategy, developers will also need to consider construction waste in the site waste management plan.

Recycling and Composting facilities

Residential environments must support recycling and composting activity. Appropriate facilities are needed to ensure that occupiers are able to separate as much of their waste materials as possible. From a design perspective the following should be considered:

Easy access and use

- Accessible for collection and use by both disabled and able-bodied users
- Sufficient space for various waste storage units without the need for stacking
- Consider the different requirements of individual houses and apartment blocks,

Meeting the requirements

- Developers must seek pre-application advice with the Waste Section of Environmental Services in order to gain information on current recycling and any future changes

Visual impact.

- Storage and collection facilities should be designed to be as compact and unobtrusive as possible
- External storage facilities must be sympathetic to the surrounding area. Natural materials are recommended

8.8 Resources

Carbon Mixer

Developers are recommended to refer to the Building Research Establishment's (BRE) Carbon Mixer toolkit. The toolkit is designed to assist developers in calculating the feasibility of a range of renewable technologies by assessing which forms of renewable energy will be the most cost effective and will have the biggest impact on carbon emissions in a particular development.

The software package, is freely available, together with training on the software via the North East Assembly website. The toolkit can illustrate how different renewable technologies can used to meet the 10% renewables target together with associated costs. The software can project the potential:

- CO2 Emissions.
- Capital Cost Increase.
- Savings.
- Payback Periods.

http://www.northeastassembly.gov.uk/page.asp?id=131

Useful Websites:

Government Guidance and Policy

- Code for Sustainable homes: www.communities.gov.uk/thecode
- Towards a Greener future: www. communities.gov.uk/archived/publications/planningandbuilding/buildinggreener

Low carbon and renewable technology

- Green Spec: www.greenspec.co.uk
- Low Carbon Buildings: www.lowcarbonbuildings.org.uk
- British Photovoltaic Association: www.pv-uk.org
- Energy Saving Trust (various documents): www. energysavingtrust.org.uk/housingbuildings/publications
- The Renewable Energy Centre: www.therenewableenergycentre.co.uk
- Solar Trade Association: www.greenenergy.org.uksta
- Ground-Source Heat Pump Association: www.nef.org.uk/gshp
- The UK Heat Pump Network: www.heatpumpnet.org.uk
- The IEA Heat Pump Centre: www.heatpumpcentre.org
- British Wind Energy Association: www.bwea.com
- Biomass Energy Centre: www.biomassenergycentre.org.uk
- Combined Heat and Power Association www.chpa.co.uk

Passive Solar Design

- Energy Saving Trust (Passive Solar Estate Layout): ww.energysavingtrust.org.uk/housingbuildings/publications
- Energy Research Group: http://erg.ucd.ie/mb_urban_design.pdf
- Solar Heating and Cooling Programme www.iea-shc.org/outputs/task28_publist.htm

Other Energy Efficiency techniques

- CIRIA: www.ciria.org/suds/index.html
- Environment Agency: http://www.environment-agency.gov.uk/business/444304/502508/464710
- Combined Heat and Power Association: http://www.chpa.co.uk

Checklist: Sustainability / environment

- Does the development demonstrate a commitment to sustainability and energy conservation issues?
- Has the scheme achieved Code for Sustainable Homes accredition of level three or above?
- Does the development have any features that reduce its environmental impact?
- Does the development have easy access to public transport?

9.0 Case Studies

9.0 Case studies

9.1 BedZED, Sutton, South London

(High Density Sustainable Development)

Context

Beddington Zero Energy Development (BedZED) is a mixed development urban eco-village for the Peabody Trust on a brownfield wasteland site in the London Borough of Sutton. The Peabody Trust is one of London's largest housing associations, with a strong reputation for quality and innovation and a programme of social housing development across 26 London boroughs. Peabody is also one of the capital's leading regeneration agencies, concerned to create lasting social and economic renewal and to build communities as well as property.

BedZED is an example of the Trust's commitment to finding new and innovative ways of raising the quality of affordable homes and meeting the predicted increase in housing demand.

Movement

The scheme is well connected to the wider area with buses running directly past the site, Hackbridge Railway station (to Victoria and King's Cross) is 7 minutes walk away, the new tram line to Wimbledon and Croydon (10 minutes walk) and Mitcham Junction station (15 minutes walk).

Local services within walking distance include 2 churches, 5 cafes/restaurants, 5 shops plus pharmacy, hairdresser and drycleaner, and industrial and office premises offering work opportunities. BedZED's medical centre, nursery (offering day-care and after school club), café/bar with internet access and organic food delivery service further enhance the services available.

Mix and neighbourhood

The development provides 82 dwellings in a mixture of flats, maisonettes and town houses, and approximately 2,500 m² of workspace/office and community accommodation including a health centre, nursery, organic café/shop and sports clubhouse.

Rather than BedZED residents being packed in like sardines, the interlocking design makes the density levels go virtually unnoticed. The BedZED design also allows high densities while still providing private gardens and conservatories as part of the purchase.

Standard ZED schemes reach densities of 50-100 dwellings per hectare compared to the minimum requirements of just 30 per hectare.

Layout and urban form

The BedZED urban system reconciles high-density three-storey city blocks with high residential and workspace amenity. Workspace is placed in the shade zones of south facing housing terraces, with skygardens created on the workspace roofs enabling all flats to have outdoor garden areas, with good access to sunlight, at the same time as providing well day-lit workspace without problematic summer overheating. BedZED relates well to buildings surrounding the scheme, which are mostly 2-3 storeys, and sits easily within the local context.

Properties front onto streets, secure and clear backs make a legible layout, and public/private boundaries are generally marked by building fronts and sides.

In urban design terms some opportunities have been missed. BedZed's relationship with adjoining sites lacks definition, with public space defined on one side by blank fences forming the backs of neighbouring properties. In ensuring all dwellings receive maximum sun, the streets themselves are often overshadowed, and in one mews street vitality is further compromised by placing bedrooms at the fronts of the houses at ground level and thereby reducing the natural overlooking which would occur with living rooms, dining rooms or kitchens.

Space around the home

Raised front gardens offer privacy and encourage sitting out. Many properties display evidence of personalisation and planting. Full glazing means that personal displays contribute to the street-scene.

Although located in a busy area, the scheme is set back from the main road and is relatively quiet, with car access to pedestrian streets restricted to deliveries. Its 'pedestrian first' policy includes pedestrian level lighting and a road layout limiting vehicles to walking speed with some shared surfaces, and reinforces BedZED's restrictions on car use. Cycle parking is given priority over car parking on site, with generous covered storage at 1 space per flat, 2 spaces per maisonette and 3 spaces per house giving a total of 117 cycle spaces.

Complete and thorough design

Built of brown-red brick with timber cladding and window frames, the scheme features windows in brick end walls similar in proportion and subdivision to those in adjacent buildings. Vertical subdivisions and balcony structures also relate closely to the rhythms of bays on nearby buildings, as do the horizontal subdivisions immediately below the top floor levels. Galvanised and external drainage fittings provide a durable alternative to the standard UPVC versions

Around 90% of ground surfaces are impermeable, maximising opportunities for re-use and recycling of rainwater, and re-use and on-site filtering of household water and run off further enhances the impact of the scheme in terms of re-charging of groundwater as well as reducing the impact of localised flooding and run off. Subtle illumination, including bollard level lighting, washes across brick walls creating a well-lit environment, which minimises extremes of light or dark areas and at night creates a safe effect, free of extreme shadows.

Energy and resources efficiency

The combination of super-insulation, a wind driven ventilation system incorporating heat recovery, and passive solar gain stored within each flat by thermally massive floors and walls reduces the need for both electricity and heat to the point where a 135 kW wood fuelled combined heat and power plant (chp) can meet the energy requirements for a community of around 240 residents and 200 workers.

The community treats all its black and grey water on site, and collects rainwater to minimise mains water consumption. To avoid over sizing the CHP unit, a 109 kw peak photovoltaic installation provides enough solar electricity to power 40 electric cars, some pool, some taxi, some privately owned. The community has the capability to lead a carbon neutral lifestyle - with all energy for buildings and local transport being supplied by renewable energy sources.

Architect	Bill Dunster Architects
Developer	The Peabody Trust

9.2 Ingress Park, Greenhithe, Kent

(Residential development in a unique historical context)

Context

Ingress Park is a key project leading the regeneration drive at Greenhithe waterfront. Ingress Park which is now under construction is a 7 year programme to build 950 homes, shops, live-work units and a new school on the south side of the River Thames about one mile east of the Dartford Crossing. The project takes its name from the Grade II listed Ingress Abbey.

In order to inform the scheme the architect spent time researching the character of the site and wider area by carrying out field trips to study materials and character forms.

Movement

A key feature of the site was the creation of a countryside walk which integrates Tudor mounds, numerous follies, a new tree-lined boulevard and grassed amphitheatre. To maintain coherence with the wider urban context, a linear park links old Greenhithe with the new development. These new public areas are to be maintained by the management company of the estate.

Mix and neighbourhood

The scheme creates a series of places within the overall boundaries, with areas ranging in density to reflect the style of development, reaching up to 125 homes to the hectare. The extensive retained woodland and park offset the high density. A higher density housing development has been achieved, consistent with PPS3 and brownfield objectives.

Close multi-disciplinary working between planners, the design team and engineers has allowed conventional practices with respect to density and infrastructure to be challenged and stretched.

Layout and urban form

The design concept opens up the park to the Thames waterfront with a new boulevard of imported mature trees and a 10ha linear public park, complete with a grass amphitheatre and retained woodlands.

The Abbey has been restored and is to be used as offices for a computer firm. Ingress Abbey's Gothic features are being echoed in the house designs to create character. Many will also clearly relate to the Kentish vernacular.

Space around the home

In order to keep density levels up, few houses have large gardens; instead they have orangeries, balconies and terraces.

The courtyards are designed to act not just as parking areas but also as inhabited spaces with front doors to houses.

All residents have a parking bay or garage but parking does not dominate and there are footpath links and cycle routes through the site. The first phase of 50 homes is now complete.

A 24 metre drop from the top of the site gives extensive views over roof tops down to the river where large vessels are a feature of interest.

Landscaping was also a vital aspect of the development. Early on in the process trees were planted and the existing landscape restored to create an early sense of maturity and character, but also ensure integration between the landscape and built environment.

Complete and thorough design

The careful attention to detail and materials has resulted in a development that has a traditional feel inspired by the vernacular.

However, despite this conservative appearance, the developers and architects have in fact challenged traditional blanket design approaches to volume housing in terms of density, quality of design, infrastructure, public realm and private amenity space.

In adopting this approach, the developers have rejected the conventional procurement practices opting instead for a bespoke design that takes its cue from the site and character of Kent's traditional towns and villages.

A variety of roof pitches and guttering details have also helped to prevent monotony and a mass-produced feel to the development. For example the variety of flat and pitched dormer heads create a more varied roofscape, while the narrow slits in the brick gables echo those found on Ingress Abbey.

Energy and resource efficiency

Sustainability was a priority from the outset. Any materials that were recyclable were incorporated in the new development. For example, old timbers from the demolition of old buildings were reused in the public realm.

Architect	Tibbalds TM2
Developer	Crest Nicholson Residential Developer South East
Local Planning Authority	Dartford Borough Council

9.3 Staithes South Bank, Gateshead

(Brownfield Development)

Context

Staithes South Bank is a 698 homes development by George Wimpey on the banks of the River Tyne in Gateshead. The scheme has been designed in partnership with George Wimpey City, Hemingway Design and architects Ian Darby Partnership. Wayne Hemingway, founder of the fashion label Red or Dead, was commissioned by house builders George Wimpey to help design a proposed 688-home estate in Gateshead after he complained of the "Wimpeyfying" of Britain by "dull cul-de-sacs".

The brownfield site is adjacent to the Dunston Staithes - a listed landmark on the banks of the Tyne which was part of a 19th century coal depot formerly used for loading coal onto ships.

Mix and neighbourhood

The development comprises 2 and 3 storey houses and one and two bedroom apartments. The development offers a choice of housing, including open plan living and a more traditional layout. CABE's design review panel, although generally supportive of the scheme, suggested a greater mix of uses would improve the overall quality of the development.

Layout and urban form

Staithes South Bank has been designed as a homezone scheme. The development secured financing through the Government's Homezone Challenge which aims to boost the quality of life for residents and create a harmonious relationship between cars and people. The scheme attempts to design a housing development where everyone can recognise their own home from the way it looks and where children can play safely, free from cars.

The layout is arranged around a grid pattern which is one of the most efficient movement patterns. In their design review CABE suggested more of the key streets could be orientated to take advantage of longer views to the River, the Staithes and wider area to assist the orientation of both residents and visitors, particularly when combined with the landscaping features and network of streets.

CABE were also unsatisfied with the architecture of the riverside apartments questioning the height of the blocks and their relationship to the striking engineering of the Staithes.

Space around the home

Much attention has been given to the detail of the landscaped courtyards, and to measures that give pedestrians, particularly children, priority in most aspects of the scheme.

Complete and thorough design

Staithes South Bank is intended to be:

- affordable
- innovative
- thoughtful
- profitable
- well designed
- family and people friendly

Architect	I D Partnership
Developer	George Wimpey
Local Planning Authority	Gateshead Council

9.4 The Former Post Office, Sunniside, Sunderland

(Conversion and refurbishment of listed building for residential use)

Building before conversion

Context

The former post office is an impressive Grade II listed building situated right at the centre of the Sunniside area of Sunderland. The property was vacant for some time before planning permission was granted for conversion of the building to luxury flats. The City Council and English Heritage financially supported the scheme with a £100, 000 Townscape Heritage Lottery grant to refurbish and convert the building.

Mix and neighbourhood

The former post office comprised two buildings; the main post office and the adjoining sorting office. The main post office has been refurbished and renovated to provide 8 apartments.

Built form and layout

The basement of the sorting office has been developed to provide integral secure parking. The facade of the existing sorting offices has been retained and integrated within the scheme. The roof of the sorting office was removed and replaced with a contemporary new steel and glass intervention providing a further two levels of flats above the former sorting offices. This new build element is carefully positioned behind the existing stone facade which is retained and refurbished. The new build element has glazing and planar panelling which contrasts with, and contributes to, the essentially Edwardian void and solid relationships of the main building. This new intervention is symbolically important for Sunniside, as it illustrates how historic buildings can be carefully refurbished and regenerated whilst, at the same time, acknowledging imaginative opportunities for contemporary urban dwellings. The new intervention is within close proximity to the main buildings and co-ordinates with the existing head and sill levels, ensuring that the planar glazing system lines up and respects these important historical elements.

Artist's impression of the building after conversion

Building before conversion

Space around the home

The original development proposal incorporated a commercial space on the ground floor for a possible bar or restaurant. This would have provided the opportunity for an outdoor seating area to the front of the Post Office. However the development proposals were modified removing the commercial element. This would have provided an additional mix of uses and could have added to the vitality and diversity of the area

Energy and resource efficiency

The re-use of existing buildings in Sunniside represents a sustainable approach to providing new housing.

Architect I D Partnership
Developer Gentoo
Local Planning Authority Sunderland City Council

9.5 Newhall, Harlow, Essex

(Greenfield 'urban extension')

Context

Harlow is set in the heart of the Essex and Hertfordshire countryside. Newhall is located less than a mile from Harlow 'old town', close to Harlow town centre. Newhall is being developed as a new residential neighbourhood set in a rural landscape by Copthorn Homes who have joined forces with Proctor Matthews architects. The development has brought original new designs and award-winning innovation to Harlow.

A masterplan for the site was developed by consultants, Roger Evans Associates. From an early stage a strong emphasis was placed on promoting quality urban design in a greenfield site. The site was subdivided into a number of parcels of land for 50 to 100 units. In order to ensure consistency throughout, a key document package was prepared setting out various urban design specifications to achieve a consistent public realm as different parcels of land were developed and to encourage fresh modern architecture.

5 key criteria were used when formulating the masterplan for the site:

- Topography and a sense of place
- Building a town rather than just estates
- Amenities and facilities in order to create a buzz about a place with variety and vitality.
- Creating a landscape structure
- Creating three density bands all of which are above 30 dwellings per hectare

Two methods of land disposal were tried. The first involved preparing a shortlist of architects for individual parcels of land, inviting tenders and selecting a winning design. This process did not prove as successful as anticipated due to a lack of innovation or quality. The second method was through a design competition held with architects and housebuilders.

Mix and neighbourhood

The Copthorn development at Newhall features 82 new two, three and four bedroom homes and a selection of one and two bedroom apartments. This represents a mix of different house types affording the opportunity to build a new community.

Layout and Urban Form

The main logic to the development is a street of 4 storey houses and flats fronting a boulevard, a parallel 2 storey terrace fronting a smaller street; and a narrow spine street linking the two with mews court spurs off each side and alleyway access to the main boulevard.

Four key underpinning themes referred to by the architects in the design of the scheme were

Anchors - related to looking at the context. In the Harlow scheme this was interpreted working closely to the townscape-driven masterplan.

Armatures- conceptual thoughts and the threshold sequence through the building leading a person from the public to private realm. The idea of trying to combine the notion of people having individual dwellings but uniting them with garden walls.

Adaptors - examining sustainability issues and looking at spaces that can be adapted. Different configurations of internal spaces in dwellings allows for flexibility and adaptability.

Animators - using architecture to reinforce a distinctive sense of place.

Space around the home

Care and attention has been given to the spaces between dwellings. Buildings have been planned economically which frees up space for communal use.

Energy and resource efficiency

The layout of the development encourages passive solar heating with many of the terraced houses on the east / west axis where they gain from the southern sun. Streets running north / south have detached houses or features such as towers or gables which catch the sun.

The master plan aims for 40% green space and attempts to maintain the existing topography of the site, conserving all the copses, woodland and hedges, and joining them with 'green corridors.'

Complete and thorough design

The palette of materials includes thatch, coloured render, weatherboard, slates and tiles, louvres, oriel windows and gabion walls, reflecting the high quality of detailing and construction throughout the scheme.

Architect	Proctor Mathews Architects
Developer	Copthorn Homes
Local Planning Authority	Harlow District Council

9.6 42 Nile Street, Sunniside, Sunderland (Proposed)

(City Centre Gap Site)

Context

Sunniside as a distinguishable urban neighbourhood dates from the 1790's although much of the built form that can be seen today dates from around the early to middle nineteenth century. In 1814 William Jameson was commissioned to lay out the Fawcett estate to provide substantial terraced housing. By 1840 fine terraced townhouses had been constructed, laid out on Jameson's grid iron street pattern. The development site falls within East Sunniside where the loss of historic buildings and the appearance of gap sites have significantly diminished the continuity and uniformity of streets. There are several listed buildings within close proximity to the site.

Mix and neighbourhood

The proposed development is for a mixed-use six storey apartment building consisting of 23 apartments, with commercial use on the ground floor. The proposed mix of uses is appropriate for such a building and will assist in achieving a high quality and more sustainable pattern of development.

Layout and Urban Form

The proposal creates a form of development on the site which will make a positive contribution to the quality of the area. The design provides a contemporary solution with an imaginative approach to public space. On the ground floor the cafe will open up onto a covered piazza.

The facade details are designed in white and an array of grey nuances - from silver to dark grey. The selection of materials, which include render, timber, glass and steel ledges, break up the overall facade with attractive contrasts.

The proposed development will help to re-establish the block structure and the street enclosure with the development of a four storey frontage plus an additional two levels set back above the street frontage .

Nile Street Proposal

Space around the home

Parking has not been provided as part of the development due to the site's close proximity to the city centre and public transport services.

The development represents a departure from the council's spacing standards although on such sites the council will permit flexibility to ensure that development responds to and reinforces the established block structure.

The apartments incorporate a 'loggia' balcony. This type of balcony is inset into the facade to provide a sheltered cover and a high quality outdoor space unlike an external balcony which can be unsuitable for most of the year.

The roof of the ground floor unit to Coronation Street will have a sustainable grass roof covering. The distinctive clear lines in the design will be carried over to the loggias' materials. The loggias incorporate a simple glass balustrade with a silver powder-coated steel handrail. Natural light is a key feature within the whole development and the corner apartments will have cutout feature corners with glazing behind to allow plenty of light in and views out.

The north east elevation houses all the external horizontal circulation that is secured by a semi - external staircase. The external walkways only allow access to the apartments and staircase. The openness of the walkways is hoped to convey a community feel and shared ownership.

Complete and thorough design

The individual elements of the development have been well designed and arranged in a coherent way that relates to the rest of the building.

Architect	Fitz Architects
Developer	Temple Security
Local Planning Authority	Sunderland City Council

Building heights block plan, Sunniside Sunderland. Development proposals were informed by the design guidance in the Sunniside Planning Framework.

9.7 Highgate, Durham

(Brownfield Development adjacent to Conservation Area)

Context

Highgate occupies the site of the historic Borough of Framwellgate in the heart of the Durham City Conservation Area, close to the World Heritage Site of Durham Castle and Cathedral. RPS Consultants, working with Amec Developments and Bryant Homes won a competition to develop one of four inner city sites owned by the City of Durham. The aim was to make the scheme look like it 'had always been there'. The sloping area below the railway station had been allocated for development by the planning authorities since clearance in the 1960s. After thirty years of use as a surface car park, and earlier half-progressed schemes for a hotel and for housing, the challenging and highly visible site has been redeveloped to create a distinctive and distinguished residential quarter.

Movement

The layout of the scheme incorporates a single access point for vehicles from the main road of Framwellgate Peth. An internal street has been created within the development, running north/south. The scheme has good pedestrian links to the station to the west. A new footbridge links the development site, functionally and visually, to the St Godric's area of Durham city centre.

Mix and neighbourhood

The scheme is relatively small in scale and is dominated by the provision of executive town houses and apartments. There are 60 dwellings, comprising of thirty-four three-storey town houses and twenty-six apartments.

Layout and Urban Form

The layout and form of the development has been shaped by the restrictions of the site, namely its considerable slope and tight boundary elements, and the views it provides across the city centre. The mix of house types was the developer's commercial choice and they have been used and modified to replicate the architectural variety of the local vernacular. All have a communal entrance giving the impression that the 3 storey apartments are a single large town house. Apartments therefore are difficult to differentiate from the neighbouring town houses. From the east, Highgate provides the rising fore-ground with a stepped pedestrian path to the station and viaduct. From Station Approach the rooftops of Highgate add foreground interest to the panorama of castle and cathedral.

Complete and thorough design

The success of the scheme lies in the attention to detail and the use of high-quality materials. The developer has used its national house plans and they have been made to look like a piece of historic Durham. The design philosophy was developed following a detailed townscape study of the historic residential streets in Durham City. A historic approach to design was adopted to recreate the traditional urban street pattern of the Old Borough with traditional Georgian house form, plan and elevations and a variety of Georgian, Victorian and Edwardian features. Particular attention has been paid to the roofscapes to reflect the variety of traditional dormer window styles and robust chimneys found in Durham City. Similar care was taken with window and door design, and external footpaths and surfaces to ensure the distinctness of each house.

"Success stems from its own authenticity, allied to sensitivity to site and context. It has a convincingly solid appearance, with no hint of facadism. The same conviction is evident from its inner street as from properties lining the perimeter. The Georgian harmony pervades in a composition where there is subtle variation in brick, render, roof height, fenestration, portal. Appropriate floorscaping and street furniture complete the unity." (*City of Durham Trust 2005*)

Space around the home

The scheme uses a number of car parking solutions, incorporating rear parking courts, on-street parking and a limited number of integral garages. Where garages are used however they are located away from the entrance to the scheme. High quality materials are used throughout the development and make a large contribution towards the success of the scheme. This approach has been carried through in the choice of surface materials and street furniture, resulting in a successful public realm.

Architect	RPS
Developer	Taylor Woodrow
Local Planning Authority	Durham City Council

9.8 Westoe Crown Village, South Shields

(Residential Development on Brownfield Site)

Context

The Westoe Colliery site is part of the former British Coal portfolio, which transferred to English Partnerships in 1996 and subsequently to One NorthEast. The site extends to 17.4 hectares (43 acres) and it is situated in a prominent position overlooking South Shields foreshore within a primarily residential area, approximately ½ mile from South Shields town centre. One North East, together with The Princes Foundation and South Tyneside Council, identified the site as an opportunity to create a new, mixed use urban neighbourhood with wider regeneration benefits for South Tyneside. The redevelopment of the former Westoe colliery site involves the construction of around 650 homes, a school, community centre, doctors, dentists and other retail and small business facilities, plus live/work units and affordable housing units, involving co-operation with Three Rivers Housing Association.

Movement

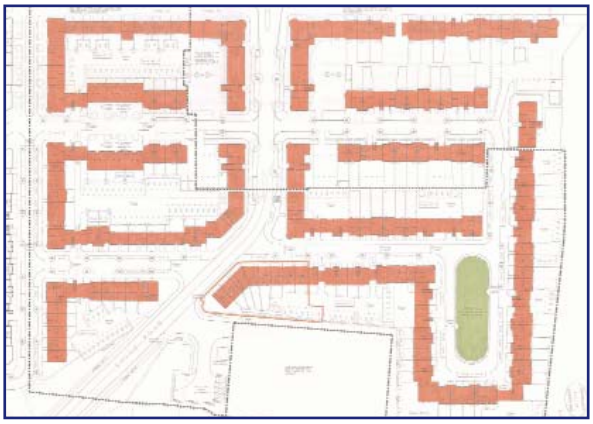
The scheme has been developed using a number of Homezone principles incorporated to varying degrees of success. Routes through the residential elements of the scheme feature traffic calming measures such as shared surfacing (block paving), controlled on street parking, soft landscaping and reduced carriage widths. Pedestrian routes generally follow the highway pattern.

Mix and neighbourhood

There is a mix of property types including two, three and four bedroom homes, three bedroom town houses and one/two bedroom apartments. The house types used are standard to the developer. However the Prince's Foundation were consulted extensively on design modifications to the properties and on the public realm, resulting in a development with a relatively distinctive modern character.

Layout and Urban Form

The layout of the scheme is based around the block structure, which increases legibility and movement opportunities. A spine road runs through the site with traffic calmed, more pedestrian friendly side roads leading off it. The scheme incorporates a number of rear parking courts in an attempt to prevent vehicles dominating the street scene. Unfortunately the smaller courts are not always utilised, whilst the larger courts create large areas dominated by hard standing. The layout includes a 'pocket park' which forms a communal landscaped area with limited visitor parking surrounding the perimeter. The general form of the scheme is 2/3 storey town houses.



Space around the home

The public realm that has been created by the development appears to have been predominantly shaped by attempts to calm traffic. Streets are not car dominated but instead give the pedestrian a greater sense of equality with the car. This relationship could have been improved however if further steps to calm traffic and prioritise the pedestrian had been taken, i.e. increased street furniture and landscaping. There remains a sense of being within a traffic calmed road, as opposed to a pedestrian area that permits traffic.

Complete and thorough design

The development incorporates a number of positive design elements such as using a number of parking solutions, pocket parks, public art, shared surfacing, creating a strong sense of enclosure and using good quality front boundary treatments. The design of the buildings are enhanced by the choice of materials.

Energy and resources efficiency

The physical design includes energy efficiency, cycleways, pocket parks, public art work and play areas. Wimpey also had a commitment to provide a number of social facilities such as car sharing, and job training. One North East procured the remediation of the site and undertook servicing works to ensure that the site was capable of being developed in accordance with the agreed masterplan. The cost of these works, which were completed by mid 2001, was in the region of £3 million.

Architect	Princes Foundation / Wimpey Homes
Developer	Wimpey Homes
Local Planning Authority	South Tyneside Metropolitan Borough Council

9.9 Leidsche Rijn, Utrecht, The Netherlands

(Mixed Use Development)

Context

Utrecht is the fourth largest city in the Netherlands, with a population of over 250,000. The city is building the largest housing area in the country (on one of the Vinex developments that make up the Dutch government's national housing programme). More than 30,000 houses will be completed in the district of Leidsche Rijn in the coming years, housing about 73,000 people. The development of Leidsche Rijn is not based on one overarching masterplan. Instead the district is being designed and constructed neighbourhood by neighbourhood.

Movement

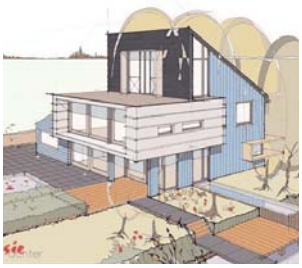
The construction of Leidsche Rijn also involves the creation of a suitable infrastructure for the development and its inhabitants, which involves plans for the relocation and partial covering of the A2 motorway that runs through the site. Three new bridges are to be constructed over the Amsterdam-Rijn canal that will link Leidsche Rijn to Utrecht's city centre. Additional access will also be provided by two new railway stations on the future Randstadspoor railway line, plus new cycle-tracks, and a high-speed bus service. Within the development site the hierarchy of roads creates quiet Homezone type streets in the immediate vicinity of the houses.

Mix and neighbourhood

The aim at Leidsche Rijn is to stop it becoming just another suburb. The large scale of the development offers the opportunity to create neighbourhoods with great diversity in terms of architectural style and the housing types. The individual neighbourhoods take on their own identities helping to create a feeling of place. The bands of greenery that separate the development phases provide continuity. The central location of Leidsche Rijn is also attractive to businesses. Some 700,000 m2 of office accommodation will be provided in four new business estates, and about 40,000 people will ultimately find employment in the region.

Layout and Urban Form

At Leidsche Rijn, the land is separated into building fields that are divided between different designers. Each land parcel is restricted to around 200 units. This allows for a variety of architecture in the development, at the same time as keeping experimentation on a small scale.



Space around the home

By arranging the housing in small terraced clusters, a hierarchy of shared public spaces has been formed which has helped new residents to settle in. Further public spaces between clusters encourage residents to feel part of the wider neighbourhood. A neighbourhood centre has already been developed in Leidsche Rijn. Attention is being paid to the public areas and to the ambience created by the streets and squares. The aim is to avoid uniformity and embrace variety and contrast. Great emphasis has been placed on nature and public parks and gardens in the district.

The Leidsche Rijn Park, with an area of 300 hectares, planned for the centre of the district will be one of the Netherlands' largest city parks. The larger and smaller parks and gardens are linked to each other by connecting zones; this will enable plants and animals to spread throughout the entire district.

Energy and resources efficiency

Leidsche Rijn is being built in accordance with the principles of sustainable construction, and large investments have been made in environmental protection and energy management , such as a rainwater collection system.

The low-energy street lighting and the low-energy demand of the houses will result in savings for both the Municipality and the residents. Moreover large areas of Leidsche Rijn are connected to the city's district heating system, thereby achieving a reduction in the demand for expensive fuels and a decrease in the level of emissions of carbon dioxide.

10.0 Specified Standards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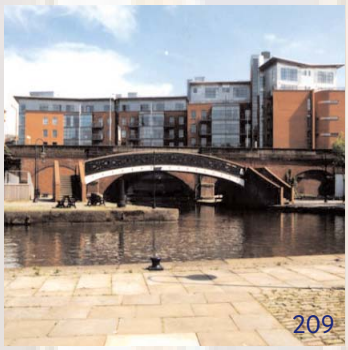
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10.0 Specified Standards

Relevant design policy

B2A Sustainable Urban Design - UDP Alteration No 2

Planning standards are usually expressed as minimum requirements and most of them concentrate on suburban estate developments. There is always a risk that they will become the basis of housing layouts, creating homogenous estates.

The Council acknowledges that a rigid adherence to spacing standards can stifle creativity in design and result in uniformity of development. The Council is looking to encourage imaginative design solutions and in doing so it accepts the need for a flexible approach to privacy distance between buildings within a development site, when good design or the particular circumstances allow this. Therefore the developer must demonstrate through the design statement how the privacy of both occupiers of existing buildings adjacent to the development and future occupiers within the new development will be protected.

Even standards which are intended to be flexible guidelines may become unquestioned rules that predetermine the layout, especially when combined with the constraints of dimensional road standards. Improving the quality of housing development requires that a way of setting bold and ambitious targets should be devised, aiming for a high level of achievement. Planning standards are useful in helping define the lowest level of acceptability, but greater freedom to vary standards needs to allowed for such things as garden sizes and privacy distances in the interest of creating more complex, varied and attractive spaces. It is through design statements that developers will be able to demonstrate depth of design and show how their proposals will meet quality objectives, and thus enable them to justify proposed variations to normal standards and a more flexible application of the standards below.

In assessing the impact of housing development on a residential area the Council will seek to ensure that the local distinctiveness and character of the urban area is maintained, to make the most efficient use of land whilst allowing for high quality contemporary and innovative design.

The urban form varies throughout Sunderland. Consequently street widths can vary considerably from one part of the city to another. Each street has particular characteristics, which make it different from others and render any sweeping generalities inappropriate and ineffective. These standards will be applied broadly and flexibility will be permitted when imaginative and quality housing designs are submitted and where other benefits can be clearly demonstrated e.g. where rigorous application of the standards would impede the proper development of a Conservation Area or a Listed Building. The Council will permit flexibility in areas and cases where the rigid application of standards would lead to poor quality development that fails to reinforce or respond to the established character and pattern of development, for example in historic village centres, areas of 'Sunderland cottages' or pre-1919 terraced housing etc.

Variations must always relate to the overall design concept. That in turn stems from the nature of the land, its natural features and existing planting and the characteristics of the surrounding area. Therefore the exercise of judgement and flexibility in one scheme can never be taken as a precedent for a similar approach elsewhere. The variables of site conditions and design concept will always demand individual solutions.

10 A

Boundary enclosures	Avoid long runs of fencing over 1m high onto public areas by imaginative housing layout.. Provide 1.8 m high screen wall or combination of masonry / fencing as appropriate on corner plots to secure privacy of rear gardens from the street facing onto public areas Runs of fencing to be broken by brick or stone piers. 1 metre of planting and 2 metres of grassed area between any such enclosures and public footpaths or roads Types of enclosures will be appropriate to the location of the overall development e.g. urban, village, suburban and rural Rear inter-garden boundaries - 1.6 - 1.8m high quality fencing

10 B

Children's playspace and amenity open space	Within residential developments of more than 40 bed-spaces: **Amenity open space** must be provided as follows i) a minimum of 0.4ha per 1000 bedspaces where the development is within 0.5 km of a neighbourhood (or larger) open space ii) a minimum of 0.9ha per 1000 bedspaces where the site is not within 0.5 km of a neighbourhood (or larger) open space **Equipped Play Space** must be provided at a mimimum of 0.2ha per 1000 bedspaces in the case of family dwellings ■ Equipment must be approved by the City Council's Community Recreation and Play Officer. ■ The developer will normally be required to provide and install equipment on the basis of a rate of expenditure per family dwelling. The sum applied will be that applicable at the time planning permission is granted. This will be the subject of a section 106 agreement attached to the granting of planning permission ■ Alternatively, the developer may be required to provide contributions towards the improvement of existing off-site facilities nearby. In this case the developer will also be required to make financial contributions based on the rate described above In all cases amenity open space and equipped play space must be designed into the housing layout from the outset and not positioned on land, which is left over after other elements of the layout have been determined.

10 C

Spacing between dwellings (Minimum standards - unless demonstrated through careful design that a lesser distance would be acceptable)	
Main facing windows (living rooms, kitchens and bedroom)	1 or 2 storey - minimum of 21m from any point of facing windows. A lesser distance may be permitted within a new residential development where the developer can demonstrate this reduced distance will assist in creating a variety of streets. Further guidance is included in the street design codes
	3 storeys or more - as above but add 5m for each storey e.g. 3 storeys 26m, 4 storeys 31m. (Developments of more than 4 storeys will be considered on their individual merits having regard to a fully detailed analysis of spacing, sunlight, daylight
Main windows facing side or end elevation (with only secondary window or no window)	1 or 2 storey - minimum of 14m from any point of main window
	3 storeys or more - as above but add 5m for each additional storey e.g. 3 storeys 19m, 4 storeys 24m
End elevations facing each other without main windows	In a scheme of 1 or 2 storey houses spacing should not be less than 2m
Position of dwellings in relation to adjacent developable land	Elevations with main windows and 1 or 2 storeys - the distance from the boundary shall not be less than 10.5 m
	Elevations with main windows 3 storeys - minimum of 13 m from the boundary plus 2.5 m for each additional storey
	End or side elevations without main windows 1 or 2 storeys - minimum of 7m from the boundary
	End of side elevations without main windows 3 storys-mimimun of 9.5 metres from the boundary plus 2.5 metres for each additional storey
For every 1 m in difference of ground levels add 2m to the horizontal difference.	E.g. if the difference in plot level is 1 m then the minimum distance between the main facing window and the side or end elevation should be 16m

10 D

Cycle lanes and footpaths			
Pedestrian / Cycleway network element	Design Speed	Specification	
On - road provision			
Main distributor roads	Above 20mph	Integral mandatory cycle lane with separate footpaths\footways	1.5 - 2m
Minor access roads and bus routes	20 mph	Integral advisory continuous cycle lane with direct network connections. Segregated on carriageway, lit with	
Off - road provision			
Cycle tracks	N/A	Sealed surface and lit. Segregated	3.0m (minimum)
Shared cycle and pedestrian route (utility)	N/A	Sealed surface and lit. Provision of cycle parking as appropriate	3.0 m-5.0m
Shared cycle route and bridleway	N/A	Continuous amenity leisure route. Unsealed surface. Unlit but with prospects for some ambient light	New routes 3.0-5.0m

The Manual for Streets, which replaces DB32 People, Places and Movement, was published on 27 March 2007. The Manual applies to both new streets and existing streets that are going to be re-designed and will set a challenge to all those involved in highways and street design to prioritise the needs of pedestrians and cyclists.

The Manual for Streets updates the link between Planning Policy and Residential Street Design. It challenges some established working practices and standards that are failing to produce good quality outcomes.

The key principle is the creation of a sense of place so that the layout of a street reflects all it's functions, not just that of moving vehicles. Although residential streets are the main focus of the Manual, local authorities are encouraged to consider applying the guidelines to other suitable streets, such as high streets. The result will be a higher quality urban environment that is safer from the danger of traffic.

A new hierarchy of road users with pedestrians and cyclists at the top is one of the Manual's key recommendations. The Manual, which applies to England and Wales, also advocates the reduction of traffic speeds to 20mph on residential streets through the design of street space. The Manual challenges traditional road engineering principles that increased forward visibility and wide roads make roads safer. The research that underpins the Manual has shown that there is no correlation between visibility and casualties.

Instead, a correlation was found between forward visibility and road width and driver speed. The research demonstrates that drivers adapt to road conditions and will drive faster if the layout of the street makes it easy for them to do so.

The Manual has key guidelines that local authorities are recommended to follow when new streets are built or existing streets are redesigned.

These include:

- A maximum design speed of 20mph for residential streets
- Scheme design should follow a user hierarchy that places pedestrians and cyclists first
- Planting should be integrated into street design wherever possible
- Seating on key pedestrian routes should be considered every 100m to provide rest points and encourage street activity
- Access to cycle parking in residential developments should be as convenient as access to car parking
- Guard railing should only be provided if a clear need for it has been shown

Any applicant is encouraged to enter into early pre-application discussion with the Director of Development and Regeneration in relation to street design within new residential developments.

10 E

Carriageway construction	■ must generally be a flexible construction designed to satisfy the requirements of Appendix B2 and Section E ■ must be a minimum thickness of 500mm ■ must achieve a design life of 40 years ■ must be constructed such that within 500mm of the finished surface all materials are not frost susceptible ■ must be constructed in accordance with this Specification

10 F

Carriageway width	Minimum width of carriageway of any highway to be adopted shall be 5.5m, unless otherwise agreed with the Director of Development and Regeneration Where a road may become a bus route, the carriageway shall NOT BE LESS THAN 6.7m in width. In cases where the road may be of greater importance, e.g. serving shopping or business and community centres or future development, the Director of Development and Regeneration may require a carriageway width of 7.3m The Director of Development and Regeneration must be consulted at the initial layout stage to consider the likelihood of bus services penetrating the development and to indicate possible routes

10 G

Residential Car Parking Standards for all dwelling houses	■ A maximum of 1.5 parking spaces per dwelling ■ A maximum of 1 space per 3 dwellings for visitors Note - These parking requirements do not apply in the City Centre Generally provision for car parking should be within the curtilage of the dwelling. Where this is impracticable or would conflict with other policies in the plan, the developer may be required to enter into a legal agreement to ensure proper provision in a suitable location elsewhere. Car parking provision should result, on average in no more than 1.5 off-street car parking spaces per dwelling in order to secure sustainable residential environments.

The following section is an extract from the Easington Lane Development Framework which was adopted as S.P.G. in February 2005. The extract demonstrates how flexibility may be applied to new residential developments in order to create a variety of street hierarchies. It should be noted that the street design codes are site specific and that such spacing standards will not necessarily be permitted on other sites. The onus will be on the developer to demonstrate how related spacing standards will create a high quality and imaginative housing scheme.

Easington Lane street design codes

Generally all streets should:

- Establish a robust and legible urban structure
- Introduce variation in widths between dwellings on either side of the street
- Minimise 'on street' visitor parking
- Minimise access points to shared or private parking areas
- Minimise private parking on hardstanding areas fronting the street
- Introduce a series of high quality urban / green spaces at key nodes and focal points along the streets

Access Streets - Urban Character

Access streets with an urban character will accommodate a variety of functions. These functions include bus routes, carriageways for regular traffic movement, multi-user routes and pedestrian footways.

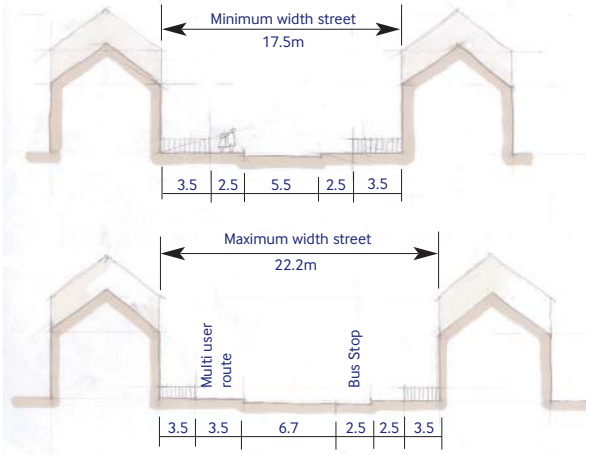
Key dimensions

Carriageways (bus routes)	6.7m
Carriageways (other than bus routes)	5.5m
Multi-user routes	5m
Footways	2.5m
Distance between dwelling frontages (mininum)	17.5m
Distance between dwellings frontages (maximum)	20.2m
Depth of private curtilage to dwelling frontage	3.5m
Height of dwellings fronting street	2-3 storey
Design speeds	20 mph

Cross section 1 - Access Streets - Urban Character (minimum width)

Cross section 2 - Access Streets - Urban Character (maximum width)

Cross Section 1 - Urban Character Access Street



Cross Section 2

Access Street - 'green character'

Access streets with a 'green' character will accommodate a variety of functions. These functions include bus routes, carriageways for regular traffic movement, multi - user routes and pedestrian footways.

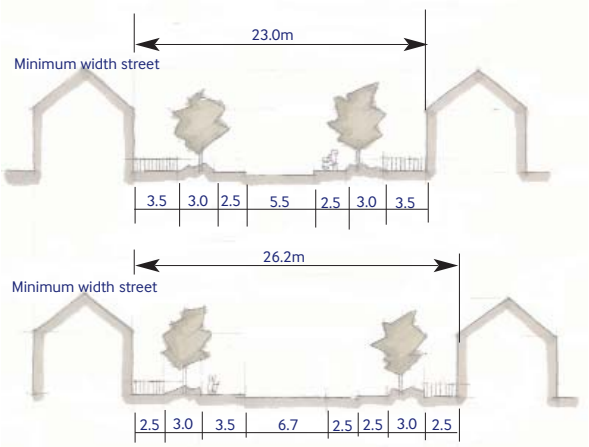
Key Dimensions

Carriageways (bus routes)	6.7m
carriageways (other than bus routes)	5.5m
Multi - user routes	3.5m
Footways	2.5m
Landscape strip	3.0m
Distance between dwellings (minimum)	23.0m
MDistance between dwellings (maximum)	26.2m
Depth of private curtliage to dwelling frontage	2.5-3.5m
Height of dwelling fronting street	2 Storey
Design Speeds	20 mph

Cross section 3 - Access Streets - 'Green' Character (minimum width)

Cross section 4 - Access Streets - 'Green' Character (maximum width)

Green Character Access Street



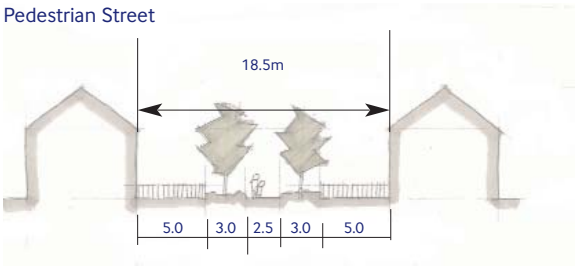
Pedestrian Streets

Pedestrian streets provide access within individual blocks of housing. Generally, dwellings should front directly onto the route.

Key Dimensions

Footways	2.5m
Landscape strip (to both sides of footway)	3.0m
Distance between Dwellings	18.5m
Depth of private curtilage to dwelling frontage	5.0m
Height of dwellings fronting street	2 storey

Pedestrian Street



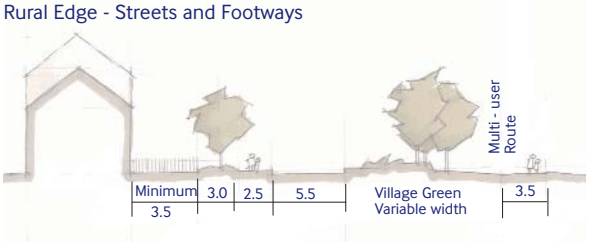
Rural edge streets and footways

Streets which front onto large areas of open space or open fields will require a different approach and should attempt to 'soften' the edge between buildings and the open countryside. The layout of new developments, combined with imaginative landscape proposals should establish a series of 'village greens' at key locations along this edge.

Key Dimensions

Carriageway Width	3.5-5.5M
Depth of private curtilage to dwelling frontage (Minimum)	3.5M
Grassed / planted strip adjacent to footway	3M
Footway	2.5M
Design Speeds	20 mph

Rural Edge - Streets and Footways



11.0 Appendices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Appendix A Design policies

B2A Sustainable Urban Design (UDP Alteration No 2)

The City Council will seek to secure the highest possible quality of built environment and the creation of desirable places to live, work, shop, and visit.

To achieve high standards of urban design all new development will be required to:

i Reinforce or enhance the established (or proposed) urban character

ii Respond to and reinforce the scale, form, massing and patterns of townscape development which make a positive contribution to the distinctive townscape and architectural qualities of the area

iii Ensure the arrangement of buildings define the enclosure of the street, with street frontages as continuous as possible with the minimum of gaps between buildings

iv Contribute to a safe and secure environment by providing surveillance for paths, streets and public spaces

v Integrate with the existing street pattern as appropriate and provide choice and convenience of movement for pedestrians and cyclists

vi Ensure parking provision is considered as an integral element of the design

vii Developments will be required to conform with the Council's Supplementary Planning guidance including design criteria set out in S.P.G. No 3 Residential Design. Specific Guidance for the central area /city centre will be prepared in the form of a city centre design strategy

viii Be accompanied by a design statement for all significant forms of development, setting out the design principles of a proposed development

ix Respect and enhance the best qualities of nearby properties and the locality and retain acceptable levels of privacy (including proposals for extensions to existing buildings)

x Ensure Sustainable Urban Drainage techniques (SUDS) are incorporated into development proposals, unless it can be demonstrated that this is not feasible

All new major developments will be encouraged:

i To achieve 10% embedded energy supply from renewable sources, unless it can be demonstrated that this is not feasible

ii To achieve high energy efficiency and to minimise consumption so that they achieve BREEAM and eco-homes very good or excellent rating (to include the redevelopment of existing buildings)

B2B Tall Buildings (UDP Alteration No2)

Tall Buildings will only be permitted where they:

i Make a positive contribution to the character of the site and the wider area

ii Form a positive relationship with the skyline and topography of the site and the surrounding area;

iii Will not detract from established views of important buildings, structures and landscape features

iv Have a proper relationship with the street (or ground)

v Avoid generating adverse climatic conditions, particularly wind and overshadowing

Appendix B Checklist for residential developments

A Character / context

- Does the development take into account the surrounding area and in particular the character, identity and density of nearby buildings?
- Does the scheme feel like a place with a distinctive character?
- Does the scheme exploit existing buildings, landscape or topography?
- Does the development demonstrate a commitment to innovative housing design?
- Does the development demonstrate that the built form, materials and detailing have been informed by an understanding of the local vernacular qualities that make a significant and positive contribution to the character of the wider area?

B Movement

- Do the buildings and layout make it easy to find your way around?
- Does the development establish a legible environment that is easy to move and find your way around, including gateway features and identifiable nodes?
- Are the streets pedestrian, cycle and vehicle friendly?
- Does the scheme integrate with existing roads, paths and surrounding development?
- Are public spaces and pedestrian routes overlooked and do they feel safe?
- Does the proposed development encourage access by all forms of travel including walking, cycling and public transport to local facilities?
- Does the development have easy access to public transport?

C Density,diversity and community

- What is the density of the development?
- Does it meet the density requirements of a development brief / PPS3?
- Is there an accommodation mix that reflects the needs and aspirations of the local community?
- Is there a tenure mix that reflects the needs of the local community?
- Does the development create a mixed neighbourhood with a range of homes suitable for people of all ages and economic status?
- How successfully have the different housing types been integrated in the overall development?

D Built form /design and construction/ layout

- Do the buildings exhibit architectural quality?
- Are the built form, materials and detailing informed by an understanding of the local vernacular qualities that make a significant and positive contribution to the character of the wider area?
- Are streets defined by a well-structured building layout with continuous frontages to streets and a varied sense of street enclosure?
- Is the design specific to the scheme?
- Do buildings or spaces out-perform statutory minima, such as Building Regulations?
- Has the scheme made use of advances in construction or technology that enhance its performance, quality and attractiveness?

E Layout / parking / public realm

- Does the building layout take priority over the roads and car parking, so that highways do not dominate?
- Does the development establish a sequence of high quality and connected public realm spaces, focal points and routes?
- Does the development establish a public realm which is not dominated by parked vehicles and includes the provision of imaginative landscaped areas and routes for use of residents and visitors
- Is the car parking well integrated and situated so it supports the street scene?
- Has parking been provided within courtyard areas to the rear of dwellings or in high quality landscaped areas within the public realm?
- Does the development make a positive response to the landform of the site, taking into account significant changes in levels?
- Has the use of house types with integral garages and areas of hard-standing for parked vehicles that front the street been avoided?
- Is the amount of car parking appropriate?
- If there is on street parking, is it interrupted at regular intervals?

F Public open space / facilities

- What is the amenity open space provision within the development?
- Is the open space provided in an appropriate location?
- Does it benefit local residents and does it properly relate to the surrounding dwellings?
- Is the public space well designed and does it have suitable management arrangements in place? Is it well maintained?
- Do the dwellings relate to open space in terms of their frontage and scale?
- Does the development provide for (or is it close to) community facilities, such as a school, parks, play areas, shops, pubs or cafes?

G Safety and security

Does the development:

- Provide a safe and secure environment for residents and visitors?
- Maximise overlooking and natural surveillance of the public and private realm?
- Adopt measures and design features to reduce traffic speed?
- Create a layout appropriate for the identified crime risk as well as to meet wider planning objectives?
- Ensure all public space serves a purpose and supports an appropriate level of legitimate activity?
- Eliminate 'inactive' frontages and corners?
- Provide a high standard of lighting and adequate maintenance regime?

H Building elements / interface elements / landscape elements

- Is an appropriate boundary treatment provided to the frontages of dwellings?
- Have the following building elements been given careful attention:

  doors, windows, porches, roof structures, lighting, flues and ventilation, gutters, pipes and other rainwater details, iron-mongery and decorative features, flashings?
- Have the following interface elements been given careful consideration:

  bin storage, cycle storage, external lighting, service entries, inspection boxes, windows and glazing, walls, hedges, fences and gates?
- Have the following landscape elements and their future maintenance been given careful consideration:

  trees, flowers, grass and other planting, carriageways, footways and hard landscaping, cycleways and footpaths, kerbs and channels, steps and ramps, fences, walls, hedges and gates, street signage, street lighting, seats, bollards, railings, public art?

I Sustainability / environment

- Does the development demonstrate a commitment to sustainability and energy conservation issues?
- Has the scheme achieved Code for Sustainable Homes acreditation of level three or above?
- Does the development have any features that reduce its environmental impact?
- Does the development have easy access to public transport?

Appendix C Glossary

This glossary is intended to provide general guidance, not authoritative definitions of terms which are sometimes controversial or used with different meanings in different contexts.

Accessibility - The ability of people to move around an area and to reach places and facilities, including elderly and disabled people, those with young children and those encumbered with luggage or shopping.

Area appraisal - An assessment of an area's land uses, built and natural environment, and social and physical characteristics.

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.

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

Design Standards - Specific, usually quantifiable measures of amenity and safety in residential areas.

Design statement - (a) A pre-application design statement is made by a developer to indicate the design principles on which a development proposal in progress is based. It enables the local authority to give an initial response to the main issues raised by the proposal. (b) 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.

Desire Line - An imaginary line linking facilities or places which people would find it convenient to travel between easily.

Development brief - A document, 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 or development frameworks.

Fenestration - The arrangement of windows on a facade.

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

Layout structure - The framework or hierarchy of routes that connect in the local area and at wider scales.

Legibility - The degree to which a place can be easily understood and traversed.

Movement - People and vehicles going to and passing through buildings, places and spaces. The movement network can be shown on plans, by space syntax analysis, by highway designations, by figure and ground diagrams, through data on origin and destination of pedestrian flows, by desire lines, by details of public transport services, by walk bands or details of cycle routes.

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.

Node - A place where activity and routes are concentrated often used as a synonym for junction.

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

Public/private interface - The point at which public areas and buildings meet private ones.

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 - A detailed analysis of the features of a site or area (including land uses, built and natural environment, and social and physical characteristics) which serves as the basis for an urban design framework, development brief, design guide or other policy or guidance.

Sustainable Development - Defined by the Bruntland Commission (1987, and quoted in PPG1) as 'Development which meets present needs without compromising the ability of future generations to achieve their own needs and aspirations'.

Topography - A description or representation of artificial or natural features on or of the ground.

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 development.

Appendix D Images within the document

1 Sunderland City Council (front cover)
2 Sunderland City Council
3 Extract from Design Statement, Station Road, Nathaniel Lichfield and Partners
4 Extract from Design Statement, Station Road, Nathaniel Lichfield and Partners
5 Sunderland City Council
6 Sunderland City Council
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15 Sunderland City Council
16 Extract from Design Statement Station Road, Nathaniel Lichfield and Partners
17 Extract form Pennywell masterplan - Gentoo
18 Building in Context CABE
19 Sunderland City Council
20 CABE
21 Building in Context CABE
22 CABE
23 Sunderland City Council
24 Sunderland City Council
25 Sunderland City Council
26 Sunderland City Council
27 Sunderland City Council
28 Companion Guide to PPG3
29 Towards Better Neighbourhoods
30 Sunderland City Council
31 Sunderland City Council
32 CABE
33 Sunderland City Council
34 Sunderland City Council
35 Sunderland City Council
36 AJ Specification
37 Sunderland City Council
38 Sunderland City Council
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40 Design for Homes
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46 AJ Specification
47 AJ Specification
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51 Design for Homes
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63 JDDK Architects
64 Joseph Rowntree Foundation
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70 Sunderland City Council
71 By Design
72 By Design
73 CABE
74 CABE
75 Sunderland City Council
76 Sunderland City Council
77 AJ Specification
78 Design for Homes
79 Design for Homes
80 Sunderland City Council
81 Sunderland City Council
82 Sunderland City Council
83 Sunderland City Council
84 Hypostyle Architects
85 CABE
86 CABE
87 CABE
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89 CABE
90 CABE
91 Sunderland City Council
92 Sunderland City Council
93 CABE
94 Towards Better Places
95 Sunderland City Council
96 Urban Design Compendium
97 CABE
98 Joseph Rowntree Foundation
99 Building for Life
100 Building for Life
101 Joseph Rowntree Foundation
102 Joseph Rowntree Foundation
103 CABE
104 Towards Better Places
105 Sunderland City Council

106 Wimpey
107 CABE
108 CABE
109 Sunderland City Council
110 CABE
111 CABE
112 Residential Design Guide Birmingham C.C.
113 CABE
114 CABE
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126 Urban Design Compendium
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154 AJ Specification
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156 Design for Manufacture
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177 Building in Context
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179 CABE
180 Building for Life
181 Sunderland City Council
182 Sunderland City Council
183 Sunderland City Council
184 Sunderland City Council
185 CABE
186 CABE
187 CABE
188 www.communities.gov.uk
189 www.energytech.at
190 www.iea.shc.org
191 www.energysavingtrust.org.uk
192 www.sdublincoco.ie
193 www.empa-ren.ch
194 www.zedfactory.com
195 www.zoxed.en
196 www.gaia.ibl.gov
197 www.bbc.co.uk
198 www.tue.org
199 www.architektur.tu-darmstadt.de
200 www.solar-components.com
201 www.downwithco2.co.uk
202 www.house.gov.uk
203 www.working.uk
204 CABE
205 CABE
206 Sunderland City Council
207 CABE
208 AJ Specification
209 AJ Specification
210 CABE
211 Design for Manufacture
212 Sunderland City Council
213 Design for Manufacture