RESIDENTIAL DESIGN

DRAFT SUPPLEMENTARY PLANNING DOCUMENT

EXETER CITY COUNCIL
JUNE 2010

CONTENTS

INTRODUCTION

I This Supplementary Planning Document (SPD) is one of a series that form part of the Local Development Framework of Exeter. It identifies Exeter City Council's requirements in relation to residential development and has been prepared in accordance with government policy, national design guidance, regional policy, Local Plan Policy and with the emerging Local Development Framework – Core strategy. This policy context is summarised in Appendix 1.

II Exeter is a thriving city which has seen its population grow from 108,000 to 119,000 in the last ten years, an increase of 15%. This places pressures on the city to accommodate significant numbers of new houses within its boundaries. There are now requirements to meet significantly higher net densities than have hitherto been required and taken together with pressing needs for higher standards of accommodation, residential amenity, townscape and environmental performance it is important that clear, comprehensive guidance is given to all prospective developers of new housing.

III The SPD is written in a context of the compelling need to tackle climate change and, therefore, the need to design all aspects of new residential development in such a way that contribute to nationally adopted carbon reduction targets. Changes to Building Regulations will require all new houses to be "zero-carbon" by 2016, but these do not include all aspects of how residents use their dwellings and their wider environment. This means that guidance needs to consider not only the design of new buildings themselves, but also how they are laid out, how they connect to facilities and how development may actively discourage motor vehicle use.

IV One of the key aspects of the guidance is the need to achieve high quality development measured by a range of clear criteria. There are numerous publications providing guidance on a range of aspects of design including sustainability, the aesthetics of townscape, maintaining residential amenity and the quality of accommodation. Some of these, such as those dealing with townscape, are dealing with well understood issues, whilst those which consider environmental performance are dealing with areas of emerging concern. It is vital, however, that these issues are considered together to ensure that future housing development enables people to live contentedly in one place for long periods by being attractive and adaptable to changing circumstances through life.

V The SPD explains the principles that developers should adopt and the procedures that should be followed to meet the challenge of designing high density development without compromising design quality or residential amenity. The City Council requires development which is efficient in land use terms but which also creates an attractive, city-living, environment Recent trends in house building have seen the development of some dwellings which are far too small to be sustainable. Designs are inflexible and not able to meet the changing needs of people over time. The SPD, therefore, sets clear space standards which will produce adaptable and flexible homes meeting the long-term needs of residents.

VI In providing guidance for place making the SPD draws on historically proven precedents such as linked streets of terraced housing, squares and circuses but combines these with clear guidance which helps tackle problems associated with climate change and creates pedestrian friendly places. The guide is not prescriptive in terms of architectural style but does require building design to contribute positively to the formation of coherent urban places.

VII The SPD is written in the full knowledge that the City Council has to work closely with the house building industry and be aware of the market conditions that may apply. That is not to say, however, that standards may be relaxed or applied in such a flexible way as to become meaningless. Uncertainty, delay and changing requirements late on and during implementation are major concerns for developers so the SPD provides clear standards which will be applied consistently.

1 DESIGN OBJECTIVES

INTRODUCTION

1.1 The purpose of this SPD is to achieve high quality, sustainable private and public sector housing developments whilst, at the same time, achieving densities which represent efficient use of land and contribute positively to urban renewal. In order to achieve this, developers should recognise the key objectives which form the basis of acceptable schemes.

SUSTAINABLE DESIGN

1.2 The overriding objective is to deliver sustainable housing developments. The definition of Sustainable Development is;

"Development that meets the needs of today, without compromising the ability of future generations to meet their needs".

This means that developers must ensure that they minimise the carbon emissions produced by their developments, both during construction and during the use of the development by future residents, and that they take an approach to design that maximises the quality of life of residents and takes all opportunities to improve biodiversity.

Figure 1.1 An attractive residential development incorporating sustainable features.

OBJECTIVES OF DEVELOPMENT

1.3 To achieve high quality, sustainable development the ten objectives set out below must be met. These are based on concepts which are now well recognised by those involved in the provision of housing development.

(I) High quality townscape, landscape and amenity

Layouts of buildings, routes and spaces that promote health and well-being of communities and which are designed as one piece (integrated design). Good enclosure, high quality landscape and green infrastructure, high quality public and private spaces, active frontages, visual delight and good quality amenity.

(II) High architectural quality

Dwellings that are fit for purpose, providing space standards and facilities which meet a range of needs over time and which minimise energy consumption. Buildings that are durable, well built and aesthetically pleasing.

(III) Places which have their own distinct identity

Development which either enhances and/or creates local distinctiveness and which helps people find their way around by the design of layout and buildings. Schemes which are built using or reflecting the limited Exeter palette of materials and which have a clear design rationale related to the accommodation being provided.

(IV) Permeable layouts

Development which has good connections within the site and to places and facilities beyond it for all modes of transport.

(V) Pedestrian and cycle friendly places and routes

Layouts which give priority to pedestrian and cycle movement with safe and convenient routes within sites and to destinations beyond.

(VI) Energy and water efficient design

The optimisation of energy consumption in the construction and operation of developments, and optimisation of the use of renewable energy supplies and sustainable drainage systems, the use of materials from sustainable sources to reduce the impact of housing on the earth's finite resources.

(VII) Well managed and maintained public realm

A public realm, which includes open space and green infrastructure that is well managed and maintained. The adoption of mechanisms which ensure the long-term retention of high quality public realm.

(VIII) Inclusive places

Development which includes a wide range of housing types and which integrates affordable housing into the layout. Affordable and market housing that is built to the same standards, and a design of dwellings which is adaptable to the changing needs of different age groups and of people with disabilities.

(IX) Safe places reducing the fear of and opportunities for crime

The delivery of safe places and safe buildings which do not detract from the quality of the townscape or architecture.

(X) Green infrastructure and integration of wildlife habitats

Development which contributes to the provision of a green infrastructure and enhancement of ecological value, including the integration of existing and new wildlife habitats.

BUILDING FOR LIFE (BfL) AND LIFETIME HOMES

1.4 BfL is a method for measuring the design quality of residential developments. It sets the national standard for residential design with its Gold Standard being awarded to schemes which score over 14 out of 20 against its criteria. The scheme is led by The Commission for Architecture and the Built Environment (CABE) and the Home Builders Federation. It involves assessing the quality of schemes by asking 20 questions which cover four subject areas:

Part I - Environment and Community
Part II - Character
Part III - Streets, parking and pedestrianisation
Part IV - Design and Construction.

1.5 This SPD complements BfL; its requirements cover the issues raised by BfL's 20 questions. The following chapters relate closely to BfL's subject areas and questions, and it is intended that the SPD will result in a quality of design which will meet the design standards set in BfL. At the start of each chapter a box, highlighted in blue with the BfL logo, sets out which BfL criteria relate to the contents of the chapter.

1.6 Lifetime Homes incorporates 16 design criteria to ensure homes are more flexible and inclusive to support the changing needs of individuals and families at different stages of life. The criteria also help to meet the City Council's objectives of sustainable design, architectural quality and inclusive design. The City Council, therefore, intend to make Lifetime Homes mandatory for all newly built or converted housing. Relevant criteria are listed at the start of each chapter, highlighted in purple with the Lifetime Homes logo. The criteria may be found at www.lifetimehomes.org.uk.

NEW OR CONVERTED DWELLINGS MUST COMPLY WITH THE 16 LIFETIME HOMES DESIGN CRITERIA.

2 DESIGN PROCESS

INTRODUCTION

2.1 The delivery of high quality development is dependent upon a process which takes all the relevant design issues into account at the earliest possible stages.

2.2 The developers' approach to sustainability must be set out at the start of the design process to ensure that opportunities to reduce energy consumption and carbon emissions, integrate green infrastructure and improve biodiversity are taken.

2.3 A critical element in the process is pre-application negotiation, which seeks to agree the design of proposals prior to applications being submitted for planning permission. To ensure a design which has officer support at the time of submission, prospective developers should follow the design procedure outlined in Figure 2.1:

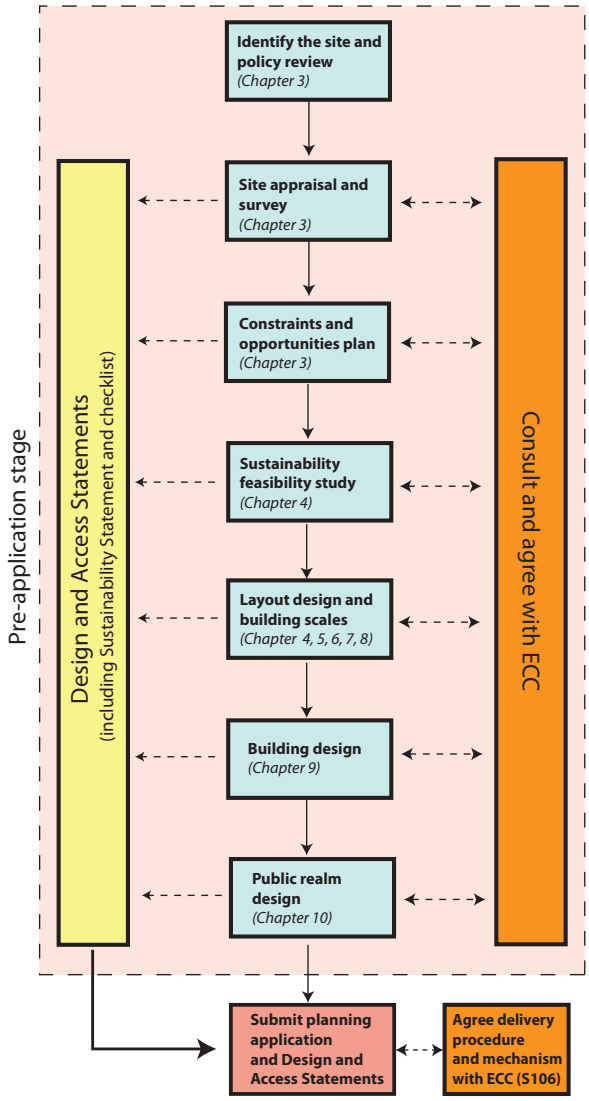


Figure 2.1 The Design Process flow chart

SUSTAINABILITY ISSUES

2.4 The following issues will be considered when addressing sustainability at the start of the design process will include:

- Climate change and energy (flooding, cooling, heat absorption, water management, carbon emission management, sustainable heating, weather resilience)
- Community (including public services and management)
- Place making (including efficient use of land, development form, provision of open space and lighting)
- Transport and movement (including promoting sustainable modes of transport and managing parking)
- Ecology (conservation, enhancement and planting)
- Resources (including appropriate use of land, environmental impact, protecting water quality and recycling/composting)
- Business
- Buildings (ensuring that the design of individual buildings does not undermine the sustainability of the development)

USE OF THE FUTURE FOUNDATIONS SOUTH WEST SUSTAINABILITY CHECKLIST IS REQUIRED.

The Sustainability Checklist can be downloaded from www.checklistsouthwest.co.uk

2.5 The design process also needs to be mindful that Government policy has established that building regulations will require CO^2 emissions from new buildings to reduce incrementally and that zero carbon homes homes will be required in 2016. Developments that span the years during which regulations require emissions reduction must be mindful of the carbon emission standards which will be required at the end of the build programme as decisions at the outset can compromise emissions reduction in latter phases.

2 DESIGN PROCESS

DESIGN AND ACCESS STATEMENTS

2.6 From August 2006 design and access statements have been required to accompany applications supporting the application and illustrating the process that has led to the proposal, and to explain and justify the proposal in a structured way. The level of detail required within a statement will depend on the scale and complexity of a proposal, but it should show how the proposal has achieved good design, and explain how it relates to design policy and site context.

ALL DESIGN AND ACCESS STATEMENTS ACCOMPANYING APPLICATIONS FOR RESIDENTIAL DEVELOPMENT MUST INCLUDE A SUSTAINABILITY STATEMENT AND A BUILDING FOR LIFE ASSESSMENT

2.7 Design and Access Statements should reflect the above design process and set out the following information:

- Setting out site and context appraisals and survey information;
- Explaining how the constraints and opportunities of the site and its surroundings have influenced the design of the proposals;
- Setting out the design concept and principles that have informed the design;
- Describing the outcomes of any consultation undertaken and explaining how this has influenced the design;
- Where relevant, illustrating the design options that have been explored and explaining why the preferred approach was chosen; and
- Explaining how the planning application proposals meet the planning authority's policies.

Further information can be found in CABE's publication 'Design and access statements: how to write, read and use them' from www.cabe.org.uk.

MAJOR APPLICATIONS PROTOCOL

2.8 There is a formal protocol in place for all residential developments of 10 or more units but developers are strongly advised to follow the procedures of the protocol for all applications and ensure that development proposals are fully supported by officers at the time of submission. The document is available on the City Council's website www.exeter.gov.uk .

3 SITE ANALYSIS

INTRODUCTION

BUILDING FOR LIFE RELEVANT QUESTIONS: 1, 2, 3, 4, 5, 6, 7, 8, 14, 15

3.1 Understanding a site and its context is crucial to the creation of development that is locally distinctive and well integrated with the surroundings. The design and access statement will include a survey and analysis of a site and its surroundings to help identify the design principles, taking account of the various constraints and opportunities.

3.2 The approach to sustainable design is likely to be informed by the site analysis. Solar orientation and topography; connections to existing foot, cycle and public transport routes; existing trees, biodiversity or drainage patterns, will all influence the form of the development. Locally distinctive urban form and materials may influence the layout and design of the scheme.

CONTEXT AND SITE APPRAISAL

Planning Policy

3.3 Prospective developers should ask:

- Is the site allocated for housing development in the development plan? An unallocated site may not be suitable for residential development in principle.
- Is there any adopted Area Action Plan, masterplan, development brief or other guidance for or relevant to the site? Development principles in these documents will need to be followed.
- Are there any designations on the site or nearby, for example Conservation Area or Valley park, which may restrain the development forms?
- Is the site within or adjacent to a flood plain? If yes, is the site suitable for residential development and what are the required mitigation measures?

The Context Appraisal

3.4 The context appraisal should help meet the aim of producing a development that is environmentally sustainable and appropriate in landscape/townscape terms.

The context appraisal, therefore, needs to take account of four main areas:

I. Connections to facilities and utilities
II. The public transport network
III. Walking and cycling routes
IV. Landscape and townscape context

I. Connections to facilities and utilities

3.5 A survey plan is required indicating both local facilities and those located further away. This should indicate public open space, schools, shops, health care, community and sports facilities. The plan should be to scale and indicate the distances to key facilities. Figure 3.1 (overleaf) demonstrates an example:

3.6 The analysis of this survey plan will be required to demonstrate where any facilities are missing or inadequate, too far away or without a convenient route to and from the site. Plans for development will be required to make proposals to solve, or contribute to solving, these problems.

3.7 The plan should also include the utility connections to the site and in particular to what extent energy utility connections include fossil fuel and / or low or zero carbon energy sources. A summary of any current or proposed low or zero carbon infrastructure in the locality. Developments in the locality of existing low carbon infrastructure will be expected to connect. An assessment of the development's potential to supply energy to the locality should be provided. If fuel for on-site energy systems is to be supplied to the site by road transport (for example through the use of biomass fuel) the method and peak frequency of these deliveries in both tonnes and vehicle movements should be stated.

Figure 3.1 An example of a local facilities plan

II. The public transport network

3.8 Survey material should demonstrate how a site is served by public transport facilities. Depending upon the nature of the site and the amount of survey material produced, this may be a separate plan or combined with the facilities plan and include bus and rail routes, stops and stations and frequencies. Analysis should include identification of scope to improve the network and the contribution the development of a site may make.

III. Walking and cycling routes

3.9 Existing walking and cycling routes should be indicated, showing links to facilities and to bus stops and railway stations. Distances or times taken to use the links should be shown. Analysis should indicate where new routes and links need to be made to improve the network.

IV. Landscape and townscape context

3.10 Plans, sections and photographs will be required, demonstrating how a site fits into its landscape and townscape context. These should include information about views in and out, the nature of the landform including its slopes and vegetation, hydrology and flooding, biodiversity and wildlife habitats. Any statutory or Local Plan designations should be highlighted. In sites located within or next to existing development the character of the townscape should be identified including the street pattern, the way buildings relate to the street, the age, scale and architectural style of buildings, and highlight any statutory or local plan designations such as listed buildings or conservation areas. Figure 3.2 is an example of how this information might be presented. The aim is to ensure a design which fits appropriately into its setting and contributes positively to the wider character and image of the city.

Figure 3.2 An example of a landscape and townscape context plan

3.11 Information should also be included which identifies constraints adjoining or adjacent to the site. This may include sources of noise and emissions such as railway lines, busy roads, or commercial uses which may affect how a layout may be arranged.

Site Appraisal

3.12 The site should be fully surveyed as the start of the development process. This will identify information such as levels, slopes, vegetation including hedgerows and trees, watercourses, wildlife habitats, existing buildings, structures and hard surfaces, existing accesses and underground and overhead services. Contours and sections should be included. Specific survey information dealing with the following may also be required:

Archaeology

3.13 Reference should be made to City Council SPD – Archaeology and Development. Contact should be made with the City Council's Archaeology Officer to ascertain requirements at the start of the process.

Existing buildings and structures

3.14 An assessment of the townscape, architectural, archaeological and historic value of existing buildings and structures is required.

Wildlife habitats and biodiversity

3.15 Contact should be made with the City Council's Countryside Projects Officer at the start of the process.

Trees

3.16 A tree survey will often be the starting point in assessing the scope for development of a site. Reference should be made to the City Council SPD - Trees and Development. Contact should be made with the City Council's Landscape and Tree officer at the start of the process.

Flood risk

3.17 Information will be required about the location of a site relative to flood risk.

Contaminated land

3.18 Information may be required about uses which may have contaminated the land.

Qualitative assessment

3.19 The appraisal of the site will need to include an agreement with the City Council of a categorization of the townscape, landscape and historic value of a site and its component parts. This should take the form of a plan and an associated categorisation of elements into positive, neutral or negative.

THE LINKS BETWEEN CONTEXT AND SITE APPRAISAL AND PROPOSALS

3.20 There must be clear links between site appraisal and the proposals that are made. The need for successful commercial or budgetary outcomes are recognised but with good procedures and communication there need be no conflict between these imperatives and the requirements of the SPD.

THE SURVEY AND ANALYSIS WILL BE USED AS THE BASIS FOR THE PRODUCTION OF A CLEAR DESIGN CONCEPT, OR A NUMBER OF OPTIONS FOR DEVELOPMENT

THE SURVEY AND ANALYSIS WILL BE IN SUCH A FORM THAT IT MAY BE REFERRED TO AT ANY TIME IN THE DEVELOPMENT PROCESS

STRONG LINKS SHOULD ALWAYS BE RETAINED BETWEEN THE PROPOSALS AND THE ANALYSIS SO THAT THEY MAY BE EASILY EXPLAINED TO INTERESTED PARTIES

3.21 Building for Life questions 6 and 7 clearly recognise the need for development based on an understanding of the way a local area looks and works, and how successfully a scheme reinforces local patterns of development, landscape and culture.

4 LAYOUT DESIGN

INTRODUCTION

BUILDING FOR LIFE

RELEVANT QUESTIONS : 1, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14,15, 16, 19, 20

4.1 The layout is the arrangement of the development blocks, streets, buildings, open space and landscape that make up the development area. A good design will look at the inter-relationship of all these elements, rather than each particular characteristic in isolation, and will make a 'place' that is distinctive, has its own character and is easily identifiable.

4.2 New development, regardless of its scale, should ensure it has a strong and memorable character. This is more than just building places that are pleasing to the eye but about making places that work and where people want to be. This is achieved by ensuring that the design is based on an analysis of the site and its surroundings including links to existing facilities and movement networks.

4.3 Careful layout of the site is an important part of achieving sustainable, environmentally friendly development. High quality housing, public spaces, parks and streets improve the quality of life for residents. Creating good connections to infrastructure and facilities encourages more walking, cycling and use of public transport. Efficient use of water and energy results from careful site design, and a good standard of private and public open spaces allows local informal leisure, social interaction and opportunities for on-site food production, all of which reduce the need for energy consumption in transport. Layout should also be mindful of increasing summer temperatures due to unavoidable climate change resulting from past and current CO emissions. Building form and layout, and trees and plants play an important role in providing attractive levels of summer shade which will become increasingly important as summer temperatures rise.

DESIGN PRINCIPLES

4.4 Site layout must be based on the following five design principles highlighted:

(I) Sustainable design

DEVELOPERS MUST ENSURE THAT A SITE IS DESIGNED AND LAID OUT TO MINIMISE ENERGY REQUIREMENTS, INCORPORATE SUSTAINABLE URBAN DRAINAGE SYSTEMS (SUDS) AND MAXIMISE THE POTENTIAL FOR BIODIVERSITY AND GREEN INFRASTRUCTURE.

Where development sites include existing buildings, developers should consider incorporating converted buildings into the layout and, if proposed to be demolished, to demonstrate why conversion of these is uneconomic.

The design process should include a construction methodology which minimises waste and energy use.

(II) Integrated landscape design

A LANDSCAPE FRAMEWORK THAT IS INTEGRATED INTO THE DESIGN WILL BE REQUIRED FOR MOST DEVELOPMENT SITES. THIS WILL INCLUDE HARD SURFACES, STREET FURNITURE, PLANTING (SOFT WORKS) AND BOUNDARY TREATMENT

On larger sites a landscape framework, including the retention of existing trees and shrubs worthy of retention, will form the basis for a layout ensuring a good relationship between buildings and spaces and demonstrate how the proposed landscape links to adjoining areas. Public open space requirements will need to be considered at an early stage in the development of the landscape framework as will provision for green infrastructure including wildlife habitats, the design of a sustainable drainage system, all underground services and effective future management of the public realm.

The connections which form the public realm must be linked into the landscape framework and with community facilities.

(III) Making connections

LAYOUTS MUST ENSURE GOOD PEDESTRIAN, CYCLE AND PUBLIC TRANSPORT LINKS WITHIN A SITE AND TO AND FROM ITS SURROUNDING AREA.

Priority should be given to different modes of transport in accordance with the following hierarchy:

1. Walking
2. Cycling
3. Public Transport
4. Emergency Vehicles
5. Other – mainly car

Pedestrian and cycle routes should be safe, legible, overlooked, well lit and be directly connected to key facilities and places. Streets should be designed as places that prioritise people (such as Home Zones) rather than vehicles. Safe and secure public and private cycle storage should be included.

The road layout should make connections to the existing public transport network, providing through routes suitable for use by buses where necessary to enable them to serve the development. Public transport stops should be in safe, sheltered and accessible locations, and be close to key facilities such as schools, shops and health centres. Vehicle access within a site should be based on a connected highway system rather than culs-de-sac.

(IV) Services

ALL SERVICES AND UTILITY INSTALLATIONS MUST BE INTEGRATED INTO THE LAYOUT FROM THE OUTSET SO THAT THEY DO NOT DETRACT FROM THE TOWNSCAPE OR LANDSCAPE FEATURES. SERVICE CORRIDORS MUST BE IDENTIFIED AT THE START OF THE DESIGN PROCESS TO AVOID CONFLICTS BETWEEN EXISTING AND PROPOSED TREES AND UTILITIES.

Utility installations such as meter boxes on the frontages of buildings will not be acceptable.

(V) Energy and drainage

DEVELOPERS MUST ENSURE THAT BUILDING AND INFRASTRUCTURE LAYOUT MINIMISES ENERGY CONSUMPTION.

The layout and massing of development should, as far as possible, exploit local climate conditions – daylight, sunlight, wind and temperature – to help create an energy efficient layout. Design must be resilient to internal overheating and be sufficiently robust to accommodate the impact of the rise in external summer temperatures anticipated at the end of the buildings lifetime

SUSTAINABLE URBAN DRAINAGE SYSTEMS (SUDS) MUST BE INTEGRATED INTO THE LAYOUT AT THE START OF THE DESIGN PROCESS.

Potential for SUDS to link to existing water bodies and improve the biodiversity of the site should be considered.

POTENTIAL FOR ENERGY GENERATION ON SITE MUST BE CONSIDERED AT AN EARLY STAGE IN THE DESIGN PROCESS.

Provision of district heating and energy centres will be supported. In sites utilising district heating thoughtful site layout can reduce the length and cost of district heating pipe work. Where district heating is not achievable initially, the provision of the relevant infrastructure, such as ducting, should be considered.

The roofs of buildings should be oriented and structurally and electrically prepared for the installation of photovoltaic panels across all non-overshadowed south facing roof surfaces.

PERIMETER BLOCKS

4.5 Perimeter blocks (Figure 4.1) are an arrangement of buildings that enclose places such as streets and squares. They assist in achieving sustainable development by creating layouts which have good links between places and hence the potential to reduce vehicle movements and encourage walking and cycling. They may consist of houses or flats but all will create a clear building line with a well articulated frontage to the public realm while containing private space to the rear. Built to a consistent and continuous building line, perimeter blocks will have frequent front doors and fenestration bringing life to the street. They allow for feature buildings on corners or at the end of vistas which help people to find their way around and add interest to the street scene.

NEW DEVELOPMENTS SHOULD NORMALLY BE IN PERIMETER BLOCK FORM APPLYING THE FOUR DESIGN REQUIREMENTS OUTLINED BELOW. WHERE A SITE MAY ALLOW ONLY PART OF A PERIMETER BLOCK TO BE BUILT, THE REQUIREMENTS WILL NEVERTHELESS APPLY.

4.6 Perimeter blocks may be square, rectangular, concentric or irregular as indicated in Figure 4.2.

4.7 Irregular or informal blocks, with more variety of angles, will give the impression of a townscape which has evolved over time, perhaps with a village, rather than urban or town character. Larger sites or urban extensions may require a combination of the formal or informal arrangement to create distinct character areas, although many medium or smaller sites will benefit from a consistent approach.

4.8 In cases of formal layouts, based largely on the use of right angles, the creation of continuous building lines and avoidance of left-over spaces is relatively straightforward. Informal layouts will require more care and a flexible approach to house design to avoid disjointed and poorly enclosed streetscape.

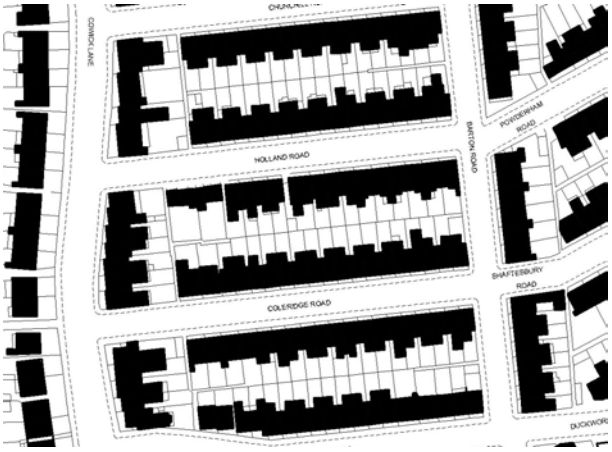
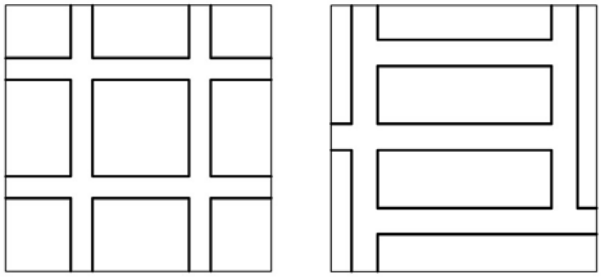
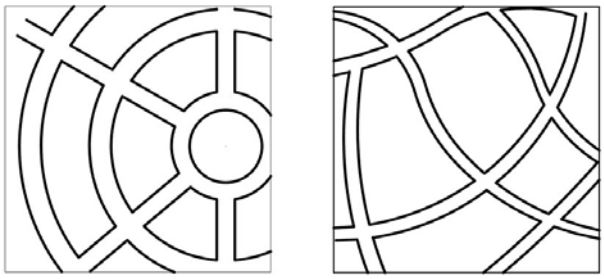


Figure 4.1 Bulldings in a perimeter block form



Square block

Rectanglar block



Concentric block

Irregular block

Figure 4.2 Basic forms of perimeter blocks

REQUIREMENTS

4.9 Four key requirements for the use of perimeter blocks are outlined below. These would apply equally to small sites where perhaps only a row of houses may be provided, rather than a complete block.

(i) Street frontages will be defined by building fronts and blank elevations will be avoided. To enhance activity building entrances will face onto the street or other public space and all buildings will have habitable rooms on the frontage at ground floor level(Figure 4.3). Integral parking will only acceptable where living areas are accommodated on the ground floor frontage and where the dwellings are set sufficiently far forward to avoid parking between the dwelling and the street.

DEVELOPMENTS MUST HAVE ACTIVE FRONTAGES FACING ONTO THE STREETS AND OTHER PUBLIC OR COMMUNAL SPACES.

Figure 4.3 Buildings contribute to active street frontage

(ii) Buildings and walls should define and enclose the street by adhering to a consistent building line (Figure 4.4). Dwellings should generally not be arranged in a jagged form, but should reflect the alignment of the street (Figure 4.5). Arbitrary projections and set backs should be avoided. Where projections and set-backs are justified in townscape terms, the resulting spaces should have a clear function.

A CONSISTENT AND CONTINUOUS BUILDING LINE MUST BE PROVIDED IN ORDER TO DEFINE AND ENCLOSE THE STREET.

Figure 4.4 Houses following a consistent building line

Figure 4.5 Jagged building lines result in unsatisfactory street scene

(iii) Block corners will consist of buildings which turn corners effectively. Increasing the scale of corner buildings will help people find their way around but should normally follow the building line. Varying the roof design, fenestration detailing and/or materials may also help turn corners effectively. (Figure 4.6).

Figure 4.6 Buildings turn corner effectively.

It is important that corners are overlooked (Figure 4.7). Blank walls (Figure 4.8) should be avoided and front entrances and fenestration serving habitable rooms provided.

Figure 4.7 A corner building providing good surveillance to the street

Figure 4.8 A house with vandalised blank side wall

Corner buildings will need to be specifically designed to provide good quality amenity space on the private side of the building and provide good standards of privacy and daylight. (Figure 4.9)

BLOCK CORNERS MUST CONTRIBUTE TO ACHIEVING GOOD ENCLOSURE, LEGIBILITY, RESIDENTIAL AMENITY AND SURVEILLANCE.

Figure 4.9 A corner block with good amenity space on the private side.

(iv) The perimeter block principle works on the premise that a public realm is created at the front and a private realm to the rear. This distinction is emphasised by the idea that occupiers and visitors should arrive at the front and that parking should be close to the front door. Block interiors should be designed as secure, tranquil private amenity space – either private gardens or communal space or a combination of both - that does not contain parking or otherwise encourage public access.

THE BLOCK INTERIOR MUST BE EITHER IN THE FORM OF BACK TO BACK GARDENS AND/OR A HIGH QUALITY COMMUNAL SPACE.

Figure 4.10 Block interior in the form of priviate gardens

DEVELOPING A HIGH QUALITY LAYOUT PLAN

4.10 Once the constraints and opportunities plan referred to in Part 4 is complete the set of plans outlined below will be required. The level of detail that is required is largely dependent upon the nature of the site but it is important that the final layout plan is clearly based upon the analysis that has been carried out and demonstrates that the principles outlined above have been incorporated.

4.11 The paragraphs below include good practice examples of the required plans for an urban extension site and for a smaller, infill site. This demonstrates that the principles are applicable across a range of situations. These good practice plans are followed by guidance for the development of good quality components of layout such as streets and squares, including contrasting images of good and poor practice.

Concept Plan

DEVELOPERS MUST PRODUCE AN ANNOTATED CONCEPT PLAN.

4.12 This will demonstrate how the site makes visual and physical connections with the surrounding area, and the basic internal structure and form of the development. Figure 4.11 is an example of how such a plan may be presented.

Figure 4.11 An example of a concept plan

Landscape Framework

A LANDSCAPE FRAMEWORK MUST BE REQUIRED FOR LAYOUTS ON MOST SITES.

4.13 This will demonstrate how the proposed landscape will connect to the wider landscape and ensure a good relationship between buildings and spaces. The existing landscape will often be the starting point for the design with the framework setting out the structure of the site, how existing and proposed views will be accommodated, and how the management of water and biodiversity (existing habitat, connections to off-site landscape/ecosystems) will be integrated into the development.

4.14 The landscape framework for a site must ensure that the various components of landscape, such as public open space, play areas, woodland, hedgerows, wildlife habitats and green lanes are well connected to each other Site development should contribute to the Green Infrastructure of the city and underpin the landscape of the site. Underground services, sustainable drainage systems and circulation and access arrangements should be integrated into the framework . Figure 4.12 is an example of how a landscape framework may be presented.

Figure 4.12 An example of a landscape framework plan

Block plan

A BLOCK PLAN MUST BE PROVIDED, DEMONSTRATING THE PLACES THAT ARE BEING MADE.

4.15 This will show street pattern, distribution and size of open space and how places within the site are connected. The principles of built form and enclosure will be demonstrated without the detail of individual buildings or landscape. Connections to the surrounding area should be clearly set out to demonstrate how these are to be achieved. Figure 4.13 is an example of how such a plan may be presented.

Figure 4.13 An example of a block plan

Layout plan

A DETAILED LAYOUT PLAN MUST BE PROVIDED.

4.16 The layout plan is a detailed plan which demonstrates how all the site's facilities, including individual dwellings, parking, underground services, bin storage and other utilities are accommodated. The layout plan should show how the development will deliver the principles set out in the concept plan, landscape framework and block plan and demonstrate how the site will work in practical terms. Figure 4.14 (over page) is an example of how such a plan may be presented.

Newcourt Layout Plan to be inserted

Figure 4.14

5 PLACES WITHIN A LAYOUT

INTRODUCTION

BUILDING FOR LIFE

RELEVANT QUESTIONS : 3, 6, 8, 9, 10, 11, 13, 15, 16,19, 20

5.1 Each place within a layout, be it a street or a square, an avenue or a mews, should be designed with its own distinct character and identity. This approach will engender a sense of pride and affection in the places people live in and help maintain a high quality environment and sense of community. On small sites it may be the case that only one kind of place may be created; perhaps a courtyard or mews, but on larger sites there is likely to be a requirement for a number of different types of place. Careful consideration should be given to how these are arranged and in many situations there will be a requirement for a clear hierarchy of places. For example, on the parts of a site where there may be through traffic or a public transport route an avenue or boulevard concept may be applied. Away from a boulevard where no through traffic is planned, smaller residential streets may be appropriate. Off these streets small courtyards or mews places could complete the hierarchy.

5.2 In addition to the hierarchy it will be important that larger sites are divided into character areas, creating discrete parts with which residents may readily identify.

PRINCIPLES

5.3 The following four principles should be applied to making places within a layout:

(i) Distinct character

NEW DEVELOPMENT MUST CREATE PLACES OF DISTINCT, IDENTIFIABLE CHARACTER.

This may reflect and strengthen local townscape or create new character with a new local distinctiveness. A formal approach – perhaps based on a grid iron pattern including a repetition of unit types may be applicable – which would be likely to create a clearly planned design or, alternatively, the character may be achieved by an informal approach, perhaps utilising winding streets - reflecting incremental growth. On larger sites development should be based on a clear hierarchy of places.

(ii) Priority given to townscape

STREET LAYOUT MUST BE DESIGNED TO GIVE PRIORITY TO THE TOWNSCAPE AND PEDESTRIANS OVER THE MOVEMENT AND PARKING OF VEHICLES.

Roads will be designed to fit into the townscape and ensure a high quality pedestrian environment, rather than the buildings designed to fit in and around the roads. Junction radii should be avoided or minimised in order to slow down turning vehicles. Vehicle carriageways must be designed to accommodate turning vehicles without the need for generous radii. Where appropriate, use should be made of the tracking system outlined in By Design.

(iii) Creating good enclosure

Urban places such as streets and squares should be enclosed so that spaces are well-defined. The key to this is to ensure that buildings are appropriate in terms of scale and massing to the spaces they face. Tree planting and other landscape elements will also be important in creating attractive enclosure.

When considering development options developers need to consider the quality of the places they will be making. To achieve high quality design the City Council will expect recognised components of place making including streets, avenues, lanes, mews, squares, crescents and circuses and public open space to form the basis of a layout.

On smaller sites perhaps only one component may be necessary, such as a street, but on larger sites the composition of components needs to be assessed to ensure that a developed site is attractive and safe to move through.

Some places such as key pedestrian and cycle routes will be vehicle free but most good places are those that accommodate the movement and parking of vehicles at the same time as creating a pedestrian friendly and attractive public realm which encourages social interaction.

(iv) Summer shading

Places within a layout should be mindful of increasing summer temperatures due to unavoidable climate change resulting from past and forecast CO^2 emissions. Building form, trees and plants play an important role in providing attractive levels of summer shade which will become increasingly important as summer temperatures rise.

PLACE MAKING GUIDANCE

5.4 The guidance below suggests how good quality places of urban character may be made.

Streets

5.5 Linked streets will generally be the main component of a layout. Good quality streets may take various forms as indicated in Figure 5.1 and 5.2 but there are common elements such as a good balance between the width of a street and the height of buildings, limited lengths of street, views or glimpses to places beyond, space for informal social interaction, good planting and motor vehicles accommodated without detracting from safety or the townscape which are required to achieve high quality places.

Figure 5.1 A strong sense of place created by a formal, planned character.

Figure 5.2 This street also has distinct character but it is informal and gives the impression of incremental growth rather than having been planned.

5.6 This requirement is in response to the problems associated with layouts based on culs-de-sac (Figure 5.3). There is some evidence that short culs-de-sac have some benefits in terms of security and arguably in terms of sense of community, but this is outweighed by the disadvantages in terms of movement and connectivity and the space taken up by the requirement for turning heads. With care, secure places with a strong sense of community may be designed without the use of culs-de-sac (Figure 5.4).

Figure 5.3 Layout based on cul-de-sac.

Figure 5.4 Layout based on perimeter blocks.

Avenues

5.7 An avenue may be appropriate in a scheme for a larger site, perhaps including a prominent through route.

5.8 Avenues (Figure 5.5) are broad, formal streets, specifically designed to accommodate rows of trees. It is important that the trees have sufficient space to grow to a reasonable size without affecting residential amenity and to allow vehicles to move through and to park without adversely affecting the trees. Figure 5.6 indicates the space and distances needed to accommodate trees.

5.9 To create a good quality avenue with a good balance between the heights of buildings and spaces they face three storey buildings will often be required in conjunction with appropriate species of trees. Carriageway widths may need to take account of large vehicles (e.g. bus routes). Parallel on street parking may be required. Figure 5.6 illustrates how this may be achieved:

Figure 5.5 An avenue with one row of trees.

Figure 5.6 An example of avenue design

Squares

5.10 Squares are well recognised and appreciated components of urban form. They contrast with the linear nature of streets and lanes and act as a focal or reference point in a townscape. They help create a strong sense of place and also provide good opportunities for social interaction and may accommodate public open space and car parking effectively without damaging the townscape or amenity. An effective square may be large with imposing buildings (Figure 5.7) or small creating a sense of intimacy (Figure 5.8).

5.11 Careful consideration needs to be given to the size of a square, the nature of the buildings facing onto it and the ways in and out of the space and across it. Footpaths and cycleways should follow desire lines – this avoids damage to planting through people forging their own routes.

Figure 5.7 A large green square within a residential development.

Figure 5.8 An attractive intimate square.

Crescents and circuses

5.12 Crescents and circuses are attractive, formal townscape features (Figures 5.9 and 5.10) which can act as a focal point for a scheme giving the sought after sense of place and significant scope for social interaction.

Figure 5.9 A crescent enclosing an attractive green space.

Figure 5.10 A circus within a recently completed development

5.13 Crescents and circuses are effective devices with which to define and enclose open space and, within a modern residential layout, may accommodate car parking without affecting the townscape. In the example in Figure 5.11 public open space was successfully incorporated within the design of the circus. Figure 5.11 also demonstrates how right angled parking may be accommodated within a circus. In many other situations this form of parking is difficult to assimilate into the townscape.

Plan of Newcourt Circus

Figure 5.11

5.14 Crescents and circuses, have convex rear elevations, allowing good quality private amenity space. The space opens up, enhancing the quality of gardens and outlook. Curved streets with convex front elevations can be included in a layout (Figure 5.12) but the concave rear elevations need to be designed carefully to create good quality amenity. This arrangement would provide scope for attractive communal open space combined with semi-private patio space connected to the dwellings.

Figure 5.12 A curved street with convex front elevation.

5.15 In creating these forms ensure that the built form and materials are consistent. Where arbitrary changes take place (Figure 5.13) the concept will be spoilt.

Figure 5.13 The introduction of a change of house type has spoiled the crescent effect and demonstrates the importance of consistent building form.

5.16 The example in Figure 5.14 demonstrates the problems of integrating archways to accommodate emergency vehicles into a street scene but the negative aspects of this feature have been minimised by continuity of built form and good quality materials.

Figure 5.14 The scale of archways is often a problem but the negative aspects here have been minimised by the continuity of built form and good quality materials.

MEWS AND LANES

5.17 Courtyards or narrow streets forming intimate spaces may be possible and, indeed, useful in creating a hierarchy of places within a layout. Depending upon their design they may be known as mews, mews courts, lanes or even back streets. Mews were originally stables with living quarters above which have mostly been converted into attractive residential places. An arrangement, as suggested in Figure 5.15, would involve integral garages or car ports and used where traffic movement is low. Designs such as this can achieve high densities and, with care, may create attractive, intimate spaces as indicated in the example in Figure 5.16. Services would be accommodated within the carriageway and the bin stores integrated into the design of the building.

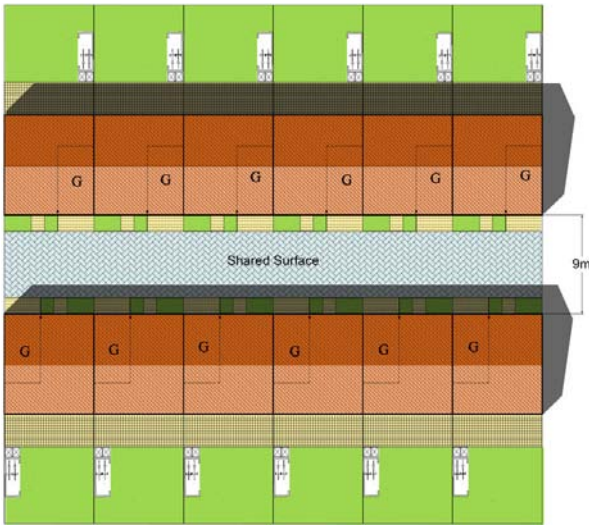


Figure 5.15 An example of a block layout based on lane/mews concept.

5.18 These places should maintain the principle of providing active frontages (at ground floor as well as upper floors). Mews streets or courts should not be based on the use of flats over garages (FOGS).

Pedestrian only routes

5.19 Houses with frontages provided onto pedestrian only routes (Figure 5.17) are reliant on rear access for parking and are therefore not normally allowed. The problems associated with rear access parking outweigh any advantages of vehicle free frontages. Where there is scope to create a frontage onto an attractive green corridor an arrangement based on a shared surface narrow lane (possibly involving one-way traffic) would be acceptable.

Figure 5.17 A attractive pedestrian only route.

PUBLIC OPEN SPACE

5.20 The provision of public open space (Figure 6.20a) should be considered as an integral part of the design of a layout. As well as meeting the technical requirements specified in planning policy and in the City Council's adopted SPD for open space, the spaces also need to form part of the landscape infrastructure, be attractive, safe, well maintained and accommodate biodiversity. It is essential that developers consider the location, extent and function of public open space at the start of the design process.

Figure 5.19 An open space successfully integrated into a recently developed residential area.

Requirements

5.21 Open space should be an attractive feature within a wider network of places and routes. It needs to be integrated into the townscape and form features or focal points within a development. Place work best if they are located on well used routes and are faced by buildings. The space needs to be intrinsically attractive with well considered landscape design defining the space.

(i) Level land

PUBLIC OPEN SPACE MUST BE LEVEL.

The range of uses to which public open space generally require level land. Sloping areas may be included within open space but will not normally count towards the required provision.

(ii) Accommodate the functions required

TO ALLOW ADOPTION, OPEN SPACE MUST CREATE A USEFUL FUNCTION FOR THE COMMUNITY.

It is important, therefore, that developers discuss with the City Council at an early stage the contribution their site needs to make to open space and leisure provision within the city, including the equipment that needs to be provided, and how the space fits into the local pedestrian and cycle network.

(iii) Safe

PUBLIC OPEN SPACES MUST BE WELL DESIGNED AND CAREFULLY LOCATED. SPACES MUST BE OVERLOOKED AND EASILY ACCESSIBLE TO THOSE THAT LIVE NEARBY.

Enclosure and lighting should be both efficient and attractive and planting should enhance the space without providing scope for anti-social or illegal activities. Space should be designed to accommodate the needs of a wide range of ages and abilities.

(iv) Contribute to sustainability and biodiversity

PUBLIC OPEN SPACES MUST MAKE A SIGNIFICANT CONTRIBUTION TO SUSTAINABILITY AND BIODIVERSITY.

Well located and designed space with high quality facilities can reduce the demand for travel by local residents and may allow the incorporation of SUDS provided the leisure use of the space is not compromised. Connecting open space to existing green corridors and planting on the space itself will contribute to biodiversity. Whilst in some cases surfaces will need to consist of formal, low cut grass this should be minimised and consideration given to meadow planting and shrub planting which creates natural habitats for a wide range of species. Trees should be planted as part of the structural landscape of the site and as features in key locations

(iv) Contribute to sustainability and biodiversity

PUBLIC OPEN SPACES MUST MAKE A SIGNIFICANT CONTRIBUTION TO SUSTAINABILITY AND BIODIVERSITY.

Well located and designed space with high quality facilities can reduce the demand for travel by local residents and may allow the incorporation of Sustainable Urban Drainage Systems. Connecting open space to existing green corridors and planting on the space itself will contribute to biodiversity. Whilst in some cases surfaces will need to consist of formal, low cut grass this should be minimised and consideration given to meadow and shrub planting which creates natural habitats for a wide range of species. Trees should be incorporated as part of the structural landscape of the site, and as features in key locations.

(v) Clear management and maintenance plans.

THE RESPONSIBILITY FOR MANAGEMENT AND MAINTENANCE MUST BE UNAMBIGUOUS AND CLEAR TO RESIDENTS. MANAGEMENT PLANS, WHICH MAINTAIN THE HIGH QUALITY OF THE OPEN SPACE AND ARE RESPONSIVE TO RESIDENT'S NEEDS, ARE REQUIRED.

THE DESIGN OF BUILDINGS IN RELATION TO THE PLACES THEY FACE

The effect of building design on enclosure

5.22 The design of buildings should be considered as an integral part of the design of streets. The width of a street will help determine the appropriate scale of building which face onto it with the aim of producing a balance of width and height which achieves good enclosure. Recognised guidelines suggest that a height to width ratio of 1:3 will maintain good enclosure. However, the design of the buildings has a critical impact upon the sense of enclosure and quality of the townscape as demonstrated in Figure 5.20(a – d)

Figure 5.20a Shallow pitched buildings generally do not help to achieve good enclosure even if a space ratio of 1:3 is maintained.

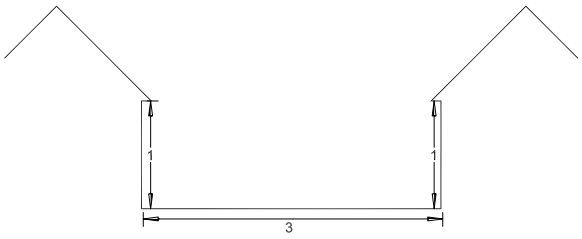


Figure 5.20b Steep roof pitches help to create greater enclosure.

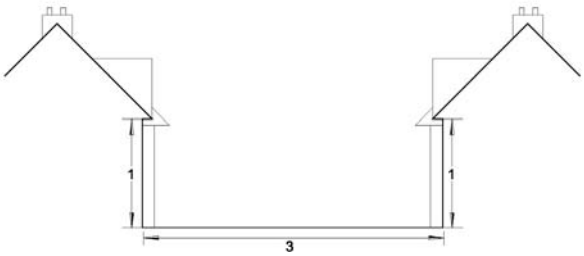


Figure 5.20c Architectural details such as gables, bays and chimneys greatly enrich the street scene and help to reinforce enclosure.

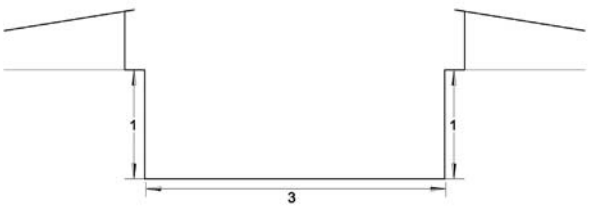


Figure 5.20d Contemporary buildings with an interesting roofline will enhance enclosure and create good townscape.

5.23 These figures demonstrate the reasons why Victorian and Edwardian houses with their wealth of detail were so effective at creating well-enclosed interesting streetscapes. Whatever architectural approach is applied, The City Council will expect this quality of design to be emulated in new housing development.

Back of footway dwellings

5.24 Careful consideration needs to be given to the design of elevations which are set at the back of the footway. There may be good townscape reasons for this approach but it is important that elevations are uncluttered and that footway materials directly abut the building. Any need for the delineation of adopted and private surfaces should be unobtrusive and minimal. Rows of Studs or setts may be appropriate. It is essential that meter boxes and any other service installations are avoided on the front elevations of back of footway dwellings (Figure 5.21).

Figure 5.21 Attractive elevations uncluttered by meter boxes or satellite dishes.

5.25 Consideration will need to be given to the means of complying with Lifetime Homes criterion 4c (the need to provide covered entrances). Where highway authority requirements may not allow canopies over the footway a recessed front door will need to be provided.

Dwellings with front gardens

5.26 Front gardens provide “defensible” space and a good transition between the public realm of the street and the private areas of dwellings. Large front gardens may not be appropriate because they may reduce densities, but with sufficient space they allow scope for planting, sitting out and informal social interaction. If front gardens are to be used for bin storage it is important that structures accommodating them are integrated into the design and screened by front and party walls and that in accommodating bins sufficient space is allowed for planting.

6 PARKING

INTRODUCTION

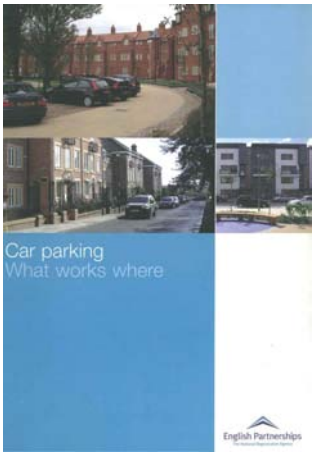
BUILDING FOR LIFE RELEVANT QUESTIONS: 11, 12, 13, 16

Lifetime Homes RELEVANT DESIGN CRITERIA:
1. Car Parking Width;
2. Access from Car Parking.

6.1 The following guidelines and requirements will apply to all development unless the City Council is satisfied that a scheme has been specifically designed to meet exceptional standards of sustainable, low or carbon free development which avoids cars being parked adjacent or close to dwellings within the main layout.

Figure 6.1 Car free environment in Vauban, Freiburg, Germany.

6.2 "Residential Car Parking Research" (DCLG 2007) explores the issues relating to allocated and unallocated parking and suggests that Local Planning Authorities may wish to develop specific guidance regarding the provision of car parking. The principles outlined in "Parking – What works where" will be applied. On-street and on-plot car parking should be considered first, with courtyards used only as a last resort. Design should deter indiscriminate and anti-social parking. All households should be provided with secure and convenient storage facilities for cycles. Where a need has been identified, the design of a dwelling should include storage for an electric powered disability vehicle, including power supply.



6.3 How parking is accommodated into a housing layout is critical to the quality of a scheme both in terms of townscape and residential amenity. Advice within documents such as "Car Parking - What works where", Manual for streets and By Design all recognise that the townscape should take priority over parking provision and that provision for car parking should be included as part of the place-making process. This, however, is a real challenge. Residents will often say they want more car parking, conveniently located but at the same time there is a desire for attractive, safe streets.

6.4 To ensure that a balance is struck between these competing aspirations parking has to be considered at the outset of the process and be seen as an integral component of the design.

PARKING OPTIONS MUST BE PROVIDED WHICH COMPLEMENT GOOD TOWNSCAPE AND THE SETTING OF BUILDINGS, AND DO NOT INTRUDE INTO PRIVATE OPEN SPACE.

THE PRINCIPLE OF FRONTAGE ACCESS

6.5 Approaches to housing layout have changed from low-density, cul-de-sac based layouts to designs which respond to the challenges of achieving higher densities by adopting urban form, creating permeable, well-enclosed streetscapes. In many schemes carried out in the late 20th and early 21st century this has been achieved by the use of rear parking courts and the provision of garaging based on rear access to the dwelling. Experience and research, however, has demonstrated that this approach has significant flaws and should be replaced by on street parking and parking on plot which is accessed from the front of the curtilage (frontage access). Rear access arrangements, such as those at Poundbury, attempted to give priority to the aesthetics of townscape but denied the way residential layouts work viz: the logic of frontage access, security, street activity, etc. Furthermore, they use too much land and result in small gardens, reduced privacy, less activity in the street and anti-social parking. For as long as there remains a demand for private vehicles, there will remain an in-built contradiction by providing parking at the rear. "Car parking. What works where" states;

"Do not park in the back of the block until on street and frontage parking permutations have been exhausted. Use of the mews or rear court should support on street provision, not replace it."

Therefore:

PARKING MUST BE PROVIDED ON STREET OR ON PLOT ACCESSED FROM THE FRONT OF THE CURTILAGE. REAR COURTYARDS OR REAR GARAGING WILL ONLY BE PERMITTED AS A LAST RESORT IN SUPPORT OF FRONTAGE PROVISION.

PARKING RATIOS AND ALLOCATION OF SPACES

6.6 Development proposals should comply with local plan policy (T10) of a maximum average of 1.5 spaces per dwelling. The intention of this limit is to promote sustainable travel choices and to help achieve high densities and high quality townscape. However, it is also important not to under-provide and to ensure that sufficient, conveniently located car parking spaces are designed into a layout. Therefore, whilst complying with the 1.5 limit, developers are required to provide car parking in accordance with the tables in Figures 6.2 and 6.3

A MAXIMUM AVERAGE OF 1.5 SPACES PER DWELLING WILL BE PERMITTED

Meeting the need for parking

6.7 Parking requirements in residential developments are a product of car ownership. DCLG's Residential Car Parking Research' demonstrated that there is significant variation in car ownership between different households. For example in the 2001 census the national car ownership profile for a typical 5 room owner-occupied house was:

- 16% had no car
- 53% had one car
- 26% had two cars
- 4% had three cars, and
- 1% had four or more cars

6.8 These figures are matched in a closer analysis of car ownership profiles in Exeter (again based on the 2001 census) where local figures can be seen to match the national profile, but with slightly lower average car ownership. For example in the 2001 census the car ownership profile for a typical 5 room owner-occupied house in Exeter was:

- 17% had no car
- 58% had one car
- 22% had two cars
- 3% had three cars, and
- 1% had four or more cars

6.9 Average car ownership across the city is 1.02 cars per dwelling, but this hides significant variation between different dwelling types and sizes. Average car ownership per house is 1.23 cars, whilst for flats it is 0.88 cars per dwelling. Larger houses and flats have higher levels of car ownership than smaller dwellings, but still with significant variation between individual properties. Affordable (Rented and Shared Ownership) dwellings also have lower average car ownership than privately owned dwellings.

6.10 There is also variation in car ownership across different wards within Exeter, but this can be seen to relate to dwelling type and size rather than location or distance from the City Centre. Car ownership levels in Topsham or Whipton Barton are similar to those in St Leonards or St James. Several areas have significantly lower levels of car ownership (notably St Davids and Newtown). This reflects not the location of these areas, but the much higher percentage of flats and rented properties than other parts of the city.

6.11 The parking requirements tables below have been developed from these car ownership patterns (based on data for Exeter from the 2001 census).

6.12 In order to accommodate the variation in car ownership between dwellings developers should provide parking spaces according to the following table, up to the maximum average of 1.5 spaces per dwelling set by local plan policy (T10). The tables set out the number of unallocated spaces per dwelling required in relation to the number of allocated spaces provided. For example for each 3 bed privately owned house with 1 allocated parking space an additional 0.7 unallocated spaces are required to accommodate additional demand and visitor parking.

Figure 6.2 Requirement for unallocated spaces per privately owned dwelling:

Houses			
Allocated space per dwelling	0	1	2
1 bedroom	1.0		
2 bedrooms	1.1		
3 bedrooms	1.3	+ 0.7	+ 0.2
4 bedrooms	1.4	+ 0.8	+ 0.3
5 bedrooms	1.7	+ 1.1	+ 0.4

Flats			
Allocated space per dwelling	0	1	2
1 bedroom	0.8		
2 bedrooms	0.9		
3 bedrooms	1.1	+ 0.4	
4 bedrooms	1.2	+ 0.5	
5 bedrooms	1.5	+ 0.8	

Figure 6.3 Requirement for unallocated spaces per affordable dwelling (rented or shared-ownership):

Houses			
Allocated space per dwelling	0	1	2
1 bedroom	0.6		
2 bedrooms	0.9		
3 bedrooms	1.0	+ 0.4	
4 bedrooms	1.2	+ 0.6	+ 0.3
5 bedrooms	1.6	+ 0.9	+ 0.5

Flats			
Allocated space per dwelling	0	1	2
1 bedroom	0.5		
2 bedrooms	0.7		
3 bedrooms	0.8	+ 0.3	
4 bedrooms	1.0	+ 0.5	
5 bedrooms	1.2	+ 1.0	+ 0.4

Note: Sections of the above tables which are shaded out indicate levels of parking that are unacceptable for this dwelling type and size. A single garage counts as one allocated space.

PARKING SPACES WILL BE PROVIDED IN ACCORDANCE WITH THE TABLE ABOVE WHILST ALSO ENSURING A MAXIMUM AVERAGE OF 1.5 SPACES PER DWELLING.

DEVELOPERS MUST PROVIDE A TABLE SETTING OUT THE PARKING PROVISION FOR THE DIFFERENT DWELLING TYPES PROPOSED.

6.13 The example below illustrates how these tables would be used to calculate parking provision for an example development of 100 houses and flats:

Privately Owned Dwellings

Dwelling Type	Number of bedrooms	Number of units	Allocated spaces per dwelling	Allocated Parking Spaces	Unallocated spaces per dwelling	Unallocated Parking Spaces	Total Parking per dwelling type
	House						
A	2	11	0	0	1.1	12	12
B	3	25	0	0	1.3	33	33
C	4	23	1	23	0.8	18	41
	Flat						
D	2	8	0	0	0.9	7	7
F	3	8	1	8	0.4	3	11
	Total	75		31		73	104

Affordable (Rented or Shared-ownership) Dwellings

Dwelling Type	Number of bedrooms	Number of units	Allocated spaces per dwelling	Allocated Parking Spaces	Unallocated spaces per dwelling	Unallocated Parking Spaces	Total Parking per dwelling type
	House						
A	2	4	0	0	0.9	4	4
B	3	8	0	0	1	8	8
C	4	7	1	7	0.6	4	11
	Flat						
D	2	3	0	0	0.7	2	2
F	3	3	1	3	0.3	1	4
	Total	25		10		19	29

Total number of dwellings:	100
Ratio of affordable units:	25%
Total number of unallocated parking spaces:	92
Total number of allocated parking spaces:	41
Total number of parking spaces:	133
Average Parking Ratio (Spaces/ Dwellings):	1.33

6.14 The location of parking spaces must be close to the main frontage access to the dwellings they serve. Where allocated spaces are provided (either on street or on plot) the additional unallocated spaces required to accommodate additional parking need should be located within easy walking distance of the dwellings they serve. As a guide this distance should be no more than 200m.

WHERE UNNALLOCATED PARKING SPACES ARE PROVIDED IN ADDITION TO ALLOCATED SPACES THESE MUST BE PROVIDED WITHIN EASY WALKING DISTANCE OF THE FRONT DOORS OF THE DWELLINGS THEY SERVE.

6.15 The DCLG research and local analysis demonstrates that allocating parking spaces on a plot-by-plot basis for average car ownership ignores significant variations in car ownership and wastes space by allocating bays to people who don't need them. The provision of unallocated parking, on the other hand, is a flexible system which reduces the overall number of spaces required. Therefore, for terraced dwellings the presumption is that unallocated parking will be provided, on street, close to the front doors. If developers are able to clearly demonstrate that the allocation of spaces allows sufficient densities to be achieved and that a high quality townscape and pedestrian friendly streetscape may be provided the requirement may be waived. In requiring unallocated parking, resident's parking schemes may be applied to ensure residents have priority for the use of parking spaces where adjoining or nearby development may result in overspill parking.

FOR TERRACED DWELLINGS UNALLOCATED ON STREET PARKING MUST BE THE MAIN PARKING OPTION UNLESS IT IS CLEARLY DEMONSTRATED THAT ALLOCATION OF PARKING SPACES IS NOT DETRIMENTAL TO THE NEED TO ACHIEVE SUFFICIENT DENSITIES AND THAT HIGH QUALITY AMENITY, TOWNSCAPES AND PEDESTRIAN FRIENDLY STREETSCAPES ARE MAINTAINED

6.16 Figure 6.4 demonstrates that an arrangement of terraced housing in perimeter blocks can allow on street parking at up to 1.3:1, with on street parking spaces located outside front doors. It is important that parking is conveniently located to increase activity on the street and help avoid anti-social parking and associated neighbour problems. In a development site consisting of a mix of terraced, semi-detached and detached dwellings it is important to ensure that the average ratio remains no more that 1.5:1. The level and arrangement of parking provision must, furthermore, ensure an attractive, pedestrian friendly streetscape.

6.17 Semi-detached or detached houses may be provided with on-plot parking if appropriate and provided the maximum parking ratio of 1.5:1 is not exceeded. Garages are to be counted as an allocated space and must meet the requirements set out elsewhere in this chapter.

6.18 To help maintain densities and support the objective of promoting sustainable travel choices the number of on plot parking spaces needs to the limited. Where an individual dwelling may require more than 2 parking spaces these additional spaces will need to be provided as part of unallocated on-street parking. Therefore:

A MAXIMUM OF TWO PARKING SPACES, INCLUDING ANY GARAGES OR CAR PORTS, WILL BE PERMITTED ON PLOT.

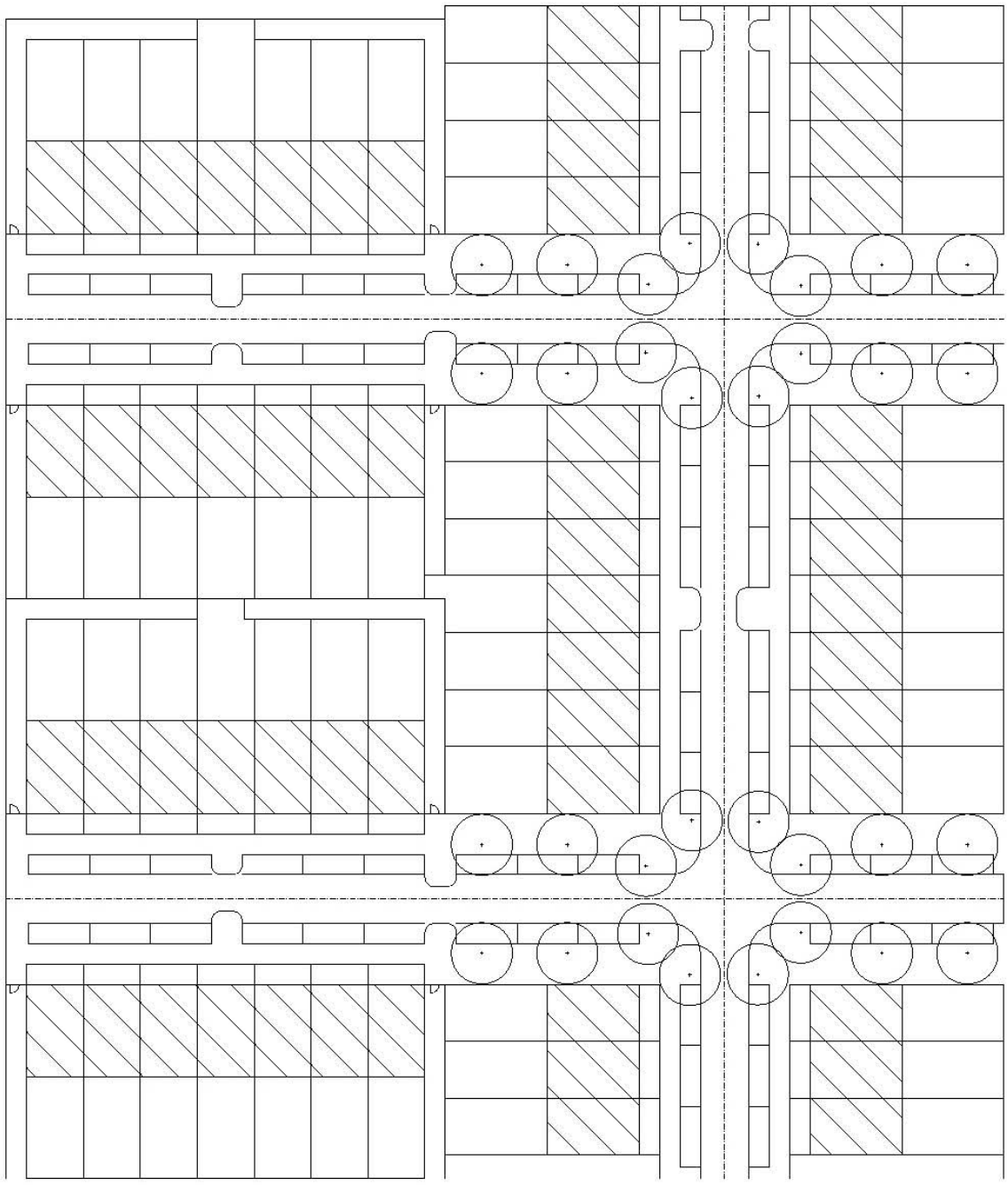


Figure 6.4 A parking ratio of 1.3:1 can be achieved with on street parallel parking.

ON STREET PARKING

6.19 Throughout the UK there are streets built in the late 18th, 19th and early 20th centuries which create good, and in some cases, exceptionally high quality townscape and have adapted well to accommodating private motor vehicles. Some of the better preserved examples are highly desirable properties (Figure 6.5) whilst many are less grand (Figure 6.6) but nevertheless function well. The two key elements these have in common are the way the blocks are arranged and the width of the streets themselves.

Figure 6.5 Parking accommodated well on street.

Figure 6.6 Convenient on street parking.

6.20 Junctions restrict the scope for on street parking so it is important that the number of junctions included in a layout allows sufficient space for the amount of on street parking required.

6.21 The width of the street is critical in maximising parking. In traditional arrangements with segregation of vehicles and pedestrians, carriageway widths of 4.8 or 5.5 metres do not meet residents' preferences for frontage parking on both sides of a road and often result in parking half on the footway and half on the road, causing danger and inconvenience to other users (Figure 6.7).

6.22 In many situations, particularly with regard to terraced houses, the street must be wide enough to accommodate parking on both sides.

Figure 6.7 Anti-social parking on the footway.

LAYOUT DESIGNS MUST DEMONSTRATE THAT STREET WIDTHS ARE SUFFICIENT TO ACCOMMODATE ON STREET PARKING AS THE MAIN PARKING PROVISION.

THE DESIGN OF ON STREET PARKING

6.23 Particular care must be taken to ensure that cars are accommodated on street in a way which maintains a high quality public realm. Formal Home Zones should be considered the first option because they are purpose- designed to ensure that cars defer to pedestrians and have the potential to accommodate more car parking than traditional parallel parking arrangements. Traditional streets with parallel parking remain possible but designs must ensure a pedestrian friendly environment, good townscape and high quality public realm.

Home zones

6.24 Home zones are legally defined, shared surface arrangements which do not segregate pedestrian and vehicle traffic. They incorporate measures to ensure than moving cars do not dominate the public realm and which allow the integration into the street of play space, informal social space and well-integrated landscape works. Traffic is slowed down and paving makes it clear to drivers they are in a pedestrian priority area. They are potentially very attractive solutions to the problem of integrating pedestrian space with vehicles. Figure 6.8 is a good example of a recently completed home zone scheme.

Figure 6.8 A recently completed homezone development.

6.25 As a rule, whilst the street itself may be straight, the carriageways are not, so that interesting and safe social environments may be created. By creating streets with individual character, residents may be further encouraged to take pride in the streets in which they live. Figure 6.9 suggests how a layout may incorporate a home zone approach.

6.26 As indictated in Figure 6.10 a mixture of parallel, angled or possibly right angled parking may be possible. A mixture of provision within a shared surface arrangement will slow traffic down and help create a pedestrian friendly environment.

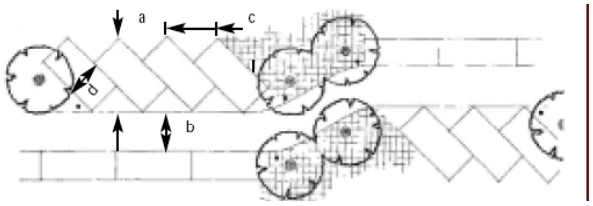


Figure 6.10 Parking arrangements within a homezone development.

IN GIVING CONSIDERATION TO ON STREET PARKING PROVISION HOME ZONES MUST BE THE FIRST CHOICE DESIGN.

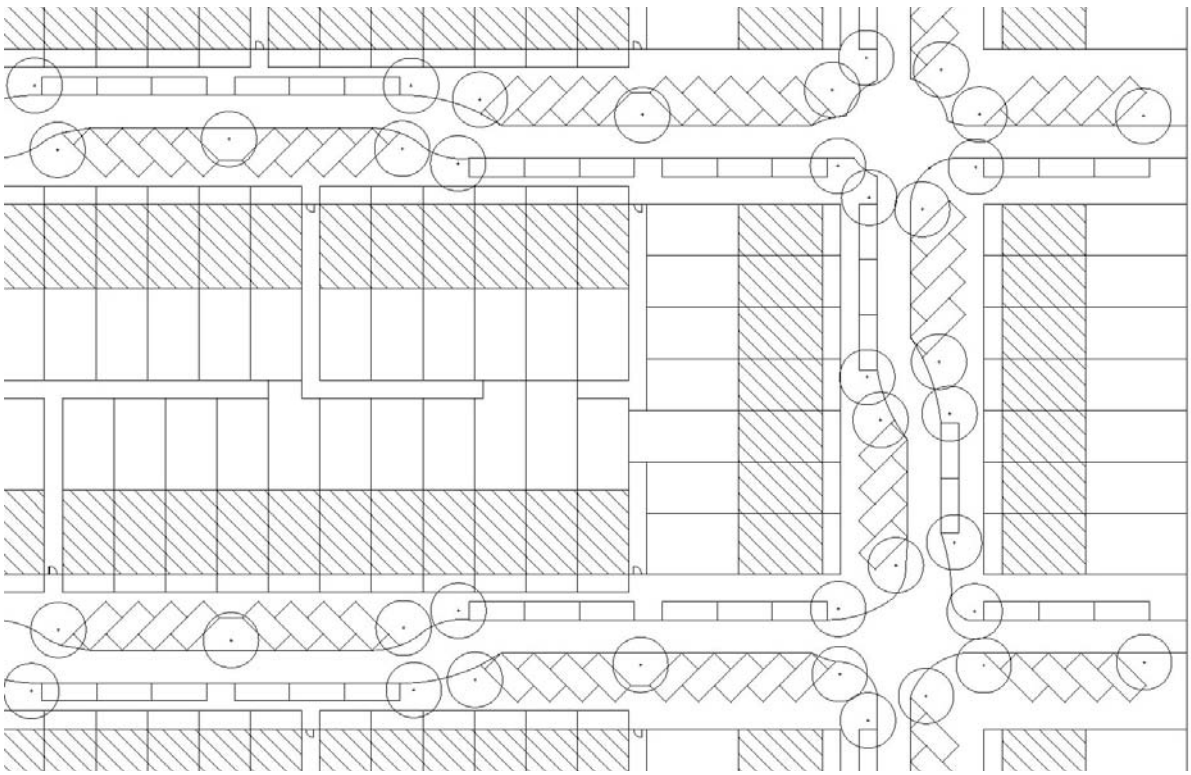


Figure 6.9 A layout based on homezone principles.

Traditional streets

6.27 Traditional streets incorporating parallel parking may be possible as long a clearly pedestrian friendly, high quality public realm is achieved. Figures 6.11 indicates the narrowest width of carriageway possible. Assuming parallel parking spaces 2x6 metres on both sides, the carriageway should be a minimum of 7.5 metres where the central area (3.5 metres) only needs to accommodate vehicle movement in one direction. This arrangement may require allocated space to allow vehicles to pass depending upon its length, or the street designated one-way. Where two-way movement is required the central area should be a minimum of 4.8 metres, resulting in a minimum carriageway width of 8.8 metres. Wider central areas will be required where larger vehicles are frequent or on bus routes. To create safe crossing points and allow tree planting there should be sufficient breaks in the parking bays.

Figure 6.11 A narrow street with parallel on street parking.

Figure 6.12 A typical terraced street with on-street parking as the main parking provision supplemented by frontage access on-plot parking.

6.28 The arrangement in Figure 6.12 demonstrates how high densities may be provided at the same time as providing parallel parking and improving dwelling space standards. The terraced dwellings in this example have an internal frontage width of 5.3 metres, which helps allow parallel parking as well as providing good amenity.

6.29 Right angled parking has the potential to maximise parking provision on street but usually at the cost of good townscape and the quality of pedestrian space (Figure 6.13). Right angled parking may be acceptable as part of a home zone design but without the home zone approach will not normally be acceptable.

Figure 6.13 Right angled parking enclosed by two storey houses produces poor townscape.

DEMARCATION

6.30 Where parking bays are demarcated it is important that road surfaces and markings do not detract from the floorscape. To strengthen the quality of spaces there should be either subtle variation or continuity in the choice of high quality surface materials. It is acceptable to mark out parking spaces by a minimal use of studs or setts rather than a change in materials. Using different materials for the parking spaces, if not carefully done, merely emphasises the presence of vehicles and can detract from the quality of the place being made.

ON PLOT PARKING

6.31 On plot parking is parking that is located within the boundary of the property which it serves. As parking in rear gardens is covered in the section dealing with rear access, this section deals with garages, car ports and parking spaces accessed from the street frontage.

6.32 On plot parking should be arranged so that it does not dominate the street scene. Town houses of the type indicated in Figure 6.14 are not acceptable because their frontages lack fenestration, and, instead, are dominated by garage doors. Houses with integral garages of the type indicated in Figure 6.15 may be acceptable where a specific mews or lane character is being designed.

Figure 6.14 Townhouses create dead frontage and vehicles dominate the street scene.

Figure 6.15 Well-designed garage doors integrated into the overall design of the buildings.

6.33 On a development site, the number of dwellings with on plot parking that may be permissible will be dependent upon compliance with the maximum parking ratio of 1.5:1 combined with the need to achieve sufficient density.

6.34 In the context of the need to reduce the use of private motor transport, raise residential densities and improve parking efficiency (by more reliance on unallocated on street parking spaces), on plot car parking is limited. The two spaces per plot are required to be one behind the other with garages only counting towards parking provision if they meet the space standards specified below. Double garages and double drives, because of the plot width they require, have a significant impact on densities and will not normally be permitted.

FOR DWELLINGS DESIGNED TO INCLUDE ON-PLOT PARKING TWO SPACES WILL BE THE NORMAL MAXIMUM PERMITTED PER ON-PLOT UNIT. GARAGES OR CAR PORTS MUST NOT PROJECT FORWARD OF THE BUILDING LINE .

6.35 Where two parking spaces are provided on a plot the design should be arranged such that cars are not parked forward of the building line. Garages set back a minimum of six metres from the main front wall of any dwelling will allow a car to be parked in front of the garage doors without it protruding forward of the building line.

6.36 Where on plot parking is restricted to one space, the garage or car port should be located in a position which does not permit a second car to be parked in front of the garage doors. Where garages are immediately adjoining the footway the garage doors must be designed not to overhang the footway either when being operated or when in the open position. The example in Figure 6.16 illustrates an attractive sliding design which would be an acceptable solution.

6.37 Where a mews design may be acceptable in principle, integral garages may be provided within a terrace as suggested in Figure 6.16. This minimises the highway space that is required, so allowing densities to be maintained.

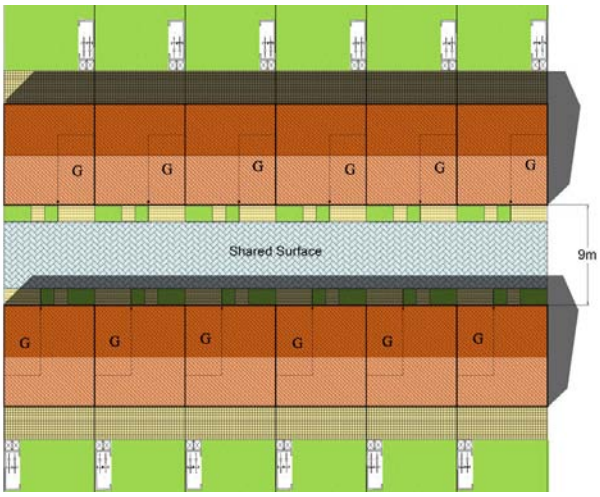


Figure 6.16 An example of mews design

6.38 The best design solutions are those which integrate garages or car ports into the built form and hence the street scene by providing accommodation over. Design should ensure good enclosure and there is activity provided to the street by a good balance between fenestration and vehicle access.

Garages

6.39 Research has demonstrated that only a small percentage of garages are used for parking cars because they may be inconveniently located, they are too small and they are used for domestic storage because insufficient storage space is provided within houses. This leads to problems of anti-social parking and congested streets.

6.40 Electricity supply to garages is also important. Electric cars and disability vehicles need to be re-charged and mains sockets and lighting will encourage use of garages.

GARAGES MUST HAVE MINIMUM INTERNAL DIMENSIONS OF 3X6 METRES AND BE WITHIN THE CURTILAGE OF THE DWELLING IT SERVES. FACILITIES MUST BE PROVIDED FOR CHARGING ELECTRIC CARS, DISABILITY VEHICLES AND OTHER SIMILAR VEHICLES AND MAINS POWER AND LIGHTING PROVIDED.

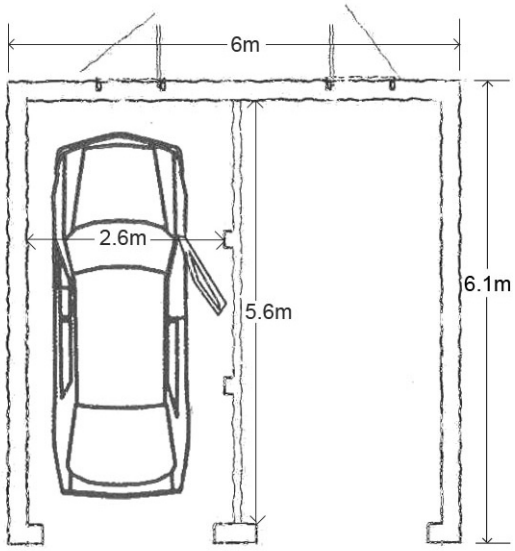


Figure 6.17 Small garages are inconvenient to use. The garages (2.6x5.6 internally) above only allow doors open from one side.

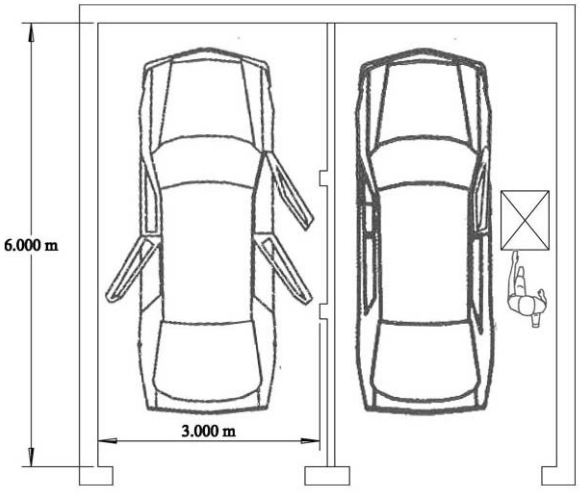


Figure 6.18 Increase garage size to 3x6 internally allow doors open from both sides and space for wheelie bins to move through.

REAR PARKING

6.41 Where rear parking is provided as a last resort, the principles of place making must still be applied. Three broad options – mews courts, within rear gardens and open courtyards - are available.

Mews courts

6.42 Traditional mews can be attractive environments adapted to modern living. Where rear parking is unavoidable a mews form can be used to accommodate the vehicles. Car ports and/ or garages can be provided under dwellings facing onto a landscaped space. Critical to the success of this arrangement is the quality of the amenity for residents, both internal and external, the quality of architecture and external works and the provision of convenient links to the adjoining streets. Figure 6.19 shows a poor environment, with poor quality architecture, amenity and materials.

Figure 6.19 A poor quality mews court.

Rear gardens

6.43 The option of providing parking within rear gardens will not normally be acceptable. Whilst this arrangement may give residents the option of using the space for garden, rather than parking, there are significant disadvantages related to the comings and goings and maintenance of motor vehicles which may disturb the quiet enjoyment of private gardens. Where such provision may occasionally be acceptable it should be provided in addition to specified garden space.

Parking courts

6.44 Spaces within parking courts are not frequently used and are often perceived as dangerous and insecure. A good quality layout which accords with the guidance above should obviate the need for courts.

REAR PARKING COURTS MUST ONLY BE PROVIDED AS A LAST RESORT.

6.45 Where parking courts are unavoidable the design of the layout, the connections to adjoining streets and places and the quality of materials used for surfaces and enclosure must result in attractive and safe places. Courtyards should normally accommodate a maximum of 10 spaces and sufficient space provided for tree and shrub planting to help create an attractive environment. Figure 6.20 demonstrates a poor quality solution where there is only one access point, there is no view out and the quality of materials is poor. Figures 6.21, on the other hand, demonstrates arrangements which work better because views out are attractive and materials are of high quality.

Figure 6.20 A poor quality parking court.

Figure 6.21 A good quality parking court, which is located at the front of buildings and is well overlooked.

SEMI-BASEMENT AND UNDERGROUND PARKING

IN ALL BELOW GROUND LEVEL SOLUTIONS, ACTIVE FRONTAGES MUST BE MAINTAINED.

6.46 The means of access to below ground level parking must minimise the impact upon the townscape. Ramps of minimal width accommodating only one car in one direction at any given time, using controls as necessary. Security needs to be given careful consideration and the parking designed for the needs of all people.

6.47 Semi-basement parking has advantages over underground parking insofar as natural ventilation may be possible and that by raising the building levels by half a storey above the surrounding site, privacy to ground floor accommodation is enhanced whilst maintaining an active frontage. The elevated nature of ground floor accommodation is particularly useful where units face onto busy roads. However, raising ground floor levels can result in bland or blank front elevations so it is important that attention is paid to the details of design. In most circumstances producing an acceptable townscape will require clear entrances onto the street and frontages set back from the highway to allow planted areas.

6.48 Underground parking allows flexibility in the design of buildings and disposition of uses and activity at ground level. Active frontages may be maintained and good quality amenity space may be possible above underground car parking (Figure 6.22). Specific provisions such as trees pits, planting troughs and irrigation may need to be incorporated, adding to the cost of excavation, tanking and mechanical ventilation.

Figure 6.22 Good quality amenity space provided above underground parking.

6.49 Podium and undercroft parking is parking at ground floor level with either open space or buildings above. These solutions will rarely be acceptable because of the difficulties in achieving active frontages but in some circumstances a solution may be found, particularly where accommodation may face the street by wrapping around the parking or where there is only a limited amount of blank wall facing the street.

CYCLE PARKING

PURPOSE DESIGNED CYCLE PARKING IS REQUIRED. PARKING SHOULD BE COVERED, DISCOURAGE ANTI-SOCIAL BEHAVIOUR, BE SAFE AND CONVENIENT.

6.50 Local Plan policy requires 1 space for 1-2 bed units and 2 spaces for larger units. Cycle parking should be incorporated into the design of buildings or otherwise located and designed such that it does not detract from the townscape or the quality of spaces between buildings.

6.51 Where a need has been identified, purpose built cycle storage should include space for the storage and re-charging of electric disability scooters and buggies or for the adaption of the storage space for this facility in the future. Shared cycle parking facilities should be located and designed to discourage anti-social behaviour.

Cycle parking for houses

6.52 Where no other provision is specified, garages or car ports should be large enough to accommodate bicycles. The dimensions and location of doors should be such that bicycles can be taken in and out without removing the car and/or bins if these are also stored in the garage. Figure 6.23 identifies minimum dimensions to accommodate bicycle storage.

WHERE CYCLE PARKING AND BIN STORAGE IS LOCATED WITHIN GARAGES DEVELOPERS MUST DEMONSTRATE THAT GARAGES ARE OF SUFFICIENT SIZE.

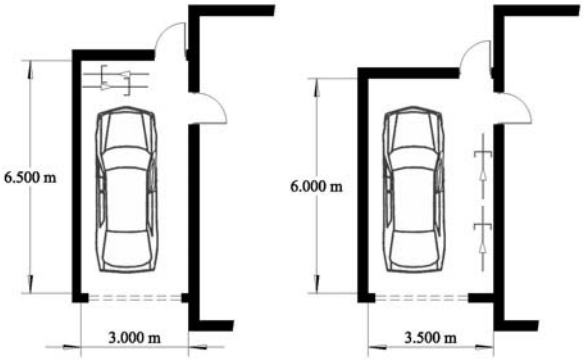


Figure 6.23 Cycle parking within garages.

6.53 Where houses are reliant on on-street or, occasionally, courtyard parking, cycle parking should be provided in purpose built covered areas within rear gardens, conveniently located adjacent to rear garden gates as suggested in Figure 6.24. These covered areas should also be designed to accommodate recycling bins where necessary.

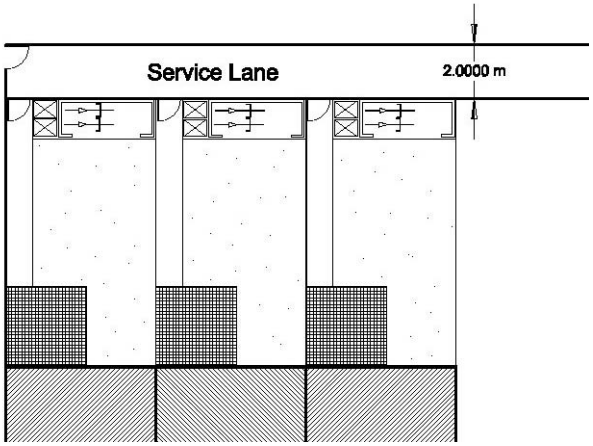


Figure 6.24 Cycle pakring in rear gardens.

Cycle parking for flats

6.54 As with bin storage it is essential that cycle parking for flats is considered at the outset of the design process so that the facilities may be incorporated without spoiling the townscape or residential amenity. One of the main aims of the SPD is to ensure that high quality spaces are created between buildings and it is, therefore, Important that these spaces are not considered as a depository for facilities such as bicycle or bin storage at the cost of creating high quality places.

6.55 The first choice location for cycle parking for flats is within the building, either in a ground floor communal area close to the main entrance, under stairs or in underground or semi-basement areas. If the nature and size of space between buildings allows separate storage, facilities may be incorporated into boundary walls or elsewhere where the storage will not dominate the space being created (Figure 6.25).

Figure 6.25 A bicycle store integrated into the overall design of the development.

6.56 Sheffield stands provide a simple and convenient means of securing bikes within communal areas. The internal layout of the cycle store needs to refer to the dimensions shown in figure 6.26. A minimum of 600mm of space should be provided at the sides and end of cycle stands.

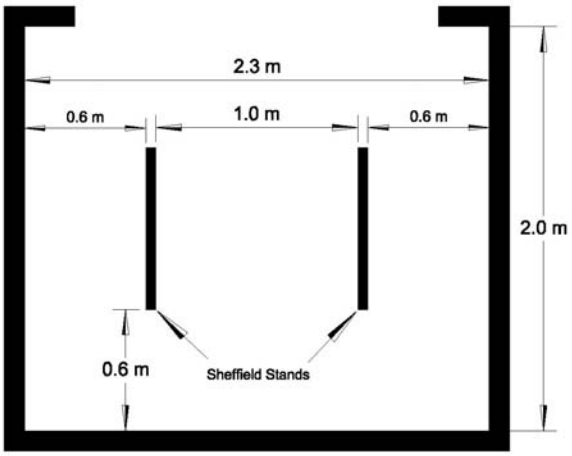


Figure 6.26 Internal dimensions of a communal cycle store

Visitor cycle parking

6.57 Visitor cycle parking should be provided in well-overlooked areas, convenient for access to the building, which may often be the street itself. Sheffield stands or similar should be used. Cycle stands need to be located clear of pedestrian desire lines. They should be detectable by people with little or no sight. If there is a well-defined need to provide storage for cyclists with baskets and panniers, stands should be a minimum of 1 metre apart. There should be a minimum space of 600mm between a stand and any wall.

INTRODUCTION

BUILDING FOR LIFE RELEVANT QUESTIONS: 2,5,16,17,18,20

Lifetime Homes RELEVANT DESIGN CRITERIA: 3. Approach Gradients; 4. Entrances;

7.1 This section covers three areas:

i. The size of private gardens and private communal open space.
ii. How to achieve reasonable privacy.
iii. How to ensure adequate daylight and good quality outlook.

7.2 Standards are flexible according to site analysis but designs will be required which allow people to feel at ease and comfortable at home, either in their houses or flats or in their gardens. Adequate secure space for drying areas and refuse, recycling and composting bins must be provided.

7.3 Establishing an appropriate standard of amenity in residential layout is about providing private or shared outdoor space directly associated with people's enjoyment of their home and about ensuring people enjoy a degree of privacy and a quality of outlook that makes them feel comfortable in their homes and gardens without feeling hemmed in.

PRIVATE GARDENS FOR HOUSES

GARDENS MUST BE LEVEL, LOCATED TOWARDS THE PRIVATE, NON-MAIN ENTRANCE SIDE OF THE HOUSE AND HAVE SEPARATE REAR OR SIDE ACCESS.

7.4 The requirement to build houses to defined internal standards identified in Part 6 will result in wider frontages which will consequently result in wider and higher quality gardens. Nevertheless, it is important to specify external standards to maintain high quality amenity in the context of the need to raise densities.

Minimum garden sizes

7.5 Local Plan policy (DG4) requires that design is of a quality which allows residents to feel at ease in their homes and gardens (criterion b). Local Plan text states that garden space may vary in size and requires a minimum size of 55 square metres. Further guidance advises that the size of houses and their orientation needs to be taken into account. Experience suggests, however, that an area of 55 square metres has become the maximum in many cases and is inadequate to allow compliance with criterion b. The size and orientation of houses are frequently ignored by developers. In addition, the City Council's Exeter Vision and draft Green Infrastructure strategy both refer to the need for people to grow some of their own food. Good sized gardens are important in helping achieve these aspirations. The guidance below respond to the need to take account of house size and orientation whilst 55 square metres remains the average size.

THE FOLLOWING MINIMUM GARDEN SIZE WILL BE APPLIED TO EVERY PROPERTY DEPENDENT ON:

I. THE NUMBER OF BEDROOMS WITHIN THE PROPERTY;
II. THE ORIENTATION OF THE GARDEN.

GARDENS FACING PREDOMINANTLY SOUTH BETWEEN 30 DEGREES NORTH OF DUE WEST AND 30 DEGREES SOUTH OF DUE EAST (FIGURE 7.1) MUST COMPLY WITH THE FOLLOWING STANDARDS:

NUMBER OF BEDROOMS	MINIMUM GARDEN SIZE
UP TO TWO BEDROOMS	45 SQM
MORE THAN TWO BEDROOMS	55 SQM

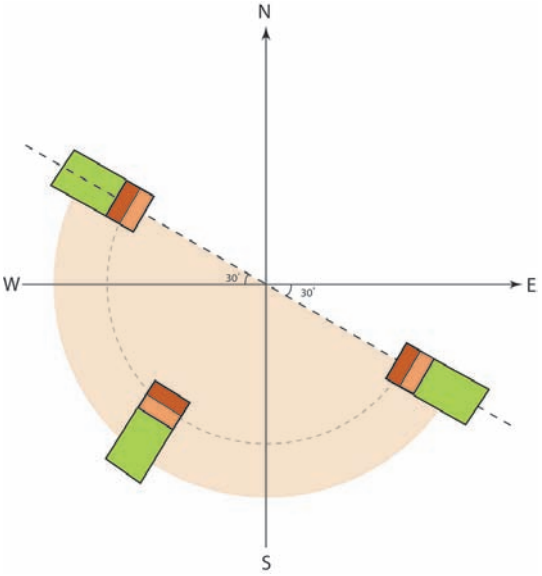


Figure 7.1

GARDENS FACING PREDOMINANTLY NORTH BETWEEN 30 DEGREES NORTH OF DUE WEST AND 30 DEGREES SOUTH OF DUE EAST (FIGURE 7.2) MUST COMPLY WITH THE FOLLOWING STANDARDS:

NUMBER OF BEDROOMS	MINIUM GARDEN SIZE
UP TO TWO BEDROOMS	55 SQM
MORE THAN TWO BEDROOMS	65 SQM

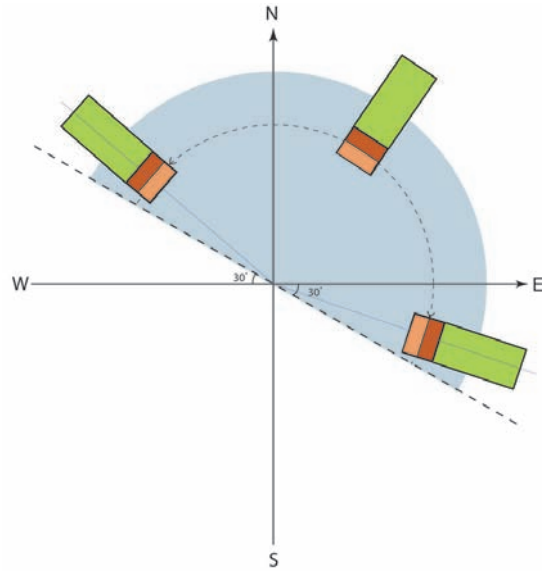


Figure 7.2

Roof gardens and balconies

7.6 Roof gardens and balconies may be permissible as part of the design of a house subject to satisfactory privacy standards being maintained. They will not count towards private garden space provision.

Communal open space (houses)

7.7 Although the garden sizes specified above will normally be required, there may be development which justifies an approach based on communal space.

WHERE PRIVATE COMMUNAL OPEN SPACE IS PROVIDED IN LIEU OF INDIVIDUAL PRIVATE GARDENS THE REQUIREMENTS UNDER THE HEADING PRIVATE OPEN SPACE FOR FLATS WILL APPLY.

Front Gardens

7.8 Whilst front gardens may be required for townscape and amenity reasons they will not count towards minimum private garden space provision.

Figure 7.3 Attractive front gardens

PRIVATE OPEN SPACE FOR FLATS

7.9 Private amenity space for flats will consist of communal open space, private sitting out space for ground floor flats and balconies or roof gardens for upper floor flats.

Communal open space

7.10 Local Plan text advises that a minimum of 10 square metres of communal space per dwelling will be applied as a rule of thumb. This figure has become a norm despite advice that there are cases where more should be provided. Experience has demonstrated that 10 square metres does not allow compliance with criterion b of Policy DG4. The minimum requirement, therefore, is now 20 square metres.

A MINIMUM OF 20 SQUARE METRES OF COMMUNAL OPEN SPACE PER FLAT MUST BE PROVIDED. THIS SHOULD BE CONNECTED TO THE BUILDING, ACCESSIBLE TO ALL RESIDENTS FROM WITHIN THE CURTILAGE, FREE FROM VEHICLES, SCREENED FROM PUBLIC VIEW AND LOCATED TO RECEIVE SUNLIGHT FOR A SUBSTANTIAL PART OF THE DAY. THE SPACE SHOULD BE MANAGED BY OR ON BEHALF OF THE OCCUPANTS OF THE ADJOINING FLATS.

Ground floor private sitting out space

7.11 Residents of flats on the ground floor should have access to a well defined private sitting out area. This will act as “defensible space” and create good quality amenity.

PRIVATE SITTING OUT SPACE MUST BE PROVIDED FOR ALL GROUND FLOOR FLATS IN ADDITION TO THE 20 SQUARE METRES OF COMMUNAL OPEN SPACE. THE SPACE SHOULD ADJOIN AND BE DIRECTLY ACCESSIBLE FROM THE FLAT AND THE COMMUNAL OPEN SPACE. IT WILL BE A MINIMUM OF 3 METRES DEEP AND BE THE SAME WIDTH AS THE DWELLING IT IS SERVING (FIGURE 7.4). A PRIVACY SCREEN BETWEEN DWELLINGS AND A LOW WALL, RAILING OR HEDGE AND WITH A GATE TO ENCLOSE THE SPACE WILL BE REQUIRED.

Balconies and roof gardens

7.12 Residents on upper floor flats should have access to a balcony which is large enough to be enjoyed.

BALCONIES MUST BE PROVIDED FOR ALL FLATS ABOVE GROUND FLOOR LEVEL IN ADDITION TO THE 20 SQUARE METRES OF COMMUNAL OPEN SPACE. THE FLOORS OF BALCONIES MUST BE A MINIMUM OF 2 METRES DEEP WITH A MINIMUM FLOOR AREA OF 6 SQUARE METRES. PRIVACY SCREENS MUST BE INCLUDED BETWEEN BALCONIES.

7.13 Roof gardens may be provided as part of the design of buildings accommodating flats. To allow them to count towards the 20 square metre provision they will need to be of a high quality landscape design including specific measures to accommodate and maintain plants. Direct access to them will be provided from the flats they are serving.

Front Gardens

7.14 Front gardens for flats may be required for townscape and amenity reasons. However, the space will not count towards minimum private garden space provision. Access directly on to the space will be provided from a front or patio doors. Ownership will be clearly defined by a low wall and/or railing or other means agreed with the planning authority.

PRIVACY

7.15 People should be able to enjoy a degree of privacy which makes them comfortable in their dwellings and to enjoy their gardens without feeling overlooked or hemmed in.

A MINIUM BACK TO BACK DISTANCE OF 22 METRES IS REQUIRED BETWEEN HABITABLE ROOM WINDOWS.

7.16 Privacy may also be achieved by avoiding windows between habitable rooms (living room, dining room, kitchen and bedroom) directly facing one another.

7.17 Where buildings of different storey heights back onto one another, or differences in site levels place buildings of the same storey height higher than those they back onto, privacy distances will need to be increased.

7.18 Where the angle of properties backing onto each is 45 degrees or more the separation distance may be reduced to 15m between habitable room windows.

7.19 These standards apply to distances between proposed and existing dwellings as well as between proposed dwellings.

7.20 Where in exceptional circumstances privacy standards cannot be met but that a proposed form of development is otherwise acceptable, and that no precedent is set that is counter to the requirements of the SPD, the City Council will consider the merits of applying the standards flexibly.

NATURAL LIGHT AND OUTLOOK

Natural Light and Solar Orientation

7.20 To ensure that habitable rooms and private gardens receive sufficient natural light, and opportunities for passive solar gain and on-site solar energy generation are maximised, consideration will need to be given to the proximity and scale of existing and proposed buildings adjacent to one another in conjunction with the orientation of building plots and the levels across sites.

DEVELOPERS MUST DEMONSTRATE THAT DWELLINGS HAVE SUFFICIENT DAYLIGHT TO ALLOW COMFORTABLE USE AND ENJOYMENT OF HABITABLE ROOMS, GARDENS AND COMMUNAL SPACES. WHERE THERE IS DOUBT ABOUT THE QUALITY OF DAYLIGHT DEVELOPERS WILL BE REQUIRED TO PRODUCE PLANS ILLUSTRATING SHADOW PATHS AT THE WINTER SOLSTICE AND SPRING/AUTUMN EQUINOX (SUNRISE, MIDDAY AND SUNSET.

7.21 The provision of buildings and dwellings with good quality natural light also allows opportunities for passive solar gain and on-site solar energy generation to be maximised (See Chapter 9, Section Sustainable Building Design)

7.22 In cases where there is doubt about the quality of daylight reference should be made to BS 8206 Lighting for buildings, the DETR Good Practice guide 245 Desktop Guide to Daylighting and the BRE document Site Layout Planning for Daylight and Sunlight: a guide to good practice (1991).

Outlook

7.23 Residents should be able to enjoy good quality outlook, without adjacent buildings being overbearing.

WHERE HABITABLE ROOM WINDOWS FACE ONTO A BLANK OR LARGELY BLANK WALL OF ANOTHER BUILDING, A MINIMUM DISTANCE EQUAL TO TWICE THE HEIGHT OF THE BLANK WALL (MEASURED FROM GROUND FLOOR LEVEL TO EAVES OR PARAPET) MUST BE PROVIDED BETWEEN THE TWO BUILDINGS (FIGURE 7.5). WHERE THERE IS A LEVEL DIFFERENCE BETWEEN THE TWO BUILDINGS THE DISTANCE MUST INCREASE (FIGURE 7.6) OR MAY DECREASE ACCORDINGLY.

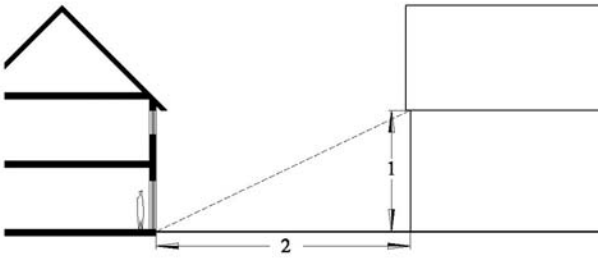


Figure 7.5 The distance between habitable room windows and a blank wall must be minimum 2 times of the height of the wall.

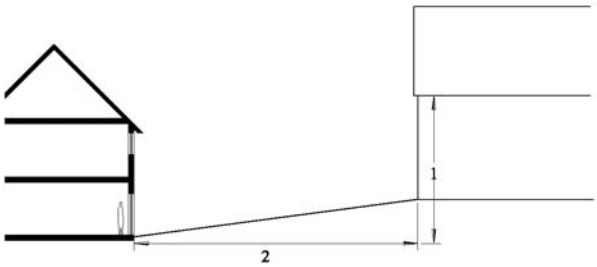


Figure 7.6 The distance between habitable room windows and an elevated blank wall must be minimum 2 times of the height of the wall plus the level difference.

8 BIN STORAGE

INTRODUCTION

BUILDING FOR LIFE RELEVANT QUESTIONS: 2,5,6,17,18,20

8.1 Bin storage needs to be considered from the outset of the design process. Recycling requirements have resulted in an increase in both the size and the number of bins which, without carefully located storage, can be detrimental to the quality of the public realm, to residential amenity and public health (Figure 8.1). Developers need to be familiar with Exeter City Council publication; "Refuse storage for new and converted residential properties". The guidance below incorporates the principles on which this document is based.

Figure 8.1 Bins on the footway damage townscape quality and cause detriment to pedestrian safety.

8.2 Bin storage space must be provided within the curtilage of each house to accommodate two bins of 240 litre capacity as indicated in Figure 8.2. Layouts need to comply with requirements for carriage distances and access for appliances.

Height = 1070 mm
Depth = 730 mm
Width = 570 mm

Figure 8.2 Specifications of a standard 240 litre domestic wheelie bin.

Houses

8.3 Houses must include purpose-built storage within the curtilage and screened from the public realm, which allows step free access to the collection point. Storage may be within garages as suggested in Figure 8.5, or within purpose built areas in unobtrusive locations. Storage provision, particularly if it is communal, must be within 25 metres of the kerbside collection point and identified on plans.

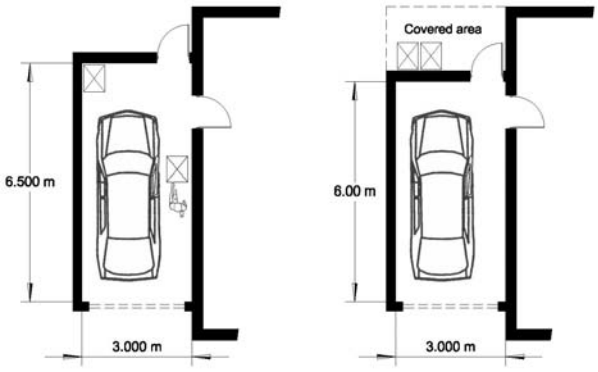


Figure 8.3 Bin storage for houses with attached garages

8.4 In houses without garages, purpose-designed bin stores located in rear gardens may be possible if the distance to the collection point (which must be on the boundary of the curtilage) is no further than 25 metres. Refuse will not be collected from rear service paths or lanes. Stores would be best located adjacent to rear gates and may be incorporated into the design of bicycle storage. As indicated in Figure 8.4 rear lanes should be 2 metres wide and free of steps to allow convenient movement of bins and allow pedestrians to pass when bins are being moved along the lanes. Particular attention should be paid to the need to provide safe and secure rear lanes.

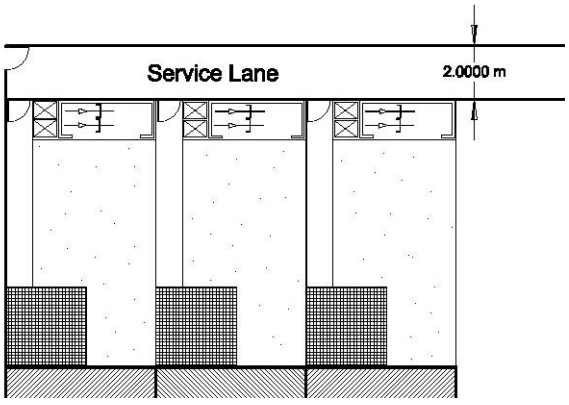


Figure 8.4 Bins in rear gardens

8 BIN STORAGE

8.5 In practice the scope for storing bins in rear gardens is likely to be limited by the maximum wheeling distance to collection points of 25 metres. Therefore, storage on the frontage will often be required, either within the footprint of the dwelling or in the front garden. Because there is an inherent contradiction in creating attractive frontages and providing storage for waste, very careful attention must be paid to the design of bin storage at the front of dwellings to ensure that they are not detrimental to residential amenity or to the quality of the public realm. Frontage storage may be within the footprint of the dwelling or in the front garden complying with the principles indicated in Figures 8.5. Open storage is detrimental to amenity and the townscape and will, therefore not be permitted.

REFUSE STORAGE MUST BE WITHIN PURPOSE BUILT STRUCTURES WHICH PRESERVE RESIDENTIAL AMENITY AND THE QUALITY OF THE TOWNSCAPE

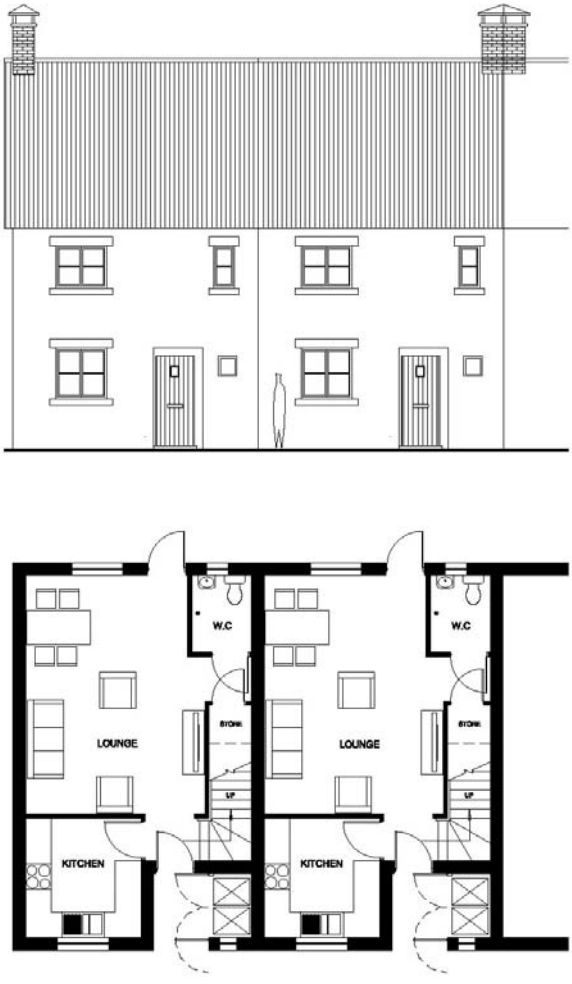


Figure 8.5 Bins are accommodated within footprint of houses

8.6 Front garden storage needs to be carefully designed so that the quality of the front garden and the streetscape is maintained. Bins must be located behind front walls which are at least 1.1 metres high. In terms of the public realm there are significant advantages in pairing dwellings as suggested in Figure 8.7 to create attractive front boundaries.

Figure 8.6 Bin store within front gardens

Flats

8.7 Communal bin storage, located within the envelope of the building should be used for flats. Internal access should be provided for residents and external access for refuse collectors. Good ventilation, drainage and washing facilities must be included. In some circumstances stores integrated into boundary screen walls may be acceptable but it is important that they do not detract from the quality of amenity space. Free standing bin stores will not normally be acceptable because of their detrimental impact upon the public realm and private amenity and consequent difficulties in complying with BfL criteria.

8.8 For details of the amount of space required, carry distances and other technical requirements developers should make early contact with Exeter City Council Environment Health Services, Cleansing Department. The example in figure 8.6 demonstrates an unobtrusive and convenient location within a building which maintains the character of the building itself and the street.

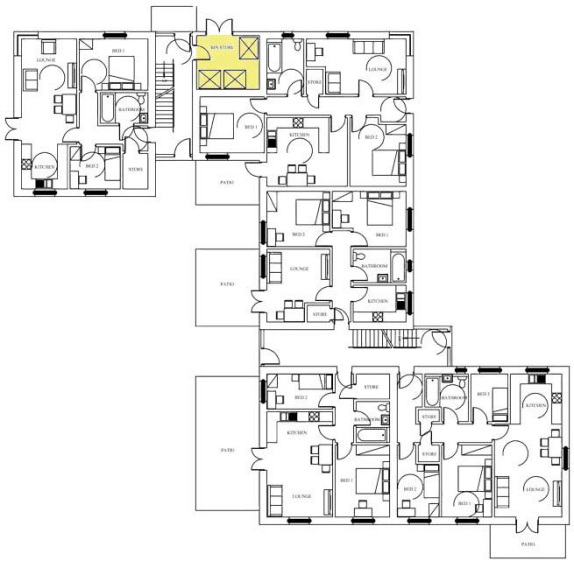


Figure 8.8 An example of bin store incorporated into the building design

Design for bin collection

8.9 Vehicular access in terms of vehicle heights, weights, turning circles, width, etc. needs to be taken into account in the design. Archways will need to be a minimum of 4.5 metres high to allow access for refuse vehicles.

8.10 Waste collection vehicles are required to be able to get to within 25 metres of any storage point and the gradient between the two should not exceed 1:12. There should be a maximum of three steps for waste containers up to 250 litres, and none when larger containers are used.

8.11 The design of new developments must be designed to deter waste bins being left on the footway as they reduce its effective width. Waste bins on the footway pose a hazard for blind or partially-sighted people and may prevent wheelchair and pushchair users from getting past.

9 BUILDING DESIGN

INTRODUCTION

BUILDING FOR LIFE RELEVANT QUESTIONS: 5,6,8,9,10,15,17,18,19,20

Lifetime Homes RELEVANT DESIGN CRITERIA:

3. Approach Gradients;
4. Entrances;
5. Communal Stairs and Lifts;
6. Doorways and Hallways;
7. Wheelchair Accessbility;
8. Living Room;
9. Entrance Level Bedspace;
10. Entrance Level WC and Shower Drainage;
11. Bathroom and WC Walls;
12. Stair Lift/Through-Floor Lift;
13. Tracking Hoist Route;
14. Bathroom Layout;
15. Window Specification;

9.1 Well designed buildings are those that are sustainable, fit for purpose, create good internal and external amenity, are pleasing to the eye with good proportions, use high quality materials and have details which are not “add-ons” but result from the function of a building. With regard to architectural style, advice is only given insofar as there are numerous styles which may be appropriate in given situations.

9.2 Buildings must be designed to be sustainable. They should meet the requirements of Part L of the Building Regulations, but also be designed to maximise the potential for residents to live in a sustainable way. In particular, homes should have low energy use designed into the structure of the building, maximise daylight and solar gain in the winter and have the potential to generate energy (either as an individual dwelling or as part of the wider community). Simple measures such as providing a south facing roof with solar panels and sufficient space for an efficient hot water tank/heat store can be easily provided at the planning stage, but can be difficult to retrofit. The design of dwellings must also be resilient to internal overheating and be sufficiently robust to accommodate the impact of the rise in external summer temperatures anticipated at the end of the dwelling’s lifetime.

9.3 Buildings should make a positive contribution to the public realm. The houses of the 18th and 19th centuries did this very well and have been successfully adapted to modern requirements. Lessons learned from these historic precedents need to be combined with the new requirements to deal with climate change and the need for energy conservation. Buildings should confidently face the street, animate it and be of high architectural quality whatever their style.

9.4 Dwellings should have sufficient space to create comfortable homes, without people living on top of each other. They should be adaptable to occupiers’ changing needs over time, and have sufficient space and storage to accommodate sufficient furniture and equipment to enable comfortable living.

9.5 Requirements and advice on internal standards are laid out under the headings Fit for purpose and Adaptability below. Important national guidance documents are in place which seek to significantly improve the quality of housing accommodation. Dwellings need to meet defined floorspace standards, be designed to be adaptable to the changing circumstances of occupiers over time and built to minimise energy consumption and emissions in construction, running and maintenance.

9.6 Research indicates that the United Kingdom has some of the smallest newly built dwellings and the smallest average room size in Western Europe. Without minimum standards, private housebuilders tend to minimise room sizes so reducing flexibility and adaptability. As the pressure for increased densities grows the requirement for minimum standards is ever more important. A balance needs to be struck between maintaining densities and providing dwellings which meet people’s needs.

9.7 This chapter incorporates many of the criteria and guidelines contained within Building for Life, Lifetime Homes and the Code for Sustainable Homes, adapting their contents to the needs of Exeter. The SPD seeks to rectify the problems associated with inflexible and non-adaptable dwellings by specifying key internal floorspace standards. Meeting these standards will contribute towards achieving many of the townscape and amenity requirements of the SPD.

RELATIONSHIP TO PLANNING POLICY

9.8 Advice on the design of buildings relates specifically to policies DG1, DG2, DG4 and H7 of the Exeter Local Plan. The guidance takes into account changes in national policy and guidance, and in clarifying and interpreting policy, makes reference to research and practice adopted since these policies were formulated.

9.9 The guidance below outlines specific requirements for internal space standards which are designed to ensure that development complies with DG4 (b). Increasingly it is recognised that internal, as well as external,space standards need to specified to ensure that a high quality of amenity is achieved.

9.10 The link between external and internal standards also needs to be taken into consideration.

PRINCIPLES

9.11 New dwellings should be of high architectural quality meaning that they should be:

I. SUSTAINABLY DESIGNED IE MINIMISE ENERGY CONSUMPTION, WATER AND WASTE;
II. DESIGNED TO WORK WELL FOR THEIR INTENDED USE IE FIT FOR PURPOSE;
III. ADAPTABLE AND ADAPTED TO THE CHANGING CLIMATE; AND
IV. WELL BUILT AND DURABLE.

SUSTAINABLE BUILDING DESIGN

9.12 To achieve a reduction in carbon emissions the amount of energy and resources used to construct and live in residential properties needs to be minimised. The Residential Design Guide SPD requires all residential buildings in Exeter to, as a minimum, meet the Government targets for reduction in carbon emissions.

9.13 Whilst Part L of the Building Regulations sets requirements for energy use in new dwellings, there is potential for developments to seek higher levels of sustainability by considering other options at the start of the design process.

A SUSTAINABILITY STATEMENT EXPLAINING HOW A DEVELOPMENT MEETS THE SUSTAINABILITY REQUIREMENTS OF THE RESIDENTIAL DESIGN GUIDE WILL BE PROVIDED FOR EACH PLANNING APPLICATION. THIS APPRAISAL CAN FORM PART OF THE DESIGN AND ACCESS STATEMENT.

S106 AGREEMENTS WILL BE REQUIRED FOR ALL MAJOR DEVELOPMENTS TO ENSURE THAT THE AGREED MEASURES ARE IMPLEMENTED IN THE FINAL SCHEME.

9.14 Exeter City Council encourages the use of Code for Sustainable Homes by Developers to demonstrate the level of sustainability achieved by development proposals.

9.15 Large development areas within the City, including the Newcourt, Monkerton and South West of Exeter development areas, will be required to meet higher levels of the Code for Sustainable Homes. These required standards will be set out in the masterplans and Supplementary Planning Documents for each of these areas.

9.16 The SPD requires that applicants take a sequential approach to sustainable design. Developers should focus on reducing the use of materials and energy (during and after construction), before considering how energy could be generated on site. In addition to completing the Future Foundations South West Sustainability check list, developers must demonstrate how their schemes achieve the requirements outlined in Figure 9.1 in the Sustainability Statement:

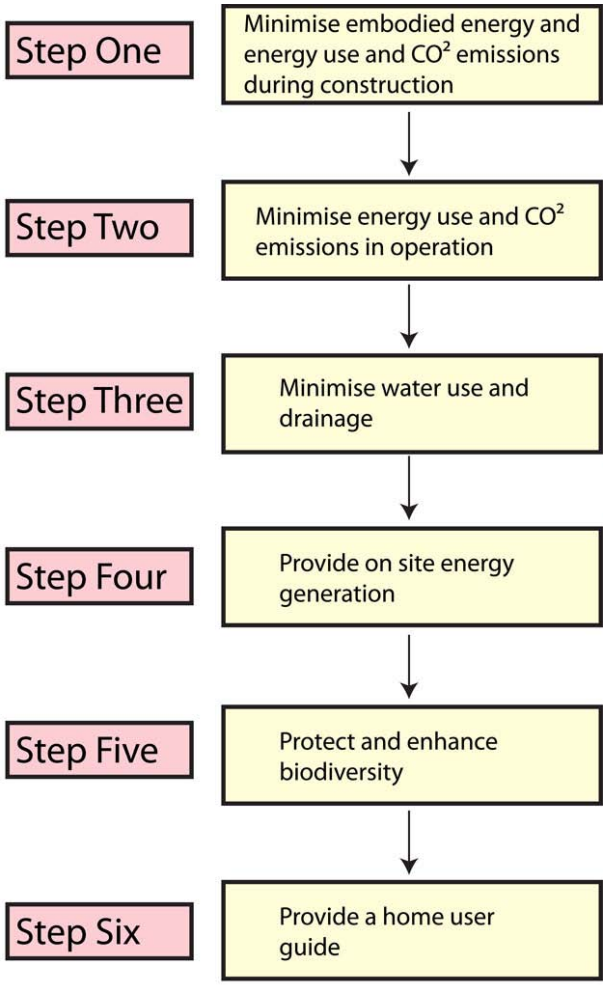


Figure 9.1 Sustainable Building Design Flow Chart

Step 1: Minimise embodied energy and energy use and CO² emissions during construction

THE SUSTAINABILITY STATEMENT WILL EXPLAIN THE APPROACH TAKEN TO REDUCE THE ENERGY USE OF THE DEVELOPMENT DURING ITS CONSTRUCTION.

9.17 Developers should minimise the energy used to construct buildings and the site. This can be achieved in the following ways:

- Buildings should be designed to be constructed efficiently using materials that have minimal embodied energy (such as locally sourced materials, timber products or recycled materials or with A or A+ ratings in the BRE Green Guide);
- Materials should be sourced ethically (demonstrated by having approved chains of custody), prioritising materials with low embodied energy from as close to the site as possible (to reduce energy used to transport materials);
- Minimise site infrastructure (e.g. reduce drainage system requirements by dealing with surface water run off on site through Sustainable Urban Drainage Systems)
- Build durable buildings with an increased design life;
- Reduce wastage by specifying standard elements that do not require cutting on site. Waste materials produced during the construction period should be collected for re-use or recycling. All projects valued at over £300,000 are required to have an approved site waste management plan;
- Design for deconstruction so the materials can be re-used at the end of the building's life

Step 2: Minimise energy use and CO² emissions in operation

THE SUSTAINABILITY STATEMENT WILL EXPLAIN THE APPROACH TAKEN TO REDUCE THE ENERGY USE OF THE DEVELOPMENT DURING ITS USE. THIS SHOULD DEMONSTRATE THAT A HIERARCHICAL APPROACH HAS BEEN TAKEN TO REDUCE ENERGY CONSUMPTION BY THE END USER.

9.18 The layout of a site needs to be designed to integrate the landscape framework and streets with the surrounding area, encourage movement by more sustainable modes of transport, connect to community facilities; and link into existing ecological and hydrological systems. This is discussed in more detail in Chapters 4 and 5 of this SPD.

9.19 Individual plots and buildings need to be designed to minimise energy use. Part L (Conservation of Fuel & Power) of the Building Regulations sets out requirements for the environmental performance of individual dwellings, which are set to increase in line with Government targets. Meeting the requirements of the Building Regulations should be seen as a minimum – the sustainability of each building should be maximised wherever possible.

9.20 A hierarchical approach to the reduction of energy consumption should be taken:

i) Use solar orientation to maximise daylight and passive solar gain. Orientate main rooms and windows to make best use of daylight (solar spaces or light wells could be used) and reduce physiological and psychological need for lighting. It is possible that thermal mass can be created within buildings to store heat collected during the day and release it over night; reducing the need for heating systems. However, it is also important to design out any potential for internal overheating and avoid any future need for mechanical cooling.

ii) Provide good space standards that contribute to long term flexibility and future proof the home, allowing potential for alterations and extensions in the future and different use (such as home working, or the retro-fitting of micro-renewables). It uses less energy to alter an existing dwelling that to build a new one. (Cross ref with internal standards)

iii) Reduce waste energy – maximise the level of insulation to reduce wasted heat. Use robust construction details to reduce heat loss from thermal bridging. Reduce draughts and ensure property is airtight while also a healthy internal environment e.g. by providing a ventilation and heat recovery system.

iv) Provide a secure private external space with opportunity to produce food on site (this could be within communal gardens or allotments). Provide adequate space within the building/plot for cycle storage, external drying areas and recycling/ composting. (cross reference with Resi Amenity).

v) Provide good quality utility connections, including high-speed (10-20MB) broadband supply. Install a smart meter in all dwellings to inform the occupants of their energy consumption.

vi) Reduce levels of energy consumption by fitting low energy appliances and fittings within the individual dwellings.

Step 3: Minimise Water Use and Drainage

THE SUSTAINABILITY STATEMENT WILL EXPLAIN THE APPROACH TAKEN TO REDUCE THE WATER USE OF THE DEVELOPMENT DURING ITS CONSTRUCTION.

NEW DEVELOPMENT SHOULD TAKE MEASURES TO REDUCE AND COLLECT SURFACE WATER RUN-OFF ON SITE, INCLUDING HARVESTING RAINWATER FOR USE WITHIN THE DEVELOPMENT.

NEW DEVELOPMENT SHOULD INCORPORATE SUDS, LIVING WALLS AND GREEN ROOFS UNLESS THERE ARE DEMONSTRABLY PRACTICAL REASONS FOR NOT DOING SO.

9.21 Part G (Sanitation, hot water safety and water efficiency) of the Building Regulations requires potential water consumption within new dwellings to be less than 125 litres per day per person. Meeting the requirements of the Building Regulations should be seen as a minimum – the water efficiency of each building should be maximised wherever possible. (Note: higher levels of the Code for Sustainable Homes require greater levels of water efficiency)

9.22 Water efficiency can be achieved in a number of ways. As a minimum drainage and water supply for new dwellings should meet the following requirements:

- Minimise water use on site by installing low water use fittings (e.g. aerating taps) and appliances, and through the other measures set out below;
- Surface water run off should be collected within the plot or dealt with as part of the site Sustainable Drainage systems;
- Rainwater should be harvested for on site use (either collected for use within the garden or used for non-potable water use (e.g. flushing toilets);
- Recycle grey water (from showers, baths or washing) to flush toilets;
- Where there is sufficient space, consider use of on site water treatment and collection to reduce the need for mains supplied water.

Step 4: Provide on-site Energy Generation

PROPOSALS WILL BE DEVELOPED USING AN HIERARCHICAL APPROACH TO ENERGY.

9.23 In dealing with energy developers should adopt a hierarchical approach as follows:

i) use less energy (by incorporating energy efficiency)

ii) supply energy efficiently (by prioritising decentralised energy generation and using renewable and low carbon energy sources)

iii) developments of 10 dwellings or more are to provide the necessary infrastructure and use decentralised and renewable or low carbon energy sources to cut predicted CO^2 emissions by the equivalent of at least 10% over and above those required to meet the current building regulations.

THE SUSTAINABILITY STATEMENT SHOULD DEMONSTRATE HOW THE DEVELOPMENT APPROACHES ENERGY USE AND EXPLAIN HOW THE REQUIRED LEVEL OF RENEWABLE ENERGY PRODUCTION WILL BE ACHIEVED.

9.24 The primary design approach for new dwellings should be to minimise energy use and maximise solar gain (while at the same time avoiding overheating). In order to achieve the higher levels of the Code for Sustainable Homes, or to further reduce the carbon emissions of a property/development, it will be necessary to produce some energy on site.

9.25 All developments of 10 dwellings or more should prepare an energy assessment that prioritises an efficient decentralised energy supply. Decentralised energy generation is a series of local systems generating heat and power, at or near the point of use, connected to local distribution networks. Decentralised energy schemes make more efficient use of energy than large scale generation via the national grid. All major new developments should provide heat led, site wide Combined Heat and Power networks where feasible. Where future heating and cooling network opportunities do not exist yet, but are identified; developments should be built to be 'heat network ready.'

9.26 The provision of on site renewable energy generation is also another valuable method of reducing energy use. Policy RE5 of the Regional Spatial Strategy (Proposed Changes (RSS), July 2008) requires all major developments (over 10 dwellings) to provide 'at least 10% of the energy to be used in the new development from decentralised and renewable or low-carbon sources, unless, having regard to the type of development involved and its design, this is not feasible or viable.'

9.27 Development proposals should seek to provide a reduction in carbon dioxide emissions through the use of onsite renewable energy generation where it is feasible. There are a number of potential renewable and low carbon energy technologies that can be used on site including:

- Solar thermal water heating;
- Wind turbines;
- Ground source heat pumps;
- Air source heat pumps;
- Hydroelectric systems;
- Photovoltaic solar cells;
- Wood pellet stove/boilers;
- Site wide heating systems through buried underground hot water pipes (referred to as district heating) using a renewable or low carbon onsite or offsite heat source including combined heat and power (CHP).

9.28 The appropriateness of these will vary from site to site. However, mindful of the importance of renewable electricity, the roofs of new dwellings should as much as is practical be oriented to face south and not overshadowed. If solar PV is not installed by the developer south facing roofs should be structurally and electrically prepared for the subsequent installation of photovoltaic panels by occupiers.For larger developments district heating systems are likely to be more economic than generating energy on an individual dwelling basis.

9.29 The Sustainability Statement must set out the measures taken to generate energy within a development.

Step 5: Protect and Enhance Biodiversity

THE DESIGN AND LAYOUT OF NEW RESIDENTIAL DEVELOPMENT WILL PROTECT AND ENHANCE AREAS AND FEATURES OF ECOLOGICAL VALUE AND SEEK TO ENHANCE THE ECOLOGICAL CAPITAL OF THE AREA.

THE SUSTAINABILITY STATEMENT WILL SET OUT THE APPROACH TAKEN BY THE DEVELOPMENT TO MEET THIS REQUIREMENT.

9.30 Developers must demonstrate the ways in which a proposed development will protect and enhance the biodiversity of a site. To do this a baseline ecological survey should be carried out by a qualified ecologist using recognised methodology. This should be followed by consideration by the ecologist and design team of the best way to retain, protect and enhance existing ecological features (including links to off site habitats and ecological features) and provide the opportunity for new habitats and increased biodiversity within the development.

9.31 Within individual plots and dwellings approaches could include integrating SUDS into adjacent wetland/riparian systems, providing green roofs and walls to buildings; and providing nesting or roosting areas within buildings and landscaped areas for birds, bats and insects.

9.32 The Sustainability Appraisal must set out the baseline ecological value of the site and proposals to enhance biodiversity.

Step 6: Provide a Home User Guide

S106 AGREEMENTS WILL BE REQUIRED FOR ALL MAJOR DEVELOPMENTS TO AGREE THE CONTENT OF AND ENSURE THAT THE HOME USER GUIDES ARE PROVIDED FOR ALL DWELLINGS PRIOR TO OCCUPATION OF ANY PART OF THE DEVELOPMENT.

9.33 A Home User Guide should be produced for each property within a development, setting out how the energy and water systems in each home should be operated to provide best performance at different times of year. The User Guide should also include the running and maintenance requirements of the technologies installed to minimise energy or water use, or generate energy in the dwelling. The guide should provide information about sustainable transport, setting out the site's Green Travel Plan and providing information regarding local green transport infrastructure and services. The guide should explain how the site's infrastructure, such as SUDS and Green Infrastructure work and are managed.

FIT FOR PURPOSE

9.34 Fit for purpose means that dwellings must meet the changing needs of occupiers over time. Space standards for dwellings in the UK are near the bottom of the range of European space standards and the difference in size between dwellings built by the public and private sector is greater in the UK than elsewhere in Europe.

9.35 It is important to regulate space standards as the difference in internal space provision between public and private sector houses is widening and, without controls, there is evidence that the size of dwellings tends to be reduced contrary to the needs and aspirations of occupants. In attempting to maintain value, facilities such as extra bathrooms or WCs are added at the cost of smaller rooms and less storage space.

9.36 Space standards are an important factor in delivering sustainable development. People need space to work from home, store bicycles and accommodate features such as extra water tanks for recycling water. Larger houses in which people are likely to be content to spend leisure time and inhabit longer are likely to reduce energy consumption in the longer term.

9.37 Research has found that small internal spaces, particularly living and dining rooms, have been found to be negative to family well being and health. Small rooms limit the space available for families to live happily together and for private leisure within the house – resulting in a feeling of "living on top of each other". House buyers prefer larger habitable rooms and more storage. Space designed for flexible and multi-use, such as a bedroom with space to work/study in, is appreciated over the provision of numerous bath or shower rooms.

9.38 The findings of this national research is supported by the results of local studies carried out by Exeter City Council as part of the development of this SPD (see Appendix X).

9.39 This Guide sets minimum standards for all dwellings, including conversions, such that people have good quality space to live together, to have privacy and quiet and to have adequate storage space. The space standards specified are set on the basis of per person (bedspace) and developers are required to specify the designed occupancy at the time of the planning application.

Minimum Gross internal floor area (GIA)

9.40 The minimum (not maximum) standards specified below derive from the need to ensure that rooms may be used flexibly, taking account of accommodating furniture and the activities that may take place.

9.41 The GIA provides space for one bathroom in dwellings occupied by up to five people and one bathroom and an additional WC in dwellings occupied by more than five people. However, assuming that all bathrooms will be located on upper floors, the further requirement for a WC at entrance level means, in practice, that all houses will have at least two WCs. The provision of extra rooms such as en-suite bathrooms and utility rooms will not count towards the requirement and would have to be provided in addition to the minimum floor area.

THE FOLLOWING SPACE STANDARDS MUST BE MET AS A MINIMUM IN NEW DEVELOPMENTS OR CONVERSIONS.

	Bedrooms / Persons	GIA (sqm)
Flats	1b2p	50
	2b3p	61
	2b4p	70
	3b4p	74
	3b5p	86
	3b6p	95
	4b5p	90
	4b6p	99
2 storey house	2b4p	83
	3b4p	86
	3b5p	96
	4b5p	100
	4b6p	107
3 storey house	3b5p	102
	4b5p	106
	4b6p	113

APPLICANTS ARE REQUIRED TO PROVIDE A SCHEDULE OF ALL DWELLING TYPES, AND THE ACCOMMODATION THAT IS BEING PROVIDED AS IN THE EXAMPLE BELOW:

Dwelling type	House A	House B	Flat C
No. of units	x	y	z
Storeys	2	3	1
Gross internal floor area	90	118	61
No.of beds/ occupants	3b4p	4b6p	2b3p
Area for cooking, living, eating (sqm)	34.8	31	25
Size of double bedroom 1 (sqm)	12.8	19	13.2
Size of double bedroom 2 (sqm)	n/a	19	n/a
Size of single bedroom 1 (sqm)	9.7	9.3	8.8
Size of single bedroom 2 (sqm)	8.4	9.3	n/a
Area of internal storage (sqm)			0.96

Living, dining and kitchen areas

9.42 The minimum combined space required for living, dining and kitchens is dependent upon the number of people living in a dwelling:

Household size (bedspaces)	Square metres
1-2 person	23
3 person	25
4 person	27
5 person	29
6 person	31

9.43 The specified standards do not define how much floorspace should be allocated to the individual living, dining or kitchen functions within the combined space but the space must be at the dwelling's entrance level. Two separate rooms accommodating lounge, diner and kitchen areas will be required for dwellings with three bedrooms or more.

9.44 The width of space is also important. Therefore, to allow good internal amenity and good quality daylight the narrowest part of a living room should be 3.2 metres. There should be space for turning a wheelchair in dining areas and living rooms as specified in Figure ** below. Adequate circulation space should be provided elsewhere. To allow views out of living rooms whilst seated the maximum height of glazing should be 800mm from the floor.

Bedrooms

9.45 Bedrooms should be of sufficient size to allow for a variety of activities including relaxation, hobbies, work or study. Specified standards allow space for the access of wheelchair users and include space for built-in wardrobes:

Single bedrooms minimum	8.4sqm
Double bedrooms minimum	12.8sqm
Minimum width of double/twin bedrooms	3m

9.46 The design of downstairs space should allow temporary accommodation of a bed to help with temporary changes in circumstances and the upstairs should provide a convenient route for a hoist.

Bathrooms and WCs

9.47 The GIA provides for one bathroom in dwellings occupied by up to five people. In dwellings occupied by more than five people the requirement is for one bathroom and an additional (separate) WC. All dwellings should provide wheelchair accessible entrance level WC with drainage provision enabling a shower to be fitted in the future. In practice this means that dwellings of more than one storey (assuming the bathroom is upstairs) will be required to have an entrance level WC.

9.48 Bathrooms must be designed for adaptation to meet the needs of future occupants. WCs should have a clear space of 1100mm in front and 700mm to one side to allow for a wheelchair user to manoeuvre. Walls should be capable of taking adaptations such as handrails. Reinforcements should be located between 300 and 1500mm from the floor.

Storage and utility spaces

9.49 A floor to ceiling storage cupboard with a minimum floor area of 0.8 square metres should be provided for 1-2 person dwellings. For each additional occupant, a minimum of 0.15 square metres storage area should be provided. Lofts should be boarded to allow storage. Dwelling plans should demonstrate that suitable space is provided for a washing machine, for drying clothes, and for waste and recycling bins within the home.

Study and work

9.50 Dwelling plans should demonstrate that all dwellings are provided with adequate space and services to enable work and study at home.

ADAPTABILITY

9.51 Dwellings should be designed to meet the changing needs of occupiers over time. Lessons may be learnt from historic housing forms, such as Victorian and Edwardian terraces, which have proved very adaptable to modern living. The important design principle is that adaptable dwellings will prove to be more sustainable and robust over time than those in which space standards have been pared down to the minimum.

9.52 Developers will be required to design dwellings to a specified standard, generally in accordance with the criteria set out in Lifetime Homes. Initial design and choices of construction have an important bearing on the scope for creating additional living space or adapting existing space to meet the needs of a changing household.

ALL NEW DWELLINGS WILL BE REQUIRED TO PROVIDE THE ACHIEVE THE LIFETIME HOMES STANDARD AND MEET THE FOLLOWING CRITERIA:

A WHEELCHAIR ACCESSIBLE ENTRANCE LEVEL WC WITH DRAINAGE PROVISION ENABLING A SHOWER TO BE FITTED IN THE FUTURE.

A CONVENIENT ROUTE FOR A HOIST UPSTAIRS.

STAIRS SHOULD ALLOW FOR THE INSTALLATION OF A STAIR LIFT AND THE GENERAL DESIGN OF A DWELLING SHOULD ALLOW FOR THE INSTALLATION OF A THROUGH-FLOOR LIFT.

SPACE FOR TURNING A WHEELCHAIR IN DINING AREAS AND LIVING ROOMS AND ADEQUATE CIRCULATION SPACE ELSEWHERE.

9.53 Plans should demonstrate how space can be used in a variety of ways. Rooms should be designed to allow space to rearrange furniture, put up guests, create space for work and study, etc. Dwelling types which rely on open-plan layouts will not necessarily create the flexibility required.

9.54 Dwellings should also be designed to allow changes to the structure to allow adaptation of a property to changing family circumstances. Pitched roofs should allow conversion of roof space to accommodation and the top floor should be designed to accommodate a stair.

9.55 The design of dwellings must be adapted to climate change anticipated as a result of past and likely future emissions. In particular, dwellings should be resilient to internal overheating and be sufficiently robust to accommodate the impact of the rise in external summer temperatures anticipated at the end of the buildings lifetime. Climate change will also result in more intense weather events and the external design of dwellings should be adapted to more prolonged intense rainfall.

Circulation

9.56 Whilst circulation space in a well designed dwelling will be minimised, it is important that it is of a standard that allows easy access for all potential residents and visitors and is designed to give access to storage.

9.57 Space should be made available inside the front door for off-loading outdoor items without entering habitable rooms.

9.58 The width of doorways and hallways should conform to the specifications below:

- The clear opening width of the front door should be at least 800mm.
- A 300mm nib is required beside the latch side of all doors at entrance level.
- All internal doors should have a clear opening width of at least 775mm
- All hallways and corridors inside a dwelling should have a clear width of at least 1050mm.

Wheelchair user dwellings

9.59 Whilst not all dwellings need to be entirely wheelchair accessible, it is important that new development includes a specified number of dwellings that are designed to meet the needs of wheelchair users.

5% OF NEW HOUSES WITHIN A DEVELOPMENT WILL BE REQUIRED TO BE WHEELCHAIR ACCESSIBLE IN ACCORDANCE WITH ‘THE EXETER WHEELCHAIR DESIGN STANDARDS’.

Building design and layout implications of meeting specified standards

9.60 The plans below compare and contrast three typical volume builder floor plans with floor plans which would meet the standards. Figures 9.2 and 9.3 indicate layouts which demonstrate that meeting Lifetime Home standards does not reduce densities.

Example 1: Two storey, four person dwelling

9.61 The main point to highlight is that an internal footprint of 4.8 metres by 7.8 metres results in bedrooms that are significantly substandard. The Lifetime Home plan, on the other hand meets the standards with an increase of 12 square metres and a frontage of 5.3 metres.

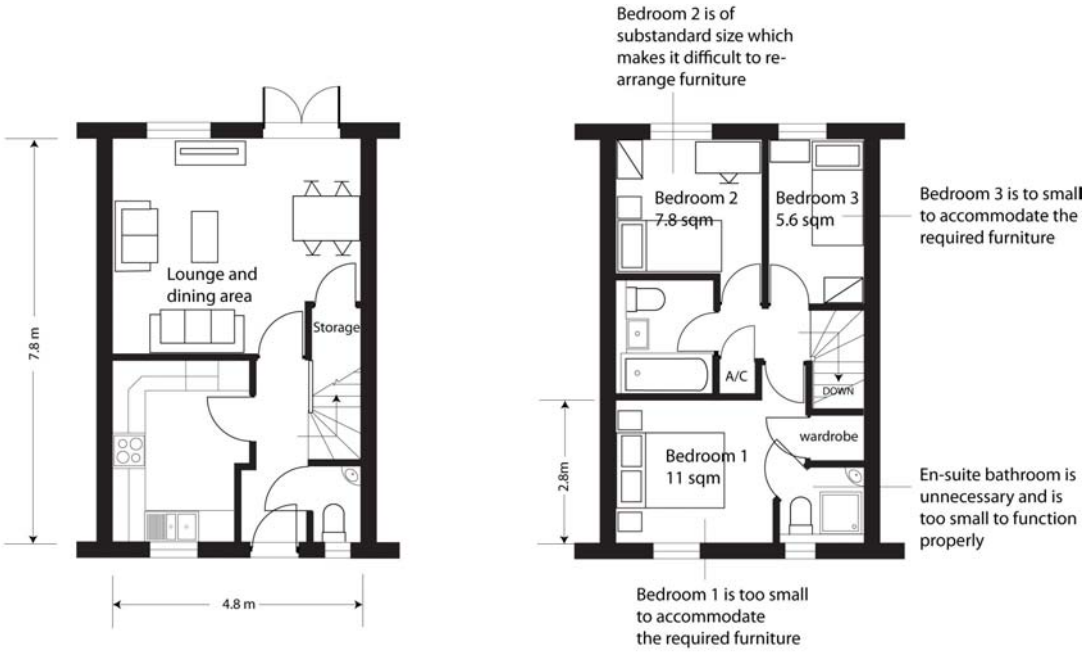


Figure 9.2 Typical Volume house builders 3 bedroom house type. Gross internal floor area 74 square metres

Figure 9.3 An example of a 3 bedroom house which meets the standards. Gross internal floor area 90 square metres

Figure 9.4 indicates an arrangement which places the living room on the frontage of the building. This has significant advantages in creating good quality townscape and amenity. The lounge on the frontage provides better scope for attractive architectural design and allows a kichen to overlook the garden space.

Figure 9.4 Example of a 3 bedroom house with front bay windows which meets the standards. Gross internal floor area 90 square metres

Example 2: Three storey six person dwelling

9.62 Adapting the volume builder unit (Figure 9.4) to meet the standard requires the living room to be located on the ground floor (Figure 9.5).

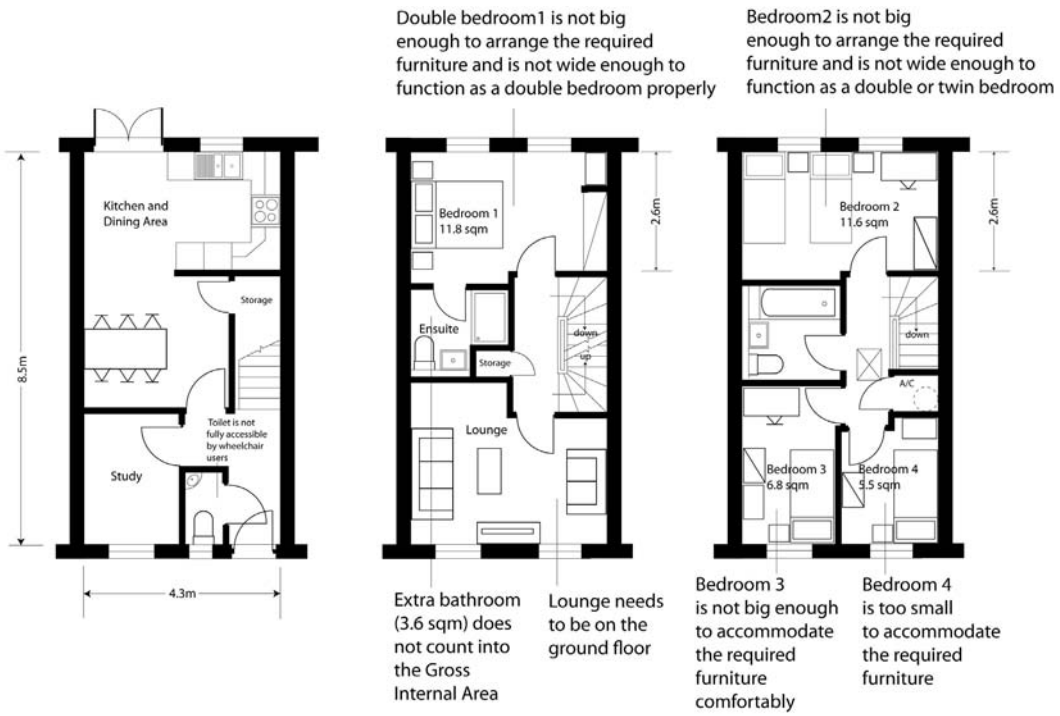


Figure 9.5 Typical volume house builder's 4 bedroom townhouse type, Gross Internal Floor Area 106 sq metres.

Figure 9.6 An example of 4 bedroom townhouse which meets the standards, Gross Internal Floor Area 117.6 sq metres.

As with Figure 9.7 indicates an arrangement which creates better townscape and amenity than the arrangement in Figure 9.6 by providing the living room on the frontage.

Figure 9.7 Example of 4 bedroom townhouse with front bay windows which meets the standards, Gross Internal Floor Area 117.6 sq metres.

Example 3: Two person flat

9.63 This example of a volume house builder's flat (Figure 9.6) demonstrates that unregulated internal standards are often so small that the space fails to function properly as a comfortable and convenient dwelling (Figure 9.7).

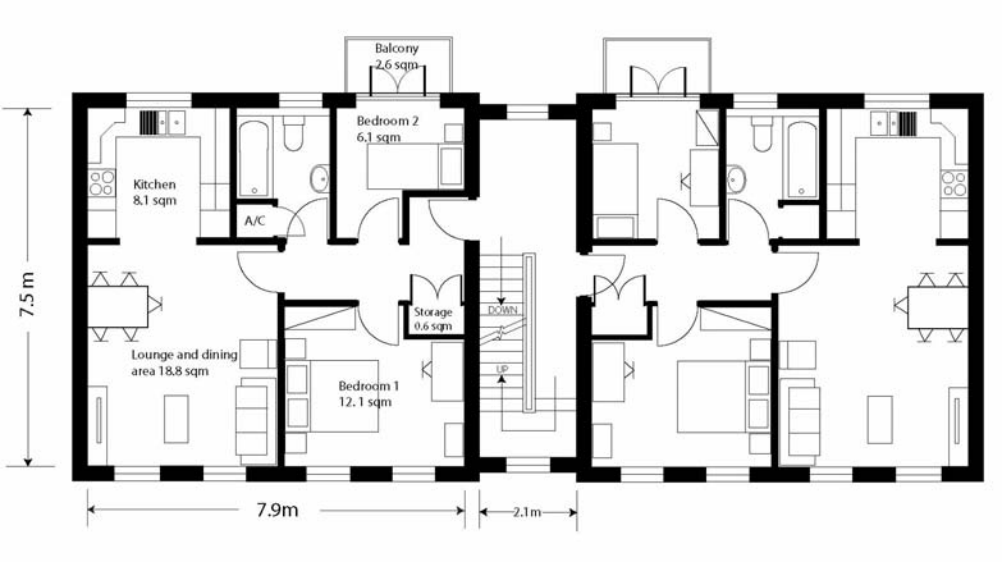


Figure 9.8 Volume house builder's typical first floor flat layout, Gross Internal Floor Area 59 sq metres

Figure 9.9 An example of first floor flat layout which meets the standards, Gross Internal Floor Area 61 sq metres

WELL BUILT AND DURABLE

9.64 In order to deliver high quality sustainable housing it is essential that individual dwellings are built to a high standard, using robust and hard wearing materials that can be easily maintained.

9.65 Building for Life includes five criteria which deal with design and construction, three of which deal with the quality of buildings. Criterion 19 specifically seeks schemes which make use of advances in technology which enhance performance, quality and attractiveness. The City Council will give consideration to the types of materials used, how they are put together and their longevity - both in terms of how robust they are and their aesthetic qualities.

9.66 Techniques such as timber frame, other prefabricated elements and modular construction give scope for quicker delivery of schemes but their suitability should be considered alongside other criteria such as local distinctiveness and adaptability.

9.67 It is important that new construction techniques are sound and robust, providing long-term benefits to future occupiers. Some basic trussed rafter designs, for example, do not allow roof space storage or allow extensions within the roof space. “Room in the roof” trussed rafters to a minimum pitch of **degrees allow storage and the potential for habitable space and are normally required. Boarded out loft space should be included in the design specification for dwellings.

DEVELOPERS MUST DEMONSTRATE THAT DWELLINGS WILL BE BUILT USING HIGH QUALITY MATERIALS AND SOUND, LONG-LASTING CONSTRUCTION. THEY MUST EXPLAIN CLEARLY IN THE DESIGN AND ACCESS STATEMENT HOW ADVANCES IN TECHNOLOGY HAVE ENHANCED PERFORMANCE, QUALITY AND ATTRACTIVENESS OF THE PROPOSED BUILDINGS.

AESTHETICALLY PLEASING

DEVELOPERS MUST DEMONSTRATE THAT THE DESIGN OF EACH BUILDING FORMS PART OF THE OVERALL DESIGN CONCEPT FOR THE SITE, ENHANCES INDIVIDUAL STREETSCAPES AND CREATES A HIGH QUALITY AESTHETIC THAT ENHANCES THE SENSE OF PLACE OF THE DEVELOPMENT WITHIN EXETER

9.68 Building design needs to be aesthetically pleasing to ensure a high quality residential environment which people will take pride in and look after (Figure 9.10). Architectural quality means being fit for purpose and durable, but without the elements which please the eye and raise the spirits the long-term success of a scheme will be unlikely. BfL criterion 17 requires high quality architectural solutions and recognises the importance of good aesthetics in achieving this.

Figure 9.10 High quality building design contributes to the sense of place.

9.69 The challenge for this SPD is to raise the aesthetic standard of everyday house building design. Many schemes, based on good quality layouts are spoiled by the aesthetic quality of the built form (Figure 9.11). Lack of interest and enclosure by bland brickwork and repetitive low pitched roof forms spoil the scheme. Poorly proportioned porch designs, standard Upvc windows, no enclosure to front gardens, white metal garage doors and lack of bin storage add to the negative aspects of this street scene. In contrast, Figure 9.12 demonstrates good enclosure with good proportions, interest in the elevations and enclosure to the front gardens. Townscape concepts can either be implemented well or badly. In these two contrasting examples of mews (Figure 9.13 and 9.14), the form and details of the architecture clearly make or break the quality of the place.

Figure 9.11 Poorly designed buildings.

Figure 9.12 Well designed buildings.

Figure 9.13 A poor quality mews.

Figure 9.14 A high quality mews

9.70 The examples highlighted in the figures to the left involve traditional forms and it is recognised that these architectural styles will frequently be sought. However, Exeter is made up of numerous character areas into which new developments will be required to fit and the SPD, therefore, recognises that there are a wide range of approaches to the aesthetics of design and architecture which can be applied to new developments. Whatever the style of architecture it is important that new dwellings are of high quality. A high quality built form should emerge from an analysis of a site and its context, and the developer's aspirations.

9.71 Careful consideration will need to be given to the details of individual buildings and how they relate to one another so that a sound development concept is carried through to the whole built form. Whilst the focus of this section is on architectural quality, a building is only as good as its setting. It is important that architectural quality is considered at the same time as the design of the spaces between the buildings. The best schemes form places where the various elements of design fit seamlessly together and create a strong sense of place.

9.72 The pressing need to build low energy dwellings will have an impact upon architectural aesthetics but it remains important that dwellings sit comfortably within their surroundings. The need to achieve appropriate scale, massing and external finishes remains important. Low or carbon neutral buildings may be achieved using a range of technical solutions and materials. The need for sustainable/low energy forms of construction will also influence the design approach and it is important that the design elements which contribute to an environmentally sustainable future are considered at the outset of the process.

9.73 Whilst the guidance does not advocate any particular style of architecture, designers should take note of historic forms and choose from a palette of materials which are prevalent in the city. Designs should be respectful of existing high quality historic townscape, and even if proposing a clearly contemporary solution, the use of locally familiar materials will often be required to enhance local distinctiveness. Attention should also be paid to how a given material may weather. Traditional materials such as brick and slate have the advantage of weathering well and looking better over time, whereas materials such as composite panels and timber may deteriorate relatively quickly.

9.74 The following images demonstrate that a range of architectural styles may achieve high architectural quality. The following must be achieved:

- A STRONG SENSE OF PLACE AND IDENTITY
- SCALE AND MASSING THAT RELATES WELL TO THE STREET AND ADJACENT BUILDINGS
- GOOD BALANCE BETWEEN SOLID AND VOID AND A CO-ORDINATED APPROACH TO THE LOCATION AND SIZE OF FENESTRATION TO THE ELEVATIONS WITH WINDOW SIZES AND PROPORTIONS APPROPRIATE TO ARCHITECTURAL DESIGN.
- ATTRACTIVE ROOFSCAPES WHETHER USING TRADITIONAL DOUBLE PITCHED ROOFS, MONO-PITCHES, FLAT ROOFS OR CURVED ROOFS
- ROOF PITCHES WHICH ENHANCE ENCLOSURE, MAKE A POSITIVE CONTRIBUTION TO THE TOWNSCAPE AND STREETSCAPE AND ALLOW THE USE OF HIGH QUALITY MATERIALS WHICH ENHANCE LOCAL DISTINCTIVENESS
- THE INTEGRATION OF RENEWABLE ENERGY TECHNOLOGY WITHOUT DETRIMENT TO THE ROOFSCAPE OR STREETSCENE
- BUILDINGS CONSTRUCTED USING HIGH QUALITY, LONG-LASTING MATERIALS WHICH MAY IMPROVE AESTHETICALLY WITH THE EFFECTS OF WEATHERING RATHER THAN DETERIORATE
- A RATIONAL USE OF A LIMITED PALETTE OF MATERIALS WHICH STRENGTHENS THE SENSE OF PLACE
- BUILDINGS WITHOUT PARAPHERNALIA SUCH AS METER BOXES OR SATELLITE DISHES ON ELEVATIONS FRONTING THE PUBLIC REALM
- THE USE OF GOOD QUALITY WINDOWS WHICH COMPLEMENT THE OVERALL DESIGN OF THE BUILDING

Building elements and detailed design

DEVELOPERS MUST DEMONSTRATE THAT THE DETAILED DESIGN OF THE ELEMENTS WHICH MAKE UP EACH BUILDING ARE OF A HIGH QUALITY AND ENHANCE THE DESIGN CONCEPT FOR THE SITE AND THE BUILDING ITSELF.

9.75 The elements which make up a building should be put together in a rational way and be of high quality. This is not a subjective matter: Building for Life question 17 asks; “Do the buildings exhibit architectural quality?”. Buildings should be put together carefully to create a pleasing balance of proportions, with high quality materials and carefully designed details. Developments may be designed to be formal or informal, large or small scale, but in all cases the parts should be skilfully designed to achieve a coherent whole and reinforce the basic design concept of the scheme. Buildings where the elements have been well put together will be pleasing to the eye, will last well and will complement the spaces they face whatever the style of architecture, as demonstrated in Figures 9.15 and 9.16.

Figure 9.15 Traditional style buildings forming attactive street scene.

Figure 9.16 Attactive contemporary street scene.

9.76 Attention to detail is vital to ensure that a development is successful. If a traditional/ vernacular design language is being applied it is important that details such as windows are convincing as indicated in Figures 9.17 and 9.18, rather than paying lip service to tradition.

Figure 9.17

Figure 9.18

9.77 In taking a contemporary approach the overall effect may still be spoiled by clumsy detailing and enhanced by stylish elements (Figure 9.19).

Figure 9.19

9.78 The choice of front doors can also have an impact upon the building itself and the character of the street. The colour of a front door has a major impact upon the character of a street. Dark colours work well in contrast to the insipid effect of white (Figure 9.20).

Figure 9.20

9.79 As with front doors, garage doors are far more characterful in dark colours or timber rather than white (Figures 9.21 and 9.22).

Figure 9.21

Figure 9.22

9.80 Other details such as balconies need careful attention paid to their design (Figure 9.23.

A well designed balcony juxtaposed with a bad one

Figure 9.23

10 PUBLIC REALM DESIGN

INTRODUCTION

BUILDING FOR LIFE RELEVANT QUESTIONS: 5,6,8,13,15,16,19,20

10.1 The public realm is made up by all the places which are visible and generally accessible by the public, including streets, squares and parks as well as front gardens and parking areas. A high quality public realm has far reaching benefits in terms of the health and well-being of residents. Well-designed public spaces help to ensure that developments are socially inclusive, functional, and sustainable, and help to create a strong sense of place.

Figure 10.1 Simple, high quality streetscape

10.2 In 2006 CABE's 'Housing Audit - Assessing the design quality of new housing in the East Midlands, West Midlands and the South West' flagged up the public realm as a key failing of poorer housing schemes. They noted:

'Most streets were of uniform size and designed with no clear hierarchy to help with legibility. Streets were often too wide, dominated by roundabouts and hammerhead turns, accentuated by an excessive use of tarmac. Speed bumps were often used to compensate for the ineffectiveness of winding road patterns used to slow driving speeds. On-plot parking rather than on-street parking has resulted in empty streets, allowing cars to speed, or poorly parked cars that obstruct cyclists and pedestrians.

Rear courtyard parking resulted all too often in large expanses of lifeless, unsupervised and underutilised land to the rear of houses. Garages fronting on to pavements were often prominent, creating blank facades. Landscaping was not used in driveways and areas to break up car parking, and avoid cars dominating the street scene.

Public open space was often insufficient, or if it was provided, was poorly designed with no apparent thought to its intended use, or future maintenance.' (p19)

10.3 Exeter City Council's Building for Life Assessment of developments completed in 2008-9 also found that housing schemes were weak in this area, with most scoring poorly under Criteria 16 - Is public space well designed and does it have suitable management arrangements in place?

10.4 In developing the design of housing schemes the public realm needs to be considered as an integral part of the design process. The landscape framework should be used to create the main structure for the public realm, which should demonstrate a well considered and coordinated use of hard landscape and planting. The framework should reinforce the identity and access arrangements of the development.

10.5 A simple approach to the design of streets and public spaces should be taken, ensuring use of a limited and co-ordinated palette of materials, dealing with changes in levels in a creative way which maximises useable space and avoids left-over spaces. The choice of tree and shrub species should reinforce the design concept for the site.

SUFFICIENT DETAIL MUST BE PROVIDED AS PART OF THE DETAILED PLANNING APPLICATION TO PROVIDE A CLEAR UNDERSTANDING OF THE PUBLIC REALM DESIGN.

HARD AND SOFT LANDSCAPE DETAILS AND MATERIALS AND PLANTING SPECIFICATIONS MUST BE SUBMITTED AS PART OF ALL DETAILED PLANNING APPLICATIONS.

MANAGEMENT OF THE PUBLIC REALM

10.6 A key principle of the design, implementation and management of the public realm is that it will evolve over time. Materials will be subject to wear and tear through their everyday use, plants establish and grow, and wildlife will colonise the site. The design of the public realm should therefore be robust to minimise future management and proposals will be required to demonstrate how the different elements will be maintained and allowed to develop.

10.7 A management regime should be put in place which enhances the sustainability of the site. The energy used in the day-to-day management of the site may be reduced, for example, by using on-site composting facilities to reduce exported waste, or producing food or energy in the landscape.

10.8 Proposed ownership and management responsibility for different areas should be clearly set out at the start of the planning process. There should be an equally high standard of design and management in privately owned and managed and publicly adopted areas.

A DETAILED MANAGEMENT PLAN AND MAINTENANCE PROGRAMME FOR THE PUBLIC REALM SHOULD BE SUBMITTED AS PART OF ALL DETAILED PLANNING APPLICATIONS.

ALL OF THE PARTIES INVOLVED IN THE MANAGEMENT OF THE PUBLIC REALM MUST BE INVOLVED AND AGREE TO THEIR MANAGEMENT RESPONSIBILITIES AT THIS STAGE.

PRINCIPLES OF PUBLIC REALM DESIGN

(i) High Quality and Hard Wearing

THE CONSTITUENT PARTS OF THE PUBLIC REALM SHOULD BE OF HIGH QUALITY, BE DURABLE AND HARD WEARING, AND BE CONSIDERED AS PART OF THE OVERALL DESIGN OF THE DEVELOPMENT.

10.9 To achieve a high quality and hard wearing public realm the design should:

- be locally distinctive, relate to character of the site and the wider design concept, complement the layout of the site, its built form, the materials of the site and its context, use local materials, with detailing and site-specific public art reinforcing local character.

Figure 10.2 Local detailing helps to create a strong sense of place, such as this ‘Cock and Hen’ coping detail and Minton tile street-names

- be careful and detailed. The interface between different materials, changes in levels, placement of street furniture should be designed to minimise clutter and create a high quality streetscape.
- be easy to maintain and safe for its purpose.
- use high quality planting and durable, high quality materials in a simple way (Figure 10.3)
- use healthy trees and shrubs which are appropriate for their location and planted at appropriate centres. Planting should be carried out in accordance with best horticultural practice.

Figure 10.3 High quality paving and planting creates an attractive streetscene in Upton Northampton.

(ii) Sustainable

THE PUBLIC REALM MUST CONTRIBUTE TO THE OVERALL SUSTAINABILITY OF THE DEVELOPMENT. A CO-ORDINATED APPROACH TO THE DESIGN AND LONG-TERM MANAGEMENT OF THE LANDSCAPE IS REQUIRED.

DEVELOPERS MUST SET OUT THE APPROACH TO THE DESIGN OF THE PUBLIC REALM IN THE SUSTAINABILITY STATEMENT

10.10 A joined-up approach to the design of the public realm and open space can have multiple benefits. For example, the need to water trees and shrubs is reduced by SUDS so reducing energy use. Biodiversity is potentially increased and peak water flows off-site are reduced. Similarly the landscape can be used to produce food or energy (such as biomass from coppiced woodland), whilst providing public open space and wildlife habitat.

10.11 To achieve a sustainable landscape and public realm the design must:

- demonstrate a joined up approach to the public realm and landscape that achieves high quality long-term maintenance, minimises energy use and takes opportunities for on-site food or energy production.
- use materials from sustainable sources, including consideration of the manufacturing process and energy use and transportation to the site.
- take opportunities to design in biodiversity, protect, restore and enhance existing species populations and habitats and make connections to biodiversity features outside the site, particularly through the use of a strong landscape framework and green infrastructure.
- integrate Sustainable Urban Drainage Systems into the public realm, reducing peak storm flows and allowing on-site infiltration of water. The use of SUDS should be co-ordinated between private spaces, streets and public spaces to produce a comprehensive water-management system for the site (Figure 10.4).

Figure 10.4 Sustainable Urban Drainage incorporated into the streetscape.

- integrate the public realm with wider green infrastructure networks and assist in habitat creation, retention and enhancement.
- take opportunities for tree planting to provide shade, cooling and increased biodiversity.
- be designed to be low maintenance and hard wearing.

Figure 10.5 The public realm should be designed to enhance biodiversity – through measures such as 'bug-friendly' walls, wildflower planting and wildlife gardens.

(iii) Co-ordinated design

THE DIFFERENT ELEMENTS OF THE PUBLIC REALM MUST BE COORDINATED WITH EACH OTHER. THIS WILL OFTEN INVOLVE CLOSE WORKING BETWEEN DIFFERENT PROFESSIONS WHO ARE RESPONSIBLE FOR DIFFERENT ELEMENTS OF THE STREET SCENE.

AN URBAN DESIGNER OR LANDSCAPE ARCHITECT SHOULD HAVE OVERALL RESPONSIBILITY FOR COORDINATING THE DESIGN OF THE PUBLIC REALM.

10.12 To achieve a co-ordinated public realm the design must:

- indicate agreed areas for adoption early in the design process. In general there should be no visual difference between adopted and non-adopted public space. Edge details or studs can be used to demarcate different areas as required. Developers should make clear to the end-user who is responsible for each part of the site.
- lay out paths in public spaces to support desire lines, make connections to key destinations and co-ordinate with street furniture design.
- ensure pedestrian and cycle routes are direct with cyclists accommodated on the carriageway in residential streets. This has the benefit of increasing activity on the street and creating a safer and more secure environment. Routes must be an integral part of the overall public realm design; footways, cycle-ways (including shared routes) and vehicular routes should be designed to avoid creating visual clutter. Use of signs and bollards to demarcate different transport modes should be avoided.
- accommodate service and emergency vehicles without allowing their requirements to dominate the layout or design. On streets with low design speeds it should be assumed that they will be able to use the full width of the carriageway to manoeuvre.

Figure 10.6 A simple low wall and railings creates a strong interface between the street and individual dwellings.

- ensure the interface between buildings and the public realm is carefully designed. Doors, levels, relationship between trees and buildings, design of refuse and cycle storage areas should all be considered early in the detailed design process (Figure 10.6)
- indicate service corridors early in the design process. The impact of services on the public realm should be considered and addressed (for example by co-ordinating utility boxes and providing ducting to allow for additional services to be added in the future).
- indicate agreed design for adopted public open space and play areas early in the design process. The site should be laid out to avoid the creation of left over spaces and small areas of grass.
- ensure there is sufficient space for the long-term establishment of trees, and that future works to services do not damage tree roots.

(iv) Clutter free and simple

CLUTTER MUST BE AVOIDED AND MATERIALS CHOSEN TO CREATE VISUALLY SIMPLE AND EASILY UNDERSTOOD STREETS.

10.13 Clutter is the result of excess street furniture and signs, which results in an environment that is difficult to understand as well as being unattractive (Figure 10.7). Clutter can constrict pedestrian routes and can be distracting to pedestrians, cyclists and drivers, potentially making public spaces more difficult to use safely. To achieve a clutter free public realm design must:

- locate street furniture (benches, bins, streetlights etc) in a logical and co-ordinated way to complement the townscape
- agree the design and location of refuse and recycling facilities early in the design process. The location of domestic waste and recycling bins needs to be carefully considered to avoid household bins creating clutter on the street.
- ensure that traffic lights, service boxes, and other equipment are designed carefully as part of the street scene
- only use traffic signs and road markings when they are essential to the safe functioning of the street. (Manual for Streets and LTN 1/08 provide guidance on design of streets).
- position inspection covers (manholes) into paved areas parallel with line of paving to minimise cutting and create a neat finish

Figure 10.7 Clutter creates a confusing and unpleasant streetscape.

(v) Accessible to all

THE PUBLIC REALM MUST BE DESIGNED TO BE ACCESSIBLE TO ALL USERS.

10.14 To achieve an accessible environment the design of the public realm must:

- use the guidance in Inclusive Mobility (DfT) as the basis for design.
- ensure that streets and public spaces are generously proportioned, simply designed and arranged, legible and consistent. Sudden changes in level or alignment or creation of obstructions should be avoided.

Figure 10.8 Carefully detailed granite steps and tactile paving.

- ensure that different elements in the public realm are consistent and co-ordinated. Footways should generally be a minimum width of 2m. Where this is not possible because of physical constraints a footway
- in cases of shared surface areas consider the need to distinguish solely pedestrian areas from mixed-use areas through use of different surface materials or edge details. Particular consideration should be given to how blind or partially-sighted people will find their way around.
- meet the requirements of Building Regulations Part M. Elements such as hazard warning paving should be carefully integrated into the design of the street. Contrast details on steps should be designed into the tread to create a visually simple detail. Use of a number of different materials should be avoided as this is visually confusing and will be a long-term maintenance problem.
- ensure that key pedestrian and cycle routes are well lit using light sources with a good colour rendering ability (e.g. white light sources).

(vi) Well managed and maintained

MANAGEMENT OF THE PUBLIC REALM MUST BE CONSIDERED DURING THE DESIGN STAGE TO ENSURE THAT THE SCHEME ACHIEVES ITS LONG TERM DESIGN OBJECTIVES AND CAN BE MAINTAINED TO A HIGH STANDARD.

A LONG-TERM MANAGEMENT PLAN (FOR A MINIMUM OF 20 YEARS) THAT SETS OUT THE MANAGEMENT OF BIODIVERSITY, HARD AND SOFT LANDSCAPE AND SUSTAINABLE URBAN DRAINAGE IS REQUIRED AS PART OF A DETAILED PLANNING APPLICATION SUBMISSION. THIS DOCUMENT MUST EXPLAIN IN DETAIL HOW THE MANAGEMENT OF THE PUBLIC REALM WILL BE CARRIED OUT.

10.15 The management plan must:

- set out the methodology and requirements of management to achieve long term aims (including establishment and maintenance of planting, maintenance of hard landscape areas, enhancement of identity and place, waste and water management, and energy & food production)
- include adoption of different processes as the site develops over time. For example the management requirements may develop from establishment of planting during the first 2-5 years to development and maintenance as plants become more established (5-15 and 15+ years respectively).
- ensure the management of existing retained trees to achieve their long-term retention and accommodate future growth.
- ensure co-ordination between different management processes to increase the sustainability of the development. For example on site composting of green waste would reduce vehicle movements, and could provide a source of compost for on-site food production.
- indicate clear responsibilities for management of different parts of the site (including minimum standards and frequency of maintenance).
- where necessary, form part of a S106 for a development, clearly setting out the responsibilities of the different parties responsible for the management of the site.

DETAILED REQUIREMENTS

10.16 The detailed design of the many elements in the public realm should be carefully considered to achieve simple, uncluttered and harmonious streets and public spaces.

Hard surfaces

10.17 A limited palette of simply laid out paving materials is visually clearer and easier to maintain than a complicated mix of materials and patterns. Hard surfaces should be designed to support the overall character of the site.

10.18 High quality materials should be used, particularly for key streets and spaces, to maximise the lifespan of the materials and minimise maintenance costs. Generally slabs should be used for main pedestrian circulation routes and pedestrian spaces.

10.19 Materials can be used to indicate different functions and activities – for example paving slabs to pedestrian areas and small units (blocks/setts) to shared surfaces and carriageways.

10.20 Tactile paving should only be used where it is required. It should be well integrated into the surrounding paving, which should be laid out to minimise cuts and changes in material. Guidance on the use of tactile paving is provided in Inclusive Mobility and the DfT document 'Guidance on the use of Tactile Paving Surfaces'.

10.21 Paving should be set out and detailed to avoid unnecessary cuts and complicated laying patterns. Careful detailing of drop kerbs, interfaces with buildings and street furniture, and changes in level is essential.

Figure 10.9 Simply detailed, high quality paving materials and recessed manhole covers; Simply detailed drop kerb and tactile paving at controlled pedestrian crossing.

Soft Landscape Areas and Tree Planting

10.22 Planting can help to soften the street scene, reinforcing a local identity, creating visual interest, improving the micro-climate and providing a valuable habitat for wildlife. Tree planting should be considered as part of an overall townscape concept. Trees should be used to define space, frame views and create attractive places such as avenues and squares. The planting of a single large specimen tree as a feature may be effective in defining a space such as a square or circus, or terminating a view. Planting should be integrated into the overall site, individual street and public open space designs.

10.23 Existing trees should be retained where possible. A tree constraints plan (prepared in accordance with BS 5837) should be prepared at the start of the design process and submitted as part of any planning application.

Figure 10.10 Existing trees create scale and an immediate sense of place within new developments

10.24 The guidance in Exeter City Council's 'Trees in Relation to Development' SPD should be followed for the protection of existing trees and the design and implementation of new tree planting.

10.25 Tree planting should form part of the landscape framework of the site – supporting the spatial arrangement of the site. Structural landscape planting should not be located within private gardens.

10.26 Tree planting should be careful designed and integrated into the street scene. Trees and plants are living organisms and the design must recognise that they will grow and change over time, and need access to air, water and nutrients. Careful choice of species and location is essential to avoid problems as trees mature. Buildings and walls should be designed with foundations to allow for adjacent tree growth.

10.27 Opportunities to enhance biodiversity should be taken. Native plant species should be used where possible. Existing species present on site should be the starting point for the planting design, enhancing the existing character of site. Opportunities to provide habitats for wildlife should be taken both at the design stage (by providing nest boxes or over wintering areas for invertebrates) and during the management of the site (by avoiding use of herbicides or pesticides, or by leaving the wood from felled trees on site).

10.28 Trees and shrubs should not obstruct pedestrian sightlines. Low planting (below 600mm) and trees with clear stems to above 2m should be considered immediately adjacent to footways and carriageways. Trees to be planted within streets and public spaces should be specified as 20-25cm girth semi-mature container grown specimens to ensure good establishment and minimise damage due to vandalism.

10.29 Sufficient growing area must be provided to allow the tree to successfully establish and mature. The growing area should be in the form of a generous tree pit or trench. Concrete rings or similar barriers must not be used to constrain root movement as they severely restrict a trees access to water and nutrients; limiting growth and reducing the lifespan of trees. Underground services must be carefully located in defined zones which allow sufficient growing room for newly planted trees and avoid damage to existing trees. Root barriers such as Green-tech Root Barrier or similar can be used to protect service zones from root penetration if necessary (Figure 10.12).

10.30 A detailed planting plan, showing the location of all plants should be provided as part of the planning application. The plan should also include a planting schedule which specifies plant species, quality, plant size, container/rootball size, planting density and quantity of plants and specification of planting medium. (This should include areas of grass or wildflower seeding).

10.31 All new tree planting within major developments will be the subject of Tree Preservation Orders.

10.32 A 20 year Landscape Management Plan should accompany the landscape plans. Clear responsibility for establishment and long-term management of landscape areas should be set out at the design stage. The watering and irrigation of planting areas during the establishment of the landscape must be set out in the Management Plan. Where possible the planting should be integrated into SUDS schemes to provide landscape areas with sufficient water.

Figure 10.11 Good quality semi-mature street tree planting in a new neighbourhood.

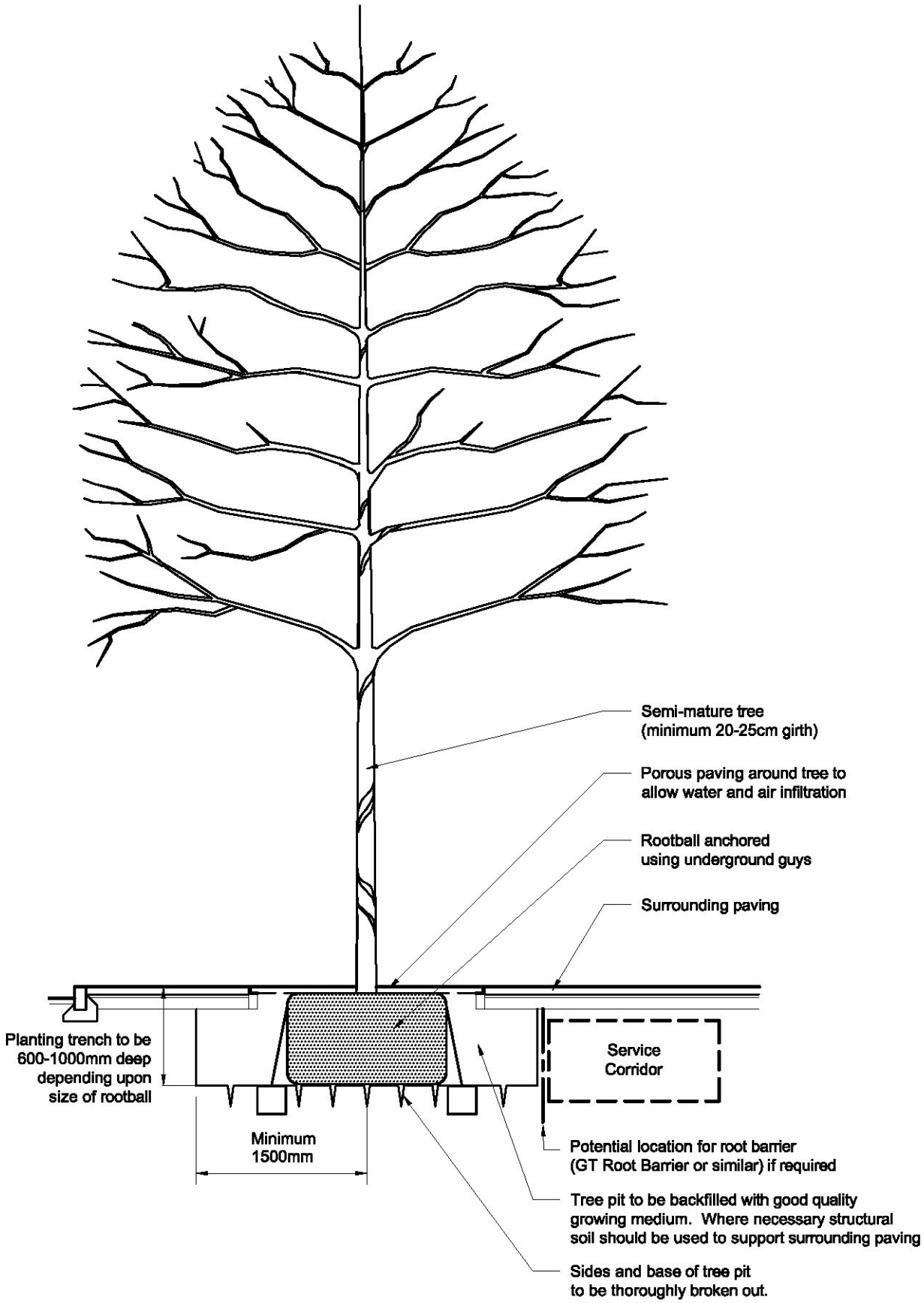


Figure 10.12 Good practice tree planting detail (showing service zone, porous paving, underground guys and good rootzone)

Services

10.33 Service corridors must be defined at the design stage and indicated on the planning drawings. Service corridors must not pass through the root protection areas of existing trees.

10.34 The impact of services on other elements of the public realm – particularly existing or proposed trees must be considered. Careful co-ordination of proposed (and future) service routes and tree planting is required. A co-ordinated services plan should be provided as part of all detailed applications to demonstrate the relationship of service routes with existing and proposed trees and other elements of the public realm.

10.35 Service equipment (substations, utility boxes and inspection covers) should be unobtrusively located within the streetscape. Substations should be designed into the streetscape and enclosed with structures that complement the streetscape.

10.36 In shared surface areas the routing of services will require careful consultation between designers, utility companies and the highway authority.

10.37 The interface between Sustainable Urban Drainage Systems and utilities must be carefully designed to avoid conflicts or the potential for damage to SUDS during future utility works.

10.38 Sustainable Urban Drainage Systems require long term management. A specific SUDS management and maintenance should be prepared. This may form part of the Landscape Management Plan.

Means of enclosure/boundaries

10.39 Boundaries should be carefully designed to contribute to the local distinctiveness of the area.

10.40 Where private boundaries face onto the public realm then solid walls of stone or brick should be used. Where enclosure is required for semi-private areas such as front gardens a low wall with railings will generally be the preferred solution. Timber fences are not acceptable for boundaries facing the public realm.

Figure 10.13 High quality local stone garden wall.

10.41 Where hedgebanks are retained or proposed they must be designed as part of the overall landscape framework and site layout, with sufficient space for maintenance and future development. Clear responsibility for the management of hedgebanks should be set out in the Landscape Management plan.

10.42 Timber rear gates must be of good quality, constructed using frame, ledge and brace.

10.43 Where bin stores are required they should be enclosed within walls that are designed as part of the street scene and complement the surrounding architecture and sense of place.

Figure 10.14 Simply detailed garden walls and bin stores good front enhance the public realm.

Street furniture and Signs

10.45 Excessive street furniture and signage should be avoided. Street furniture of direct benefit to street users is encouraged, but should be sympathetic to the design of the street and respect pedestrian desire lines. A co-ordinated range of street furniture should be used to reinforce the identity of the site.

10.46 Traffic signage and road markings should be limited to that which is strictly necessary, and should be considered as part of the overall design of the street.

10.47 Shops and other commercial signage should be carefully designed as part of the street scene.

Figure 10.15 Simple, co-ordinated street furniture

10.48 Street furniture, including lighting columns and fittings, needs to be resistant to vandalism and be carefully placed to reduce clutter and minimise the risk of damage by vehicles.

10.49 Guard railing should be avoided unless a clear need for it has been identified. Design of the street to reduce traffic flows and speeds may be helpful in removing the need for guard railing. In most residential streets it is unlikely that guard railing will be required.

10.50 Cycle parking should be provided in convenient and safe locations – immediately adjacent to destinations such as shops or schools, at transport interchanges or next to community facilities.

10.51 Structures for building services; such as ventilation outlets, inlets, cooler, bin and refuse stores, substations or junction boxes, should be designed into the streetscape and carefully positioned to avoid creating clutter or obstructions.

Public Art

10.52 Public Art can add to local identity and sense of place, and should be specifically designed as part of development. Opportunities for art to be incorporated into the streetscape through bespoke design of street furniture (such as seats, railings or other elements) should be taken.

Figure 10.16 Public art: Bespoke tree grille, Heavitree; Paving detail, Moretonhampstead, and Bench inspired by Delftware, Potter's Field, London.

Lighting

10.53 Lighting should be of high quality, and be designed as part of the overall public realm design. All light columns should be appropriate to the scale of the street. Generally lamp columns should not exceed the height of the eaves of adjacent buildings.

10.54 Lights can be mounted on buildings or co-ordinated with other street furniture (such as signs or traffic lights) to reduce clutter (Figure 10.17).

Figure 10.17 A Wall mounted street light.

10.55 The colour of lighting should be carefully specified to suit the streetscape. Generally pedestrians prefer whiter lighting which makes it easier to discern street features, information and facial expressions.

10.56 Light levels should be carefully specified to be appropriate to the use of the street. Over lighting should be avoided. Continuity of lighting levels is important on key pedestrian routes – sudden changes in lighting level can be problematic for some partially-sighted people.

10.57 The design of lamp columns should relate to the palette of street furniture and materials and reinforce the identity of the street. Use of pastiche 'Victorian' lamp fittings should be avoided.

Figure 10.18 High quality distinctive lamp columns using a white light source.

10.58 Feature lighting of key buildings, trees or features can reinforce sense of place, but must be carefully designed to avoid light pollution and potential negative impacts (such as light intrusion to bedrooms or impact on bat routes).

10.59 All external lighting should use low energy, low maintenance fittings.

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