



Achieving Well Designed Housing

Supplementary Planning Document

April 2011



CARLISLE
CITY COUNCIL



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Local Development Framework

“Good Design ensures attractive, usable, durable and adaptable places and is a key element in achieving sustainable development. Good design is indivisible from good planning”
(PPS1 2005)

“Design which is inappropriate in its context, or which fails to take the opportunities available for improving the character and quality of an area and the way it functions, should not be accepted”
(PPS1 2005)

This document forms part of the Local Development Framework, for Carlisle District following the adoption by Carlisle City Council on the 26th April 2011. Prior to adoption, the Achieving Well Designed Housing SPD was subject to a period of public consultation between 9th March 2009 and Friday 24th April 2009. If you would like this document in another format, for example large print, Braille, audio tape or another language, please contact:

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1 Introduction

Why is well designed housing important?

1.1 New housing should make a positive contribution to its context. It should respect the streetscape or environment in which it sits and help to enhance local distinctiveness. The former Minister for Housing Lord Falconer articulated this when he called for 'an end to banal developments that were found everywhere but which are designed for nowhere in particular' (CABE 2001 'By Design - Better Places to Live').

1.2 This document intends to guide new residential development, whether at the scale of one house or a hundred, towards the goal of creating well-designed, locally distinctive schemes that contribute to the quality of Carlisle and its towns and villages.

'Where people live has a major effect on their life. If where they live is well planned, well designed and well managed, their quality of life is likely to be a great deal better than that of those who live elsewhere'

(CABE 2001 'By Design - Better Places to Live')

Status of document - Planning Policy Context

1.3 The Council has produced this SPD to help improve the design of residential areas. This document forms part of the Local Development Framework, for Carlisle District following the adoption by Carlisle City Council on the 26th April 2011. Prior to adoption, the Achieving Well Designed Housing draft SPD was subject to a period of public consultation in 2009.



Fig 01. How can new housing help add to the townscape legacy that we have inherited from the past?

1.4 This SPD has been prepared in accordance with PPS12 - Local Spatial Planning. It is identified in Carlisle's Local Development Scheme (LDS), which sets out the programme for the preparation of local development documents over a three year period.

1.5 The advice within the SPD will guide those involved in the submission and determination of planning applications.

1.6 This SPD expands on the policies contained in the Carlisle District Local Plan. Notably policies under the Plan's Chapter 3 'Core Development Policies' CP5 'Design'; CP6 'Residential Amenity'; CP7 'Use of Traditional Materials'; CP8 'Renewable Energy'; CP9 'Development, Energy

Conservation and Efficiency'; CP10 'Sustainable Drainage Systems' and policies contained in Chapter 5 of the Local Plan under the heading 'Housing'.

1.7 The SPD draws on national guidance, notably Planning Policy Statement 1 (PPS1) 'General Principles'; Planning Policy Statement 3 (PPS3) 'Housing'. Policy DP7 'Promote Environmental Quality' and EM3 'Green Infrastructure' in the Regional Spatial Strategy for the North West provides support at a regional level'

Scope of document

1.8 This document applies across the District but it emphasises the need for a design response which is of high quality and builds on the character of a place, whether urban or rural. Poor, 'anywhere' designs will not be entertained and the underpinning principle of 'designing for context' is applicable to all situations. Creativity in design is to be welcomed but it should learn the lessons of the past.

Integrated Design

1.9 Buildings should be designed in response to these special qualities of their site, not designed in isolation. Existing landscape or townscape context, the need for safe and effective movement of goods and people, the need for community safety, access for all, 'place-making' and the creation of communities all need careful consideration.

1.10 Early discussions with Planning Officers at a pre-application stage can assist this process. For larger schemes, a development team approach with an integration of the elements above is required.



Fig 3. 'Designed for anywhere' housing. Developers must strive instead to create a 'sense of place'.



Fig 4. A poor entrance to an area of new housing. Highway dominated and creating a poor public realm where pedestrians feel isolated and insecure.



Fig 5. 'Anywhere' housing. Poor relationship between rear boundaries and the fronts of other houses.

2 Objectives

2.1 This guidance seeks to promote development which:

- relates to its context and is integrated with its townscape or landscape setting;
- enhances the special character and local distinctiveness of Carlisle;
- conceives new housing design for the benefit of future residents and existing communities;
- provides safe and secure environments which minimise the opportunity for crime and anti-social behaviour;
- uses the design process to produce a movement infrastructure that is convenient, accessible, safe and attractive for pedestrians, cyclists and public transport users, and to promote a safe and attractive road network; and,
- promotes the principles of sustainability and responsible design.

2.2 In recent years there has been a convergence of design guidance to achieve these goals, bringing together planning and highway design advice that had hitherto pulled against each other. Planning Policy Statements 1 and 3 emphasise the key importance of good design. The Department for Transport's 'Manual For Streets 1 and 2' recognises that roads are not just conduits for movement but also key elements of place making and effective and integrated residential design. Good practice examples of successful design have been identified and published by CABI (Commission for Architecture and the Built Environment).

2.3 At a local level the 'Carlisle Urban Design Guide and Public Realm Framework' Supplementary Planning



Fig 6 Local design guidance - the adopted SPD's on Urban Design and detailed advice on local character areas such as Denton Holme and Long Sowerby

Document (SPD) offers relevant guidance for city-centre development. Other guidance includes adopted SPDs on specific areas of the District such as Denton Holme and Longsowerby.

Creating Neighbourhoods

2.4 Development should be conceived to fit into their surrounding neighbourhood. New schemes will often be close to existing areas and their shops and services.

2.5 They should endeavour to contribute positively to this context, and to contribute to the viability and enhancement of the neighbourhood. Where this is not done we risk creating soul-less 'estates' lacking in character, services or identity.

Density and Mixed Use

2.6 Appropriate density can help to ensure that shops and services can survive and that public transport can be more viable. Too low a density can hinder this. Typical densities in traditional villages, market towns and pre-war portions of Carlisle are usually higher than the densities typical of post-war development. The Warwick Road area of Carlisle has 34 dwellings per hectare, with terraced areas of Denton

Holme at 51. By contrast the density of late twentieth century estates are frequently 20-25 e.g. Windsor Drive has 19 dwellings per hectare. Low density levels make the provision of services, shops and public transport less economically viable than the denser examples.

2.7 Density should be appropriate to context and characterisation studies can be used to identify those areas where increased density is appropriate. Early 1990's density averages in the UK were around 20-25. The Urban Task Force has argued that at a density of between 40 - 60 dwellings per hectare 'more people are close enough to communal facilities and an efficient bus service can be made viable' (Urban Task Force, 1999 p60).

2.8 Whilst recognising that a high density may not be appropriate in all cases, the planning authority will encourage development which is contextual and which contributes to the sustainability of the settlement.

2.9 Relatively dense developments often lend themselves to being part of a 'mixed use' approach, where housing can be developed alongside other suitable uses. This can reduce the need for car trips and is a more sustainable development form. Housing over shops is an example of this type of desirable development. Care needs to be taken when mixing uses to avoid conflict between residents, cars, goods deliveries, parking and associated activity.

2.10 Increased density can be achieved by numerous means, including minimising often underused space at the front of dwelling, building in a terraced form and creating a third storey or usable roof space.

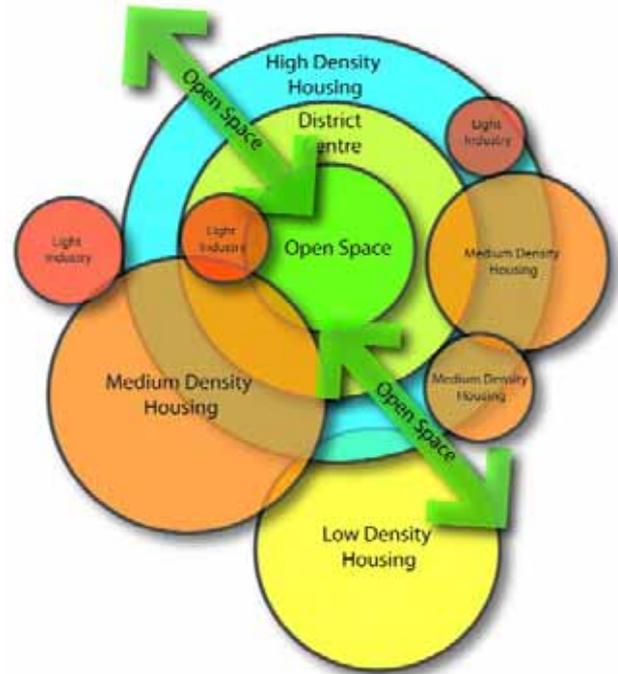


Fig 7. Where opportunity exists, developments should aim for diversity, interest and a mixture of uses.



Fig 8. Traditional strict zoning and separation of uses leads to bland and segregated environments.

Increased density places greater challenges on provision of parking and integral parking, parking courts and subterranean parking are all possible responses to this issue. Greater densities make provision of viable public transport and local shops and services more likely.

3 Movement

3.1 Development should create ‘places’ first, and enable effective transport infrastructure to dovetail into this. This approach is taken by the ‘Manual for Streets 1’ (DfT, 2007) and ‘Manual for Streets 2 - Wider Application of the Principals’ (DfT 2010).

‘Places and streets that have stood the test of time are those where traffic and other activities have been integrated successfully, and where buildings and spaces, and the needs of people, not just of their vehicles, shape the area’. (Manual For Streets 1, p6)

3.2 The layout of a development should be designed to make it easy to get to and to move through. Developments should create connected layouts which provide transport choices and which provide access to facilities and to public transport. Where the geometry of vehicular movements alone dictate the design of a scheme, and where undue weight is given to the needs of a single means of transport, usually the car, poor quality environments often result.

3.3 Schemes should make travelling by foot, cycle or public transport viable options. Developers should have regard to the movement hierarchy - this gives priority to meeting the needs of pedestrians, cyclists and public transport, in advance of private motor vehicles, in order to encourage these modes of travel.

Connections

3.4 The designer should consider how a site relates to the existing movement network. They should assess what footpaths and



Fig 9. A highway layout designed for the convenience of the car alone.



Fig 10. Traditional ‘perimeter block’ development at Petheril Street enabling ease of movement by a variety of transport means.



Fig 11. A new residential street which promotes pedestrian safety by making the car feel as if it is in a non-car space (Dorset).

roads will adjoin their development and how the development should relate to these. Schemes should accommodate likely ‘desire lines’ and enable people to move as easily as possible between the site and its surroundings.

3.5 The 'perimeter block' pattern (Fig 10) is well tested and suitable for varying densities of development and transport modes. It allows for effective movement connections, efficient use of land and a legible environment. Dead-ends and cul-de-sacs should generally be avoided (Fig 09), with preference given to layouts based on roads serving a variety of users and contributing to place-making as well as ease of movement.

3.6 Developments need to integrate these principles at the design stage, avoiding clumsy 'add on' measures to restrict the speed of motorists and make areas more amenable for other users. Figure 11 shows a pre-calmed residential road, without demarcation of road or footpath, with houses fronting onto it. Built-in calming, such as limited forward visibility, should be used to promote lower speeds.

Movement Network

3.7 Movement should be based on a network of spaces: Streets, squares, mews and courtyards. Roads design should reflect this approach and while devices such as tracking can ensure vehicular access, highway geometry should not dictate the layout.

3.8 A shared surface, similar to the 'home-zone' concept, allows public circulation space to be used for a variety of uses when cars are absent. Fig 14 shows a design where parking in a square is not demarcated, enabling flexible use.

- The buildings that comprise a development should be conceived first, with roads and circulation measures integrated into the design, not dictating it.
- Ease of access for persons of restricted mobility should be designed in at the earliest stage, in an integrated manner.



Fig 12. Development which takes no account of the existing street pattern.



Fig 13. Crude, retrofitting of speed control measures. Vehicular speeds can usually be controlled by more by more visually subtle methods.



Fig 14. Unmarked parking bays - When not occupied by vehicles the space takes on a civic appearance, rather than appearing as merely an empty car park.

- Schemes should cater for a diversity of transport choices, following the movement hierarchy.
- Regard should be given to the design of networks which minimise opportunities for crime or anti social behaviour.

4 Open Space and Landscape

4.1 Good design must include the use of space around buildings. Where buildings are positioned with care and regard to the quality of external space they create, then space can be used efficiently and wasted space avoided. Inefficient space is a double-loss to the community. It fails to create a resource within the site, and second, by failing to use a site efficiently it adds to pressure to develop greenfield land.

4.2 Informal recreation areas, housing green spaces, domestic gardens, village greens, urban commons and other green spaces within built up areas form the green infrastructure of the District.

Open Space

4.3 Private and public open space can be key to the attractiveness and success of a development. On large sites, the layout of open space, gardens and access roads can improve the quality of the area and integrate a scheme into its wider environment. It will also provide an opportunity for social interaction between future occupiers.

4.4 The future use of space outside dwellings should be considered at an early stage to ensure the overall design of the proposals reflect the comprehensive use of the site and are not an afterthought.

4.5 On a small site, the development of one large house that dominates the plot to such an extent that insufficient amenity space is left for enjoyment of the occupants, would not be acceptable.



Fig 15. Well overlooked public open space can become a townscape asset. Denton Holme conservation area.



Fig 16. Small front gardens, providing a buffer to the street and allowing personalisation but avoiding wasted space.



Fig 17. Ill considered outdoor space of no practical or aesthetic value. In addition, impermeable surfaces contribute to surface water run off and increased flood risk.

4.6 Where public space is valued residents will care for it more and maintenance costs can be lower. Unloved and underused open space is a liability which must be maintained even when it is not valued. Space should work hard in as many ways as are possible.



Fig 18. 'Space left over after planning': Incidental space that requires maintenance but does not significantly benefit the streetscape.

Figure 18 shows typical 'leftover space' on a suburban estate, a public liability with little value save for a slight visual softening of buildings. Figure 19 shows open space framed by buildings. The space becomes a resource for children's play and social interaction. In all instances, space should be consciously designed for a function rather than a by-product of poor building placement, or road layout.

4.7 Open space should be designed positively, with clear definition and enclosure, with no ambiguous or leftover space.

Landscaping

4.7 Large areas of open space may serve as a buffer between the edge of a settlement and countryside beyond, or may act as a corridor allowing greenspace and wildlife to penetrate settlements. Smaller play areas or hard open space should be well overlooked by buildings. In Figure 20 buildings have turned their back on it, posing security risks and failing to bring the benefits to residents that an open aspect over well maintained public space can bring.

4.8 The likely number of new residents on the site will determine the amount of formal



Fig 19. Positive framing of public open space at Parkland Village.



Fig 20. Unless well-overlooked and well-managed, open space is prone to neglect and misuse..



Fig 21. Residential open space of high civic value, London.

open space required. Account will also be taken of the general supply of open space in the area. Accessible open space within 500m of every home is a desirable target. Further details of the requirements for open space are contained in Policy LC4 of the Local Plan.

4.9 Formal open space such as for children's play should be well overlooked but at least 30 metres away from the nearest house to avoid potential nuisance to residents.

- Time invested in good design can reduce long term costs in maintenance.
- Open space should be made to contribute as many functions as possible, including civic quality, benefit to residents, wildlife, the environment, and the enhancement and conservation of biodiversity.

Trees

4.10 Carlisle benefits from a legacy of Victorian street-tree planting which makes many of its streets extremely attractive. The Warwick Road area in particular has fine examples of boulevard tree planting, including Aglionby Street and Broad Street (fig 23). The suburb of Stanwix has a combination of street trees and well-planted private gardens, lending quality to the environment and softening a dense urban environment.

4.11 Despite their contribution to environmental quality, street trees are frequently beset by pressures for removal, based on perceptions of risks to drains, foundations, dropped leaves, interference with lighting, or CCTV lines-of sight. However, the value of street trees can be great. They reduce airborne pollution, produce oxygen and absorb carbon dioxide. In built up areas they soften potentially monotonous streetscapes and provide a landscape context for buildings.

4.12 In addition to the Victorian planting legacy and the corridors of 'parkland planting', for example along the River Eden, there are numerous garden-suburb inspired areas where trees are meant to be an inte-



Fig 22. Housing surrounding a 'village green' soft landscaping, Nottingham.



Fig 23. The legacy of Victorian street tree planting has made a great contribution to environmental quality, as here at Broad Street, Carlisle.



Fig 24. Retention of existing trees can lend instant maturity to a development and should be explored wherever trees are already present.

gral part of the streetscape. Fig 26 shows former local authority housing still retaining its impressive planting. By contrast the scene in Fig 25 is much poorer for the absence of trees. Studies have shown that property values in tree-lined streets are



Fig 25. A treeless vista at Morton with verges of sufficient width to accommodate treeplanting. Trees play a critical role in the creation of attractive and humane environments and space must be found for them. This development was probably conceived with street trees in-mind.

15% higher than in tree-less neighbours.

4.13 There are numerous methods to use tree planting as part of an effective residential scheme. Initially, any trees already existing on a site should be surveyed to consider how they can be retained and incorporated into a scheme. Where trees are absent, new garden trees and street trees planted with root controlling barriers and irrigation systems can help to overcome problems of fear of root damage. Trees should be of an appropriate species, and space must be made to allow for the planting of the substantial forest species that add drama and a long-lived presence to the built environment.

4.14 Developers should refer to the Council's SPD 'Trees on Development Sites' for further detail on this topic.

- Trees provide a visual foil to bricks and mortar;
- Appropriate species can be found for most sites;
- Planting today is a positive legacy for future residents, and can enhance biodiversity.



Fig 26. Denton Street, with mature trees integral to its attractive character.



Fig 27. Distinctive pollarded trees in the centre of Longtown. Such a legacy requires recognition and replanting on occasion to replace losses ensure continued coverage.



Fig 28. SUDS incorporated into a new highway as an infiltration swale, minimising the burdening of drainage systems.



Fig 29&30. Watercourses incorporated into the public realm.

Water

4.15 The City of Carlisle is bisected by three significant rivers, while other rivers and watercourses can be seen throughout the district.

4.16 Within built-up areas, these watercourses can act as fingers of ‘countryside’, penetrating urban areas, and bringing nature closer to people while offer recreational benefits. Where water is present, safe access to it should be enabled. Culverted streams and watercourses have been re-exposed as the environmental and psychological benefits of such resources has become more appreciated, while also alleviating the risk of flooding.

4.17 Guidance on ‘Sustainable Urban Drainage (SUDS)’ promotes the diversion of run-off from roads, roofs and car parks to balancing ponds and swales to allow gradual infiltration back into the ground (PPS25). This replenishes ground water and minimises risk of ‘flash floods’ that can beset environments where rainfall is sealed from the ground by impermeable materials and forced into overburdened sewers.

4.18 Proposals for development should take account of the effects of potentially



Fig 31. A culverted watercourse confined in a concrete channel with a mesh cover, Cong Burn, Chester-le-Street.



Fig 32. The above, following works to return the watercourse to its natural open channel at the centre of a public park.

increased surface water run-off. This can increase the flows downstream and so increase the risk of flooding. This is particularly so for development on greenfield sites but the downstream impacts can also be significant for brownfield development

where the existing drainage system may not have the capacity, or be in a condition to carry the additional drainage without reconstruction. For brownfield development, therefore, sustainable drainage also contributes to the more efficient use of existing conventional systems. Conventional piped systems can lead to flooding and pollution affecting areas downstream of development. Reduced drainage requirements, less capacious drains and potentially greener and more water-filled environments are likely to result from the appropriate implementation of SUDS schemes.

- Developers and householders should look to conserve water through harvesting rainwater into collection systems, and greywater recycling.
- A balance should be struck between safety and better access to water.
- New development must consider the possibilities of incorporating existing watercourses, swales or balancing ponds into positive landscape elements of their schemes.
- SUDS can contribute to biodiversity and the effective landscaping of a development.
- 'Flood pathways' should be incorporated into layouts so that water can flow safely without excessive damage to property.

Boundary Treatments

4.19 Boundary walls, railings and fences are important parts of the design of a development. Their choice requires careful thought, and a balance will need to be struck between competing issues of design, security, aesthetics and cost. Good design will address all of these issues and enhance the overall quality of a project.

4.20 Fences, walls, hedges and railings contribute to the attractive appearance of an area. They can also have a negative impact if poorly designed. Boundaries fronting the 'public face' of a development serve as its 'shop window', illustrating quality. Choice of the type of enclosure will depend on context, and privacy and security needs are likely to influence design. Nonetheless, quality should be pursued in each instance. An inferior looking boundary can diminish a potentially successful scheme.

4.21 Poorly designed modern timber fence-



Fig 33. A new random rubble boundary wall in local sandstone appropriate to rural Cumwhitton.



Fig 34 An 'anywhere' brick boundary wall which could have referred to the typical boundaries of native hedge or natural stone typical of its rural context.



Fig 35. Blank fencing should not usually abut footpaths. A brick wall or piers with dwarf wall, infilled with railings would be a better treatment for this boundary.

ing, concrete block walls or inappropriate hedges of Leylandii Cypress can mar the setting & appearance of a building and its neighbours and should generally be avoided.

4.22 In order to integrate the development into the street scene the use of local materials to reflect neighbouring boundary treatment may be appropriate. Existing site features or topography may help to form natural plot boundaries. Where an existing frontage boundary is tree-lined the impact of access roads and visibility splays on the tree line should be minimised.

4.23 Walls, fences, hedges and railings can have an important security function. They denote where public space stops and semi-public or private space begins. They can help the householder to control who can use particular areas of space and can dissuade casual trespass.

4.24 Within a development site a clear distinction should be made between private gardens and public space particularly for future maintenance.

4.25 Context is crucial to choosing the appropriate boundary material, but there



Fig 36. Cast iron railing typical of Carlisle's Victorian terraces. Hawick Street.



Fig 37. In rural areas a hedge of native species can make an attractive and robust boundary (c) Myerscough College



Fig 38. Estate fencing can be an effective and cost effective boundary treatment.

are few hard and fast rules over what type of boundaries may be found where. Dressed stone, or elaborate cast or wrought iron railings can be seen equally in urbanised areas, and in the grander parts of smaller rural settlements. Native hedges



Fig 39. A variety of appropriate boundary treatments including rubble walling and hedging at Cumwhitton, providing a clear and attractive precedent for new boundary treatments.

and rough stone walls may be characteristic of rural areas but can be used elsewhere.

Hedges

4.26 Hedges are an important part of the rural landscape. Originally planted for enclosure and shelter they are now a recognised ecological and visual asset. Fig. 37 shows the traditional practice of hedge-laying to form a dense and stock proof barrier. On a domestic scale they can be inexpensive aids to enclosure and security. Mixed hedges are usual in rural situations. The dominant local species are often Hawthorn or Blackthorn. Formal hedges usually consist of one species only, often Beech, Box privet, Hornbeam or Yew.

Fences

4.27 Fences are a popular boundary choice due to their relative cheapness and ease of erection. A variety of designs are available but most often they are best used to create privacy in rear gardens and are rarely suitable for boundaries fronting the street. Exceptions include picket or paling fencing. Close boarded fencing (Fig 35), should not be used on boundaries fronting the public highway but may be suitable to separate rear gardens. Best kept to a height



Fig 40. Breezeblock walling is unlikely to make an appropriate boundary treatment in areas visible to public view.

of about 1 metre, such fences are an effective deterrent to casual trespass and clearly separate 'private' from 'public' space. Post and rail fencing can be a suitable and attractive solution in rural areas. Estate fencing, (Fig 38) has also been used successfully in new developments and is simple, visually permeable, and quick to erect.

Walls

4.28 Wall construction can vary enormously. Brick, squared random rubble and dressed stone can all be used successfully depending on context. In general the more urban the area the more likely that a wall will be constructed of dressed and coursed stone or of brick. Neighbouring building may have a characteristic 'bond' pattern and this

could be reflected in new walling. Concrete block patterns, (Fig 40) are likely to be inappropriate in the majority of cases.

4.29 New boundary treatments should be in harmony with their neighbours and with the surrounding landscape. If chosen with thought, and consideration of context, a railing, wall, hedge or fence can greatly enhance the character of a development.



Fig 41. New boundary at Dalston Road creating a robust demarcation of public and private space.

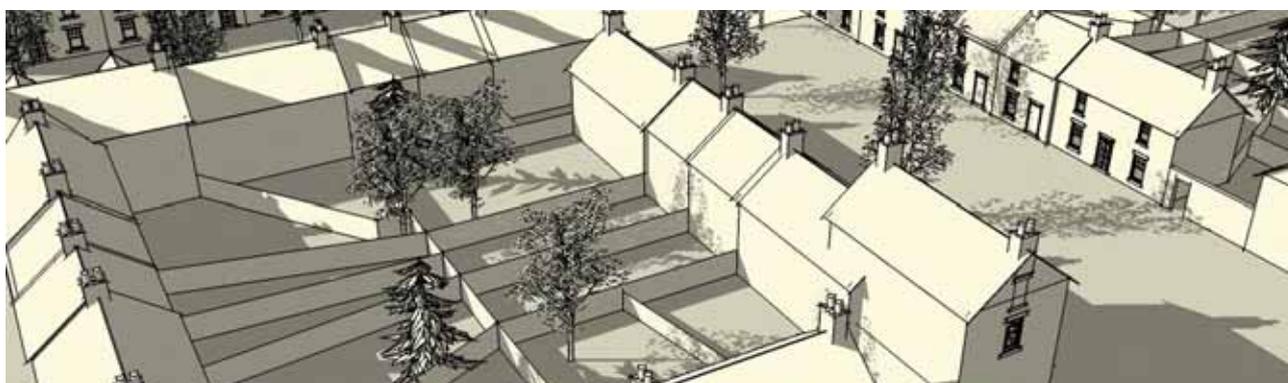


Fig 42. Interlocking back gardens with active frontages facing the street is a good starting point for a defensible and secure housing layout.

Designing Out Crime

4.30 A key consideration at the concept stage of any development is making it safe and secure. This applies across the life of a scheme as the impact of a poorly designed or executed scheme will have an impact on users, residents and the wider community long after developers have departed.

4.31 The concept of ‘designing out crime’ is enshrined in PPS1 and in the companion guide ‘Safer Places: The Planning System and Crime Prevention’ (OD PM 2004). For further detailed guidance refer to the City Council’s ‘Designing out Crime’ SPD.

4.32 Key to designing out crime is paying adequate attention at the design stage. For



Fig 43. Double-aspect corner building providing ‘eyes on street’ Howard Street, Carlisle.

example, in laying out housing, developments should back onto one-another, landlocking their rears for mutual protection. Crude add on security measures such as those in Figure 47 are often a sign of failure at the design stage. Figures 46 shows a chi-



Fig 44. Blank Facade and poorly overlooked parking which invites antisocial behaviour, Denton Holme.



Fig 45. Garage Court without adequate overlooking are likely to invite anti social activity , Morton

caned footpath, denying through visibility and adequate security.

4.33 Effective design should include measures to reduce the actual risk of crime and the perceived risk. Each situation will require a tailored response but general principles include:

- Clear demarcation of public and private space and the creation of 'defensible space' around houses where it will be clear that a threshold has been crossed.
- Principal entrances should address the street, both to generate activity and to expose possible intruders to view.
- The arrangement of buildings and windows should promote 'passive surveillance' of exterior spaces. Blank gables and dead elevations should be eliminated where possible.
- Arrangements of buildings should reduce opportunities for criminals to access unguarded rears. Interlocking gardens and continuous frontages are one way of achieving this.
- Security measures should go hand in hand with thoughtful design. Razor wire, fortress-like exteriors and bristling security cameras are usually a sign of design failure at concept stage.



Fig 46. Paths should be wide enough to allow users to pass one another comfortably, and where possible should allow a direct line-of-sight.



Fig 47. Inappropriate, crude security measures, City Centre.

- The involvement of the Police Architectural Liaison Officer in pre-application discussions presents developers with an ideal opportunity to incorporate crime prevention measures and design out crime at an early stage in the development process.

5 Form

“High-quality and inclusive design should be the aim of all those involved in the development process”

PPS1, ODPM 2005

5.1 Whether urban or rural, full regard must be had to the form and character of the area around a development site in order to integrate the site with its surroundings. In rural areas, the Council has produced a Countryside Design Summary for Carlisle District. This was adopted as an SPG in June 2000. The guidance sets out many of the important features that contribute to the character of the locality and impact on the landscape. Features include the topography, natural features such as hedges and trees, manmade features such as walls and gateways, and short and long distance views. In urban areas, the characteristics of the local neighbourhood within which the site lies are important. Elements such as plot ratios, heights of nearby buildings, massing of buildings and general form of neighbouring structures will inform the design of any scheme.

5.2 Views into and out of the site are important, as well as the effect new development has on the views of important features and buildings in the locality.

5.3 Neighbouring development is important in establishing the scale and mass of development, and architectural details such as the relationship of windows and roof pitches. This will help new development to blend into the landscape/ townscape setting.



Fig 48. Terraced housing in Stanwix. Continuous built frontage and a short front garden to buffer houses from the street.



Fig 49. Cumwhitton. House hard-up to the boundary of the road, which in turn is free from intrusive highway detailing.



Fig 50. Infill development which fails to take note of the materials, form, proportions or position in relation to the frontage of its neighbours.

Character

5.4 Although neighbouring character and building types should be taken into account, a pastiche of different styles from a combination of buildings may result in a cluttered



Fig 51. Contemporary building drawing on traditional palette of timber and local sandstone, Bank.



Fig 52. New development in the grounds of Rickerby House. (c) Storey Homes

design and it is here that architectural skills are brought to bear. This will draw out the underlying qualities of an area which can inform any new design, or can forge an appropriate design when positive design cues are absent.

5.5 A design should respond intelligently to context and should not be a stock design 'dropped in'.

5.6 Elements that will inform the character of an area include landscape, building form, grain, massing, scale, detail, spaces, views and important frontages. Exploring what constitutes 'local distinctiveness' is a key part of establishing the design principles of a scheme. If the immediate neighbourhood of a proposal offers few positive examples then looking in nearby areas can help, or in some cases a new design path will need to be struck.

Layout

5.7 The layout of the proposed housing will help to integrate the proposal into the existing development. Taking into account local character can identify factors such as



Fig 53. Terraced housing drawing on the terraced pattern typical to Denton Holme but providing for undercroft parking and flood resilience. C Storey Homes.



Fig 54. Generic post-war development. Developers should strive to make their proposals locally distinctive and relevant to Carlisle.

whether housing fronts the highway, pavement/footpath or has a garden in front of the dwelling. Terracing is a typical method of arranging dwellings in pre-20thC developments and this pattern allows for efficient use of space and can be architecturally diverse.

5.8 The orientation of dwellings and their relationship to the highway is also important. In many twentieth century schemes, dwellings slavishly follow the line of the highway. The highway has usually been designed first with the housing arrayed around it as an afterthought. In older urban and rural areas there is a mixture of dwellings facing or end on to the highway. Depending on context houses may front hard against the footpath, be buffered by small gardens or be set back in a more spacious landscaped setting. Current guidance encourages developers to consider the general layout of buildings and open space first, and then to fuse this with the need for vehicular access i.e. developments should not be arrayed around a pre-determined road layout. The new Manual for Streets 1 and Manual for Streets 2 underline this, giving primacy to 'place-making' above 'movement'.

5.9 There is variety of layouts and relationships to roads and open space that offers a diversity of approaches for a site. Mews, squares, lanes and courtyards should be considered as potential design elements, subject to context. A courtyard development for example can provide a central focal point rather than arraying housing around a conventional road layout. The characteristics of the site such as ground levels, features to be retained or existing infrastructure, may contribute to how the buildings are oriented on the site and the overall layout. A survey of the site showing all features is a useful starting point to determine the layout and indicate which features are to be retained as part of the development.



Fig 55. Distinctive geometric terraced layout, Algonby Street. Rows of street trees echo the formality of the road layout and the repetition of strong housing forms.



Fig 56. Local precedent, Blackwell. Here, farm buildings form a tight boundary hard-up against the street.



Fig 57. Thatched roof, cob-walled building, Burgh-by-Sands, historically typical of the Solway Plain.

Materials and Detail

5.10 Building materials and details should be sympathetic to the location and reflect local character. They can define the buildings intended status, and play a major role



Fig 58. New apartment building drawing on the locally distinctive palette of sandstone and brick, but using a contemporary idiom.

in how successful and attractive a scheme will be. While the trend over the latter half of the twentieth century has been for standardised materials drawn from across the UK, or abroad, this has often been at the expense of visual interest and character. Designers should strive to make their buildings clearly reflect their context, and study surrounding examples to identify the locally distinctive elements that they can draw on and include in their development.

5.11 The District has a rich history of building materials and building detailing on which to draw. In addition to this, the challenges of sustainable design and climate change have brought new materials to the fore, and new ways of using old ones.

5.12 External building materials in the area have historically been stone, often the red hues of Lazonby and Shawk sandstone. To the west, where stone was in short supply, consolidated earth or 'cob' was a common building material, with a number of buildings

constructed using this method still surviving today. This method is now re-emerging as an environmentally friendly, 'low-impact' construction technique (Figure 57).

5.13 Roofs were typically riven sandstone or slated with Cumbrian slate such as Burlington and Buttermere. Thatch was also used. Brick buildings were often built with clay excavated and fired locally, reflecting the difficulty and cost of transport over long distances. From the point at which the railways reached Carlisle Welsh slate, and imported brick became common.

5.14 The 'Carlisle brick' is typically a red in hue, but with some diversity across a batch, lending walls greater visual interest. The accurate colour consistency of many twentieth-century

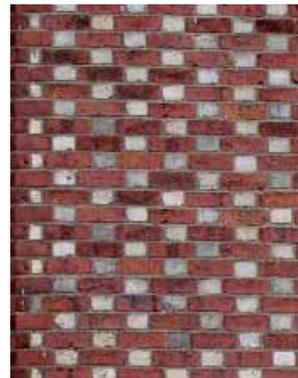


Fig 59. 'Diaper work' - headers and stretchers in contrasting colours.

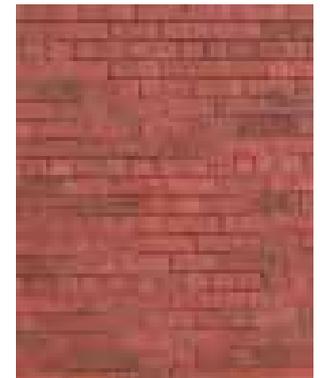


Fig 60. 'English Bond' - courses of 'header' bricks and 'stretcher' bricks.



Fig 61 Dressed rubble sandstone walling, Stanwix.



Fig 62. Cobble walls and stone quoins, Dalston

eth century brick types can often be bland and uninteresting, and a better precedent for new work is often the richer and more varied colours and textures of earlier bricks.

5.15 A locally distinctive brickwork technique, sometimes found used elsewhere but common in Carlisle, is chequerboard or diaper brickwork. Here bricks are laid as a 'Flemish' bond of alternating headers and stretchers, with contrasting brick colours.

5.16 The wide use of cavity walls with a facing brick entirely of stretchers has largely eliminated the use of bond patterns such as English bond, as this relied on use of headers and stretchers. This method can still be used to add visual interest to boundary walls, or can be used on cavity walls via the use of split-bricks.

5.17 Dressed stone is typical of rural parts of the District or of more prestigious buildings with urban areas. Bonding patterns and dressing details vary depending on the area and type of building, and a study of local examples should provide inspiration. Less prestigious buildings often used whatever stone was available and construction varies from random rubble walling, coursed rubble, dressed rubble and also the use of river cobbles and fieldstone.

5.18 Some examples can be seen, for example at Dalston, where higher-class buildings use a combination of dressed quoins and coursed stone infill (Figure 62).

5.19 When using these materials in new buildings, or when repairing existing buildings, care should be taken to use an appropriate mortar and pointing technique. Cement mortars, or visually incongruous novelty techniques such as ribbon pointing,



Fig 62. Materials, Coursed rubble & quoins, Brampton

risk substantial damage to older brick and stone work. Mortar should be weaker and more porous than the material bedded in it. Lime based mortars are preferable in many instances because their elasticity can yield to slight structural movement, thermal expansion, and their porosity allows walls to 'breathe'. Guidance on the use of traditional lime mortars is available from the Council's Conservation Officers.

5.20 Other elements, which vary locally, include the style and detail of gutters and down-pipes. Cast iron, cast or extruded aluminium or stainless steel rainwater goods are durable alternatives to plastic. 'Drive-in' or rafter brackets may be locally typical, and can relieve the need for a fascia board, reducing maintenance.

5.21 External meter boxes should be mounted discreetly on side elevations or provided as semi-sunken units (Fig 63)

5.22 Windows were historically set back a brick depth or more from the outer face of the building in order to protect their woodwork from the elements. This also lends interest to a facade and a set back distance from the face of the building of a brick's depth should be sought. Window design



Fig 63. Meter boxes should be mounted discreetly and not on the main elevation. Sunken 'in ground' boxes are also available.

should be fully considered and consideration given to the lifetime costs. Where timber is used developers should look for Forestry Stewardship Council (FSC) certification. If PVCU is used, glazing bars used should appear on the face of the windows and not solely sandwiched within panes, a poor imitation of a historical appearance.

Dwelling Types

5.22 On larger developments it is appropriate to have a mix of types of dwellings which will help generate a mixed community. A preferred range will typically be a mixture of terraced, linked, semi-detached and detached units, and with appropriate variation in storey heights. The exact format would depend on local context. A robust mix would include smaller units as well as large units. A nominal mix of 3,4 or 5 bed-roomed detached houses would be unlikely to generate the diversity which makes for sustainable and attractive communities. Local character is likely to play a major role in what mixture is suitable for a site

5.23 Opportunities should be taken to add variety and visual interest to proposals, for example, through variations in building mass and height.



Fig 64. Windows set back from the facade protect timber from the elements and add can depth and visual interest to the elevation.



Fig 65. New development in Durham with a variety of townhouses and apartments, unified by a strong traditional form.



Fig 66. Internal streetscene of the above scheme.

5.24 For smaller developments of one or two houses it may be appropriate to provide dwellings of a similar size and type to those on neighbouring sites unless there is good urban design justification for a variation.

5.25 The width of plots in relation to height is an important consideration - this 'plot ratio' can help a new development reflect the dominant local pattern.



Fig 67. An infill development which respects the plot position and scale of its neighbours. A rendered finish would match neighbours better.



Fig 68. A variety of dwelling sizes in a contemporary style, Taylor Wimpey development, Gateshead.

Highway Layout

‘Good Design need not cost more, and may save money through fewer traffic signs, road markings and related equipment and street furniture’

(DfT Circular 1/08 Traffic Management & Streetscape)

5.26 Our streets make up a large part of the public realm. Well-designed streets contribute significantly to the quality of the built environment and play a key role in the creation of sustainable, inclusive, mixed communities. The 2007 Manual for Streets and Manual for Streets 2 (2010) provides national guidance on highway design in residential

areas. They emphasise the importance of ‘place-making’ over ‘movement’ - a radical shift from the now superseded Design Bulletin 32.

5.27 In the same vein, the DfT’s Traffic Management and Streetscape Circular 1/08 states that:

- Good scheme design must meet functional and visual objectives.
- ‘Less is more’ should be a guiding principle of good scheme design.
- Practitioners need to be aware of the status and function of guidance documents and regulations.

- Good practice can be achieved within the regulations.
- It is important not to focus on single issues, look at the bigger picture.

This approach is vital in helping to create places that meet the needs of both circulation, and place-making.

5.28 Smaller scale development on infill sites may be accommodated without major changes to the highway. Larger sites may require a new road access to service the proposed housing. The 'Cumbria Design Guide Vol 1: Layout of new residential developments' contains guidance on the specific requirements for internal access roads but will be revised in the light of Manual for Streets 1 and 2. The size of the proposed development and the number of dwellings will determine the access requirements needed for the site.

5.29 In determining the layout of roads it should be recognised that this is a residential development and the pedestrian should take priority over the car. National guidance has established a road hierarchy based on pedestrian; cyclist, public transport, and lastly, private motor vehicles.

5.30 On larger developments it is likely that there will be a hierarchy of roads, ranging from streets, squares, mews and courtyards to well defined private space. The use of materials can help to differentiate areas of the highway and to show where pedestrians and other road users should be given additional priority.

5.31 Traffic calming should be designed in at the outset, for example through tighter geometry and through limiting forward visibility. 'Retrospective' measures such as



Fig 69. An understated and minimal road, appropriate to the light vehicular activity here and the sensitivity of the landscape.



Fig 70. Narrowing of the highway can result in more cautious and slower traffic speeds, such as here at Cotehill. Such methods could be designed into contemporary schemes.



Fig 71. A new street in Poundbury which promotes pedestrian safety by making drivers feel they are in a non-car space.

speed humps should be avoided. Developments need to integrate these principles at the design stage, avoiding clumsy 'add-on' measures to restrict the speed of motorists and make areas more pleasant for other users.

5.32 Figure 71 shows a pre-calmed residential road, without demarcation of road or footpath, with houses fronting onto it. Built-in calming, such as limited forward visibility is used to restrict speed.

5.33 Context is of key importance. Carlisle has great variety in its settlements and in their highway detailing, and it is important to maintain distinctiveness. An appropriate solution for an urban area may be quite unsuitable for rural locations, and risk erosion of character. Distinction between urban or rural, market town, functional highway or intimate street should be reinforced when interventions are made. National highway guidance supports this.

Parking Provision

5.34 The amount of parking required for a site is usually considered in relation to the number of bedrooms in the proposed dwellings. In addition, the level of car parking will reflect the ability of that development to be served by existing or new public transport services and its proximity to facilities.

5.34 National guidance strives to integrate the provision of parking with the need to promote alternatives such as walking, cycling and increased use of public transport. The Cumbria Design Guidance Vol 1 includes suggested levels of provision.

5.35 PPS3 (Housing) requires that developments take ‘a design-led approach to the provision of car-parking space, that is well-integrated with a high quality public realm and streets that are pedestrian, cycle and vehicle friendly’.

5.36 Parking is usually considered to be more secure when contained within the curtilage of the property although as density of



Fig 72. Informal Courtyard Parking.



Fig 73. Subtle demarcation of parking bays.



Fig 74. Parking accommodated within a coach house-like building with apartments above. Durham.

development increases, on street parking in well-overlooked locations, and parking in well-overlooked parking courts is likely to be a useful method.

5.38 Situations should be avoided where lower car parking provision results in the

increase of on-street parking where this would encroach on highway safety. Communal parking areas can help to provide for additional parking in mixed developments. These should be well lit and overlooked by primary windows to enable surveillance.

5.39 Parking areas can be designed so that when clear of cars they serve as attractive hard paved areas, rather than just vacated parking lots.

Privacy and Amenity

5.40 The respect for personal privacy is essential in determining the layout of new housing. Protection of privacy relates to views to and from the street, to outdoor space and views between rooms within separate dwellings. Consideration should be given to the relationship between existing neighbouring uses and any new development as well as within the development site. The topography of a site can play an important part of helping to avoid the perceived intrusion of private space.

5.41 Whilst gardens to the front of properties are often regarded as enhancing privacy, this is not always in fact the case. Privacy from the street tends to be less in 'suburban' layouts than where houses are closer to the street, as passers by are given a wider 'visual field' which provides views into a property. This field is tighter and therefore privacy is enhanced when houses are brought closer to the street with very short, or no gardens. Houses closer to the street can also enhance safety through providing more 'eyes on the street' and the perception that passers by are well-overlooked. Traditionally, those buildings that had generous front gardens tended to be protected



Fig 75. In terraces, a limited field of vision for passing pedestrians results in greater privacy to residents than if houses were set further back from the pavement edge.



Fig 76. Morton. Increased separation distances to a suburban norm, but with no clear environmental or townscape benefit.



Fig 77. Improved privacy and natural lighting via an off-set oriel window to overcome privacy concerns.

from overlooking by hedging, planting and boundary walls.

5.42 It may be desirable, and reflects the historic street patterns of many parts of the district, to restrict the size of front gardens

to a short buffer, allowing for more generous provision of fully private space to the rear of dwellings. Local precedent will often give an indication of what solution would be suited to a particular site.

5.43 Privacy can be achieved either by remoteness or by design; that is, either by setting dwellings within generous, well-landscaped plots, or by the use of projecting wings, high boundary walls and the careful positioning of main, habitable rooms. The layout of houses and gardens should help to ensure private space is respected.

5.44 Where a development faces or backs onto existing development, in order to respect privacy within rooms a minimum distance of 21 metres should usually be allowed between primary facing windows (and 12 metres between any wall of the building and a primary window). However, if a site is an infill, and there is a clear building line that the infill should respect, these distances need not strictly apply.

5.45 While it is important to protect the privacy of existing and future residents, the creation of varied development, including mews style streets, or areas where greater enclosure is desired, may require variations in the application of minimum distances.

5.46 Nominally detached dwellings, typical of late twentieth century developments, are often poor in townscape terms and it is preferable to avoid extensive use of such layout, and instead to terrace dwellings or to provide more meaningful distances between dwellings.

5.47 Where appropriate, garaging may be located between dwellings to increase privacy.



Fig 78. Where the existing street pattern is tight, separation distances must be waived if these buildings are converted to residential use.

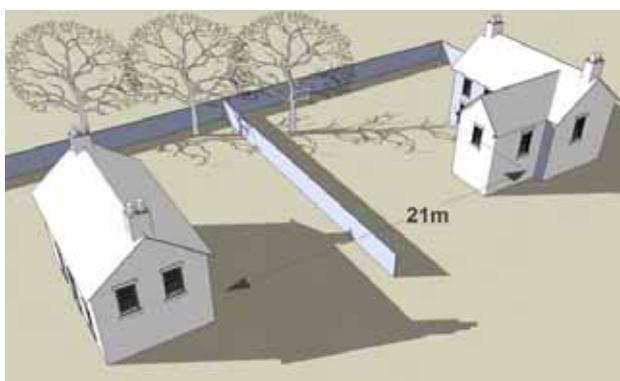


Fig 79. To protect privacy of occupants, 21 metres should usually be allowed between primary facing windows.

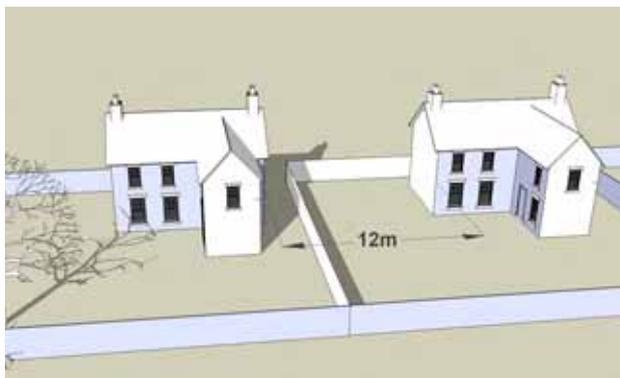


Fig 80. 12m should be allowed between an existing elevation with a primary window and any blank gable or wall to any new building or extension. The same distance applies to new elevations containing primary windows facing existing blank elevations.



Fig 81. An extension which competes in scale with the original dwelling would be likely to be unacceptable.



Fig 82. An extension should be secondary in scale and massing to the original dwelling house.

Extensions

5.53 Many people choose to adapt their existing homes to cater for changes in lifestyle rather than move house. House extensions includes any extension of the living space, including basements, roof conversions and conservatories. Extensions must be of an appropriate scale and not dominate the original dwelling.

5.54 Adding extensions will alter the original design of the building, changing the balance and proportion of existing features. In order to ensure good design, extensions should respect the original design and not seek to dominate the building. They should also use matching or complementary materials e.g. brick or stone, bonding patterns, roof covering as appropriate.

5.55 The cumulative impact of extensions will be taken into account when extensions are considered. Fig 81 and 82 show inappropriate and appropriate extensions.

5.56 Extensions can add interest to otherwise bland elevations and could be designed to complement the existing architecture without copying the existing.

5.57 Extensions should usually be clearly



Fig 83. An extension should usually be set back from the original dwelling - 500mm is suggested.

subordinate to the original dwelling. A setback of around 500mm is suggested from the face of the original dwelling to the face of the new extension (fig 83).

Attic Conversions

5.58 Converting attic space affects the design of the building by the introduction of roof lights or dormer windows. Modifications such as these should be designed to minimise the visual intrusion on the main façades of the building. Figures 84-86 show an example of acceptable and unacceptable methods of achieving this.

- Dormers should be as small and discretely sited as possible.
- They should be located on rear elevations where possible.
- They should be related to the scale and position of existing windows.
- They should complement the original building in terms of style and detailing.



Fig 84. Where possible dormer windows and veluxes should be located on rear elevations.

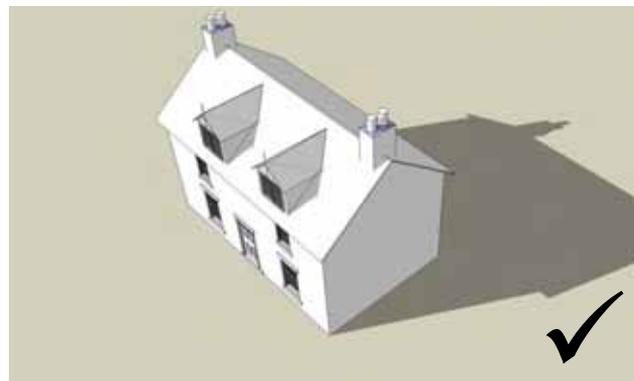


Fig 85. Where local precedent exists or where the design is deemed acceptable, front dormers may be possible.



Fig 86. Box dormers or overly large dormers will not generally be acceptable.

Avoiding the ‘terracing effect’

5.61 The impact on the original street scene may be considered too great if the extension would create an unwelcome precedent. An example may be where a row of semi-detached houses separated by garages has extensions built over the garages. This would change a row of semi-detached houses to the appearance of a large terrace, adversely altering the original design. In such instances extensions should be well set back from the original dwelling and avoid the terracing effect (figs 87/88/89).

5.62 In order to respect the original design, buildings that are converted to residential use may be prevented from having extensions built onto them.



Fig 87. A street of semi detached houses with garages between. It is important to avoid creating a terracing effect by incremental extensions.



Fig 88. Incremental and poorly scaled extensions creating an unwanted terracing effect.



Fig 89. A preferred approach to extending would be to create subordinate extensions that maintained the primacy of the original houses.



Fig 90. Shaddon Mil. Spectacular former industrial building now converted into apartments.



Fig 91. Conversion to other uses can assist in the continued existence of buildings such as this former corn mill, Warwick Bridge.

Conversion to Residential

5.48 New housing development need not always be new build. Conversion of buildings used for other purposes may contribute to the housing stock. In existing residential areas former industrial or commercial buildings may be suitable for adaptation provided adequate measures can be undertaken to provide a reasonable quality of accommodation. Reusing old buildings, where possible, will help to save on embodied energy and help keep the character of an area. The Local Plan provides guidance as to whether such a use is acceptable (policy H8).

5.50 Conversion to residential use is usually considered to be the most damaging in terms of its impact on historic features (such as spaces and finishes), and the setting and legibility of buildings. When considering residential use the conversion of a building should be able to be accommodated without substantial alteration or extension to the original building.

5.51 A conversion should respect the form of the original building reusing openings for windows or doors. Conservation roof lights may be used to avoid the need for excessive window openings, however excessive



Fig 92. Conversion of agricultural building to a camping barn; Birdoswald. This has had little impact on the appearance of the building.

use of roof lights will not be acceptable. The use of dormer windows, if alien to the building, should also be avoided in conversions.

5.52 Converting a building to residential use must respect the purpose and design of the original building. Permitted development rights may be removed in order to restrict the addition of ancillary buildings and other inappropriate residential structures.

6 Sustainable Design

“In 1987 the ‘Brundtland Report’ defined sustainable development as ‘development which meets the needs of the present without compromising the ability of future generations to meet their own needs’. This means that the consequences and impacts of using materials must be considered from the point at which they are mined or harvested in their raw state, through manufacture and processing, through use, reuse and recycling, until their final disposal as waste with no further value”.

Brundtland G H. Our Common Future: The UN World Commission on Environment and Development. United Nations. 1987. in ‘Code for Sustainable Homes’ Department for Communities and Local Government, February 2008.

The Code for Sustainable Homes

6.1 The Code for Sustainable Homes was introduced in England in April 2007. The Code is a voluntary standard designed to improve the overall sustainability of new homes by setting a single framework within which the home building industry can design and construct homes to higher environmental standards. The Code is closely linked to Building Regulations, which are the minimum building standards required by law. Minimum standards for Code compliance have been set above the requirements of Building Regulations.

6.2 The Code measures the sustainability of a home against nine design categories, rat-

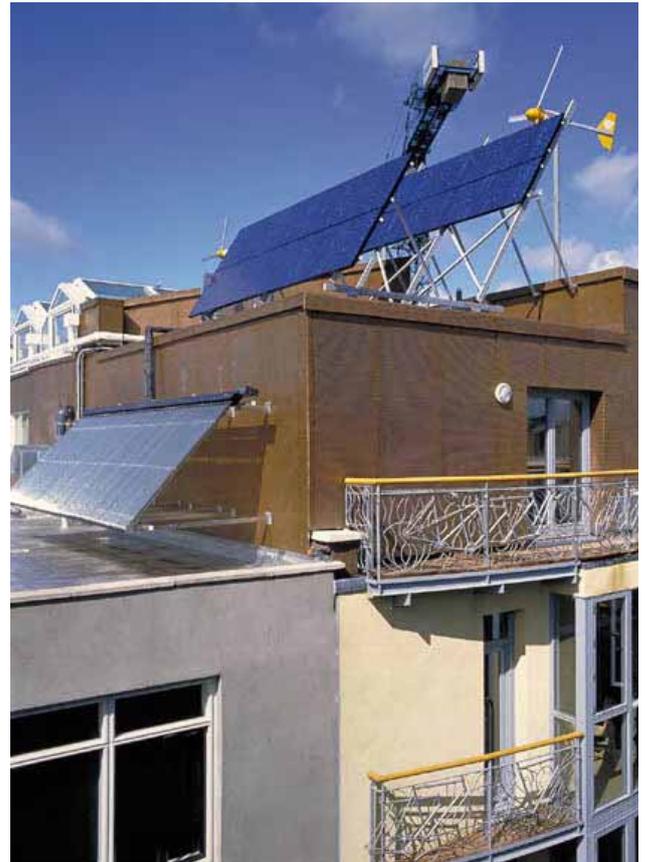


Fig 93. Green Building, Temple Bar, Dublin. Arc Digital



Fig 94. High levels of insulation is one of the key components of a sustainable building. 270mm of insulation is currently recommended. Energy Saving Trust

ing the ‘whole home’ as a complete package.

The categories are:

- Energy and CO2 Emissions
- Pollution

- Water
- Health and Well-being
- Materials
- Management
- Surface Water Run-off
- Ecology
- Waste

6.3 The Code's performance targets are more demanding than the minimum standard needed to satisfy Building Regulations or other legislation. They represent good or best practice, are technically feasible, and can be delivered by the building industry.

6.4 Pursuit of a Code 3 rating or above will be encouraged in all new residential developments. Further to this, in deciding whether housing development is granted planning permission for other than allocated sites, account will be taken of its location and whether there are adequate transport networks available that will allow for and enable walking, cycling and the use of public transport.

6.5 While the Code pertains to the performance of individual buildings, the relationship of a development to its immediate environment and to the wider townscape or built context is also of key importance. Additional sustainable design elements include:

- Building layout/orientation and siting to maximise passive solar gains, shelter and natural shade and ventilation;
- Retention of existing vegetation in landscaping and contribution to ecological corridors;
- Accessibility by foot or cycle;
- Flexibility in use of space for changes in occupants requirements (lifetime homes);
- Use of local sources of materials to reduce environmental impact of delivery;



Fig 95. Beddington 'zero emission development, 'Bedzed', Surrey.

- Use of long lasting, high performance, low maintenance materials where appropriate; and,
- Use of materials that are reusable, recyclable.

6.6 Energy use in buildings accounts for nearly 50% of UK carbon emissions. There is a duty on Local Authorities to secure a significant improvement in domestic energy efficiency across all housing tenures. Energy efficiency in terms of building design concerns the fabric of the building and appliances in the building. It also concerns the practice of constructing and arranging buildings to minimise the use of resources including obtaining the maximum benefit from solar gain and building to control heat loss.

6.7 Small scale, on site, renewable energy generation is encouraged and are now classified as permitted development in some instances. Figure 95 illustrates the 'Bedzed' 'Zero-Emission' development at Beddington, Surrey. Here electricity is generated on site by photovoltaic panels. Extensive glazing allows free 'passive solar heating'.

6.8 Development must both mitigate the effects and adapt to the predicted consequences of climate change. It must take account of aspects such as building location in relation to flood plains, potential disruption from more frequent extreme weather events, and seek to follow the Energy Hierarchy (LGA, 1999), which is to reduce the need for energy, use energy more efficiently, supply energy from renewable sources and any continuing use of fossil fuels to use clean technologies and to be efficient e.g. using Combined Heat and Power (CHP).

Water Efficiency

6.9 W Water is at the heart of our ecology. Wasting it and polluting it should be avoided. We can address this through building design, and in how we develop sites. Design should promote water efficiency within buildings, and water conservation within the built environment. Capture of rainwater for reuse within the home or garden, grey water recycling and the use of SUDS to dispose of excess water are all established technologies that can be appropriate to many developments.

Waste Management

6.10 Construction waste, directly and indirectly contributes to more than a third of the country's solid waste. Recycling construction waste and reusing existing buildings



Fig 96. Evacuated tube solar water heating.



Fig 97. Sedum-roofed housing development, Amble, Northumberland.



Fig 98 'Green', sedum roof, providing wildlife habitat, slowing rainwater run-off and providing additional insulation.

can address this. Household waste management in terms of building design concerns the provision of adequate waste disposal/recycling facilities including the provision of space within each dwelling for recycling bins and composting facilities.

6.11 Developers are encouraged to speak to the Council's Waste Services early on in the design process to see what space requirements will be and to integrate such spaces into a development.

Biodiversity and Geological Conservation

6.12 Design should protect and enhance green infrastructure allowing nature to permeate the built environment. For example green roofs can enhance green infrastructure as shown in Figures 97 and 98. Access to sensitive environmental and geological areas needs to be managed through design. Design should be sensitive to geological and/or geomorphological importance and conserve biodiversity as required under a local authority's duty of the Natural Environment and Communities Act 2006 (Section 40). Higher levels of biodiversity can improve ecological services by acting as carbon sinks and air conditioners and controllers of pollutants, microclimate and flooding.

Checklist:

- Use previously developed sites for housing which are well related to local facilities and the existing and proposed transport network.
- Assess the biodiversity value of any site and enhance where possible - this can include elements such as bat and bird boxes incorporated into the design of new housing, as well as the protection and enhancement of existing landscape features.
- Minimise use of energy, both mechanical and electrical, as well as carbon dioxide emissions, throughout life of the building through design, orientation and a high

degree of insulation and airtightness.

- Consider solar panels for hot water, wind generators and photo-voltaic cells for electricity.
- Choose energy sources that make the most efficient use of resources. For larger schemes consider combined heat and power. In the conventional situation gas heating tends to be more efficient than electrical.
- Use materials from sustainable sources and minimise negative impacts on the environment. For example timber from renewable sources, reused, recycled and recyclable materials, low embodied energy in construction processes, CFC-free. Particularly avoid those materials that have a manufacturing process that is especially polluting such as PVCu. Use local materials/suppliers.
- Optimise daylight and solar gain by carefully orientation, use of appropriate built forms and layout.
- Ensure developments are adaptable to changing needs of occupiers (people have children, age and can become disabled) and, where appropriate, to other uses. Houses should be built of enduring, robust materials and servicing systems to provide long, sustainable lifecycle. Provide 'long-life/loose-fit' homes.
- Design homes to allow home working, allowing for appropriate space and IT links, to reduce commuting.
- Maximise the use of compact built forms, such as terraced houses and flats, as they reduce heat loss, land take and use of

materials.

- Minimise water consumption by using water efficient systems, recycling and where practical, utilising collected rainwater.
- Use sustainable drainage systems.
- Minimise discharge from the site by recycling 'grey-water' where possible, and consider composting toilets.
- Incorporate sustainable waste schemes to minimise waste from a development, both during and post construction.

For further information refer to the City Council's adopted Supplementary Planning Guidance 'Energy Efficiency'.

Glossary

Accessibility The ease with which a building, place or facility can be reached by people and/or goods and services.

Adaptability The capacity of a building or space to respond to changing social, technological, economic and market conditions.

Biodiversity The variety of life in all its forms.

Block The area bounded by a set of streets and undivided by any other significant streets.

Brief Site-specific briefs are also called a variety of other names, including design briefs, planning briefs and development frameworks.

Building line The line formed by the frontages of buildings along a street.

Built environment The entire ensemble of buildings, neighbourhoods and cities with their infrastructure.

Built form Buildings and structures. The combined effect of the arrangement, volume and shape of a building or group of buildings. Also called massing.

CABE Commission for Architecture and the Built Environment.

Carbon sinks Areas that absorb and hold on to carbon dioxide. For example, trees have a significant capacity to absorb carbon dioxide.

Conservation area One designated by a

local authority under the Town and Country Planning (Listed Buildings and Conservation Areas) Act 1990 as possessing special architectural or historical interest. The council will seek to preserve or enhance the character and appearance of such areas.

Context The setting of a site or area.

Defensible space Public and semi-public space that is 'defensible' in the sense that it is surveyed, demarcated or maintained by somebody.

Density The mass or floorspace of a building or buildings in relation to an area of land.

Design champion A person responsible for ensuring that a particular organisation - a local authority, regional development agency, health authority or government department, for example - promotes high standards of design throughout its work.

Design guidance Documents providing guidance on how development can be carried out in accordance with the planning and design policies of a local authority or other organisation.

Design guide Design guidance on a specific topic such as shop fronts or house extensions, or relating to all kinds of development in a specific area.

Design policy Relates to the form and appearance of development, rather than the land use.

Design principle An expression of one of the basic design ideas at the heart of an urban design framework, design guide,

development brief or design code. Each such planning tool should have its own set of design principles.

Design statement An applicant for planning permission can submit a planning application design statement with the application (or prior to making the application), setting out the design principles adopted in relation to the site and its wider context. Government advice encourages an applicant for planning permission to submit such a written statement to the local authority.

Design-led development (or regeneration) Development whose form is largely shaped by strong design ideas.

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

Development brief A document providing guidance on how a specific site of significant size or sensitivity should be developed in line with the relevant planning and design policies. It will usually contain some indicative, but flexible, vision of future development form.

Development control The process through which a local authority determines whether (and with what conditions) a proposal for development should be granted planning permission.

Development plan The development plan sets out the policies and proposals against which planning applications will be assessed. Its context is set by national and regional planning policy guidance.

Development Statutorily defined under the

Town and Country Planning Act 1990 as 'the carrying out of building, engineering, mining or other operation in, on, over or under land, or the making of any material change in the use of any building or other land'. Most forms of development require planning permission.

Elevation (i) An external face of a building. (ii) A diagrammatic drawing of this. (iii) The height of a site above sea level.

Enclosure The use of buildings to create a sense of defined space.

Energy efficiency The result of minimising the use of energy through the way in which buildings are constructed and arranged.

Eyes on the street People whose presence in adjacent buildings or on the street make it feel safer.

Facade The principal face of a building.

Fenestration The arrangement of windows on a facade.

Fine grain The quality of an area's layout of building blocks and plots having small and frequent subdivisions.

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

Grain See urban grain.

Green infrastructure The network of open spaces, waterways, woodlands, green corridors, street trees, open countryside and coastal areas within and between our urban

areas.

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

Indicative sketch A drawing of building forms and spaces which is intended to guide whomever will later prepare the actual design.

Landmark A building or structure that stands out from the background buildings.

Landscape The appearance of land, including its shape, form, colours and elements, the way these (including those of streets) components combine in a way that is distinctive to particular localities, the way they are perceived, and an area's cultural and historical associations.

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

Legibility The degree to which a place can be easily understood by its users and the clarity of the image it presents to the wider world.

Local distinctiveness The positive features of a place and its communities, contributing to its special character and sense of place.

Massing The combined effect of the arrangement, volume and shape of a building or group of buildings. This is also called bulk.

Microclimate The variations of climate within a given area, usually influenced by hills, hollows, structures or proximity to bodies of water. Can differ significantly from the

general climate of a region.

Mixed uses A mix of complementary uses within a building, on a site or within a particular area.

Movement People and vehicles going to and passing through buildings, places and spaces.

Natural surveillance (or supervision) The discouragement to wrongdoing by the presence of passers-by or the ability of people to see out of windows. Also known as passive surveillance (or supervision).

Node A place where activity and routes are concentrated.

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

Perspective A drawing showing the view from a particular point, as the human eye would see it.

PPG Planning Policy Guidance Note. A document embodying Government guidance on general and specific aspects of planning policy to be taken into account in formulating development plan policies and in making planning decisions.

PPS - Planning Policy Statement. A document setting out Government policy on a specific theme to be taken into account when formulating development plan policies and in making planning decisions. PPSs are replacing PPGs.

Public realm The parts of a village, town or city (whether publicly or privately owned) that are

available, without charge, for everyone to use or see, including streets, squares and parks. Also called public domain.

Scale The size of a building in relation to its surroundings, or the size of parts of a building or its details, particularly in relation to the size of a person.

Section A drawing showing a slice through a building or site.

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

Sight line The direct line from a viewer to an object.

Strategic view The line of sight from a particular point to an important landmark or skyline.

Street furniture Structures in and adjacent to the highway which contribute to the street scene, such as bus shelters, litter bins, seating, lighting and signs.

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

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

Urban design framework A document setting out how development plan policies should be implemented in a particular area where there is a need to control, guide and

promote change. Such areas include transport interchanges and corridors, regeneration areas, town centres, urban edges, housing estates, conservation areas, villages, new settlements, urban areas of special landscape value, and suburban areas identified as being suitable for more intense development.

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

Vernacular The way in which ordinary buildings were built in a particular place before local styles, techniques and materials were superseded by imports.

(Glossary indebted to: CABE (2004) 'The Councillor's Guide to Urban Design')

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