3.7 Block Structure

3.7.1 Block Structure

Layouts should be arranged in a pattern of perimeter blocks forming permeable streets with well-defined frontages.

3.7.2 The block structure is the pattern of development blocks contained within the overall layout.

3.7.3 Perimeter blocks form connected layouts that create a walkable neighbourhood structure. This allows easy access throughout the area. Many places will already comprise a network of streets and blocks and these may be used to inform the approach to the design of the proposed block layout.

3.7.4 The design of blocks should not necessarily be uniform on all sides. The character of each side of the block should reflect the character of the adjoining street. Variation can also be achieved by making use of building types, appropriate mixed uses and designs that respond to corner locations.

Successful places:
- Comprise layouts consisting of blocks that form a permeable street pattern.
- Design the pattern and shape of perimeter blocks to complement the site context and the character of the proposed adjoining streets.
- Include variation within each side of the block (density, height, scale, use) to reflect the hierarchy and status of surrounding streets (main frontages, side streets, lane/mews) and contribute to the character, identity and function of each street frontage.
- Arrange development to be outward facing to overlook streets and public places with the primary access to buildings from the street via a clearly identifiable front entrances.
- Address key corners with special corner buildings or groups that address both sides of the corner with active frontages.

Above: A connected layout of development blocks that creates a walkable development.
3.7 Block Structure

**THE URBAN BLOCK**
- Effective method of site/plot utilisation
- Differentiates clearly the public & private sides
- Creates coherent street layout
- Enables safer homes

**FORMAL BLOCK**
- Can be too rigid
- Can create deep shadowing on private side

**INFORMAL BLOCK**
- Allows sun penetration/reduces shadowing
- Improved air quality & outlook
- Follows contours & other site factors
- Creates interesting street-space layout
3.7.5 Block size and shape

The size and shape of blocks should form part of a permeable street pattern and respond to the conditions of the site.

3.7.6 Perimeter blocks can be designed in numerous ways and may be formal or irregular. Key considerations when determining the size and shape of the block are:

- The permeability of the area (over-large blocks can reduce permeability);
- Density;
- Parking strategy;
- Privacy and amenity;
- Daylight and natural ventilation;
- Topography;
- Potential uses of the block interior (if not private gardens);

3.7.7 Irregular block shapes can offer greater flexibility and be designed to:

- Respond to the specific conditions of the site (e.g. existing features or topography);
- Assist in slowing traffic;
- Optimise orientation for good light penetration;
- Create focal points and interest in the street scene;

3.7.8 Block sizes can vary widely, but blocks of 60-90m x 90-120m provide the optimum dimensions to support good pedestrian accessibility, vehicle movement and allow for sufficient back to back/back to side separation distances.

3.7.9 Larger blocks provide scope for incorporating an interior court that can accommodate a variety of uses, such as play, parking, communal gardens or off-street service areas. Alternatively they may be sub-divided by mews streets for access, to accommodate parking and improve permeability. Blocks with open interiors should be overlooked with managed access wherever possible.

**Successful Places:**

- Ensure block sizes and arrangements are varied with frequent spacing (informed by the context).
- Ensure block shape responds to the site conditions, topography and the character of the surrounding area.
- Incorporate secure interior spaces (including private gardens).

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**Useful References**

Urban Design Compendium 1 (2007)

Shaping Neighbourhoods, Barton *et al.* (2010)
3.7.10 Culs-de-sac

The provision of culs-de-sac should normally be avoided unless particular site conditions dictate that a cul-de-sac design is the most appropriate way to develop the site. In such circumstances this should be explained and justified.

3.7.11 Layouts designed around a distributor road and cul-de-sac model have a number of disadvantages. However, in some circumstances, the provision of cul-de-sac designs may be necessary as a means of developing a difficult site or where particular constraints impose limitations that prevent connections being made.

What are the disadvantages of culs-de-sac?

- They can be difficult to navigate - everywhere looks the same and they don’t take you directly to where you want to go.
- They can create awkward ‘left over’ or poorly defined spaces.
- They result in lots of blank frontages often creating characterless and unappealing pedestrian environments.
- They also favour cars over pedestrians and other users, making it awkward to reach facilities or public transport.

Successful places:

- Avoid overlong culs-de-sac and ensure any through connections for pedestrians and cyclists are overlooked with active frontages to make them feel safe.
- Avoid concentrating large volumes of traffic on a small number of dwellings.
- Design turning heads to form part of a space not just for turning manoeuvres.
- Ensure adequate parking is provided so turning areas remain clear of parked cars.
- Arrange the layout to avoid rear boundaries backing onto public street frontages.

Adapted from Manual for Streets DCLG, DoT, WAG (2007)
3.8 Parking

3.8.1 Approach to parking

Parking provision should provide a balanced mix of parking solutions that are integrated into the design and layout to support its appearance without cars becoming visually dominant.

3.8.2 Sustainable public transport can provide an alternative to or complement car use. However, car ownership is an established aspect of modern life and satisfactorily accommodating parked cars is a key function of most residential streets.

Successful places:

- Provide a mix of parking options appropriate to site location and context.
- Integrate parking into the design/layout without detracting from the character or appearance of the place.
- Provide parking environments that are attractive, convenient and safe.
- Generate activity/movement between dwellings and the street creating safe, animated places.
- Provide surveillance of parking areas from adjoining buildings and gardens.

3.8.3 Designs need to reconcile the need to provide attractive streets that include adequate parking, but without detracting from the character or visual quality of the place. Well designed places integrate car parking without it becoming over-dominant.

Below: A housing layout incorporating a well designed mix of parking solutions, including on-plot provision, rear parking courts and on-street spaces designed into the street scene (Drawing courtesy of Davidsons Group Ltd).
3.8 Levels of Parking

The level of parking provision should be determined by the site context, its sustainability and accessibility to public transport, employment and other local amenities.

3.8.4 Levels of Parking

The level of parking provision should be determined by the site context, its sustainability and accessibility to public transport, employment and other local amenities.

3.8.5 The level of parking provided will be partly determined by the location of the site and its sustainability in terms of its proximity to local services and public transport. Well connected sustainable locations with good access to shops, services and employment opportunities may be able to reduce levels of parking. However, other important influences on car ownership are dwelling size, type and tenure and these should be a factor in deciding the appropriate level of parking.

3.8.6 Over-provision of parking wastes land and is likely to discourage the use of more sustainable modes of transport. Conversely, under-provision can detract from the quality of the place, causing indiscriminate parking or the conversion of front gardens to provide additional spaces, with a resulting loss of front boundaries, plot definition and enclosure of the street, as well as increased surface water run-off.

3.8.7 The level of parking and density of development can impact on the quality of the environment. Where schemes propose high levels of parking relative to the density of the development, this can be difficult to accommodate without it appearing too dominant or intrusive.

3.8.8 Banks of unrelieved parking, with a lack of front boundary treatments/open frontages, poorly considered landscape, prominent integral garages or extensive areas of driveway undermine the character and appearance of schemes. This can be an indication that the density of development is too high, if this is the only way that parking is able to be provided.

3.8.9 The level of parking must therefore be determined having regard to a range influencing of factors while always seeking to avoid the negative impacts of parking on the design and appearance of the street scene.

Sustainable?

The level of parking should be determined in conjunction with accessibility of the site to public transport and its level of service.

Suggested standards for public transport frequency are:

Excellent: 5 mins or higher. At this level of frequency travellers are able to change bus to bus with little time penalty.

Good: 6-12 mins. Travellers are able to wait for buses on spec – casual use possible.


Mediocre: 40–120 mins. Journeys have to be carefully planned.

Poor: over 2 hours. Residual level of service. Awkward to use.

Rural bus services:

60 mins. - Adequate
Stops within 10 minutes walk of homes.

Adapted from Sustainable Settlements, Barton, et al. (2010)

Car Parking: What Works Where


Guidance Note Residential Parking, Institute of Highway Engineers (2012)

Successful places:

• Incorporate an appropriate level of parking but at the minimum level necessary to facilitate the development.

• Provide reduced levels of parking in the most sustainable locations with access to good public transport where these provide a viable alternative to the car.

• Configure the amount of parking provided with regard to the needs of dwelling size, types and intended tenure.

(Photo: Tibalds Planning & Urban Design Ltd)

Trees and generously landscaped front gardens moderate the visual impact of frontage parking and achieve a good balance between providing an appropriate level of parking and the quality of the environment.
3.8 On-Street Parking

3.8.10 On-Street Parking

On-street parking should be designed as an integral component of the street scene and support the character and role of the street.

3.8.11 On-street parking can contribute to the character and vitality of a place, bringing movement and people onto the street. It is also a flexible way of providing parking that can adapt to changing levels of car ownership, cater for peak demands from different users and can also serve to slow vehicles and buffer pedestrians from traffic.

3.8.12 On-street parking must be balanced with road safety and crime prevention considerations. Road widths and levels of parking also need to be sufficient to avoid inappropriate parking on pavements and appearing visually dominant in the street scene.

3.8.13 Any on-street parking should be designed as an integral component of the street scene that supports the character and role of the street, within the place hierarchy and parking strategy.

Successful places:

- Provide on-street parking as part of a mix of parking options.
- Incorporate attractive streets that allow for unallocated on-street parking.
- Avoid large banks of uninterrupted or visually intrusive parking.
- Delineate on-street parking spaces through use of surface treatments.
- Moderate visual impacts with small groups of spaces separated by trees or features that provide opportunities to cross safely.
- Generally provide for visitor parking through unallocated parking spaces.
- Limit visitor spaces in accessible locations.

Good Practice

Typical Parking Space Dimensions:

Perpendicular parking:
Bays:
- w 2.4m x l 4.8m

Required reverse distance:
- at 90° = 6.0m
- at 60° = 4.2m
- at 45° = 3.6m

Parallel parking bay to the street:
- w 2.0m x l 6.0m


Allocating spaces makes car parking less efficient as the spaces may be left unused even when there is demand for them.

Urban Design Compendium 2, English Partnerships & Housing Corporation, 2007

Informal on-street parking provided by subtle widening of the carriageway

On-street parking integrated into the streetscene with hard and soft landscape (Tibbalds Planning & Urban Design Ltd)

Cars obstructing pavements due to inadequate road space and parking provision

Frontage parking accommodated within an attractive space
Indicating on-street parking spaces clearly through the use of road markings or changes in surfacing material can help to encourage good parking behaviour.


Above: Parallel and perpendicular on-street parking arranged in small groups, differentiated through surface materials and broken up with street tree planting.

Below: On-street parking within an informal courtyard setting with street trees that soften the appearance of the parking and enhance the quality of the space.

On-street parking designed into the street scene and identified by changes in surface material.

The impact of on-street parking is reduced by careful street tree planting (Photo: Andy Cameron).

On-street parking arranged perpendicular to the carriageway.
3.8.14 Garaging and on-plot parking

On-plot parking and garages should be sited so they do not appear as dominant features in the street scene and be sufficient size to function as a parking space.

3.8.15 Drives and garages should normally be located to the side/rear of houses to minimise their visual impact. Any parking in front of a dwelling should maintain the maximum extent of front boundary possible in order to provide a clearly defined edge to the private space and enclosure to the street.

3.8.16 Garages are flexible spaces that can provide secure parking, although they are also often used for domestic storage or sometimes converted to additional living accommodation. This is a reflection of the generally low internal space standards of many new dwellings.

3.8.17 For a garage to count as a space towards parking provision it must meet minimum internal dimensions to satisfactorily accommodate a car (see Table 1). This includes provision of space for household storage, such as bicycles, prams/push chairs or waste/recycling bins, tools/work bench etc.

3.8.18 Garages are unlikely to be used if they are too small and impractical to easily park and exit from a car. This essentially reduces the provision of useable parking space and displaces it onto the road. This affects the quality of the place and may cause problems with highway safety or obstruct access by service vehicles.

3.8.19 The size, design and siting of garaging can also impact on the character and appearance of the street scene. Proposals should avoid visually intrusive garages that detract from the appearance of the development or result in dead frontages.

Successful places:
- Ensure houses with on-plot parking maximise the extent of a well defined vertical front boundary.
- Locate parking between houses to avoid visual impacts on the street scene.
- Avoid uninterrupted banks of frontage parking and mitigate the impact of any parking in front of houses with well designed landscape.
- Normally avoid garages that project beyond the building line/visually intrude into the street scene.
- Design garaging with enough space to accommodate a car and allow the driver to exit comfortably.
- Avoid an over-reliance on integral garage house types to minimise car/garage dominated frontages.
- Where integral garage house types are used, garaging should not dominate the main elevation.
- Setback parking to be clear of the footway.
Garages designed to meet only minimum dimensions are so small that they are often impractical for parking a car. Consequently they are not used for their intended purpose, increasing on-street parking.

Integral garages and frontage parking dominate the appearance of these houses.

Table 1: Minimum internal garage dimensions necessary to count as a parking space

<table>
<thead>
<tr>
<th>Garage Type</th>
<th>Internal Dimension (m)</th>
<th>Min Door Width (m)</th>
<th>Counts as Parking Space Y/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>6 x 3</td>
<td>2.3</td>
<td>N</td>
</tr>
<tr>
<td>Single (inc. storage space)</td>
<td>6 x 3.3</td>
<td>2.3</td>
<td>Y</td>
</tr>
<tr>
<td>Double (inc. storage space)</td>
<td>6 x 6.3</td>
<td>4.2</td>
<td>Y</td>
</tr>
<tr>
<td>Double</td>
<td>6 x 6</td>
<td>4.2</td>
<td>N</td>
</tr>
<tr>
<td>Disabled</td>
<td>6 x 3.3</td>
<td>2.8</td>
<td>Y</td>
</tr>
</tbody>
</table>


Table 2: Minimum garage setback

<table>
<thead>
<tr>
<th>Garage Door Type</th>
<th>Min set-back (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roller shutter/sliding/inward opening</td>
<td>5</td>
</tr>
<tr>
<td>Up and over</td>
<td>5.6</td>
</tr>
<tr>
<td>Hinged outward opening</td>
<td>6</td>
</tr>
</tbody>
</table>

### 3.8.20 Parking Courts

Parking courts should be safe, convenient and attractive spaces in their own right so they form an integrated part of the residential environment.

**3.8.21** Parking courts provide off-street parking located internally within a development block, which can help reduce the visual impact of vehicles parked on the street. However, parking courts have often been neglected areas in the design process, being seen as functional backland areas rather than an integral part of the residential environment. The result is often a bleak, utilitarian and unappealing space.

**3.8.22** If parking courts are too remote, inconvenient or unpleasant they can exacerbate on-street parking problems as owners choose to park cars closer to their homes. Where used, they should be small in size and ideally include one or more properties within the court (sentry units) to give a sense of ownership and security. Multi-accesses should normally be avoided and routes between parking spaces and their associated dwellings should be short, direct and convenient. Sufficient lighting is also required so that users feel safe after dark.

**3.8.23** Large rear parking courts have a reduced sense of ownership, are less private and can feel unsafe, offering opportunities for crime and anti-social behaviour. Poorly designed courts will discourage their use, displacing parking onto surrounding roads. This can cause streets to become crowded with cars and result in inconsiderate parking habits. The location, design and quality of parking courts should aim to encourage their use by residents to minimise the likelihood of such problems occurring.

### 3.8.24

Where parking courts are provided, this should normally be as part of a suite of parking arrangements across the development, rather than the sole means of providing parking.

**Successful places:**

- Normally avoid large parking courts greater than 10-12 spaces.
- Break up the layout of larger parking courts and include some residential units (sentry units) to provide natural surveillance and contribute to their character interest.
- Create attractive spaces using surface materials and tree and shrub planting to form courtyards not car parks.
- Ensure robust, attractive boundary treatments.
- Carefully incorporate areas of planting without unduly restricting illumination or natural surveillance of the parking court.
- Feel safe and secure, include lighting and natural surveillance, ideally allowing the keeper of the vehicle to see their own car.
- Provide safe, convenient and direct routes to the properties they serve with as short a walking distance as possible.
- Provide supervision of the parking court from adjoining gardens via boundary treatments that allow inter-visibility for casual surveillance.

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An attractive parking court enhanced by trees and overlooking from adjacent houses

Soft planting and a restrained palette of hard surface materials successfully break up a larger parking court

Interior courtyard parking with a robust boundary treatment, topped with trellis allowing intervisibility from adjacent gardens
**3.8 Parking**

**Right:** A parking court is more than just a car park. It should be both attractive and safe to encourage its use.

**Below:** Natural surveillance, attractive surface materials, the inclusion of soft planting and robust boundary treatments are key elements of well designed parking court.

**Below:** Robust boundary walls topped with trellis to aid surveillance of parking areas from adjacent gardens.

**Right:** Often parking courts are poorly designed spaces with limited appeal. Here timber fences provide a weak means of enclosure, overlooking is poor and the absence of hard and soft landscape combine to create an unappealing space.
3.9 Street Design

3.9.1 Streets not roads

Roads should be safe, inclusive and an integrated component of the design in a way that helps create streets and places not just roads for carrying traffic.

3.9.2 In order to achieve high quality, innovative and attractive residential places, the Highway Authorities of Derbyshire and Nottinghamshire County Councils are committed to working closely and flexibly with Local Planning Authorities, developers and other stakeholders in the process.

3.9.3 Whilst it clearly remains important to consider safety within the design, the overall philosophy has evolved from providing highways for the movement of vehicular traffic to the creation of streets and places that allow for movement by all modes but which are also established seamlessly, in their own right, within the urban fabric.

3.9.4 It should be appreciated that a more flexible approach also places greater responsibility on the Design Team to demonstrate that the proposals will operate safely and satisfactorily, are maintainable and sustainable, and to justify the design choices that have been made.

3.9.5 Full design guidance is contained within the 6C’s Design Guide document. It is not necessary or desirable to replicate substantial parts of that guide within this SPD and the information below therefore provides an indication of the main technical design issues to be considered and addressed. It is stressed that the content of 6C’s DG should not be interpreted as promoting specific standards or as prescriptive. It is accepted that unnecessary rules and restrictions can inhibit innovation and, as a consequence, can prevent schemes from reflecting local character and distinctiveness. The guidance should therefore be used flexibly within the context of place in a holistic design process.

3.9.6 Junction & access visibility splays

It is expected that the design speed of streets within residential places will not normally exceed 20 mph and that speed restraint will be achieved through the design and layout of the streets and the locations of buildings and features, and not by using physical traffic-calming features.

3.9.7 Generally, for a 20 mph design speed, visibility should be available from a point 2.4m back from the carriageway edge of the priority route, representing the distance between the front of a vehicle and the driver’s position. From this point visibility of 25m (27m for bus routes) should be provided measured along the nearside carriageway edge.

3.9.8 Where the visibility splay is at a street junction it will generally need to be constructed in a manner such that it is eligible for adoption as highway maintainable at public expense. At private accesses the splays must be capable of being kept free of solid structures or dense planting, and an appropriate condition of planning permission may reflect this.

3.9.9 The Highway Authority will consider changes to visibility provision, if it can be demonstrated that vehicle speeds will be restricted as a result of the design and layout of a scheme.

3.9.10 Intervisibility between driver and pedestrian should also be maintained at private accesses by the avoidance of solid structures and dense planting immediately adjacent to the access, at the rear of the footway. However, boundary treatments can be important elements of character and in defining street edges. A balance therefore needs to be achieved that maximises enclosure/definition, while satisfying any intervisibility requirements.

3.9.11 Carriageway widths

Generally, where there is separate footway provision adjacent to a carriageway, the carriageway should be minimum 4.8m wide for access to up to 50 dwellings and minimum 5.5m wide for up to 400 dwellings. Carriageway widening will be required on bus routes and where it is intended to
accommodate on-street parking. However, within any scheme it is expected that carriageway widths should also reflect the role and function of the street within the overall street and place hierarchy, having regard to the context and the character of development being created.

3.9.12 A surface shared by all users, appropriate for up to around 50 dwellings, should normally be 8.8m wide. Additional widening may be required to accommodate any proposed on-street parking. Where sections of narrower shared surface carriageway are proposed these will need to be discussed with the Highway Authority. Corridors may reduce to 7.5m where there is development on one side of the road (comprising elements of service strip, carriageway and margin).

3.9.13 Care is required to avoid single-surface areas that appear out of scale with the domestic buildings flanking them. Changes of material or material unit size that are appropriate to the use of the space (defining vehicle routes, thresholds to drives/parking courts, entrances to buildings, defining key pedestrian crossing routes etc) should be used, so that the landscape design responds appropriately to the scale of the space, to ensure it is proportionate and functions appropriately.

3.9.14 **Vehicle tracking**

Vehicle tracking assessments will be required as necessary, in order to demonstrate the traffic can be satisfactorily accommodated without, for example, having to mount kerbs and footways. This should take account of any planned or likely on-street parking.

3.9.15 **Footway widths**

Footways should be minimum 2.0m wide but subject to widening as necessary to reflect function within a particular place or context. In some circumstances it may be possible to provide a full width footway on only one side of the street, for example where the street would serve only a small number of dwellings or is a particularly narrow site. Conservation areas or rural settings may dictate a more informal approach to the design. Although it is likely that the footway would be necessary on both sides of the junction radii to aid pedestrian crossing.

3.9.16 **Junction radii**

Radii should not normally be greater than 6m in order to restrict vehicle entry and exit speeds and to avoid excessive crossing distances for pedestrians. Reduced radii may also be accepted subject to consideration of the design context and to the submission of tracking diagrams that demonstrate the route of vehicles relative to the proposed layout.

Above: Vehicle tracking demonstrating access and turning within the site is capable by a large refuse collection vehicle (Drawing courtesy of Caunton Properties Ltd, highway consultants Stirling Maynard and JWA Architects).
3.10 Public Realm Design

3.10.1 Creating robust, quality places

Areas of public realm should be both robust and attractive.

3.10.2 High quality public realm adds significant value to all forms of development. In residential schemes, this value is reflected both economically in higher rents and property values and through enhanced quality of life, including through reductions in crime and anti-social behaviour.

3.10.3 Appropriate development of schemes following the place making principles set out within the SPD will create high quality public realm space; attention to the detailed design of these spaces will ensure their successful delivery.

3.10.4 There are two aspects to the detailed design of these spaces; hard landscape and planting. Poor execution of either of these design aspects can have a permanent negative effect on a scheme. Developers should consider commissioning landscape architects to undertake the design of these aspects on all but the smallest schemes.

3.10.5 To ensure that the public realm is appropriately considered and capable of delivery, full details of the hard landscape and planting designs is preferable at the submission stage of any planning application. Where full details are not able to be provided at this stage, visuals of proposed conceptual approach to the treatment of the public realm are strongly encouraged. Hard and soft landscape should not be designed as a separate element or an afterthought, but as an integral component of the overall design.

3.10.6 Hard Landscape

Using a simple palette of complementary materials, the architecture of an area and the activities of its inhabitants should give character to the streets.

The choice of hard materials must reflect this intrinsic street character whilst also achieving continuity of movement, flow and, with it, connectivity.

3.10.7 The design of the public realm should not exaggerate the diverse character of places.

3.10.8 The hard landscape comprises paving, steps, ramps, boundary features, and street furniture. A good design will bring these elements together in a coherent manner that is appropriate to the needs of the individual scheme, not an ad-hoc collection of ‘standard details’.

3.10.9 The most important function of paving is to provide a hard, dry, non-slip surface that is durable, easily maintainable and that will carry the traffic that needs to use it. Analysis of successful paving illustrates that there is rarely a change in material or surface pattern without a practical purpose. The choice of materials and design detailing must be capable of satisfying all of these functions and can be summarised into the following requirements:

- Be fit for purpose and hard wearing.
- Be simple and unifying.
- Be sustainable through lifetime costing / valuing.

3.10.10 The final aspect of successful hard landscape design is that it should be sustainable through lifetime costing / valuing.
Successful places:

• **Reinforce character.** Paving brings unity to diverse places and nebulous areas that need a common background and immense variety is obtainable within a limited range of materials. Alien paving patterns or an excessive variety of materials often creates confusion.

• **Provide a sense of direction.** Examples include pedestrian routes across squares and parks, or, service vehicle routes through shared surface areas. Successful routes are direct.

• **Provide a sense of repose.** Neutral, non-directional paving has the effect of halting people. Areas of sitting, meeting, or gazing to distant views should be paved in this way.

• **Indicate a hazard by change of material or pattern.** For example, paved junctions at side streets warn drivers that they are crossing or entering a pedestrian environment. This technique must be used consistently across a scheme.

• **Reduce scale.** Introducing a change of material to affect the scale of a space requires subtlety to avoid making the paving overly important. Paving should not aggressively proclaim its presence but provide background.

• **Choose the right material for the space.** Rigid materials such as slabs and blocks work best in geometric forms where cutting can be minimised. Where the space is fluid, for example curved edges or undulating ground, flexible materials such as concrete, blacktop or small unit setts should be used.

• **Create appropriate boundaries.** Fences, railings, and walls must be selected according to their function. Ask if they are required at all? Would they be robust enough for their location? Are they the right height? Vertical elements will have an impact on the quality of space, and getting the scale wrong can have a negative effect on a scheme that seems to work on plan.

• **Reduce clutter.** Minimise street furniture to reduce clutter and long-term maintenance liabilities. Keep street lighting to the back of kerbs or on buildings and minimise the use and number of poles for signage. Use bollards to protect vulnerable areas, not to overcome the problems of a poorly designed layout – e.g. keeping cars off ‘left over space’. Put seats where it would be comfortable and attractive to sit, include some benches with backs to assist the elderly.

• **Maintenance access.** Anticipate where maintenance vehicles may need to go and ensure that the paving is capable of taking the weight – e.g. access to light columns, green areas for grass cutting, and play areas.
3.10.10 Planting

*Planting should create and reinforce character, scale, continuity and variety throughout the seasons.*

3.10.11 It is not the primary role of planting to soften visually harsh environments, screen off poor design or fill left over space.

3.10.12 Planting can promote biodiversity, help combat aspects of climate change by absorbing CO$_2$, offers shade and reduces reflected heat from hard surfaces aiding cooling and reducing energy use.

3.10.13 Planting is made up of trees, shrubs, grass and aquatics. They all need space to grow, both above and below ground. They also require appropriate drainage, water, nutrients, and maintenance to thrive.

3.10.14 Planting schemes should be developed as part of the overall design public realm with emphasis on the 3rd and 4th dimensions, not just in plan form.

3.10.15 Consider the eventual size of the planting, ensuring that there is both space for it to grow, and that its impact will not be detrimental to adjacent constructions or uses. Remember that plants are living things and that interesting layouts on plan will not be realised if their environment is hostile.

**Successful places:**

- **Reinforce character.** Planting should provide enhancement, focus, and intimacy, positively contributing to the quality of space. Planting is an integral part of the overall design and must not be used simply as a space filler or barrier.

- **Deliver quality rather than quantity.** The creation of green oases and strategically located planting must have real impact, in terms of scale, location, and nature.

- **Consider location.** Planting may be inappropriate in locations where it would obscure important features and facades or traffic sight line requirements. Position planting where it will survive its environment and flourish, considering light, water and shelter requirements and coordinate with underground services to promote successful establishment.

- **Have realistic expectations.** Whilst it is best to plant street trees directly into the ground, they should be given sufficient space to avoid their roots being cramped by buildings, street foundations, or constrained by underground cables and pipes. They face damage from vehicles and contend with air and soil pollution. Surrounding pavements also restrict air and water from reaching the roots. Trees should be planted in a suitable tree pit and growing medium to maximise their chance of survival.

**Useful Reference**

- Biodiversity by Design (Town and Country Planning Association)

Advice on planting species appropriate to specific landscape areas can be obtained from:

- The Landscape Character of Derbyshire, Derbyshire County Council
- Landscape Character Assessment, Bassetlaw, Nottinghamshire (2009)
• **Be sustainable.** The detailing of tree pits is fundamental to success and should be as large as possible. It is preferable to plant trees in uncontained, free draining tree pits and to sustain growth, it is essential to back-fill with good quality, nutritious urban tree soil. Ideally, plant trees in groups, with the tree pit forming a continuous trench or island of soil.

• **Integrate with hard areas.** Tree grilles maintain the continuity of paving around trees, protect and aerate tree root systems and allow rainwater irrigation. Tree grilles are also an important visual element.

• **Borrow landscape.** Planting in private gardens will have a positive impact on the public realm too, and where it is difficult to plant trees in the street for example, it may be appropriate to plant them in front gardens, following the above requirements. However, a significant drawback to planting in private space is the loss of long-term control over the overall scheme – freeholders may choose to remove any planting on their property.

• **Safety and security.** Planting design should take full account of minimising opportunities for crime and anti-social behaviour when selecting locations and species for planting. Planting should support secure by design principles by providing buffer zones between public and private spaces, avoid creating areas for concealment and not unreasonably impeding natural surveillance.

…”Public space relates to all those parts of the built and natural environment where the public has free access. It encompasses: all the streets, squares, and other rights of way, whether predominantly in residential, commercial or community/civic uses; the open spaces and parks; and the public/private spaces where public access is unrestricted (at least during daylight hours). It includes the interfaces with key internal and external and private spaces to which the public normally has free access…”

ODPM Caring for Quality 2004

**Above:** Planting designed in conjunction with the creation of a space. A specimen tree situated within a square will form an attractive and interesting focal point for the development, without hindering access by service vehicles. (Drawing courtesy of Pinfold Securities and David Black, Architect)
3.11 Amenity

3.11.1 Privacy by design

Proposals should ensure a satisfactory level of privacy with existing dwellings and between dwellings within the development itself.

3.11.2 Amenity describes the living conditions for the occupants of a home or place. Acceptable living conditions should always be provided for new and existing occupants.

3.11.3 If amenity is not properly considered in the design process, this can detract from quality of life in terms of privacy, noise, light, outlook, or overbearing development. To ensure the occupants of existing or proposed housing have an acceptable level of amenity, proposals should demonstrate how they have responded to amenity considerations.

3.11.4 Minimum separation distances have traditionally been used to ensure reasonable levels of privacy and daylight. This can be effective, but if applied too rigidly, can encourage uniformity, limit the potential to create more varied and interesting places and may restrict the redevelopment of more constrained sites.

3.11.5 However, the application of standards must be balanced against the desire to create good quality places with character and where appropriate, increased densities. Acceptable privacy can normally be achieved through careful, considered design.

3.11.6 To ensure a reasonable level of privacy the distance between facing habitable room windows should normally be in accordance with the principles set out in Table 3 opposite.

3.11.7 The normal minimum acceptable separation distance is determined by drawing a line between the two windows (one on each dwelling) from their nearest points and measuring the angle that this direct sight line creates at each window.

Useful Reference
Source: Site layout for daylight and sunlight: A guide to good practice (2nd ed), BRE, 2011
Good practice

Definitions: Privacy is considered in terms of the relationship of main windows to habitable rooms.

Habitable rooms are:
- Living rooms
- Dining rooms
- Kitchens
- Bedrooms
- Other rooms not defined as non-habitable rooms

Non-habitable rooms are:
- Hall/landing/circulation areas
- Bathroom/WC's
- Utility rooms
- Garages or other ancillary buildings or rooms

A main window is:
- The largest or most important window within a room.

A secondary window is:
- The smaller window to a room served by more than one window.

High level windows are:
- Windows with a cill height 1.7m above floor level.

Obscure glazing is:
- Glass which is permanently opaque or patterned to prevent it being transparent, such that neighbour privacy would be maintained.

<table>
<thead>
<tr>
<th>Angle of direct sight line at dwelling A</th>
<th>90°</th>
<th>80°</th>
<th>70°</th>
<th>60°</th>
<th>50°</th>
<th>40°</th>
<th>30°</th>
<th>20°</th>
</tr>
</thead>
<tbody>
<tr>
<td>90°</td>
<td>21</td>
<td>21</td>
<td>20</td>
<td>19</td>
<td>18</td>
<td>16</td>
<td>12</td>
<td>8</td>
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<tr>
<td>80°</td>
<td>21</td>
<td>20</td>
<td>19</td>
<td>18</td>
<td>16</td>
<td>12</td>
<td>8</td>
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<td>70°</td>
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<td>19</td>
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<td>16</td>
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<td>60°</td>
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<td>12</td>
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<td>50°</td>
<td>18</td>
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<td>12</td>
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<td>40°</td>
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<td>8</td>
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</tr>
</tbody>
</table>

Table 3: The minimum distances (m) between facing habitable room windows on neighbouring dwellings that will normally be expected.

Below: Examples of building angles and separation distances in accordance with the principles of Table 3 above.

Windows designed to restrict overlooking but still allow light in

Successful places:
- Design the internal layout of habitable rooms with regard to their relationship to the habitable rooms of other dwellings (existing and proposed) to prevent unacceptable levels of overlooking and loss of privacy.
- Locate non-habitable rooms to limit overlooking where a habitable room would otherwise be unacceptable.
- Use the separation, placement and orientation of dwellings to one another to ensure reasonable levels of privacy between neighbouring properties.
- Use window design in terms of shape, size, height and position to allow light penetration but limit opportunities for overlooking.
- Make use of screen walls, fences, ancillary outbuildings and/or planting to moderate overlooking and maintain privacy.

NOTE: Minimum separation distances should be applied reasonably having regard to the particular site conditions and context. Separation distances may need to be relaxed or increased depending on the specific circumstances, such as location, the conversion of existing buildings, the character of the area, topography or other relevant considerations, for example:
- The existing pattern or character of a place has established a lesser standard where reduced distances may be acceptable;
- Sloping sites where the difference in levels would aggravate overlooking problems;
- Where direct overlooking could be prevented by appropriate screening.
Good practice

Separation distances:
• 21m between the rear elevations of two dwellings directly facing one another;
• 12m front to front (min); and
• 12m rear to a side wall/gable.

These are accepted ‘rules of thumb’ in most suburban settings and remain a useful benchmark/starting point for assessing matters of privacy. However, with careful design they may be able to be relaxed.

3.11.8 Where new houses are built adjoining the private garden space (usually the rear garden) of an existing dwelling, there will often be some loss of privacy to that garden.

3.11.9 To reduce the effect of direct overlooking from new houses, first floor habitable room windows directly facing a rear boundary should not normally be sited closer than 10.5m to the boundary of an adjoining residential garden. However, not all circumstances are the same and some flexibility should be applied with regard to the extent of overlooking and the relationship between houses and gardens (similar to that outlined in Table 3 with respect to overlooking between windows).

3.11.10 Where this cannot be achieved or where the new dwelling is judged to result in an adverse impact on amenity, it may be necessary to limit its height.

3.11.11 Light and proximity

Proposals should not cause a loss of daylight, overshadowing or create overbearing relationships between buildings where this would be detrimental to residential amenity

3.11.12 Reasonable levels of daylight and sunlight should be provided to interiors. The amount of natural light to internal spaces should be maximised where possible to create comfortable spaces and reduce reliance on artificial lighting. Layouts should normally seek to minimise loss of direct sunlight or overshadowing of new or existing homes.

3.11.13 The relationship between buildings in terms of their proximity should also be designed to avoid buildings that would be unduly imposing or appear overbearing to neighbouring occupiers.

3.11.14 The site conditions, context and location will influence the significance attached to light and proximity considerations. Reduced levels of light and closer proximity between buildings may be more reasonably expected, and usually tolerated, in more urban locations or where these qualities reflect the prevailing pattern of development or would create a place with a particularly positive character, good quality townscape and allow for increased densities.

NOTE: In general, a range of measures can be used to assess the loss of light, degree of overshadowing and privacy levels for occupants resulting from particular proposals. The methods outlined in this guidance establish one approach that can be used by the local planning authority when considering a proposal. Other methods include those in the Code for Sustainable Homes (Category 7 - Health and well-being and the accompanying Technical Manual) and Site layout for daylight and sunlight: a guide to good practice (2nd ed), published by the Building Research Establishment (BRE), 2011.

Exceptions to the guidance in this document may be made for creative solutions that adequately address amenity issues, where evidence can be provided to demonstrate an acceptable level of amenity will be achieved or to solve design issues associated with the particular circumstances of the site.

Successful places:
• Avoid relationships between buildings that result in excessive dominance or overshadowing of habitable spaces.

A naturally lit room with direct access to the rear garden

A high density scheme maintains some private garden space through carefully designed windows and situating neighbouring buildings at an angle to the garden
**NEW BUILD IN FRONT OF A MAIN WINDOW TO A PRINCIPAL ROOM: THE 25° RULE**

Generally a building should not be situated in front of a main window to a habitable room if it is higher than the 25° line drawn from the centre of the affected window.

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**EXTENSIONS & IMPACT ON DAYLIGHT: THE 45° RULE**

As a general rule for windows affected by a side extension, a significant reduction in daylight is likely to occur if the centre of the affected window (1) - or a point 2 m above ground level for patio doors - is covered by the shaded area delineated by the 2 45° lines.

The 45° Rule should be applied flexibly, taking into account site conditions. Loss of sunlight may require additional checks.
3.11.15 Private Amenity Space

All schemes should provide a level of outdoor amenity space that is proportionate to the type of accommodation, appropriate to its location and suitable to meet the occupiers likely requirements.

3.11.16 Dwellings should be provided with enough private outdoor space to meet the likely needs of the occupants. Family houses are likely to require larger gardens, preferably in the range of 70-100 sqm, but not normally less than 50 sqm.

3.11.17 Where small gardens are necessary the aim should be to orientate them to benefit from afternoon sun or where possible to provide an alternative sitting out area, such as at the front of the property. Gardens facing northerly directions benefit from being longer to compensate for overshadowing.

3.11.18 Wherever possible, flats should also be provided with some outdoor amenity space, whether private or communal. Ground floor flats have the potential for their own private gardens. Upper floor flats should be provided with 25 sqm of space per flat. Collectively this can provide a reasonable communal outside space.

3.11.19 Where balconies and roof terraces are provided these areas can count towards the 25 sqm requirement for each flat. However, the overall requirements for flats may be relaxed in town centre locations, for barn conversions and where existing buildings are converted to flats or for houses in multiple occupation.

3.11.20 Dwellings should normally have a minimum single area of private open space, excluding parking areas and garage spaces in accordance with Table 4.

<table>
<thead>
<tr>
<th>Dwelling type/No. of bedrooms</th>
<th>Minimum outdoor amenity space requirements (sqm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 or 2 bed house</td>
<td>50</td>
</tr>
<tr>
<td>3 bed house</td>
<td>70</td>
</tr>
<tr>
<td>4+ bed house</td>
<td>90</td>
</tr>
<tr>
<td>Flats</td>
<td>25 per flat</td>
</tr>
<tr>
<td>Residential institutions</td>
<td>20 (per resident)</td>
</tr>
</tbody>
</table>

Table 4 Minimum size amenity spaces

Successful places:
- Provide outdoor amenity space that is suited to the accommodation.
- Aim to maximise light and privacy of private garden spaces.
- Incorporate direct access to the gardens from habitable rooms.
- Find innovative ways of incorporating outdoor amenity space, particularly at higher densities and for conversion of existing buildings.

Cramped gardens are unsuitable for family accommodation.

Responsive Environments Bentely et al (2005)
3.11.21 Outlook

**Dwellings should have a reasonable outlook that does not detract from the quality of the residential environment**

3.11.22 The quality of the environment and outlook from a dwelling influences the quality of life for its occupants. All dwellings should be provided with a reasonable outlook. Where they would look out onto unsightly spaces or buildings, poorly designed parking areas, rear walls, fences or similarly inappropriate settings, these will not normally be acceptable.

- **Successful places:**
  - Avoid or minimise any unsightly outlook from residential properties.

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*Top and above:* Communal gardens for flats provide a large usable outside space that should be appropriately managed.

*Centre and right:* Balconies to individual flats provide a modest private space that allows scope for personalisation.

*An internal area overlooked by homes but enclosed by poor boundary treatments.*

*A single aspect street where houses (right) overlook rear fences (left) providing an unappealing outlook.*

*Houses overlook blank garage walls in a tightly enclosed lane.*
3.11.23 Public spaces and play areas

Outdoor spaces and play areas should be located on a through route/main line of movement, be well overlooked by surrounding dwellings without detriment to residential amenity and benefit from natural light.

3.11.24 Outdoor spaces and play areas can add value in terms of character, interest, legibility and meeting the play and recreational needs of the residents.

3.11.25 They are more likely to be used and less susceptible to anti-social behaviour where they are well overlooked by surrounding buildings, situated on main through routes (pedestrian or vehicular) that provide good accessibility as well as opportunities for casual overlooking and orientated to benefit from natural light.

3.11.26 Natural surveillance from surrounding dwellings enhances safety, although this must be balanced with the amenity of the neighbouring occupiers to minimise the potential for disturbance.

3.11.27 Outdoor spaces and play areas should be separated from adjoining dwellings by a suitable ‘buffer zone’. The nature and extent of the separation buffer zone will be dependent on the uses intended on the open space. Areas intended for ball games or noisy activities can cause particular annoyance and will require careful siting and greater separation from dwellings to prevent undue disturbance to residents.

Successful places:
- Provide public spaces and play areas with high levels of natural surveillance.
- Orientate frontages to face towards spaces and play areas and minimise the presence of rear or side boundaries.
- Include buffer zones to provide separation between public spaces, play areas and facing properties.
- Use planting/landform to enhance amenity by providing some visual separation without undermining natural surveillance.
- Locate public spaces and play areas where they will be sheltered but still benefit from natural light.
- Separate children’s play areas from dogs with fencing, if required, but which does not obscure overlooking of the play area.
- Include lighting where appropriate.
- Identify future management arrangements to ensure appropriate maintenance takes place.
- Use larger spaces as an opportunity for planting larger trees with wider townscape benefits.

Good Practice

Recommended minimum play area buffer zone separation standards.

Separation distances are measured between the edge of the activity zone and the boundary of the nearest dwelling.

- Local Area for Play (LAP): 5m
- Local Equipped Area for Play (LEAP): 10m
- Neighbourhood Equipped Area for Play (NEAP): 30m

N.B these are ‘minimum’ distances in association with the three categories of play areas defined under the ‘Six Acre Standard’. Greater separation distances may be required depending on the size, extent and nature of the play area and the equipment or activities proposed.

Source: The Six Acre Standard.

Above: Local play spaces situated close to homes, need to strike a proportionate balance between overlooking for safety and not being so close that neighbouring residents will suffer from noise and disturbance (Bottom Photo: Andy Cameron WSP).
3.11 Amenity

Successful Places: Place Making Principles

Left & below: A neighbourhood square and play space is well overlooked by surrounding homes, while its central position is set away from immediate frontages to help maintain residential amenity.

Public spaces and play areas offer opportunities to incorporate distinctive features such as public art (Stone Tree image courtesy of Groundwork Creswell, Ashfield and Mansfield)

Permission to use drawing and photo courtesy of the Homes and Communities Agency