Creating the Design
Step 2 - Generating the layout

2.2 GENERATING THE LAYOUT

Successful Layouts

The best developments are easy to understand. Clarity of layout is assisted by careful arrangement of buildings and spaces. Planting in public areas can help, as can 'signposting' with architectural motifs or colours. The relationship between buildings should form a whole that can be easily understood on the ground.

Urban Form

Designers should normally consider the general arrangement of buildings and enclosures first.

Buildings can then be laid out to suit the desired urban form with footways and kerbs helping to define and emphasise spaces. Widths of carriageways, footways and verges will not necessarily be constant and will contain all the functions of the street, including parking and movement of vehicles.

Hierarchy of Form

The design of new developments should be based on a network of linked spaces rather than on a standardised highway layout with buildings arranged around it.

The hierarchy of form of even the smallest village provides a sense of place. It is often marked by an increase in the density and height of buildings towards the centre. Accompanied by the location of mixed uses, public buildings and a public space such as a square or village green that encourages social interaction. Too often, new developments have been based on a rigid geometrical highway layout.

Historic places usually have a layout that can be easily recognised, even by a first-time visitor. Although the functions of buildings may have changed over time, the layout remains the key to people's understanding of where they are. This inherent quality in the layout often has the positive effect of calming and filtering traffic, even though that was not the main intention originally. Strong historic layouts must be retained and continued into development sites.
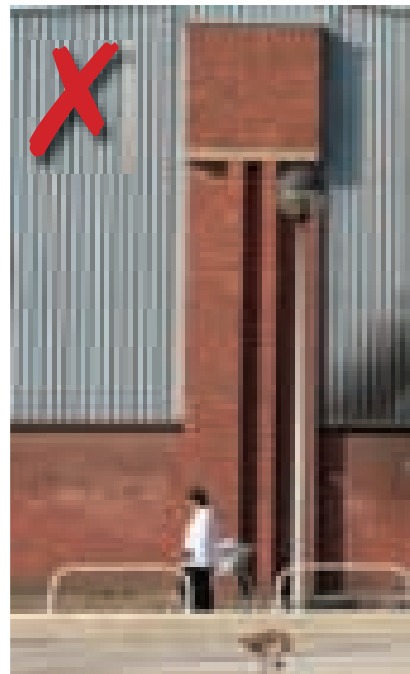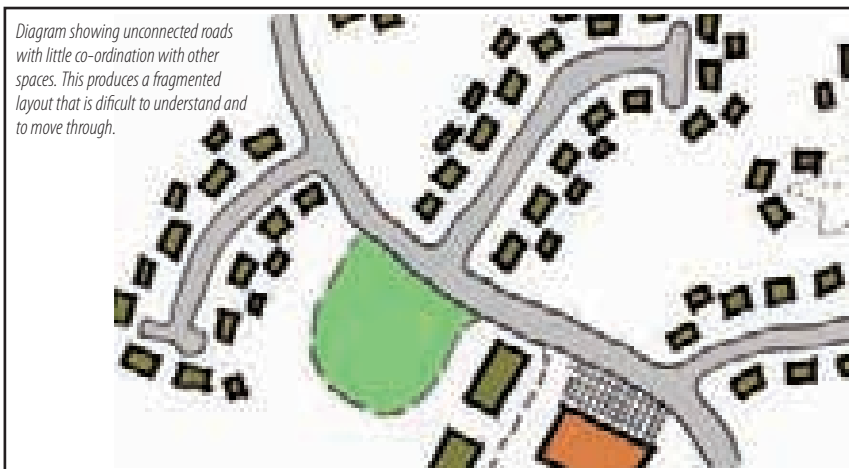

Diagram showing a linked network of spaces that is easy to move through. This produces contrast and variety but remains easy to understand.

Designing in Context

- Surrounding scale, grain, street patterns, massing, landscape, materials, colours, style and detailing should be respected
- Height differences between proposed and existing developments need to be managed properly
- Whilst the government encourages higher densities of development, the scale and massing of buildings must relate well to those of surrounding areas.
- There should be some public areas which make a positive contribution to the scheme and have genuine mixed uses and benefits
- A wide variety of building styles or mixture of materials should be avoided
- New buildings should form a harmonious composition with surrounding buildings or landscape features in local views and vistas.

Unsuccessful Layouts

Developments that are monotonous in their layout do not engender a sense of place, nor do they nurture community spirit. This, together with the use of standard building designs, has tended to create places that are undistinguished and indistinguishable from each other.

Diagram showing unconnected roads with little co-ordination with other spaces. This produces a fragmented layout that is difficult to understand and to move through.

Unsucessful layouts often result in areas dominated by roads and car parking. They tend to come about through a lack of any understanding of context and landscape setting. These buildings do not provide a sense of enclosure and consequently there is little sense of place. Top and above

Common problems with unsuccessful commercial layouts are unattractive expanses of carparking and bulky buildings with blank elevations or service areas overlooking streets or public spaces. Left

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The Features of a Successful Layout
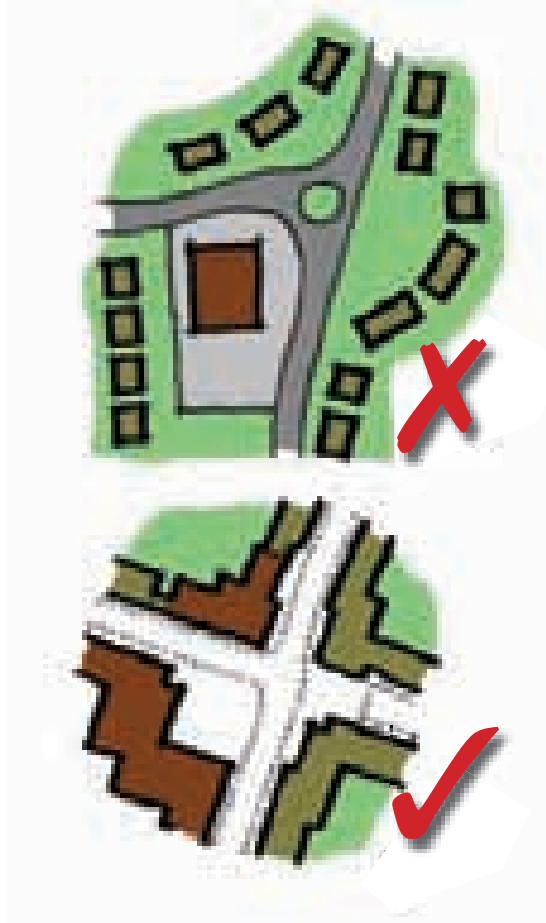
MUST HAVE ACTIVE STREETS

- Maximise opportunities for mixed uses - ensure that shops, schools, workshops, etc., are integrated into the layout

- Building entrances should be placed to maximise interaction in public areas.
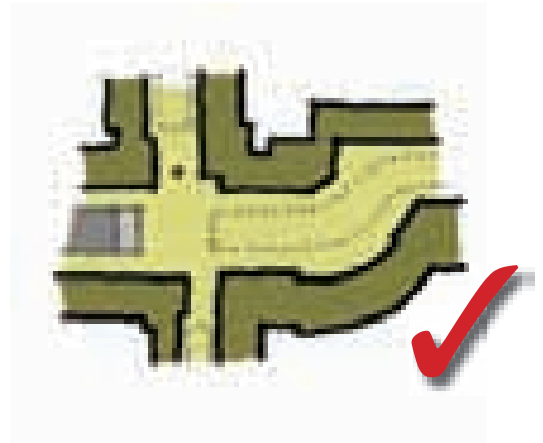
MUST HAVE EASE OF MOVEMENT

- Ensure good linkages between spaces

- Provide direct routes

- Ensure that cars will not dominate

- Provide for pedestrian and cycle priority.
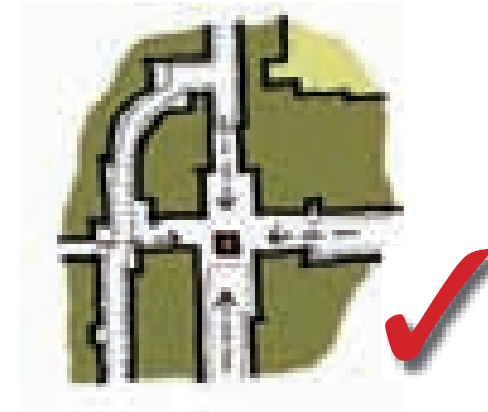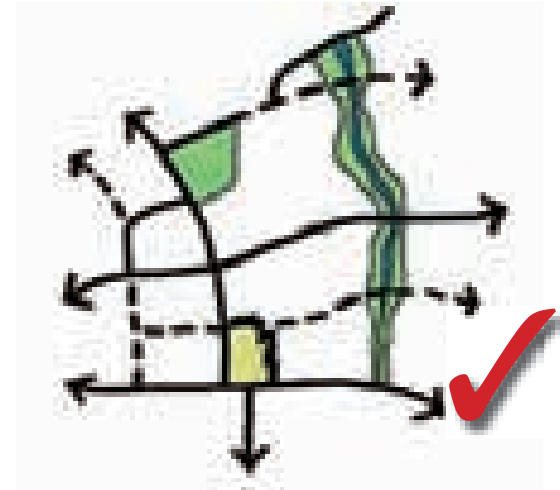
MUST BE LEGIBLE

- Have a clear street hierarchy

- Include some landmarks - distinctive buildings and public art

- Allow for vistas to existing features of the landscape.
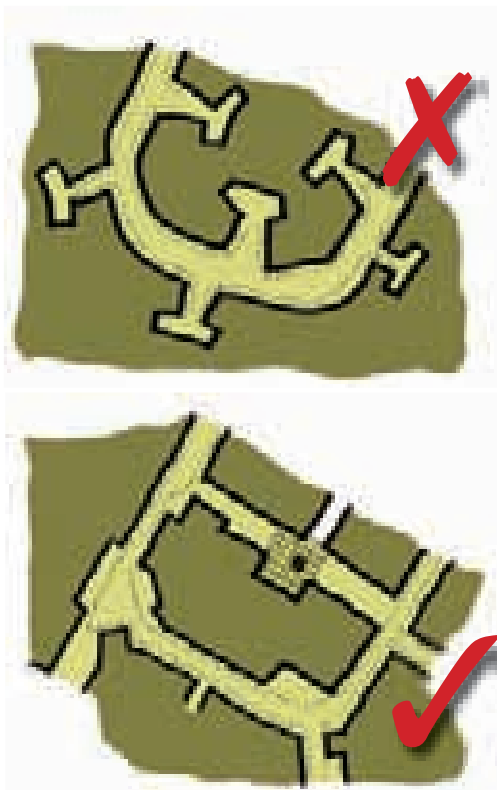
MUST BE SAFE

- Ensure direct pedestrian routes are overlooked
- Avoid blank walls in frontages
- Avoid creating blind spots and dead ends
- Ensure public spaces are well lit.
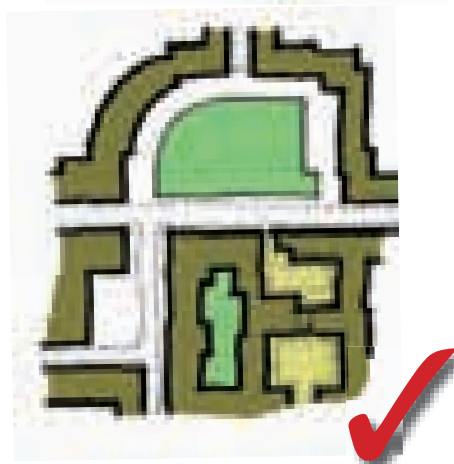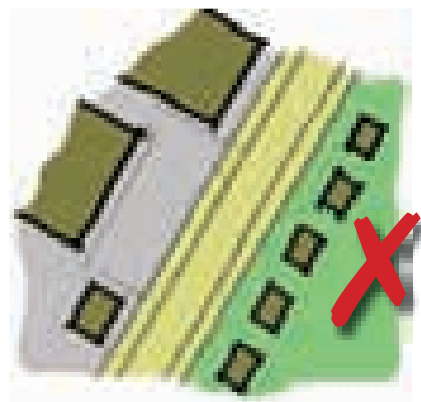
MUST HAVE A HUMAN SCALE

- Ensure that the size of spaces is related to the number of people likely to use them
- Ensure walking distances to local facilities are kept to a minimum.
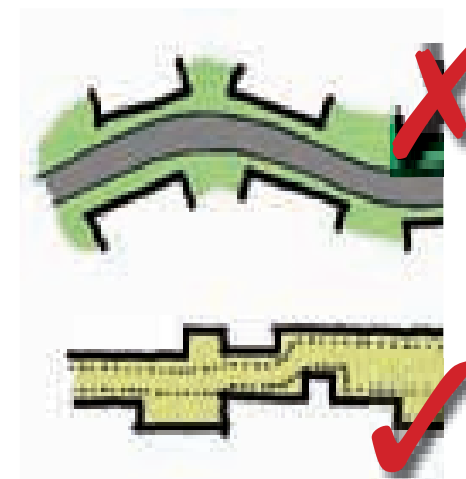
MUST HAVE VARIETY

- Avoid uniform building styles
- Use a range of different surface materials
- Vary road widths.

2.2.1 RETAINING EXISTING BUILDINGS AND FEATURES

There is a presumption in favour of the retention and repair of buildings in areas of special architectural or historic interest, including most buildings in conservation areas and other areas of historic character.

Existing buildings of conservation merit should be re-used for their cultural and historic value but it is important to find new uses that are viable.

In areas of special or predominant architectural or historic character there is a strong need for the design of new buildings to enhance, or at least maintain, this special character by understanding and reflecting the positive design attributes. In areas with no special historic character there will be scope to create a new character or a contemporary design in a modern way using 'traditional' or modern materials.

Maintaining or improving the special character of a conservation area can be achieved through a contrasting or traditional style of building. Generally it is better if traditional proportions and scale are used even if non-traditional materials are proposed. This means studying the surrounding buildings and reflecting these elements. If there is a strong unifying character such as a terrace or square of buildings, a copy is probably best. Otherwise a building which is modern, designed with skill and flair may be acceptable, providing it respects the building lines, shoulder or eaves lines, proportions, form, massing and grain of the historic context.

The presence of a listed building in or near to a development is an asset for the scheme that should be used to influence positively the character of new buildings and public spaces within the site.
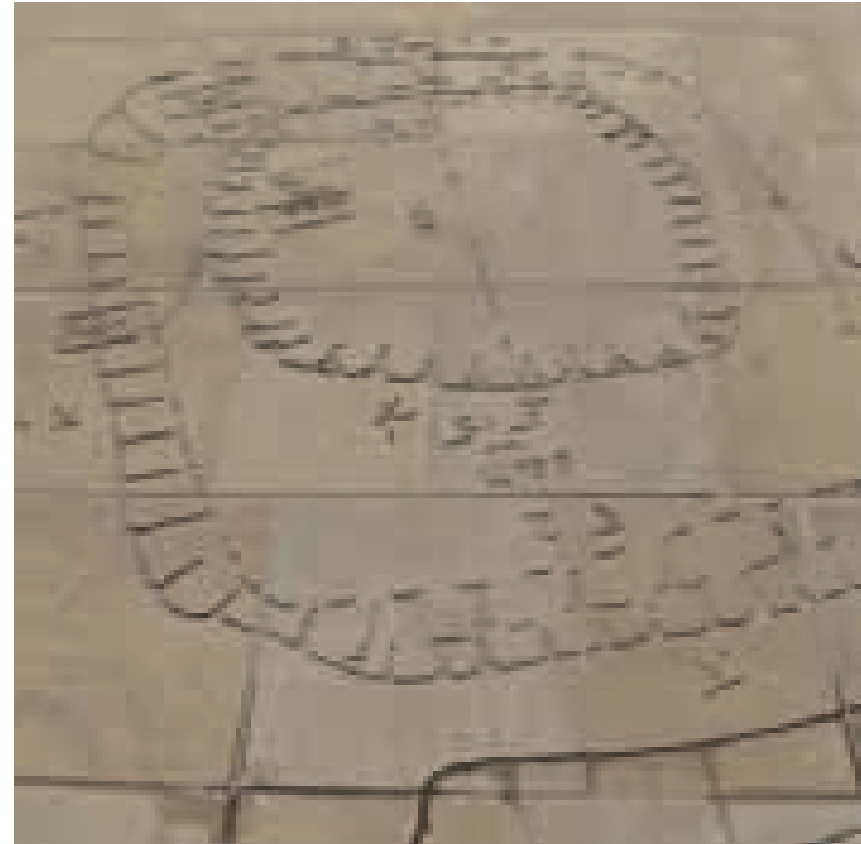
Important archaeological finds are marked on the paving of a retail scheme in Canterbury. (Whitefriars) Land Securities

Existing archaeology on the site can help define the sense of place for a new development. Either exposed or covered and recorded, it can be used positively to influence the design of the buildings, their layout, the location and type of open space, the design of the public realm and landscaping both hard and soft. Canterbury has an Urban Archaeological Database and extensive surveys have been undertaken for most other historic towns in Kent. They provide useful historic context and are being adopted as supplementary planning documents linked to the Kent and Medway Structure Plan. Further information is available from the Heritage Conservation Group, Strategic Planning, Kent County Council.

Historic buildings often display a close link to their locality in terms of form, function and materials from which modern designs can learn. At Ingress Park (Crest Nickolson) near Dartford a listed abbey has strongly influenced the design of new housing by its form and colour. At Benenden Hospital the 1930s design of the former sanitarium has strongly influenced the layout and appearence of a new wing. (John McAslan & Partners)

Retaining features already on the site can give an area individuality and continuity. (Chatham Maritime, and Hastings fishing beach)

Existing hedgerows, trees and walls

Existing sound and healthy trees and hedgerows can play a vital part in reinforcing a 'sense of place' in new developments and will bring benefits to the scheme in terms of amenity, biodiversity and saleability.

Trees may be protected by Tree Preservation Orders, but in any case their retention is desirable for providing maturity and continuity.

Wherever possible, hedgerows and walls should be retained, particularly on road frontages, in order to enclose private gardens and screen roads.

A full audit of trees should be carried out before the planning and designing of buildings.

Earth Modelling

Landform can be used for screening, acoustic barriers, site drainage or for amenity where a variation in topography is appropriate.

In general, natural site contours should be respected and the scheme gently contoured into the adjacent landform. On an almost flat site, small level changes should be exploited to bring extra variation and identity to a layout. In some situations earthmoving and shaping can provide visual and acoustic screening. Care should be taken with shaping or mounding as this can disturb natural drainage patterns and detrimentally affect existing trees, vegetation and wildlife habitats.

It may often be possible to filter out traffic noise through earth modelling and reduce energy consumption by planting shelter belts

Generally the site's natural contours should be respected, but in some cases some remodelling can help provide a screen for noise and a strong visual boundary.

Retaining existing mature landscaping can benefit a new development by screening it from the elements resulting in better energy conservation.

Heavily wooded sites can be developed and still retain much of their character (Guys Court, Kings Hill, John Walker Developments)
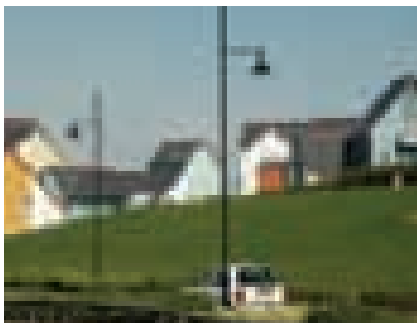
Existing earth remodelled to provide visual impact to green space on an otherwise flat site. (St Mary's Island, Chatham)

A single existing tree has been retained giving this narrow residential road an instant look of maturity. (Ingress Park, Crest Nicholson)
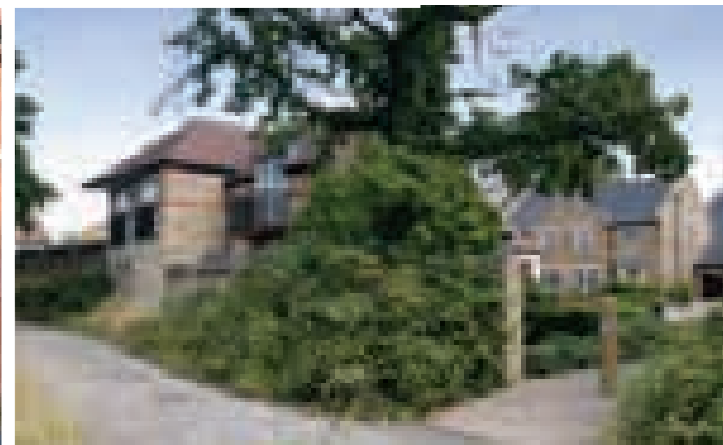
An existing wall and mature planting has been retained providing a defined edge to a built up area at the urban fringe (Caterham Barracks, Linden Homes)

2.2.2 DESIGNING STREETS AND SPACES

The design of the movement and connectivity elements begin by looking at movement links in the area surrounding the site, for all modes of transport.

The existing network should be linked to a clear, legible hierarchy of streets within the new development. With larger schemes it may prove necessary to address barriers to movement in the existing network and to improve links for areas outside the site boundaries. A movement and access appraisal should have established this (see the checklist in step 1, Understanding the site).

New areas of development should use a hierarchy of urban spaces *(spatial types)* to make it easy to understand the layout *(be legible)*, as well as move to and through it. Layouts should provide a choice of routes with good connections between new and existing developments *(be 'permeable')* to encourage walking and cycling. Developments should be designed so that walkers, cyclists, children and people with disabilities have priority over vehicles except on main roads.

This can be done by:
- designing streets for all users, not just motor vehicles
- designing road layouts that naturally calm traffic *(short lengths, tight curves, narrow widths)*
- providing good links to surrounding areas and within sites
- encouraging cycling by providing specially designed routes
- providing access for people with disabilities on all routes
- locating development close to existing integrated public transport nodes or providing good public transport links and high quality roadside infrastructure coordinated with different forms of transport *(e.g. buses and trains)*
- providing adequate car parking spaces to prevent people parking on pavements.

- encouraging community support for sustainable transport *(e.g. green travel plans)*

Defining Street Character
Streets are characterised in two main ways:
a. Their function and position in the hierarchy
b. Their spatial type and character.

The position of a street in the hierarchy will be dependent upon the level and type of traffic it will carry. This will influence the dimensions and serviceability. Previous guidance has tended to relate a street's function solely to the number of dwellings served. But other factors, such as the mix of uses and the number of routes afforded in more permeable layouts, also need to be considered. The other aspect of a street is its character or spatial type. Two roads performing the same function, for example as a Minor Access Road, can have a different character depending on context and location.

Street Hierarchy
Larger scale developments will need to include a hierarchical network. Layouts should be legible, permeable *(to make walking and cycling easier)* and should form good connections within the site and to adjacent areas, including potential development on adjacent land. The function of each road should be considered.

Over-generous road space should be avoided since this makes drivers feel they have priority over other road users. It encourages people to use their cars when they do not really need to and it encourages speeding.

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How to Design a Street Network

1 First define pedestrian movement routes, then cyclists, then cars
2 Consider the function of each road and where it fits into the hierarchy
3 Consider the character and appropriate spatial type
4 Design the details.

2.2.3 SPATIAL TYPES

Designers should assess the layout to establish which spatial types are the most appropriate.

It is important that this is done before the layout design becomes too detailed as there may need to be an adjustment between built areas and street space.

Having a variety of spatial types enhances character and sense of place. These should relate to the site context rather than simply be chosen arbitrarily. An outline guide to different spatial types is shown over the next 16 pages. These are:

- **Industrial, Commercial and mixed use areas**
- **Street**
- **Avenue**
- **Crescent**
- **Square**
- **Green**
- **Lane**
- **Mews**
- **Courtyard**
- **Private Developments**
- **Culs de sac**
- **Homezone**

For supplementary advice on highway design see 'Making It Happen' documents.

Kent's towns and villages provide some good examples of the various spatial types illustrated in the following pages. Top left, a formal residential square in Ramsgate.Top right, the Guildhall in Sandwich with a civic square and mix of retail and community uses. Middle right, shopping parade in a traditional street in the village of Goudhurst. Bottom, terraced houses overlooking a square with green space at its heart (Canterbury).

Artist's impression of a new street within a village centre.

Industrial, Commercial & Mixed use areas.

Predominantly urban in character, usually serving areas with a high volume of traffic and heavy peak flows.

Artist's impression of an industrial development at the edge of an urban area. *A parkland setting for new buildings is often more appropriate at the fringes of urban areas where landscape tends to dominate.*
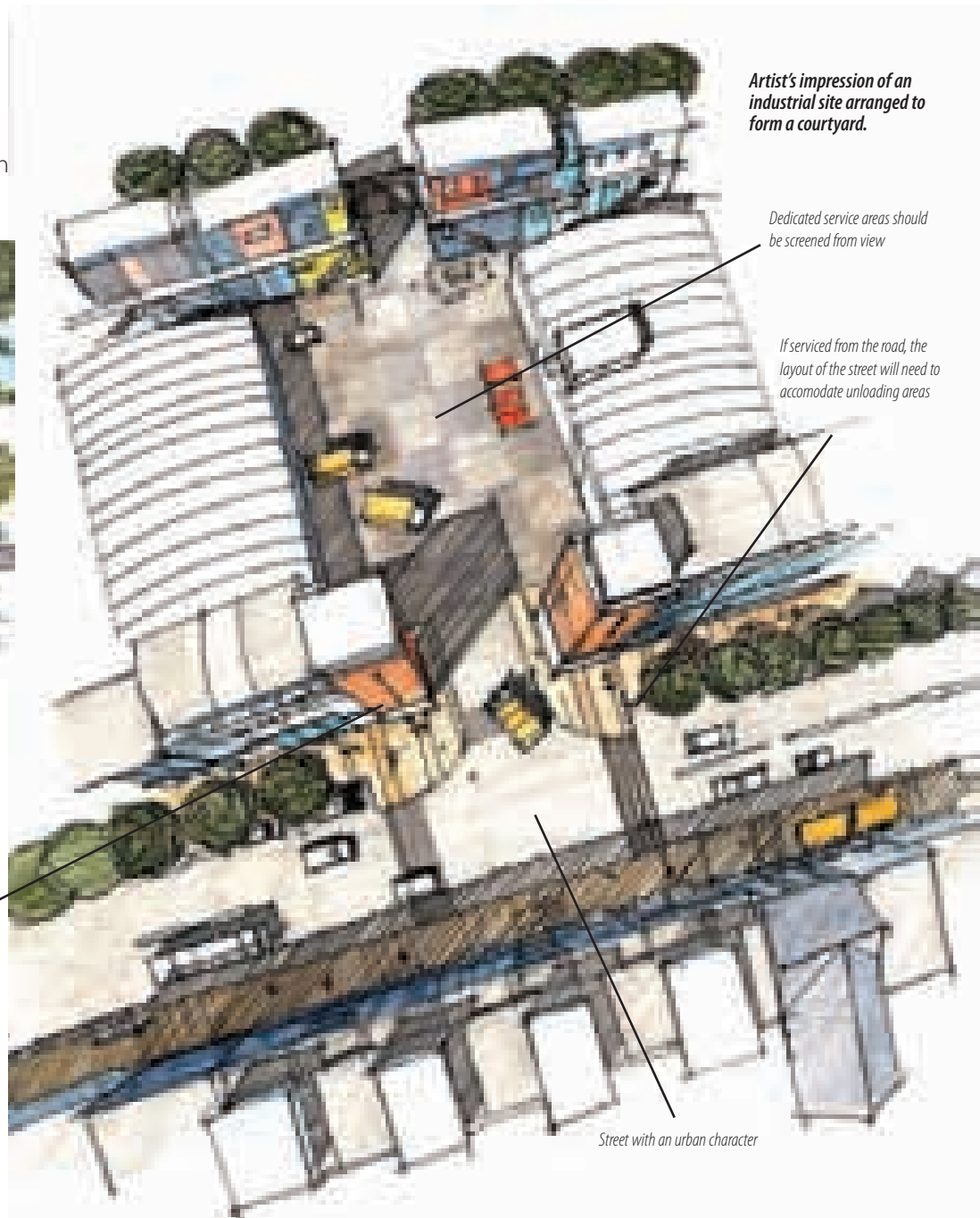
Artist's impression of an industrial site arranged to form a courtyard.

Dedicated service areas should be screened from view

If serviced from the road, the layout of the street will need to accomodate unloading areas

New buildings should have an active frontage onto all predominantly public areas

Street with an urban character

*Artist's impression of a mixed use site with retail industrial and residential in
an urban setting arranged around a courtyard with an arched entrance.*

Street Usually urban in character but equally appropriate in centres of villages with buildings providing enclosure.

Artists impression of an urban street where residential and commercial uses are mixed. *The scale provides a strong sense of enclosure. Active frontages and building entrances at ground floor open directly onto footways.*

Artists impression of a village street. *Generally buildings tightly enclose the space but the arrangement may be less formal than an urban setting.*

Artist's impression of an urban street

Street should allow scope for people to dwell as well as travel. Wider footways at key points allow scope for trees, benches and public art

Streets should be designed to accommodate a range of travel modes including public transport.

Avenue Usually suburban with tree planted verges but can also apply to main urban routes where lines of trees incorporated into paving can create attractive boulevards.

Crescent More formal curved building lines that either enclose the street on both sides or on one side only, probably overlooking an open space.

Artist impression of a formal crescent overlooking open space but connected to the highway network.

Squares Buildings arranged to define a square. Squares should have a distinctive character and be regarded as places rather than streets. Traffic routes through them should be indirect. They can be an important element in defining a sense of place, part of the public domain that people refer to in the context of the wider area.

Residential square. *Urban scale. Buildings are arranged to overlook a green space or hard landscaped area that can be used by residents and visitors alike. Smaller more intimate residential squares are more suited to surburban settings where the green space is more likely to be used by residents only.*

Village square. *Intimate scale. The space is tightly enclosed with buildings in an informal arrangement giving an urban character, high density and a mix of uses. Buildings tend to be no higher than three storeys. Sits at the heart of a community and acts as an important meeting place.*

Town square. More formal civic space with a strong sense of enclosure provided by buildings over two storeys in height. A range of uses, from retail through to eating and drinking make the space lively and attractive for large parts of the day. The space is large and flexible enough to accommodate a variety of activities. These could include outdoor eating and drinking, street markets and street performances.

Primary windows of buildings overlooking. Building entrances should open onto the space commercial uses at ground floor should provide active frontages.

Enclosed central space, predominantly hard landscaped area but with feature trees, benches, public art and a range of street furniture.

Variety of movement options. Squares can provide public transport destinations.

Urban squares with a mix of uses can provide the focal point for neighbourhoods. They provide an opportunity to cluster together commercial, residential, leisure and community buildings.

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Greens Buildings less formally arranged around an open space. But, as with squares, they should have a strong identity.

Village green. *Artist's impression of a green at the heart of a village. Mix of uses provide some activity and community focus.*

Green play space. *Artist's impression of a green in a residential development. Such spaces need to be overlooked for security, though some measures might be needed to keep disturbance to residents controlled.*

Artist's impression of a large village green with a mix of uses including residential, workspace and retail arranged around green space.

Greens on this scale need to be predominantly open allowing scope for organised games or events.

Variety of movement options. Greens can provide public transport destinations.

Country lane. Artist's impression of a residential lane in an edge of village location.

Lane. Found in rural or village locations. Usually serving areas with low volume of traffic generation and characterised by an informal layout. Generally, soft landscaping will be a dominant feature of the street scene.

Mews Buildings Set closely around a semi-public street. Parking is usually accommodated within the mews and in directly adjacent parking spaces or garages

Gateway formed by building over the road. An arch gives the impression of a semi private area.

Mews provide some scope for live/work units.

Central space generally linear and predominantly hard surfaced. The space can also serve as play space for children as vehicle speeds are kept to a minimum.

Mews should be part of the wider network of streets and open spaces and not result in dead ends or isolated pockets of housing.

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Courtyard

Courtyards are generally found in urban or village centre locations. They are tightly enclosed spaces that are on a smaller scale than a square or mews. They should have an intimate feel and can be enhanced with one or more feature trees.

Gateway formed by building over the road. An arch gives the impression of a semi private area.

Central space can be formal or informal in shape and layout. Predominantly hard surfaced. The central area can also serve as play space for children as vehicle speeds are kept to a minimum.

Private Developments

There may be exceptional circumstances when development characteristics are such that adoption of the road or roads within new housing developments is inappropriate or unnecessary. This may be due to the historic character of the site, its relationship to neighboring development or unusual layout considerations. There may be a case for having gates at the entrance. A guidance note will be prepared separately to accompany this design guide.

Cul de sac Often suburban in character. The absence of through traffic creates a semi-private character.

Homezones provide the opportunity to combine a range of spatial types within one layout

Buildings, highway geometry and landscape features combine to reduce vehicle speeds.

Artist's impression of a homezone layout

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Homezones provide safe spaces between buildings for a range of activity

Homezone Residential area where people clearly have priority over vehicles.

2.2.4 PARKING

Parking provision should be determined by locality and the availability of other forms of transport.

Measures should be taken to prevent drivers parking in inappropriate places *(i.e. on footways & verges)*. Parking regulations to prevent unacceptable parking should be rigorously enforced. Underground car parking should be promoted in town centre developments.

The need to provide parking spaces to the numbers required is influenced by several factors and should be discussed with the local authority at the initial design stage. The site may be in an urban area that is potentially well served by public transport and has good facilities for cyclists, so that the need for parking may be reduced; or it may be in a rural area where public transport choice is limited and there will be a greater reliance on the private car. Parking requirements will reflect:

- building type
- the nature of the users
- the need for long or short stay
- whether cars or larger vehicles have to be catered for
- availability of alternative transport facilities
- on-street parking controls (including neighbouring streets), and
- the proximity of public car parks (for visitors).

Parking provision should satisfy the overriding objectives of:

- maximising the use of land
- minimising car use
- promoting the safety of all highway users
- catering for people with disabilities
- providing security and showing sensitivity to the locality.

Over-provision of car parking is wasteful of land and likely to discourage the use of alternative modes of transport. Guidance on appropriate levels of parking provision for different uses is given in the document

Supplementary Guidance 4 published as part of the Kent & Medway Structure Plan Review. Reference must also be made to locally adopted maximum parking standards in the local authority Local Development Frameworks. It may be appropriate to limit parking where there is easy access to public transport and walking and cycling routes. It may even be practical to have car-free commercial or residential developments but these must be backed by evidence that potential residents will not require parking spaces. It is essential that robust controls are in place on surrounding public highways to prevent displaced parking. The visual and social impact of allowing on-street car parking must be carefully considered.
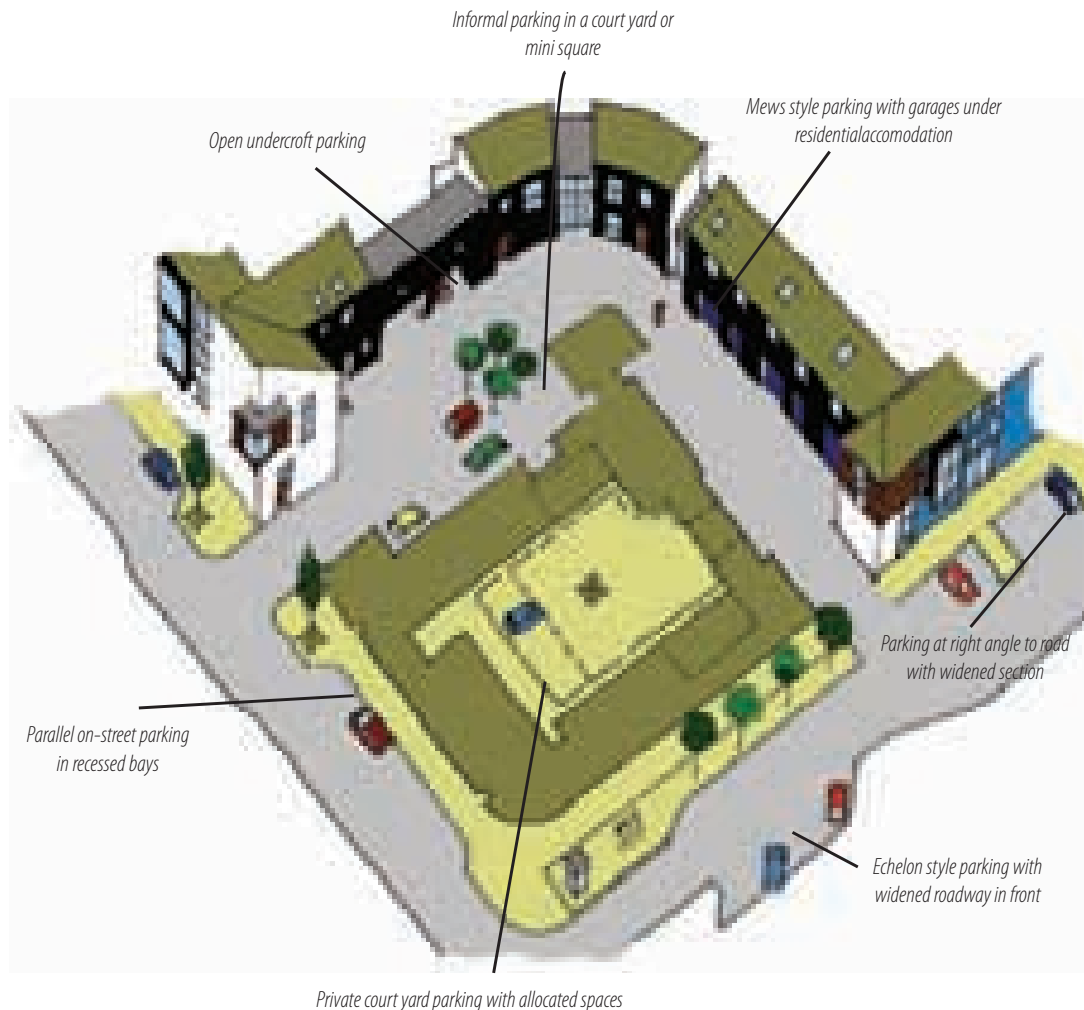
Once the amount of parking likely to be required is assessed, the design must ensure that the spaces provided are useable. Garages are unlikely to be used for the parking of vehicles unless sufficient extra space is included within them for household storage. *(Separate technical guidance contains recommendations on garage sizes)*. Spaces that are narrow or difficult to manoeuvre into are unlikely to be used. An unrealistically low provision of useable parking spaces will result in inappropriate parking which will detract from the quality of a place and may affect highway safety or require enforceable parking restrictions. Conversely, a certain amount of car parking in appropriate on-street locations can give interest to the streetscene and help promote lower vehicle speeds. Parking should not be permitted where it would be an obstacle to large vehicles. In some circumstances it may be appropriate to use bollards to deter vehicle access. This, however should be balanced against the desirability of minimising clutter.

The location of private parking spaces should relate well to the dwellings. Generally, this will be within a property curtilage or in shared parking courts. Parking provided for casual visitors should generally be available to all and so should be within the public domain. Surface materials used should promote local distinctiveness. Parking courts should not be large spaces. Smaller spaces of around 6 to 8 parking bays give the impression of being private, particularly if good quality surface materials are used. They should be overlooked to enhance security.

Above, Parking needs to be carefully designed in conjunction with a strategy for movement. Poorly designed parking areas do not take account of the need for pedestrians and other users to move through the space directly and safely. Top middle, Townhouses with integral garages at Ingress Park, where the layout allows a tightly enclosed communal space at the front of the buildings and access to the rear for further, more private parking areas. Bottom middle, Access to rear parking areas through an arch at Ventura St Mary's Island. This makes the parking seem more private and secure and allows the space above to be put to some use. Top right, Isolated car parking that is not overlooked becomes neglected and is not as secure. Bottom right Undercroft parking at Lacuna, Kings Hill in small areas clustered around courtyards. This form of parking is both safe and secure. Underground and undercroft parking is also suitable for use in mixed use and commercial schemes in town centre locations where surface level parking is limited or undesirable.

How townscape can accommodate different parking solutions

Informal parking in a court yard or mini square

Open undercroft parking

Mews style parking with garages under residentialaccomodation

Parking at right angle to road with widened section

Parallel on-street parking in recessed bays

Echelon style parking with widened roadway in front

Private court yard parking with allocated spaces

### Features of well designed parking areas

The number of spaces in a development should be agreed at an early stage with the local planning authority. Sufficient provision should be made for car parking related to the use.

In terms of residents' car parking this should be convenient, visually inconspicuous, but at the same time overlooked. Parking for homes should be located near to the frontage of houses in a way that does not dominate the street scene.

For non-residential development parking spaces can be provided in locations that are remote or communal (for example in town centre or public car parks) provided this is agreed with the local planning authority.

Ways of achieving this include placing bays at an angle to the frontage, providing bays at the rear of properties, for example in small courts accessed by driving under first floors (arches) or by having rear access to parking either with the curtilage of the site or in an overlooked private parking court. Provide a minimum headroom of 2.5 metres at entrances to private rear courts unless the furthest point of any dwelling from the highway is 45m or more in which case advice must be taken from fire services.

Parking for visitors and casual parking should be located on or near to the building frontages. Communal parking for both visitors and residents may be appropriate in the form of parking squares providing that the space for vehicles does not dominate the overall space between buildings. Parking assigned to individual properties ideally should not be allocated on the highway.
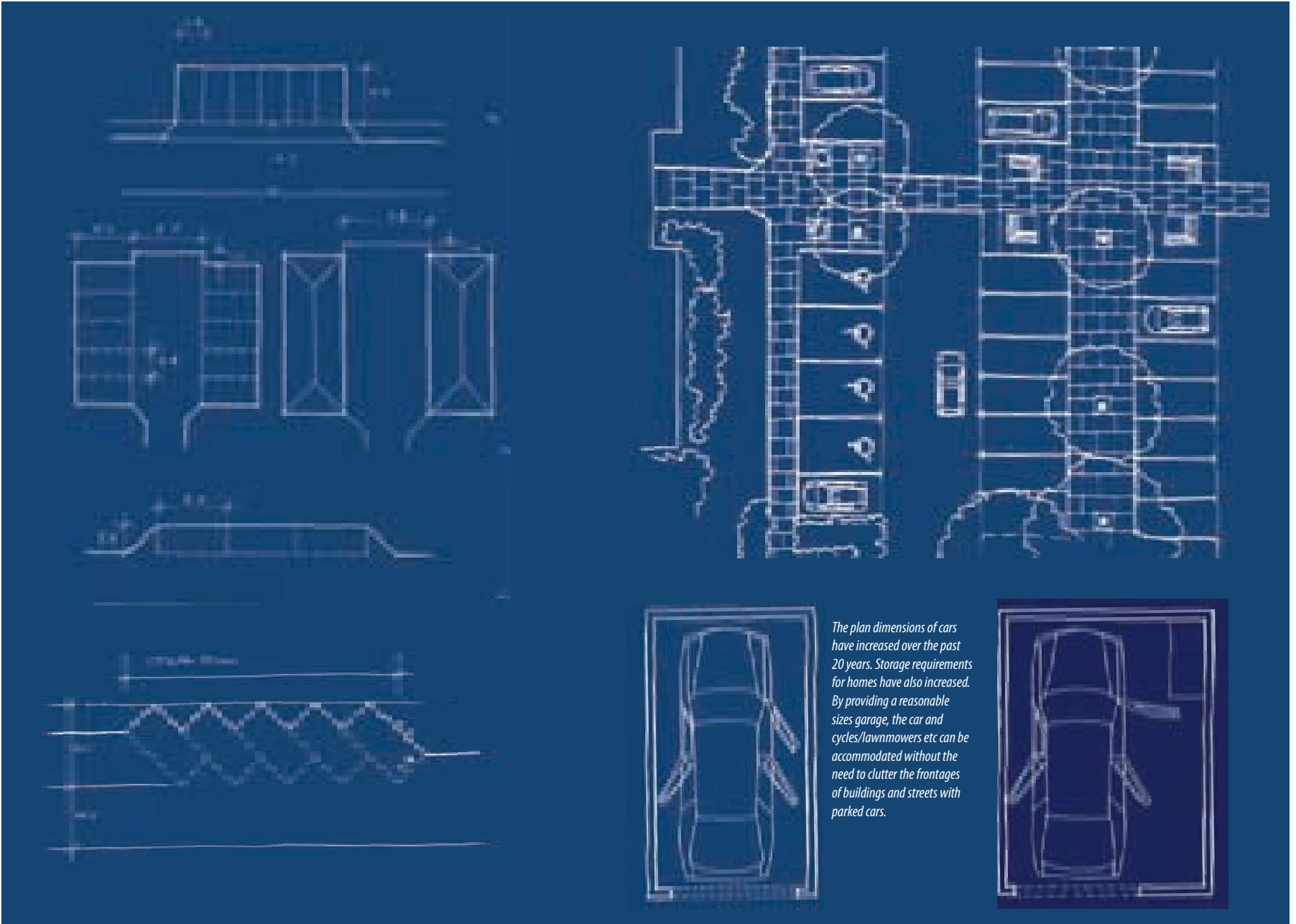
The plan dimensions of cars have increased over the past 20 years. Storage requirements for homes have also increased. By providing a reasonable sizes garage, the car and cycles/lawnmowers etc can be accommodated without the need to clutter the frontages of buildings and streets with parked cars.

2.2.5 SAFE AND SECURE LAYOUTS

Well-lit and well-maintained paths, streets and squares that are overlooked without compromising on privacy are essential to making places feel safe.

For communities to function well and foster a sense of well-being, people need to feel safe in their homes and the streets and spaces around them.

A Safe and Secure Design Involves:

- **deterring crime** – buildings facing onto streets and footpaths with windows facing onto them; car parking visible from homes

- **deterring vandalism** – public spaces well lit and overlooked; facilities for young people

- **clear definition of space** – providing a sense of neighbourhood and helping residents exercise control over their environment

- **privacy in the home and garden** – careful layout of buildings, boundary walls and planting to avoid overlooking from neighbouring properties or public areas

- **protection from noise nuisance** – careful layout and arrangement of uses; soundproofing

- **easy access for people with disabilties and the emergency services**

Blank elevations should be avoided. Buildings should maximise opportunities for the passive surviellance of the spaces they overlook

Deterring Crime

Layout design has a crucial role to play in preventing crime and in alleviating the fear of crime. Poor design can increase the potential for vandalism, theft and assault.

Successful crime prevention depends on many factors, including management and social issues, as well as the design of the development, neighbourhoods and individual dwellings. Design needs to balance crime prevention with other desirable outcomes, including appearance and amenity.

Neighbourhood groupings can help foster community development and help to create a localised sense of place within larger developments. The need for the creation of "neighbourhoods" will vary from site to site and the advice of the local planning authority should be sought. There are generally social and safety reasons for keeping the optimum size of cul-de-sac house groups to not more than 20 dwellings.

Since most crime depends upon concealment, the main aim should be to create public spaces that are well used and overlooked by dwellings or other uses and located where they can be seen from adjoining public highways and rights of way, not in a corner of the development, behind housing, industrial or commercial uses. Open spaces should not be backed on to by back gardens or the rears of commercial property.

While it is important to provide a permeable layout that will encourage walking and cycling, paths that have little benefit in terms of providing shorter routes and which are not well overlooked or where there is no clear line of sight between either end should be avoided. Routes should be as short and as safe as possible.

Section 17 of the 1998 Crime & Disorder Act requires local authorities to do all that they reasonably can to prevent crime and disorder. The design and layout of roads, housing, public buildings and public amenities all have an influence on the potential for crime. Designers should consider the latest advice on crime prevention, as they may have liability if a design flaw results in a subsequent crime problem.

Vandalism

Areas that are overlooked, open in aspect, well kept and litter-free, discourage vandalism, littering and other nuisances. Investing in better quality, more durable materials will pay in the long-term.

Residents should be encouraged to take part in the upkeep of their own development through Residents' Associations or Management Companies. The more involvement residents have, the greater their feeling of responsibility towards their environment. Crime issues are dealt with most effectively through a partnership between residents, local authorities and the police. It is also worth noting that young people who have participated in creating a development and gained some ownership or benefit from it are more likely to look after it following construction. Consider involving local people in the project development, design/decoration of site hoardings, site construction or training for future jobs in the development – as potential routes to reducing vandalism.

Layouts should avoid creating areas that are isolated and out of view of main circulation routes. Vandalism flourishes in such areas.

Clear definition of space

Open space between buildings should be clearly defined as either public or private.

Public space should not be an afterthought but should form an integral part of the layout.

Most developments can be divided into two zones, a public zone of access and common space, and a zone of private access. The building itself often forms the division between these two zones. There is a third condition, often against the flanks of buildings, in which garden walls or fences form the boundary between public and private realm. Situations where featureless flank walls directly abut public areas should be avoided where possible.

Defensible Space

Clear definition of space enables residents to exercise control over their environment and to know who should or should not be there.

- Public open space, parks, play areas, highways and adjoining land, should clearly demonstrate that it is public.
- Enclosures, gates or doors, hedges or fences may define private space.
- Semi-private spaces, such as parking courts or amenity areas are likely to be a problem if there is no clear sense of ownership or responsibility.
- Semi-private space should be designed to be overlooked, be well-lit and well-maintained to maximise the sense of ownership.

Open spaces and access ways with unclear ownership are particularly vulnerable to vandalism. Where the creation of this kind of space cannot be avoided buildings should be designed so that rooms overlook the space, to enable occupiers to see what is going on. Arrangements for visual policing should be considered early in the design process.

'Secured by Design'

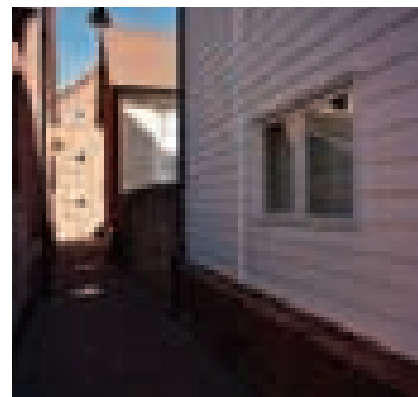*Security aspects to consider when designing housing layouts include:*

- culs-de-sac – if integrated into a permeable street network, can make strangers conspicuous, but they require careful design so that passive surveillance is not compromised
- perimeters to properties should be secure
- meters should be readable from outside houses, but sited to avoid visual intrusion
- a mix of dwellings, some with potential for day-long occupation, provide natural surveillance opportunities
- low fences, walls and planting should define private spaces without preventing clear views of frontages
- pedestrian routes, including subways, should avoid recesses or right-angle bends. Straight routes with good forward visibility are best
- pedestrian paths and entry areas should be overlooked by house windows
- planting should be chosen to deter intruders *(i.e. tough and spiky)*
- planting should not provide cover for intruders adjacent to dwellings
- parking should be in direct view of vehicle owners
- if rear gardens back onto each other, alleyways are best avoided. If there is rear access it should be properly lit and gated.

Detailed guidance on issues of security and safety in the public realm can be found in Circular 5/94 - 'Planning Out Crime" and 'Secured by Design" produced by the Police, and through the Safer Kent Initiative; a partnership between the police, local authorities, the fire service and health authorities.

Crime prevention through layout design

A range of design treatments can be successfully used to reduce the incidence of crime including:

- making a clear distinction between the public and private realm
- arranging buildings to front the street and other public spaces with windows and doors facing onto them
- lighting public areas adequately
- locating parking where people can see their cars
- positioning pathways only where they provide shorter routes, are well overlooked, and have a clear line of sight between either end
- creating public areas of high quality to encourage a sense of ownership and respect.
- using robust, easy to maintain, materials and features so that the public area stays looking good and well cared for.

Resident and visitor parking is within view of a building's principal windows

Short direct pedestrian paths link different parts of a neighbourhood. Windows and doors that open onto them provide surveillance

Adequate lighting should be provided

Main building elevations address public space and provide passive surveillance

Defensible space is provided by clear boundaries separating the public and private realm

Kings Hill. A tightly enclosed street overlooked by main windows of houses gives the street a sense of security (Left, Lacuna).

Active building frontages and permeable layout combine to give this new commercial centre a secure feel (Centre).

Windows overlooking a short, direct pedestrian path enables residents to see what is going on (Right, Lacuna).

2.2.6 PRIVACY

A balance must be struck between providing the natural surveillance needed to keep public paths and spaces feeling safely overlooked and the privacy needed to prevent visual intrusion from public spaces into private areas.

Human Scale

Most attractive and sought-after homes in towns and villages were built in close proximity to one another, providing a human scale and intimacy which people find sociable and comfortable, yet private. Most modern suburban developments fail to overcome perceptions of overlooking and visual intrusion, demonstrating that distance alone through use of minimum standards is an inadequate measure of privacy. In new development, the aim should be to achieve the qualities that people find attractive in traditional settlements, using variation of form, space, ancillary buildings, garages, planting and boundary walls to create high quality environments and to achieve a more efficient and sustainable use of land.

Achieving Visual Privacy

Within new development, visual privacy can be achieved by a range of methods other than the distance between buildings or spaces. Individual units should be designed to prevent overlooking neighbouring private spaces and windows. The following methods may be used:

- staggering adjoining units, placing extensions or protrusions to block overlooking views
- providing enclosure and minimising overlooking with adjoining blank gable walls facing private space
- design of upper storey windows to allow daylight to enter yet have restricted views outward
- raising the ground floor level of the dwelling can give occupiers a feeling of security where public access is close by

- relating the size of window opening and pane size to the potential of being overlooked. Placing public external spaces *(such as footpaths)* away from private internal spaces increases the cone of vision and so the area in which overlooking can occur
- introducing screening such as trees, foliage, fencing and walls. Three interrelated factors in good screening are the relative position of the onlooker, the screening device and the element being screened, and making use of level changes, combined with solid built forms like a roof, to allow views and light without overlooking and consequent lack of privacy.
- a flexible approach needs to be taken over privacy distances. Minimum distances are not prescribed, but developers must be able to put forward a good case for distances proposed depending on the circumstances.
- narrow vertically proportioned windows. High sills assist in providing privacy and can be useful in bedrooms to reduce overlooking. Smaller windows expose less of the interior of the dwelling and the reflection of light from window frames itself helps privacy.
- detached or semi-detached house plans that permit windows to be switched from flank to gable walls allow the designer to deal flexibly with overlooking. This needs to be balanced with the benfits of solar gain, natural daylight and the need for artificial light year round.
- within terraces, projections or set-backs in plans can help provide privacy. Single-aspect dwellings can provide high levels of privacy. Blank walls facing the public realm should be avoided.

Privacy in Gardens

Where a private rear garden or courtyard is provided adjacent to a new home, normally the area immediately outside the doorway to that space should provide private sitting out space for occupiers. This should not be directly overlooked from adjacent property or public areas. There may be more flexibility where new homes have been created by converting existing buildings in urban or village centres and lower standards of privacy have existed and are features of the area.

Privacy within housing layouts
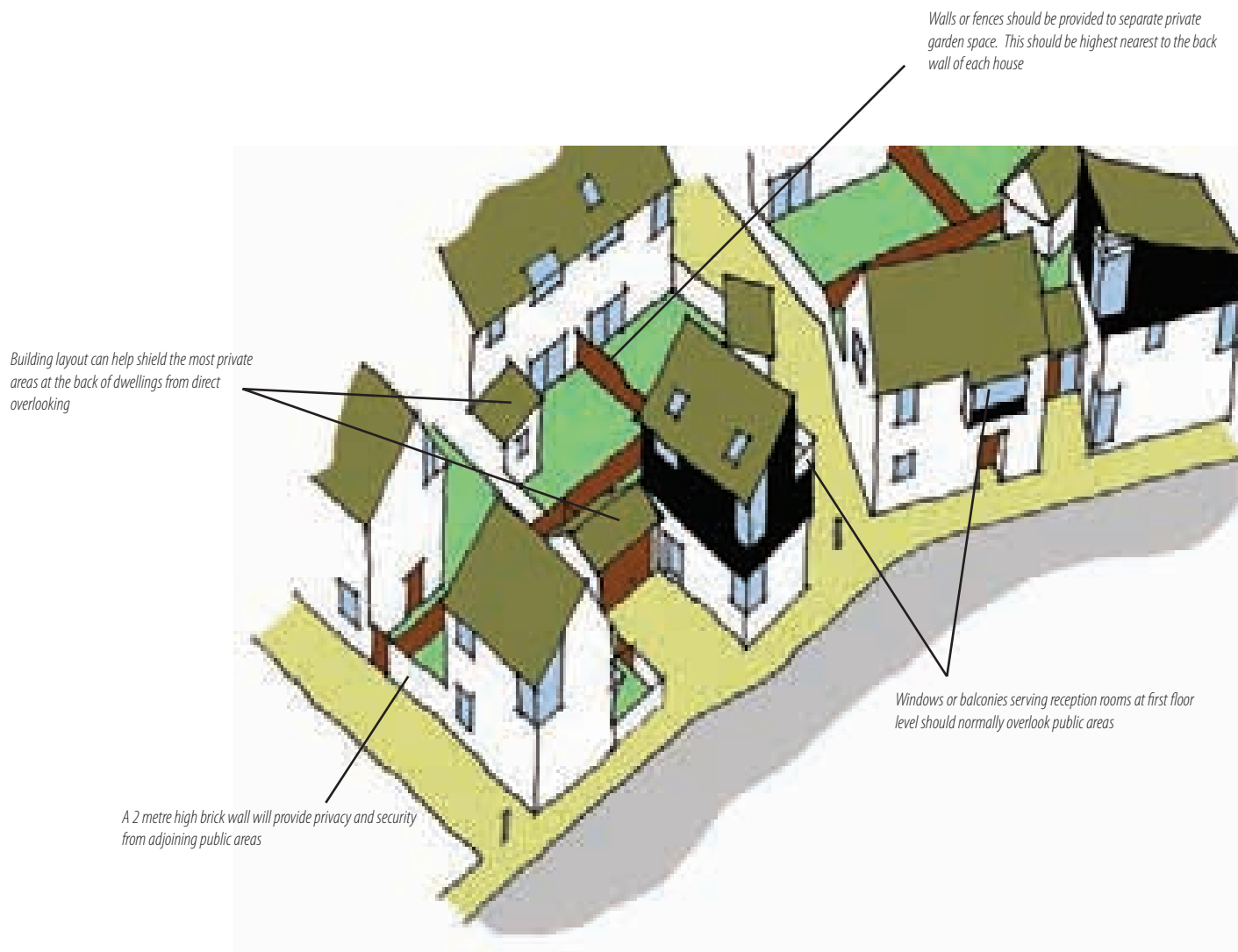
Walls or fences should be provided to separate private garden space. This should be highest nearest to the back wall of each house

Building layout can help shield the most private areas at the back of dwellings from direct overlooking

Windows or balconies serving reception rooms at first floor level should normally overlook public areas

A 2 metre high brick wall will provide privacy and security from adjoining public areas

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Protection from Noise

The need for aural privacy (protection from noise) is as great as the need for visual privacy.
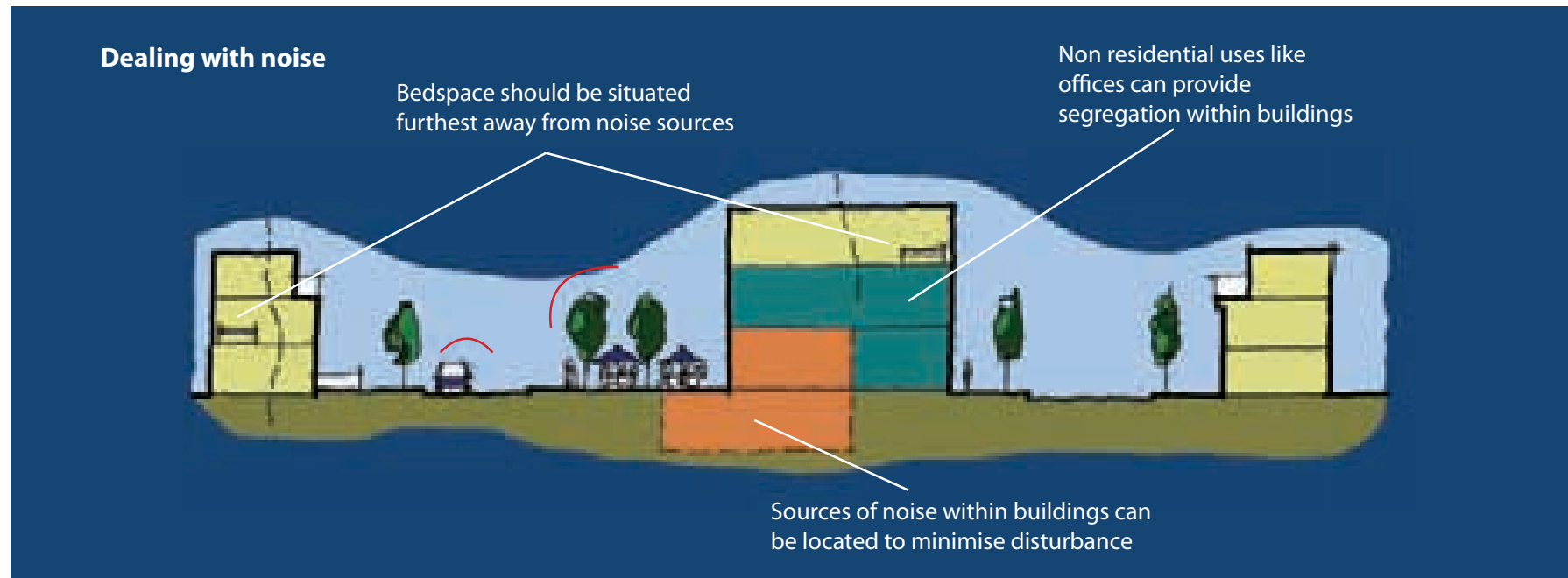
A satisfactory standard should be achieved in relation to noise from adjacent land uses, and from road, rail and air traffic. Reference should be made to PPG23. Regard should be paid to the relevant Building Research Establishment *(B.R.E.)* digests and to government publications to achieve this.

In locations subject to high levels of noise, the Local Authority will require the layout to deal with the problem. A site appraisal should establish the Noise Exposure Category of a proposed development site. Local authority envionmental health officers should be consulted. High local noise levels may render certain sites, or parts of sites, impossible to develop.

Mixed Use and Nuisance Potential

Higher density, mixed use areas require a trade-off between amenity, nuisance and convenience, however it is important to identify potential conflicts and nuisances that may arise in mixed-use developments and resolve them by design. Bringing different uses together can cause tension between occupiers unless safeguards are incorporated in the design. Nuisance late at night is often associated with people lingering outside leisure activities such as nightclubs, pubs and restaurants, often because insufficient public transport or taxis are available late at night.

Separation of activities in dense urban mixed use areas is neither possible nor desirable. Some mitigation can be achieved by making sure the residential development in a mixed-use area is out of earshot of the main routes to public transport and taxis and by locating the noisiest commercial uses furthest from family housing. Many people like to live in the heart of urban bustle and vitality but will need enhanced sound-protection in their dwellings to cope with late-night disturbance.

Dealing with noise

Bedspace should be situated furthest away from noise sources

Non residential uses like offices can provide segregation within buildings

Sources of noise within buildings can be located to minimise disturbance

2.2.7 SUSTAINABLE DRAINAGE SYSTEMS

The principles of Sustainable Drainage Systems (SuDS) should be considered for inclusion in schemes.

These are defined in the CIRIA "SuDS Design Manual" and the Environment Agency's "Introduction to SuDS".
The aims include:

• managed run-off flow rates, reducing the impact of urbanisation on flooding

• protected or enhanced water quality

• sympathy with the environmental setting and the needs of the local community

• provision of a habitat for wildlife in urban watercourses

• encouragement of natural groundwater recharge.

Regard must be given to pollutants that may become mixed with surface water and whether or not the site is within or near to a water abstraction zone. The Environment Agency should be consulted.

Where flooding is a known risk, mitigation measures must be considered, including the management of water run-off and flood protection measures. When developing new sites, the impact on existing developments must be considered. The Environment Agency can advise. Separate technical guidance has been produced on this subject to accompany this guide.

The amenity value of new artificial lagoons created as part of a sustainable drainage system can impact on flood risk and bio-diversity and their impact should be fully assessed. The rain water run-off from development can be minimised by using permeable surfacing and by the careful location of green open space. For further information on SuDS see 'Making It Happen'.

An ecology park has been created at the Greenwhich Millenium Village using water that naturally collects on site. It provides a haven for birds and other wildlife as well as an educational resource.

2.2.8 MAXIMISING THE USE OF SUNLIGHT AND DAYLIGHT

Sunlight and energy efficiency should be considered as an integral part of finalising a layout.

Sunlight and energy efficiency can be maximised if the layout of new buildings is designed with the following principles in mind;

- take advantage of south facing slopes

- avoid overshadowing

- locate taller buildings to the north of a site with lower-rise buildings to the south

- locate lower-density housing at the southern end of a site, with terraced housing or higher density housing to the north

- place terraces on east-west roads so that one window wall faces south.
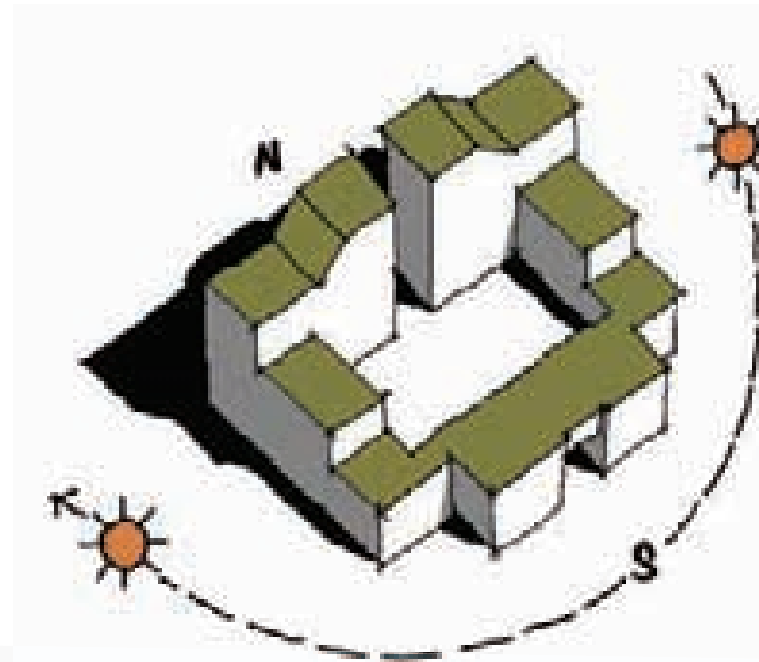
Streets and squares that are sunny but sheltered become popular, lively places that people want to be in (Sevenoaks)

Passive Solar Design

Passive solar design takes advantage of natural light and heat from the sun and uses air movement for ventilation. This reduces or negates the need for artificial lighting, heating, cooling or ventilation. It can be achieved with no additional cost to a development and can result in considerable cost savings. High levels of insulation complement this design approach.

In residential development the form of housing can have a significant impact on energy efficiency. Detached houses, particularly single-storey, tend to be less energy efficient, having the greatest surface area exposed to the elements. Assuming the same floor area and orientation, terraced development provides cross-insulation at a lower density, while flats retain heat better.

Layouts should maximise east-west building alignments and orientate most of the glazing to within 30 degrees of due south. Buildings should also be designed to avoid overshadowing and minimise shading from obstructions to sunlight *(such as other dwellings and coniferous trees)*. *Other measures can include:*
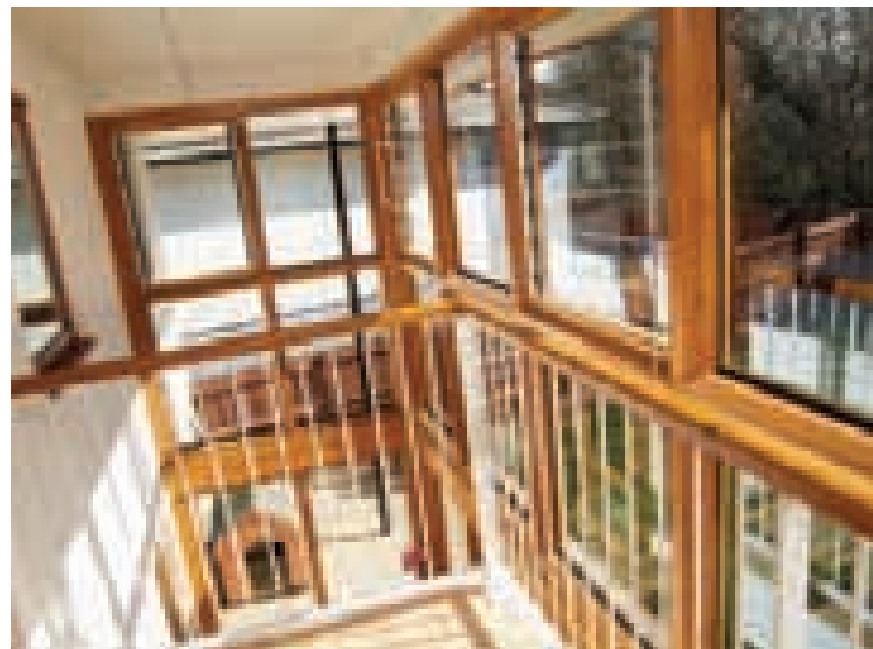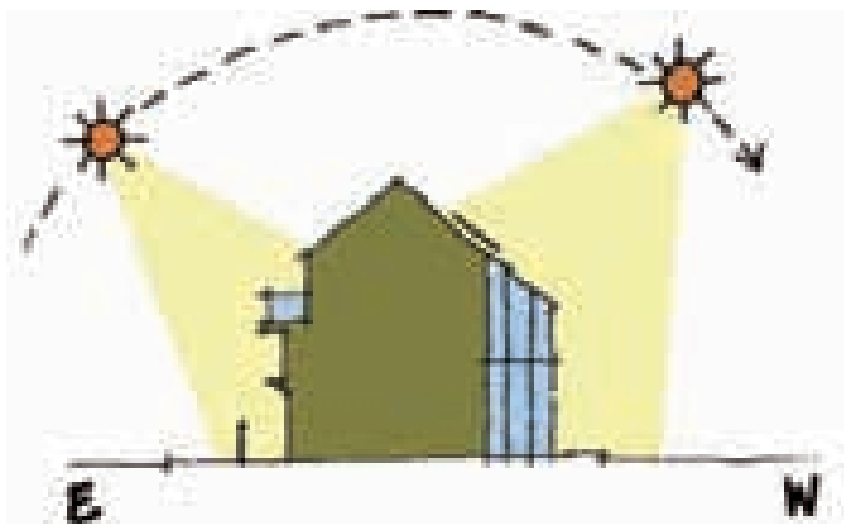
Orientation of houses to maximise the benefits of solar gain. This terrace of houses in Kingshill uses extensive glazing at the south facing rear of the building to help heat the rest of the house, cutting down on fuel consumption. (Fry Drew Knight Creamer)

Designers should consider the effect of proposed layouts on the future microclimate of the area. This can include wind tunnel effects, particularly where taller buildings are concerned. Building layout and form can be used positively to improve the local microclimate, for example protection from prevailing winds. Consider the use of natural wind breaks, such as trees and hedgerows to maximise the benefits of solar shading.

2.2.9 THE DESIGN OF OPEN SPACES
### Useable and Accessible Amenity Space

Convenient access to open space is important for quality of life and personal well-being and should be provided for in all new development.

Children, youths and adults need open space to relax, play, socialise and exercise, whether at home, at work or studying. In many areas, informal green space provides the only opportunity for contact with the natural environment. There should be an appropriate range of open space provision made within developments to meet the needs of different age groups. Sites should be appropriate for the designated purposes and available when potential users require them. Occupiers of developments where limited private space is proposed such as high density urban areas will have different needs to those in more suburban or rural areas. Green links from within town centres to the outer countryside will be a valuable resource for local residents and visitors; especially where the pathways can be extended to provide circular routes.

The provision of usable open space and play equipment may be required by the Local Planning Authority as part of a development. The size, function, location and possible adoption of open space should be discussed at an early stage with the planning officer and those responsible for landscape maintenance.

Childrens' Play Areas

In considering children's play provision, the need for informal supervision and impact on surrounding uses is important. Play areas should be overlooked by footpaths or properties. Children of different ages require different facilities but may still require supervision by the same guardian. It will also be important to ensure that the space is located and designed to avoid nuisance to nearby residents. Designers should be aware of the potential conflicts between residents and the users of open space.
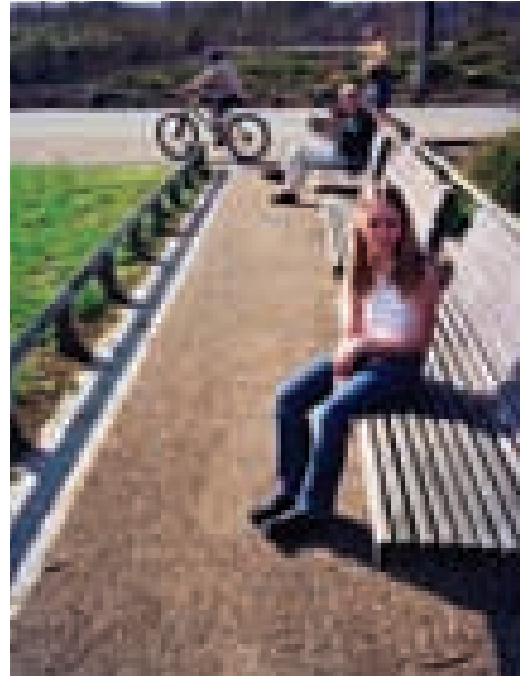
Urban Parks. *Formal parks within new development need to accomodate a range of potential activities; exercise, relaxation and a place to meet.* (Greenwich Millennium village, Left)

Public realm. *New public spaces should be capable of hosting a range of activities not just movement. An outdoor seating area in Chatham* (Below). *Street entertainment in Tunbridge Wells.* (Bottom)

In making open space provision, consider:

- access by pedestrians, cyclists and the less mobile
- safety, particularly play equipment standards
- areas for youths
- kick-about areas
- need for overlooking and natural surveillance
- the needs and constraints of the surrounding uses, especially in mixed use areas
- areas for walking dogs
- the need for sunlight, shade and a good quality environment
- seating, which should be sited well, and
- the availability and quality of existing public open space, and opportunities to enhance this.

Open spaces need to cater for a range of needs. 'Doorstep' open spaces and play areas cater for local needs (above, Canterbury).
Housing areas need to allow for informal play in safe areas overlooked by dwellings (above right, West Sussex).
Larger formal parks need to be well connected as potentially they serve a much wider catchment area (right, Greenwich Park).
Opportunities for informal access to the countryside and the county's public rights of way network need to be considered at the earliest stage (far right).

Green Space, Health and Value

The benefits of green space have a direct affect on the quality of life in terms of both physical and mental health. Physical exercise can help to counteract obesity while the opportunity to stroll through green space – especially where immediately accessible – has benefits both in terms of longevity and mental health [The value of public space – CABE Space March 2004]. Shade provided by vegetation can reduce the risk of skin cancers. Foliage absorbs harmful pollutants from car exhaust fumes and releases oxygen into the atmosphere. Property values can be significantly enhanced by their proximity to well designed and managed green spaces.
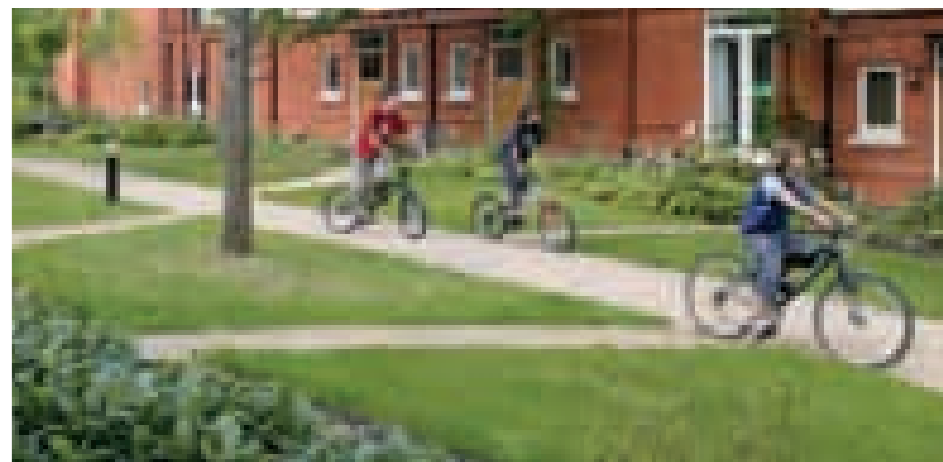
Creating new green space

Developments that propose new green space should:

- retain existing trees and other plants and ensure that they are well protected

- retain water features and incorporate them in public open space

- avoid compaction to areas to be planted and de-compact where required

- use Sustainable Drainage Systems *(SuDS)* where feasible

- ensure species of plants selected are native and of local provenance

- reduce future maintenance by appropriate design and specification e.g. the use of mulch to reduce evaporation and avoid the need for intensive maintenance regimes which require excessive use of resources; for example, grass mowing and water consumption

- ensure that plants have adequate natural light, soil water reservoir and precipitation to sustain healthy growth, without the need for artificial watering

- use earth modelling to reduce traffic noise

- use shelter belts to reduce energy consumption

- prepare planned programmes to reduce impacts during construction phase

- involve stakeholders in all stages of the development process to promote local ownership and long-term commitment to maintenance; for example, parish, community, and other interest groups.

Developments that propose new green space should not:

- permit properties to be occupied before the necessary facilities are in place

- allow unnecessary storage on site or misuse chemicals and hazardous substances

- allow contaminated run-off into neighbouring water courses

- damage trees and other plants to be retained on or off the site

- damage utilities *(check records for locations and depths)*

- be implemented during sensitive seasonal periods.

A variety of linked urban and non-urban green space contributes to a strong sense of place.
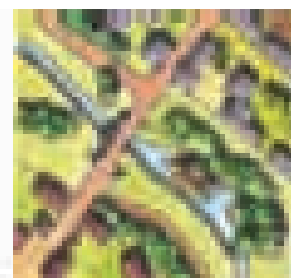
A green corridor can be a link between neighbourhoods and between towns and villages. Often follows the course of a Public Right of Way or natural feature such as a river.
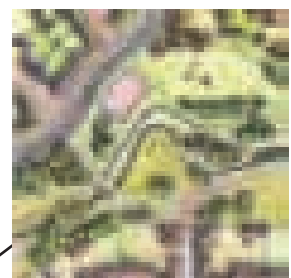
Local parks could take the form of a 'pocket park' serving a neighbourhood. They might offer a combination of formal play and countryside access if they form part of a larger linear park or green link.

The village green. Often the focal point for a village. Provides a green setting for housing and other uses and informal recreational space. New village green spaces could utilise existing landscape features such as streams, meadows, trees and other vegetation

Town or city centre green space. Enclosed space with grass, shrubs and trees in a more intensively managed space. Can be quiet and secluded and provide an escape from the bustle of a town centre, such as a churchyard.
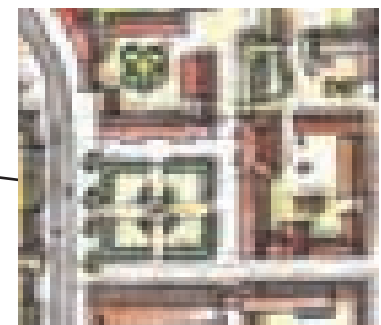
Formal squares or courtyards within a predominantly residential area provide space outside the home for play and relaxation. They should be overlooked for security. In some cases, access to non-residents could be restricted

Integrating Landscape and Open Space

The landscape and the built form and movement network should be considered together.

It is important that open spaces created are attractive, robust, easy to maintain and of high design and functional quality to encourage their use. Consideration should be given to the existing patterns of use, and potential circulation through, new and existing open spaces. A well-used space often forms an identifiable route from one place to another and can contribute to more sustainable transport patterns, such as walking and cycling.

The following points should be addressed:

- assess the attributes of the site and its context
- conserve and enhance positive assets of the site
- mitigate any adverse impacts of the development
- create an attractive and useable open space network which integrates the site with its wider landscape setting
- develop a management plan for the long term maintenance of the landscape.

Working with the Grain of the Landscape

Existing landscape features should be retained where practical with new layouts designed to enhance both existing landscape features and the new development.

Changes of level should be exploited to add interest and drama to a layout rather than be ignored or flattened to make construction easier. In flat landscape areas however it would be inappropriate to create artificial levels. The aim should be to reinforce the character created by the natural topography of the site.

Ecology

Planning for ecology and nature conservation is an essential element in layout design

Ecology is the existing or potential natural habitat of a site. It is measured by biodiversity. Ecology and nature conservation will provide:

- the requirement to retain or enhance local biodiversity
- educational benefits – wildlife areas can provide informal or formal field laboratories for biological, geographical and environmental sciences, and
- plants and animals that keep people in touch with their natural environment.

It is the totality of features external to buildings – gardens, walls, fences, hedges, paths and public rights of way, roads, trees, shrubs etc. – that forms the broad townscape setting - the physical context of a development.

For more information on Landscape Character Assessments and Landcape Plans see Miscellany.

More information on Public Rights of Way can be found in 'Making It Happen - Public Rights of Way', available 2006.

Green Space can form the new heart of a neighbourhood. This play space and natural amphitheatre has been created at Ingress Park near Datford. Housing has been arranged around the new space to give a sense of enclosure and security. (Crest Nicholson)
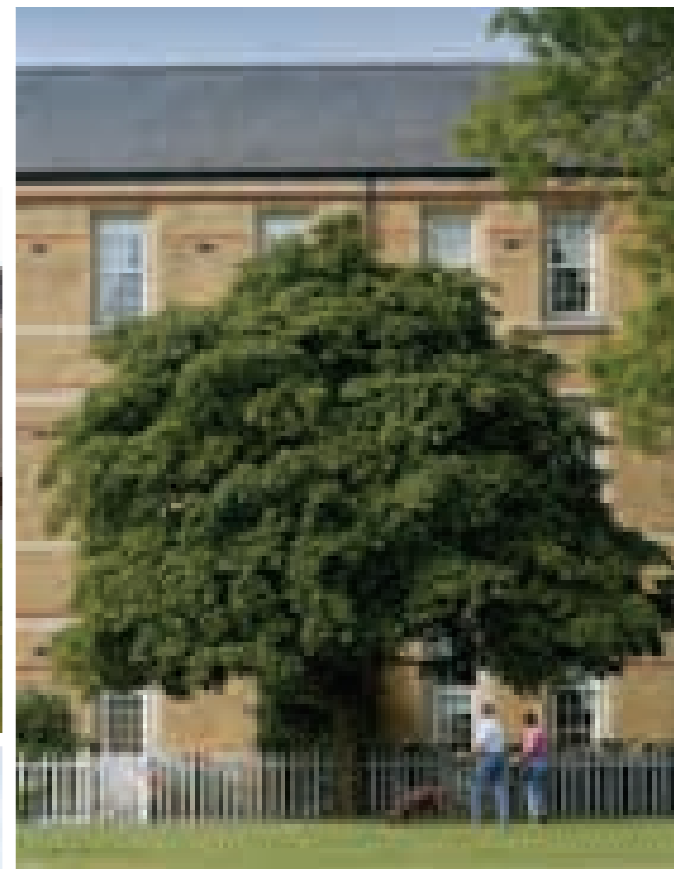
The needs of new and existing residents are varied. Walking , jogging, cycling and dog walking are major leisure activities and need to be planned for.

2.2.10 LANDSCAPING WITHIN NEW DEVELOPMENT

Siting and choice of new trees

Layouts should allow for structural tree planting which should be supplemented closer to the buildings with shrubs with less demanding space requirements.

Trees give maturity, identity and scale to a new development. Preference should be given to indigenous species or those traditional to the locality.

The potential mature size of the tree to be planted must be taken into account. Building foundations should be designed to take account of potential root damage to buildings. Tree location must take into account the position and depth of proposed utilities, including highway drainage.

New planting in areas intended for adoption should be discussed at an early stage with the local authority. Professional landscape architects should be engaged.

Ongoing Maintenace

A management plan to maintain green space on any development is essential.

The management plan should balance the positive and negative aspects of the proposal and set out:
- the objectives of the landscape scheme as it matures
- the standard or level of maintenance appropriate
- the tasks required to achieve that standard and the frequency at which the tasks should be undertaken, and
- the year on year costs of implementing the management plan.

It is important that all relevant local authority interests should be involved in these decisions and that an holistic view is taken of a scheme's design and management. Maintenance options could include:
- adoption by the Local Authority under the Public Open Spaces Act
- adoption by the Highway Authority
- maintenance by the Highway or Local Authority under a 'commuted sums' arrangement
- maintenance by Bonded Management Company
- maintenance by a Charitable Trust
- maintenance by local businesses through special arrangement
- maintenance by residents through special arrangement.

Factors Influencing Selection of Trees
When deciding upon species, position and spacing, consider:
- existing tree species, numbers and varieties
- future mature size of tree or group of trees
- soil type, for example; acid or alkali, freely or poorly drained
- site conditions; for example, sheltered or exposed
- root problems, especially on shrinkable clay soils and surface rooting trees, if proposed near to pathways
- proximity of roads, public rights of way, paved surfaces, buildings and services
- obstruction of light and vision
- nuisance; for example, sycamore seeds, fruiting, common lime aphids.

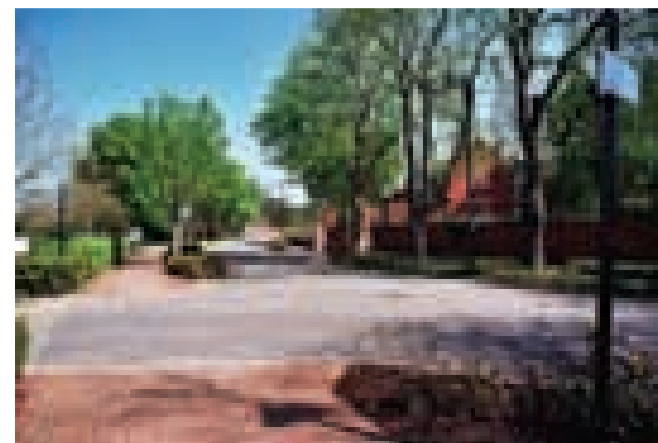For more information on the selection see Miscellany.

Structural tree planting at Crossways business park is
used to create tree lined roads but also provide shading.
(Land Securities)

New industrial road retaining existing mature trees and
planting matching species to create an avenue. (Chatham)

Choice of species at Bluewater helps orientation.Leaf
colour denotes parking zones. (Lend Lease)

2.2.11 MIXING USES

Designers should take account of the advantages that variety of use and function can bring to new developments.

The sustainable community will include a mix of shopping, leisure, work, faith, health, learning and other community uses that help bind the neighbourhood together and keep it healthy, lively, supportive and functional. Traditional Kent villages and market towns are good examples of sustainable compact mixed-use development that provide a model for higher density new development.

New residential development should therefore aim to integrate with existing transport and local facilities or to generate a new community large enough to support its own mix of uses and local services such as transport, shops and schools. The mix of uses should complement each other and provide for retail, cultural or social activity during the evening as well as the daytime.

Higher density is of growing importance in order to meet ever increasing pressure for development without compromising the green belt and open countryside and to meet sustainability objectives. Higher density is defined in Planning Policy Guidance 3 as being over 30 dwellings per hectare and recommends new development in the range 30-50 dwellings per hectare. Most Kent traditional towns and villages greatly exceed this and densities of 50-70 dwellings per hectare can be achieved successfully providing quality design and good local facilities are in place, for example, Lacuna in West Malling.

A key shortcoming of measuring density via homes per hectare is that it fails to predict accurately how many people will live in the homes and whether there will be school age children in the homes. It is therefore extremely important to measure occupancy as well as density and consider:

- Who lives in the scheme
- The time residents spend in their home
- The space residents enjoy

Greater use of the home as a workbase and the increasing number of early retired people may weaken the distinction between home and work. But the growth of car ownership is difficult to reverse and people will continue to commute to work and to shop by car. One aim of this guide is to encourage more mixed use developments which reduce the level of car use. Now is the time to put into place appropriate frameworks to accommodate the changing land use and transport patterns of the future. Developments such as edge of town supermarkets and on-garage forecourts encourage car use and can have a negative impact on the traditional mixed use cores of settlements.

The Benefits of Mixed Use
- reduction in the need for car travel from home to facilities and workplaces
- increase in vitality
- encouragement of both daytime and evening activities
- greater number of people circulating increases safety and people's sense of security
- more opportunity for people to interact
- opportunities for shared energy supply matching peak demands.

New development should complement the range of uses within an area creating cross-linkages and connections between the new and existing. Lessons can be drawn from our historic centres. Many have a vibrancy and success that derive from their cultural associations, their 'walkability' and attractive living and working environments. Many residents are prepared to trade-off some disturbance in exchange for variety and quality of life. The Urban Villages Forum believes some of these attributes can be created in new developments by promoting 'urban villages'. *(see opposite page)*

Features of an 'Urban Village':

- mix of homes, shops, leisure, community and commercial uses
- a variety of tenures to meet the needs of different parts of the community
- comparatively high densities with a population large enough to support a range of services and facilities
- a strong sense of place
- a vital and walkable neighbourhood'
- community involvement.
- caters for the motor vehicle without encouraging car use for all everyday journeys.
- close to integrated transport hub
- access to green space

Living, working & leisure in close proximity

Central civic space

Integrated transport hub:
car
bus
taxi
train
cycle
walking

Access to green space

landmark building or features

Connecting urban spaces

Range of densities

Walkable neighbourhoods

Mixing uses in existing town centres

Existing town centres in Kent provide local employment opportunities, local amenities and a cluster of civic buildings. Their prosperity, vitality and vibrancy is important for the sustainable growth of new communities within them. The government seeks to ensure the future vitality of existing towns. PPS6 (Planning for Town Centre's) seeks;

- To enhance consumer choice with a wide provision of shopping, leisure and local services to meet the needs of the whole community
- To ensure development is accessible by a range of means of transport
- To encourage investment in disadvantaged areas to provide improved services, more employment opportunities and combat social exclusion
- To promote high quality and inclusive design and make efficient use of land in town centres to deliver more sustainable development
- To encourage a cleaner, safer, greener town centre environment.

The design and placemaking principles set out in this guide apply equally to industrial, commercial, retail and other non residential forms of development. The primary objective should be to avoid creating single use areas but rather bring together a compatible mix of uses that offer a legible, adaptable and diverse environment that has been designed to reflect its local context. Even areas that are predominantly for employment can offer a mix of scales of unit and activity from large warehouses to smaller workshops.

Industrial, commercial and retail development

Where in the past the design of certain uses such as industrial buildings has been almost excepted from concerns about environmental and visual impact, this approach is no longer acceptable. There are many examples now of successful larger scale non-residential developments such as large scale retail units and business parks that have a well thought through design and strong landscape strategy that ensure the place is walkable, legible and attractive. Such developments must also consider the long views toward the site and mitigate negative impacts – by their nature these developments are often on the edge of urban areas and therefore particularly visually dominant.

New commercial and retail development should:

- Carefully consider the movement patterns and access points to buildings to encourage sustainable forms of transport to and within a site
- Avoid 'identikit' solutions – developments must respond to their local context
- Have a strong landscape strategy that reflects the overall design concept for the site, and incorporates parking in a way that avoids it becoming a visual blight
- Consider the views of the '5th elevation' – the roof – which can often account for a large area and have a significant impact on long views
- Maximise opportunities for sustainability features that can be easily and economically incorporated into large scale, relatively low tech buildings such as photovoltaics, rainwater collection and natural ventilation systems
- Provide an active frontage that relates to neighbouring buildings
- Carefully consider the boundary treatment – security fencing can create an unattractive and hostile image and should either be avoided.

A different enphasis applies in an urban, higher density settting where uses come into contact in close proximity. An activity may differ from surrounding land uses but this is not a sufficient reason, in itself, to find a proposal unacceptable. The success with which such uses are integrated into the existing fabric of a town or a village will depend on some key factors:

- how well the layout is connected to the wider neighbourhood
- the design and siting of the buildings and principal elevations
- servicing the building
- the character of the use and whether it is a good neighbour in terms of noise, pollution and traffic impact

Detailed advice on industrial and commercial development in the countryside, including National Parks and Areas of Outstanding Natural Beauty, is given in PPG7, "The Countryside and the Rural Economy". Advice

on Green Belts, where industrial and commercial development will not normally be appropriate, is provided in PPG2.

Industrial or commercial developments need to adapt over time and this should be recognised from the outset. An industrial process can, through national or global economic forces, change in nature, for better or worse. Where such uses are located in residential and rural areas, an intensification of the use may become unacceptably intrusive. Buildings need to be adaptable and long term strategies need to be in place to mitigate potentially harmful intensification.

Public buildings

High quality, successful public buildings will enhance the lives of those working or visiting them, meet the needs of the occupiers and be adaptable to future patterns of use. They should minimise the use of resources in their construction and use. These buildings should act as hubs to the local community so be welcoming and centrally located. They should offer a positive contribution to the local streetscape and can act as a local landmark.

The Commission for Architecture and the Built Environment *(CABE)* has produced useful guidance on the design of schools, libraries and other public buildings (www.cabe.org.uk).
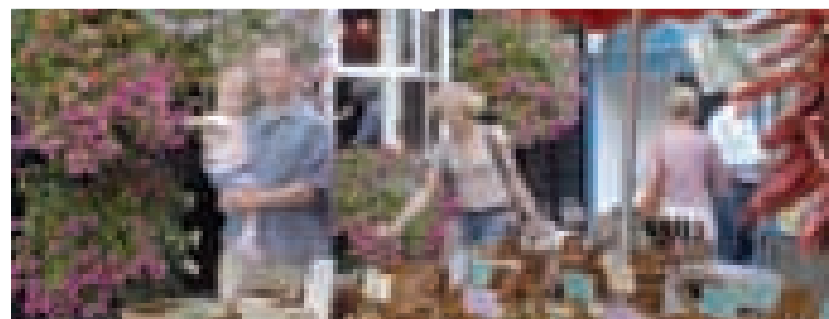
Existing Town Centres need to remain vibrant and opportunities taken to underpin their economic well being (Whitefriars Centre, Canterbury. Land Securities. Top Right Uses can be successfully mixed within existing towns even on restricted plots. Horsebridge and Brownings Yard, Whitstable where designers Clague successfully encompassed retail, residential and leisure uses within two new urban street blocks. Middle. Uses need not be restrictred to within buildings. The vibrancy of public space can be enhanced by street markets, external stalls and tables and chairs for outdoor eating and drinking (Sevenoaks). Bottom left Business parks or campus style commercial developments provide the opportunity for some quality public spaces (Crossways Business Park near Dartford) Land Securities. Bottom right. Public buildings have an important role to play in providing focus to new and existing communities. Schools in particular often provide the social glue that holds together neighbourhoods.

2.2.12 SCALE AND MASSING

The scale and massing of new development should reflect existing characteristics, not by simply replicating surrounding layouts but by identifying clues from the surroundings.

The layout, pattern and density of existing built environments is called its 'grain'. As we have described on the previous pages, traditional Kentish urban grain is tight, compact and built at relatively high densities focussed around key nodes and public spaces.

Landmark buildings are important as a helpful way to locate oneself and 'read' the townscape. This explains the term 'legibility' when applied to urban form. Traditionally, landmark buildings would be the local church or other significant public buildings. The inclusion of such landmarks would not only provide important legibility but also a richly varied roofscape and attractive skyline that could be seen from a distance.

Tall buildings are often mistakenly confused with higher density but the majority of high rise development in England is built to relatively low densities. The decision to include tall buildings in a development should be made for reasons other than increasing density.

Scale and massing sensitvely handled. The scale of a new urban scheme for housing and commercial uses (Horsebridge and Brownings Yard meets a cottage boundary without overwhelming the existing building Whitstable)

Tall Buildings

If considering tall or bulky buildings, developers should consult the local planning authority at an early stage to see if a local tall buildings *(and/or bulky buildings)* policy exists.

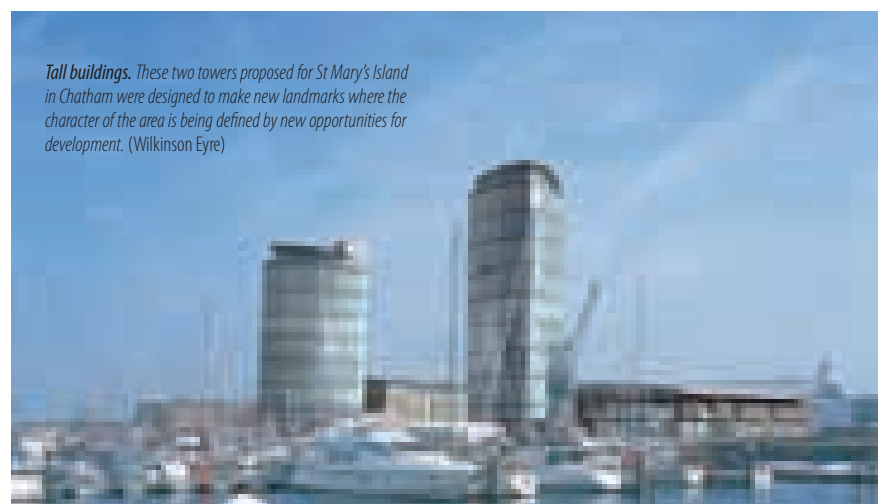The impact of tall buildings in particular demands special attention.

Outline concept drawings should be prepared to show:

- height of proposal relative to neighbouring buildings and the street scene
- height and mass of proposal related to key views and the wider context, including the skyline
- outline elevations, proposed materials, roof treatment and profile
- design at ground floor level showing how people will gain access to the building
- connections, for example to transport nodes and key open spaces
- active frontages.

Questions to be answered include:

- is a tall building the right solution? Would medium-rise high density development be better?
- how does the proposal fit in with the skyline and add to the surrounding roofscape?
- will the building be more likely to be seen as an attractive landmark or as an eyesore?
- would the building frame existing views positively or would it obstruct any important view corridors or vistas?
- does the proposal sit well within its context in terms of short and long-range views?
- does the proposal help form a group of similar scale buildings?
- are there any local buildings with materials and details that provide design clues?
- does the proposal help form a group of similar scale buildings?

- can existing utilities and transport network cope with the increased demand?
- does the design provide lively ground floor uses rather than blank facades and 'dead' spaces at ground level?
- are the entrances obvious?
- is vehicle dominance avoided at ground level?
- is adequate provision made for emergency vehicle access and standing?
- are there opportunities to create better connections and links in the vicinity to pedestrian, cycle and other rights of way?
- does the building provide opportunities for built-in surveillance, making adjoining streets safer?
- has a microclimate study been carried out? What wind tunnel effects are likely? What shadowing will occur?
- is the proposed use economically viable?
- is the building form sufficiently flexible to accommodate a change of use in the event of economic variations over time? *(in terms of its structural floor to ceiling heights, insulation standards, servicing and the design of ground floors)*. Will mixed uses be possible?
- is the building a sustainable solution to accommodation requirements?

Tall buildings. These two towers proposed for St Mary's Island in Chatham were designed to make new landmarks where the character of the area is being defined by new opportunities for development. (Wilkinson Eyre)

2.2.13 INFILL SITES

Each infill site should be considered in its context.

The setting for an infill development is always of paramount importance. Infill between two older buildings, or even larger infill plots in towns or villages will rarely be satisfactory if standardised designs are used. Infill plots created by the demolition of, for example, large houses to provide flats, require very sensitive design solutions, particularly in relation to proposed scale and height and to issues of car parking and site access for the higher number of vehicles anticipated.

The Local Planning Authority will expect to be presented with a reasoned argument for the adoption of the design approach. This must stem from a detailed appraisal of the surroundings of the site as well as from client requirements and site content.

Landmark buildings can lift a design from the ordinary and may be justified on the basis of a sound urban design appraisal of their context and a perceived environmental uplift to the quality of the area. But generally, new building proposals in established contexts should avoid bold, strong or iconic buildings unless the need for this has been identified in a wider masterplan or the Local Development Framework. Good infill design is about providing careful repair and cohesion rather than making a statement

In most cases the best infill solution will involve following the existing building line and eaves line, even if contemporary in design. Where vision splays for vehicle access to the site result in a set--back from the building line, considerable design skill may be required to produce a satisfactory solution. Solutions should be found to avoid the need for vision splays.

It should never be assumed that gaps in original frontages are automatically ripe for infilling. Such spaces may make a positive contribution to the character and appearance of a settlement and can create unexpected vistas. Boundary fences and walls, hedges, individual trees or groups of trees, gardens, allotments, paddocks, etc., will be a vital part of the overall picture. When permission to develop is sought, the proposal must show its wider context. This will extend to the immediately adjacent buildings or to a wider area involving an appraisal of the totality of village-scale, building type and detail, type of boundary etc.

If the proposed plan-depth of a building exceeds that of neighbouring structures, then the form of the roof will need to be arranged to ensure that the height of the ridge(s) are kept in line with the surroundings. In sensitive locations the lowering of eaves heights may bring better accord between new development proposals and the surroundings.

Infill development. *A formal square in Ramsgate was completed with this development of flats and town houses which continued the strong building line and incorporated some of the existing architectural language.* (left). *The corner of this street in Canterbury has been enhanced with this infill development* (below). *This single house in Sandwich blends discreetly with its adjacent neighbour despite using subtly different materials.* (bottom)

Artist's impression of an infill site within a street being used to create a new public space.

Infill scenario 1. *A break in street frontage where uniform buildings and spaces establish a clear set of design constraints.*

Infill scenario 2. *A break in street frontage where a variety of building types in a continuous frontage allows flexibility in height and elevational treatment.*

Infill scenario 3. *A break in street frontage where random building types and plot positioning combined with mature landscaping allow more freedom for the designer.*

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