APPROACH PRINCIPLES COLLABORATION DEVELOPMENT

the Kent design guide

The Kent Design Initiative

This Guide is produced by the Kent Design Initiative, a unique partnership of Kent's local authorities, developers, builders, communities and interest groups who have joined forces to campaign for good design in Kent. It updates 'Kent Design – a Guide to Sustainable Development' published in 2000, with new policy context, references and examples.

Chairman: Tony Hillier

foreword

Over the next 20 years, Kent will experience unprecedented growth that will bring over 100,000 new homes and many new jobs to the County. The Kent Design Guide has been produced to ensure that all new development results in vibrant, safe, attractive, liveable places where people want to be.

Good design adds environmental, economic, social and cultural value - it enriches our lives. It results in people working, learning, healing, playing and living better and helps communities flourish. Good design is a fundamental requirement – never to be considered as a 'bolt-on extra'.

Our aim is to create a showcase of great buildings and desirable places that reinforce Kent's distinctive character. The creation of faceless urban or rural expansion schemes that lack heart and identity is not acceptable.

The Guide provides the criteria necessary for assessing planning applications. It will help building designers, engineers, planners and developers achieve high standards of design and construction; and it will provide planning committee members and officers with the tools to refuse consent for poor design.

There is no excuse for poor design, and inferior, standards of development in Kent must be a thing of the past. This guide will be used by those responsible for granting planning consent as the measure of quality expected from now on.

We hope you will welcome the guidance and use it to ensure that any development you are associated with inspires excellence – helping to make Kent widely known as a place for outstanding design, a place where people want to live and work.

Sir Sandy Bruce-Lockhart OBE
Kent County Council

Tony Hillier
Chairman, Hillreed Homes
Kent Design Chairman

Piers Gough CBE
Partner CZWG Architects
Kent's Design Champion

Places where people want to be. The popular Tenterden High Street

about this guide

The Kent Design Guide seeks to provide a starting point for good design while retaining scope for creative, individual approaches to different buildings and different areas. It aims to assist designers and others achieve high standards of design and construction by promoting a common approach to the main principles which underlie Local Planning Authorities' criteria for assessing planning applications. It also seeks to ensure that the best of Kent's places remain to enrich the environment for future generations. The Guide does not seek to restrict designs for new development to any historic Kent vernacular. Rather it aims to encourage well considered and contextually sympathetic schemes that create developments where people really want to live, work and enjoy life.

Illustrations accompanying the text are intended to add clarity. They are not meant to be solutions to particular issues but are intended to stimulate good and creative design.

At the end of sections 2 and 3 a checklist is provided as an 'aide memoire' to the design guidance principles and the planning policies to which they relate. The checklist also appears in full at the end of the document.

Who the Guide is for

- developers, landowners, property managers
- architects, engineers, surveyors, urban designers
- local authority members and officers
- community and amenity groups

Technical specifications relating to the design of roads, street lighting, landscaping, drainage and a range of other issues will be produced and updated to accompany this guide.

Visit www.kent.gov.uk *to find the most up to date documents.*

Planning Authorities in Kent will adopt this guide as a Supplementary Planning Document so that it can be a material consideration in determining planning applications.

"Good design keeps the user happy, the manufacturer in the black and the aesthete unoffended" Raymond Loewy, industrial designer, 1893-1986

The Richard Rogers Partnership design for the Ashford Outlet Centre attracts five million visitors each year and has lifted confidence and increased values in Ashford

the value of good design

"Good design should be the aim of all those involved in the development process and should be encouraged everywhere" 'Planning policy guidance note 1'

1.1 Good Design and Policy Framework

'Design' covers a range of factors that shape our interaction with the built environment. 'Good Design' is about creating attractive and successful places that work well. Design is a subjective issue but most would agree that well-designed developments are those that add something positive to the environment and enrich the lives of those who live in, work in or visit them.

'Urban Design' is about the design of building form and the spaces between: paths, streets and squares – from a single structure to a major development. Urban Design is not just about design in towns and cities. It applies to villages and rural settlements as well.

The Government is keen to ensure that design becomes a central issue in local planning policy and decision making. Successful development is based on a balanced judgement between a variety of factors including local context and character, transport and movement and the needs of the local economy, leisure and housing.

Building communities

Good design will generate a lively, well-used environment coupled with the development of a strong local economy, safe and attractive places in which to live and work and good access to services. By contrast, poor design could create a hostile unloved environment that may lead to social and economic dysfunction and reduce the value of surrounding areas.

Seven benefits of good design

Well designed development can:

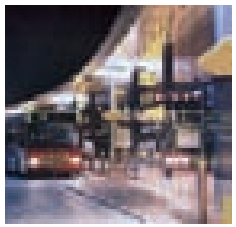
- raise people's spirits
- create a higher quality of life
- enrich the existing environment
- create higher capital value
- attract people
- increase marketability and prestige
- lift confidence in surrounding areas.

High design standards need not add to the costs of construction, but will invariably increase the marketability and prestige of completed developments and raise the quality of the environment by lifting confidence in surrounding areas. This effect has been demonstrated by many schemes in Kent.

Good Design means:

- **Enriching existing character** – reinforcing local patterns of development and landscape while not ruling out innovation
- **Diversity** – making places with variety in the form of buildings, in materials and in the mixture of uses
- **Understandable places** – having a clarity of form and layout which is easy to comprehend
- **Achieving a pride of place** – development with attractive, lively and pleasant public spaces that draw people together and create a sense of place
- **Easy movement** – easy to get to and move through; routes that are safe and welcoming
- **Enduring and flexible places** – built to last and energy-efficient according to the intended use but with the ability to be easily used for another purpose.

Diversity *A varied mix of uses and building styles create a vibrant street scene.* (Gravesend High St)



Easy movement
Good quality, accessible public transport to local amenities. (Bluewater bus station)

Understandable places
A clear and legible layout helps people find their way. (Orchard Edge Iwade, Hillreed Homes)

Elements of good design, some Kent examples

Enduring and flexible
Adaptable buildings can accommodate changing patterns of use over time. (Holiday Extras, Hythe)

Pride of place *Attractive open spaces and paths make people proud to belong.* (Ingress Park, Greenhithe, by Crest Nicholson)

Enriching character *Enhancing existing character while encouraging innovation. in style and layout* (Lacuna, Kings Hill by Environ Sunley)

The Policy Framework

The current system of regional planning guidance set by the County Structure Plan, Local Plans, Waste, Minerals and Unitary Development Plans is to be replaced by a single plan based on Regional Spatial Strategy. Up-to-date advice may be sought from the individual local planning authority concerned and Kent County Council/Medway Council as appropriate.

At present, the most significant statutory planning documents in Kent are the County Structure Plan - produced by the Strategic Planning Authorities, (Kent County Council & Medway Council jointly) - and Local Plans (to be replaced by Local Development Frameworks) prepared by the twelve District Councils of Kent and Medway Council. These are supplemented by guidance issued by central and local government, and government appointed bodies such as CABE (the Commission for Architecture & the Built Environment). These are summarised in the Appendices.

County Structure Plan for Kent and Medway

The Structure Plan identifies key growth and constraint areas; sets out policies of strategic significance; and defines the strategic framework which is elaborated at detailed scale by the Local Plans.

Local Plans

Local Plans (to be replaced by Local Development Frameworks) identify the precise boundaries of development; the design policy framework and other planning assessment criteria; and the appropriate mix of uses for a site. Local Plan policies also deal with sustainable transport, environmental safeguards and mitigation measures, so providing a clear statement of a local authority's aspirations and expectations for a particular site.

Through the Local Plan review process, site owners, developers, and the community have an opportunity to challenge the contents of the Local Plan at a public inquiry. Once formally adopted, Local Plan policies have considerable weight. They can assist developers by describing local requirements so that these can be taken into account in the decision-making process.

Local Development Frameworks (LDFs)

Local Development Frameworks are a new series of planning policy documents that will shortly replace the existing Local Plan documents and which provide the framework for delivering the spatial planning strategy for the area. They include Development Plan Documents (DPDs) covering the core strategy and Supplementary Planning Documents (SPDs) covering a wide range of more specific planning policy guidance, for example, this Kent Design Guide. They will also include a Statement of Community Involvement; defining ways of involving the community in the preparation and review of development documents and development control decisions.

Transitional arrangements will be set up to maintain continuity for development control purposes. Adopted structure and local plans in Kent will retain development plan status for a period of three years from July 2004 during which local planning authorities will bring forward Local Development Frameworks (LDFs). For plans in preparation the three-year period will start from adoption or approval of the draft plan.

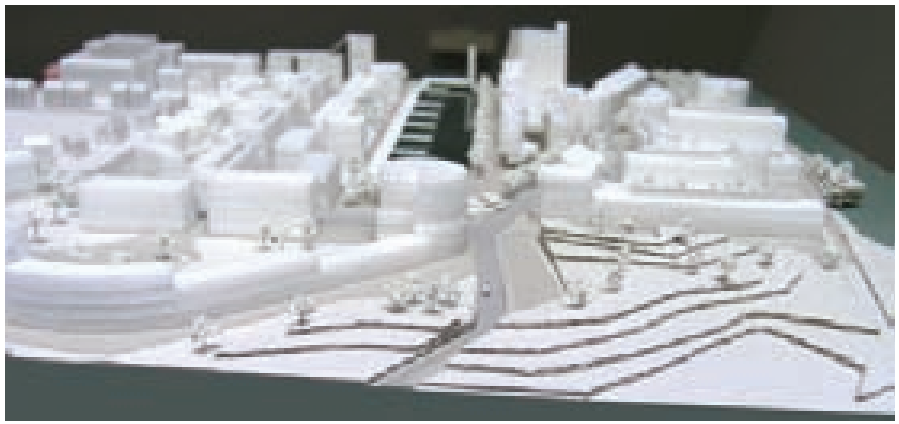
Masterplans *establish land uses, movement routes, public open spaces and phasing.* (Lord Street/Parrock Street, Gravesend)

Supplementary Planning Documents

A variety of other documents add further detail to local planning authority requirements. For certain sites more specific and detailed guidance may have been prepared to show how policies are to be applied. These are often prepared where a site's development could not be anticipated in the adopted development plan. When prepared in consultation with the public and interested parties, and if adopted as Supplementary Planning Guidance (SPG) or as a Supplementary Planning Document (SPD), they carry considerable weight. The different forms include:

- Area Development Frameworks
- Development Plan Documents
- Urban Design Frameworks (for areas)
- Masterplans (for sites)
- Development Briefs (for sites)
- Design Codes (for sites and areas)
- Village and Town Design Statements
- Design Guides
- Statements of Community Involvement
- Sustainability Statements
- Landscape Character Assessments
- Biodiversity Action Plans
- Environmental Impact Assessments
- Planning Agreements

For further information on these documents see glossary.



Using models *Model built to help local people and key stakeholders understand what a proposed development will be like.* (St Mary's Island - Housing competition entry).

A concept sketch will give the first impression of the character of a new development.

1.2 Getting the Process Right

Getting the process right is a fundamental part of good design; not an add-on. There is a plethora of design and planning guidance available so, for many well-meaning developers, trying to build a scheme that everyone agrees constitutes 'good design', can be like negotiating a minefield.

There are a number of simple steps to getting the process right:

1 **Know your site and its context:** this involves understanding the local community; the local planning policies; the area's strengths and weaknesses and the best-loved local features and buildings. It is important to visit the area and stay overnight and at different times of the week to get a 'feel' for it. Many developments are designed to concept stage without the developer or architect ever visiting the site. Do not do this if you are designing in Kent. Get to know the place first.

2 **Understand the planning process and policy framework:** these are not designed to make life difficult for developers and designers. They are intended to manage development and growth so that it achieves the best long-term benefits for the local community and the environment as a whole.

3 **Sign up to the principal planning and design objectives from the start:** if the pro-active thinking behind Kent's Local Planning Policies is regarded as restrictive and unachievable then the design process will become cumbersome and inefficient. At the end of the day, the proposed scheme may fail to win consent. Developers should work with the planners and local community and aim for the scheme to help achieve local aspirations.

4 **Keep talking:** maintain an ongoing dialogue with local planners and the community to help them gain 'ownership' and pride in the proposed development, even before it is built. If major design or planning problems are encountered, the most constructive solution can often result from sharing these and working towards a collective approach.

5 **Be flexible and adaptable:** some compromise will inevitably be required and if points of contention are not resolved at the pre-planning stage then they may become grounds for refusal or call-in. Some local requirements may appear to incur early capital cost but, if a long-term view is taken, this early cost can often be recouped in the increased value that results from building desirable well-loved places.

6 **Ask yourself whether you would be prepared to live or work in the proposed scheme** and if you would be proud to have it in your back yard. If not, why not?

See Section 3 'Getting the Planning Process Right' for further details on process.

Imaginative community involvement. *A development board game for members of the public to play showing how Ashford might grow in the future.* (designed by Urban Initiatives, 2003)

Achieving good design through all parties working together to achieve the best result.

Designing together. *Enquiry by Design workshop session for key stakeholders.* (Aylesham, 2003)

Getting to know the site – *Designers and local people work together on site.* (Ashford Barracks)

Tuning in. *Developers get a 'feel' for the area and those things the community value about it*

1.3 Respecting Context and Character

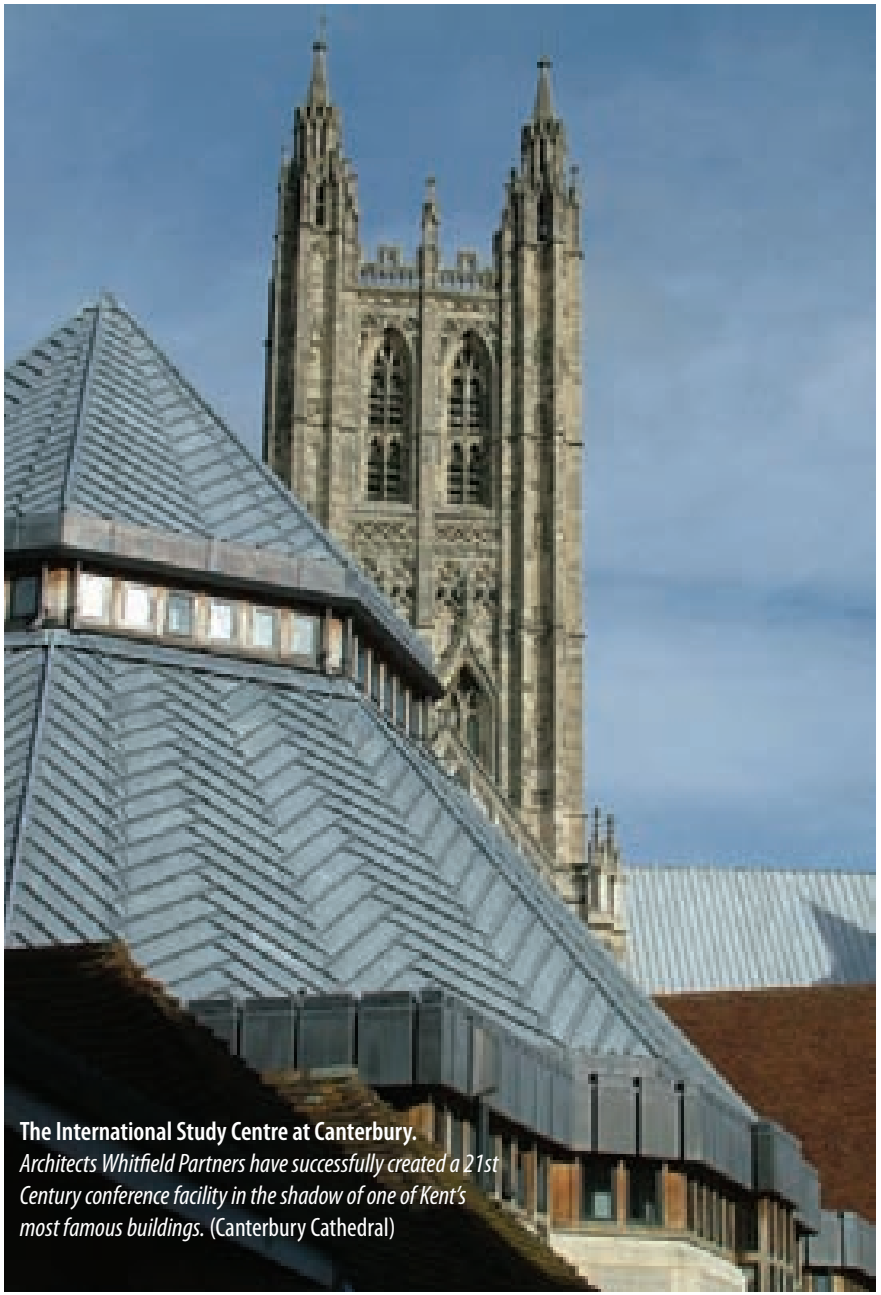
Context is of major importance, emphasising the need for the layout and appearance of buildings to be based on an appraisal of the character of the site and the adjoining land and buildings. New developments must cater for the needs of residents and visitors and must consider and raise the general aspirations and expectations of neighbouring residents and the general public. The positive features of the area should be identified and reinforced in any new proposal.

Build on local character

The traditional townscape and architecture of Kent is found in distinctive local character developed over generations. Kent's towns and villages are characterised by their compact form, building diversity, mix of uses and materials, active street frontages, irregularity of plan, pattern of narrow lanes and the informality of spaces. There are clear differences between coastal towns and inland settlements.

To achieve a well-integrated design, the established character of existing towns, villages and countryside must be respected. The design of new developments should evolve from the special local or Kentish character. This means:

- Reinforcing positive design features of an area
- Respecting the scale, street patterns, landscape, local materials, colours, style and detailing of surrounding areas
- Carefully managing differences in building and eaves height
- Including public areas that draw people together and create a sense of place, routes which make a positive contribution
- Avoiding a wide variety of building styles or mixture of materials
- Maintaining and creating good views and vistas, and
- Forming a harmonious composition with surrounding buildings or landscape features.

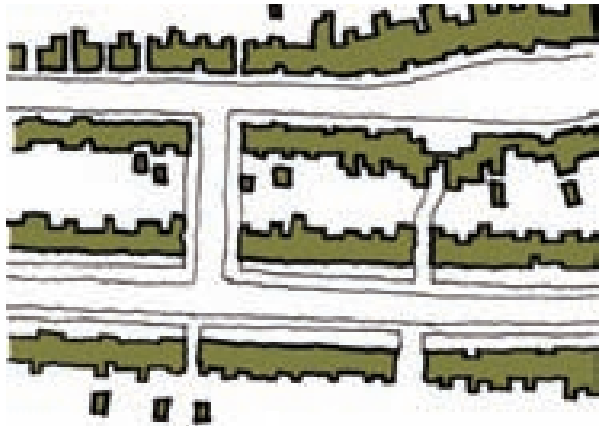


The International Study Centre at Canterbury. *Architects Whitfield Partners have successfully created a 21st Century conference facility in the shadow of one of Kent's most famous buildings.* (Canterbury Cathedral)

CHARACTER AREA GUIDELINES

URBAN AREAS

- Existing urban character of good quality should be reinforced by the continuation of its density and layout characteristics.
- In Kent's traditional urban areas, densities are relatively high *(50-70 units per hectare)* and different uses are typically closely integrated.
- Non residential uses normally cluster around 'nodes' where streets intersect and a small square or other open space should result.
- The way buildings enclose the open space and the pattern of streets and squares is often called the 'urban grain'. It is typically intricate and sometimes irregular, flowing naturally and following contours rather than arranged in a rectangular layout.
- The ratio of height to width in streets will average 1:1.
- Typical materials will be local brick, sandstone, clay tiles, copper, lead or zinc roof claddings, painted render, painted or stained timber, painted ironwork.
- Colours will be strong and natural, with crisp, elegant lines.
- Formal landscaping with concentrated areas of lush greenery and public art.
- Good amenity lighting everywhere.
- Surface car parking is limited.
- Opportunities for improved refuse management.
- New spaces and squares should be encouraged.

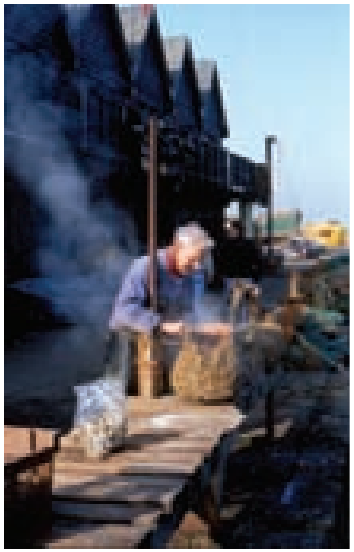


Urban areas contain a mix of uses and have a tight grain that attracts activity and vibrancy. Materials tend to be varied, with local brick and tile alongside sandstone, copper and painted render.

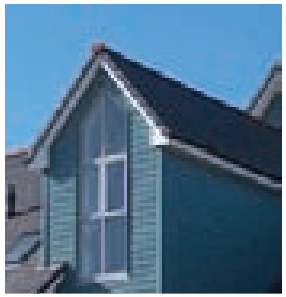
CHARACTER AREA GUIDELINES

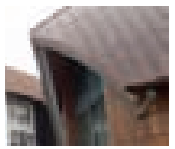
COASTAL TOWNS

- Coastal town densities are usually as high as other central urban areas, and often much higher *(70-120 units per hectare)* around the central seafront.
- Main commercial areas are usually concentrated in central areas in linear form, either parallel or at right-angles to the seafront. They will include homes as well as shops, cafes, restaurants, hotels, leisure and sometimes offices.
- Wide promenades act as the main public open space.
- The 'urban grain' will be tighter with narrow streets, alleyways and small unexpected squares, often providing shelter from the prevailing wind and acting as a winter suntrap.
- Unexpected glimpses or vistas of the sea.
- The ratio of height to width in streets will be greater than 1:1.
- Typical materials will be painted, stained or natural timber, local brick, black glazed bricks, painted render, large areas of glazing, painted metalwork and stainless steel.
- Palette of fresh, light, pastel colours intermingled with black and white.
- Use of projecting bays, oriel windows and balconies.
- Mainly hard landscaping with some robust seaside planting, public art, banners and innovative attractive lighting.
- High car accessibility and visible parking.
- Opportunities for improved refuse management.



Activity in coastal towns is focussed around a promenade and main street, where densities are generally high. Robust materials and hard landscaping prevail to stand up to the harsh weather conditions, but sometimes featuring strong colours such as pastel renders.

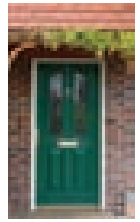




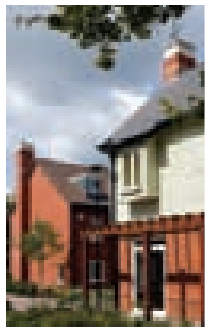
CHARACTER AREA GUIDELINES

SUBURBAN AND URBAN FRINGE

- Usually single use – mainly residential or light industrial.
- Urban grain will be looser – midway between urban and rural in character.
- Density needs to remain compact *(30-50 units per hectare)* to avoid urban sprawl but form needs to scale down so that the urban fringe blends easily into the countryside.
- Good public transport links to urban centres needed.
- Strong individual form and character needed to avoid sense of 'anywhere' places.
- Important to create a 'heart' to maintain a sense of identity with some open space and local facilities within walking distance of housing.
- Ensure quality landscaping and boundary treatment eg; hedges, fencing needed around industrial estates to avoid 'siege' effect.
- Avoid large areas of car parking by enclosing within courtyards surrounded by buildings or good planting.
- Keep lighting soft and directional to avoid light pollution.



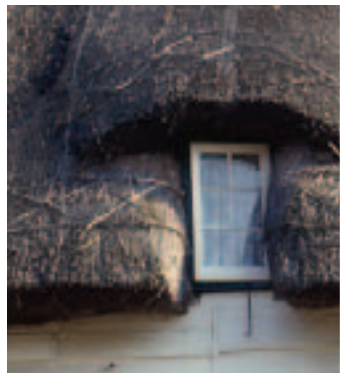
Suburban areas are generally lower density with regular plot forms, but often lack a distinct centre or heart.



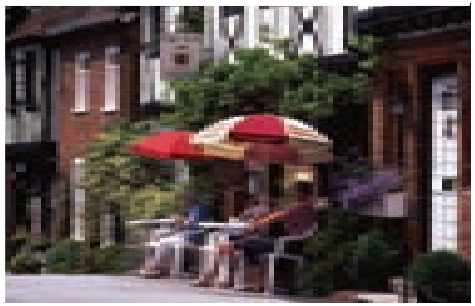
CHARACTER AREA GUIDELINES

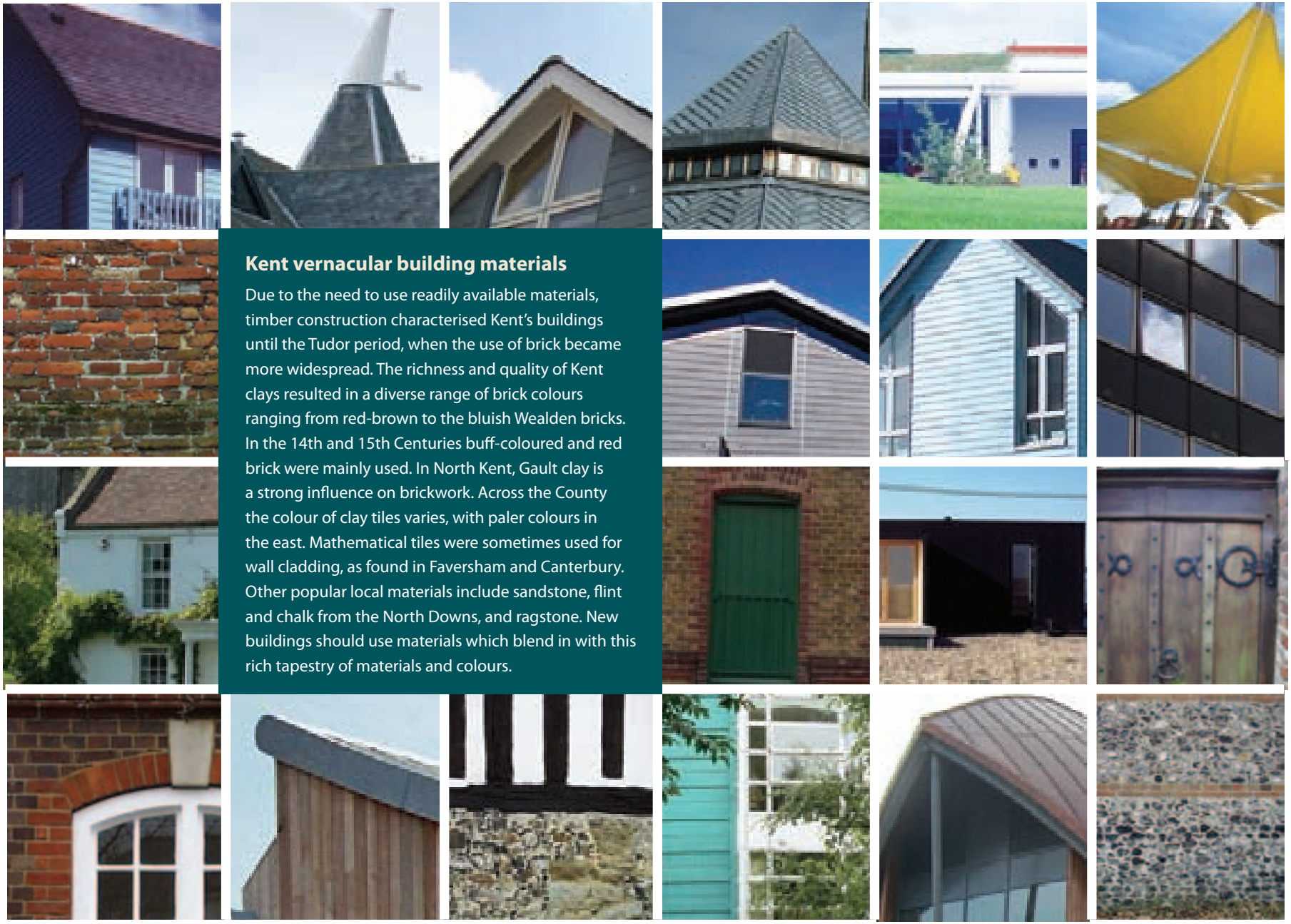
RURAL AREAS AND VILLAGES

- As elsewhere in rural Britain, traditional Kent villages are usually built to very high densities (50-70 units/hectare) concentrated on a few streets or around a village square, green or other public space where the community can congregate for special events.
- In contrast to urban areas, the buildings are set within landscaped areas. The role of the village square or green is therefore as a public space with amenity value rather than just a landscaped area – so seating, parking and commercial/ community activity must be provided to stimulate community interaction. Such spaces are important to retain and should be encouraged in new development.
- The ratio of height to width in streets will be less than 0.5:1
- Typical materials will be local brick, clay tiles or slate, stone, painted render, painted or stained timber, painted ironwork.
- Mix of strong and soft natural colours; soft natural forms with a mix of rectangular and curved lines.
- The landscape is all around so no formal public landscaping except street trees will be needed – private gardens will enhance the public realm so hard car standings should be avoided and front gardens encouraged.
- Good amenity lighting and sensible refuse management will be needed.



Villages are usually intimate in character and centred around a square or green. Materials tend to be limited to locally available brick, timber, tile and render, softened with age.





Kent vernacular building materials

Due to the need to use readily available materials, timber construction characterised Kent's buildings until the Tudor period, when the use of brick became more widespread. The richness and quality of Kent clays resulted in a diverse range of brick colours ranging from red-brown to the bluish Wealden bricks. In the 14th and 15th Centuries buff-coloured and red brick were mainly used. In North Kent, Gault clay is a strong influence on brickwork. Across the County the colour of clay tiles varies, with paler colours in the east. Mathematical tiles were sometimes used for wall cladding, as found in Faversham and Canterbury. Other popular local materials include sandstone, flint and chalk from the North Downs, and ragstone. New buildings should use materials which blend in with this rich tapestry of materials and colours.

1.4 Sustainability

Sustainable development will ensure a better quality of life, now and for generations to come. The key national and regional policy objectives lie in creating more sustainable development, and making better long-term use of natural resources. The UK government incorporates sustainability into many of its policies. The UK Strategy for Sustainable Development sets out five principles and four priority action areas.

The five principles are:

- Living Within Environmental Limits
- Ensuring a Strong, Healthy and Just Society
- Achieving a Sustainable Economy
- Using Sound Science Responsibly
- Promoting Good Governance.

The four priority action areas are:

- **Sustainable consumption and production** - working towards achieving more with less.
- **Natural resource protection and environmental enhancement** - protecting the natural resources on which we depend.
- **From local to global: building sustainable communities** creating places where people want to live and work, now and in the future.
- **Climate change and energy** - confronting the greatest threat.

A sustainable approach to development requires that location, transport connections, mix of uses and community facilities, together with careful husbanding of land and energy resources all combine to produce social and economic benefits:

- Healthier living and working environments
- Improved efficiency and productivity in use
- Reduction of fuel costs and the costs of vehicle ownership.

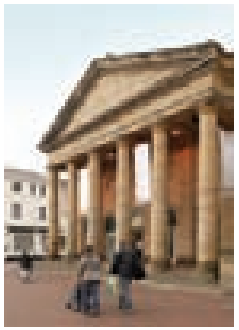
How does the development contribute to:

- ☐ Developing on brownfield or recycled land rather than on greenfield sites
- ☐ Promoting more mixed-use development to reduce commuting
- ☐ Reducing car use
- ☐ Reusing buildings and minimising waste during the construction process
- ☐ Designing buildings which are adaptable for different uses over their lifetime
- ☐ Designing and adapting buildings that use less energy to build, heat and light
- ☐ Using materials which take less energy to produce and are easy to recycle
- ☐ Providing recycling facilities for waste in the home and neighbourhood
- ☐ Using water saving devices and natural drainage to prevent depletion of the water table
- ☐ Reducing long term maintenance costs

New habitats can provide an attractive and popular feature while encouraging biodiversity. New pond system overlooked by houses and integrated into the layout. Canterbury

Cutting energy costs. *Canadian technology went into creating this highly insulated timber framed house cutting energy bills to a minimum.* (Lacuna, Kings Hill, by Environ/Sunley Homes)

Reusing old buildings. *Effective re-use of a former chapel as a shop by the Habitat chain* (Tunbridge Wells)



Minimising impact on-site *This school keeps energy consumption to a minimum by hugging the contours of the site and maximising solar gain* (Riverhead School, Sevenoaks, KCC)

Using natural and local materials. *Straw bale construction provides high thermal insulation on an exposed site with a tight budget. Very little energy was used in its construction.* (Romney Marsh Visitor Centre, New Romney)

Helping reduce global warming. *Highly efficient modern sustainable house design, cutting energy consumption, minimising CO2 emissions and helping protect our environment through sustainable construction methods.* (The Boundary House, Tunbridge Wells)

Brownfield Land

The government has set a target of accommodating 60% of new homes each year on recycled *(or 'brownfield')* land to be achieved by 2016 *(Kent's target is 80%)*. This means that development which re-uses land or buildings is more likely to achieve planning consent.

Lifetime Adaptability

The fastest route to building a functional, supportive, neighbourly community is to build homes that people can and want to live in for most of their lives instead of having to move every time domestic circumstances change. 'Lifetime' homes means designing in the flexibility and adaptability needed to allow for easy incorporation of wheelchair accessibility, addition/removal of internal walls, and ease of extension - both vertically and horizontally. This is particularly important for the aged, infirm or expanding/contracting families who may be dependent on nearby friends and family for emotional and physical support.

Mixed Use

Substantial levels of commuting to Greater London for employment developed throughout Kent over the last century. As a result, many modern housing developments are virtually abandoned for large parts of the day. There has been an accompanying decline in the economic viability of many services which, otherwise, could be locally provided. A reduction in the need for commuting can increase the vitality and economic welfare of communities, as well as benefiting people's health, increasing leisure time and reducing travel costs.

Minimising Energy Use

Buildings contribute almost half (46%) of carbon dioxide (CO2) emissions in the UK. The government has set rigorous targets for the reduction of CO2 emissions and minimising fossil fuel energy use. It is the responsibility of all new development to minimise energy use in the construction and ongoing use of buildings and to maximise passive and active technologies.

New mixed use centres *can allow people to work and shop close to home, and can help stimulate a sense of community.* (Kings Hill)

Attractive routes for walking and cycling *can encourage leisure and fitness activities too*

Solar or photovoltaic panels *can provide a cost effective and environmentally responsible form of energy.*

Minimising Construction Waste

Construction waste accounts for an alarmingly high proportion of all waste produced in this country. Government targets aim to reduce construction waste on major sites by 30%. Careful design and specification, including off-site manufacture, can help reduce waste during construction.

Recycling Materials and Buildings

Reusing buildings, parts of buildings or elements of buildings such as bricks, tiles, slates or large timbers all help achieve a more sustainable approach to design and construction. Recycling and reuse of materials can help to minimise the extraction of raw materials and the use of energy in the production and transportation of materials. Development should also maximise the re-use of existing buildings (which often supports social, environmental and economic objectives as well).

Reducing Car Use

Developments which do not require the use of a car to reach local facilities or enjoy a high quality of life will help reduce traffic, pollution, road accidents and environmental impact for all the community.

They will also encourage healthy activities such as walking and cycling and enable more social interaction and neighbourliness.

If developments incorporate local shops and facilities, are close to public transport, and include attractive, safe pedestrian and cycling routes, this will help reduce car usage without reducing car accessibility or car ownership. It will also enable a high quality of life for those least likely to own a car – the very young and the very old.

Recycling materials and good site management *can minimise the harmful effects of construction by reducing waste and the use of water and energy.*

Reuse of buildings *is sustainable and can lend a character that raises values in new development.* (Caterham Barracks, by Linden Homes)

Versatile and adaptable homes *can be provided by terraced housing.* (Kings Gate, Horsham. Belmont Homes)

1.5 Attractive, Safe and Secure Places

For communities to function well and foster a sense of well-being, people need to feel safe in their homes and in the streets and spaces around them. Well-lit and well-maintained paths, streets and squares that are overlooked without compromising on privacy are essential to making places feel safe.

A Safe and Secure Design Involves:

- **Privacy where needed in the home and garden** – careful layout of buildings, boundary walls and considerate planting to avoid overlooking from neighbouring properties or public areas
- **Easy access for people with disabilities and the emergency services**
- **Protection from noise nuisance** – careful layout and arrangement of uses; soundproofing
- **Clear definition of space** – providing a sense of belonging and helping users exercise control over their environment
- **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.

Human Scale

Most attractive and sought-after homes and businesses 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. Some modern developments fail to overcome perceptions of overlooking and visual intrusion, demonstrating that distance alone 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.

In aiming for increased 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. Upper windows overlooking paths and streets and front entrances facing the street are good ways of creating a sense of safety without intrusion.

Neighbourhood Grouping

Neighbourhood groupings foster community development in housing and mixed use schemes 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 size of cul-de-sac house groups to not more than 20 dwellings.

Safe pathways and spaces *achieved by overlooking* (Stonegate Place, Wye, Environ Country Homes)

"Crime, fear of crime and antisocial behaviour are major concerns for society today...success in stopping and reversing 'crime climb' has been down to a number of themes...[including] a focus on and the development of crime prevention through environmental design".
Dr Tim Pascoe, Building Research Establishment, foreword to 'Design out Crime' by Ian Colquhoun, 2004.

Design clues for safety and security. *Illustration showing the most important elements that go to make a safe and secure neighbourhood.*

Using the streets. *Careful design making the highway a safe place for all.* (Homezone at Cavell Way, Sittingbourne)

Overlooking without reducing privacy. *Streets and spaces feel safe and secure when overlooked from homes and public spaces.* (Lacuna, Kings Hill.)

Lively and active places *offering natural surveillance and lifting the spirits.* (Canterbury)

1.6 Movement and Connections

The design of the street system should start from the need to establish a clear, legible, joined up structure for the area, not from the technical demands of traffic. This layout may, in part, be suggested by the topography, natural desire lines and access routes to the site.

Designers should therefore 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.

It should be possible for pedestrians and cyclists to move freely between all parts of a layout, both locally and on a wider scale. The disadvantage of a layout based entirely of culs-de-sac and loops is that routes for pedestrians are indirect and boring and therefore pedestrian movement is discouraged. This creates dead areas which are vulnerable to property-related crime. Furthermore, culs-de-sac layouts result in higher traffic levels on feeder roads, with a consequent loss of amenity to residents of those roads.

Pedestrians and Cyclists

Developments should be 'permeable' (easy to move through in all directions) and linked to the surrounding network, allowing pleasant safe, direct routes for pedestrians and cyclists. Walking and cycling can be encouraged by schemes such as 'Safer routes to School'. Convenient cycle storage should be provided in homes and outside community facilities, shops and other destinations.

Movement Appraisal

A movement appraisal should be carried out for proposed developments to ensure a clear understanding of existing and possible future movement patterns. The movement appraisal will inform the preparation of a movement framework for the development and should include the following elements for each mode of transport:

- how the site relates to existing routes
- how the best connections to these routes can be made
- what improvements need to be made to these routes

Street Hierarchy

All developments should relate to a network of streets that form a clear 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.

Public Transport Links

Good public transport should be available at the initial phase of a new development, either by linking to existing networks or by establishing new routes. A coordinated approach between different transport modes should be encouraged.

Motor Vehicle Provision

Access provision for motor vehicles should cater for the size and frequency of essential vehicles and should reflect the need for public safety and the requirements of all modes of transport.

Parking

Parking provision should be determined by locality and the availability of other forms of transport. Adequate spaces should be provided to prevent people parking in inappropriate places (e.g. on footways or verges).

Support for Sustainable Transport

A comprehensive movement framework will not be effective unless people are aware of it and are willing to support the more sustainable forms of transport. In major developments, schools, businesses and developers should submit Green Travel Plans which encourage staff to think about their travel choice and consider alternatives to the car. It is not an all-or-nothing choice. The essence of a travel plan is 'travel blending', where an alternative to the car is used perhaps once a week. Incentives can be offered to those supporting such initiatives.

Catering for Disabilities

Almost 7% of people suffer from some form of disability which affects mobility. This figure may rise as life expectancy increases. Consideration must be given to the comfort and mobility of people with disabilities. The documents `Highways suitable for the mobility impaired' (Kent County Council) and `Reducing Mobility Handicaps' (www.iht.org.uk) cover highway design aspects. In some cases the Local Planning Authority may require submission of a Disability Discrimination Act 1995 (DDA) audit with the planning application. A safety audit under section 38 of the Highways Act may also require this.

1.7 Landscape and Open Space

Landscape is a combination of nature and culture; it is formed by topography, trees, hedges, paths, roads, structures and materials. These elements determine the landscape character of an area. A well-designed landscape will provide:

- An attractive setting for a development, its users and occupiers
- A positive environment of wider economic benefit
- A sense of place with a clear identity
- A sense of space and enclosure
- Spatial benefits including integrating the visual impact of the built environment with nature
- Environmental benefits including micro-climate creation, pollution attenuation and the reduction of water and energy consumption
- Noise and visual screening, and
- Retention of cultural associations with the natural environment.

Amenity Space

Amenity space is outdoor space used by people for pleasure, recreation and contact with nature. In addition, amenity space can accommodate sustainable drainage techniques. The appropriate amount of open space should be considered locally. Amenity spaces can provide:

- An enhanced quality of life, promoting social and physical well-being
- Places to meet, relax and exercise
- Space to hold events
- Facilities such as children's play areas, tailored to meet local needs
- Links between built up areas and the countryside reinforcing, where possible, the character of existing local routes, and
- Opportunities for residents to manage their environment, reinforcing a sense of community.

Ecology

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

- Opportunities for retaining or enhancing 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.

Green Space and Health

The benefits of green space have a direct effect 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.

Green space can improve physical and mental health, and encourage biodiversity. **(Crossways Business Park, Dartford, Land Securities)**

Creating the Design

Artist's impression of a new village centre. *Creating good design is about making enduring places with strong identity and distinctive character*

section 2

Creating the Design

Places that people want to live in, work in and visit do not just happen. Designers have to be creative and work hard to combine all the elements of a successful place in an integrated design.

Successful places tend to:

- be friendly, safe and attractive
- be well used - a steady passage of people provides a feeling of safety
- have public space and squares that draw people together
- have spaces for public events, markets and performances
- clearly distinguish private and public areas
- have building frontages with a direct relationship with the street
- have clearly defined entrances to buildings used by the public
- have a network of pedestrian routes and spaces
- give priority in streets to people rather than to vehicles
- have clearly defined boundaries for public areas – using hedges, fences and trees
- have a coordinated approach to street surfaces and furniture – lamps, seats, litter bins, paving, bus shelters and signs.

Quality open space *Historic green spaces and newly designed open spaces need to integrate successfully within new neighbourhoods.* Tenterden

New village centre. *Active, mixed use centres are an important ingredient of successful new neighbourhoods.* Kings Hill (Lee Evans partnership)

Drawing inspiration from a location's native character strengthens local identity. Design that is out of context will lead to an 'anywhere place'. A full appreciation of the overall site context is essential as a starting point for creating a sense of place.

Local Distinctiveness *These modern houses revive a traditionally Kentish coastal appearance.* Whitstable (Clague Architects)

Town Centre. *Strong vibrant centres are needed in Kent's existing towns if they are to support growth of residential areas.* Whitefriars Canterbury (Land Securities)

Creating a 'sense of place'

Creating a 'sense of place' or 'character' is one of the most important things for new development to achieve and requires considerable skill. It combines all aspects of the design process from site selection and analysis through to the finest of details.

A sense of place is about character, identity and variety. Architectural distinctiveness and urban design is required that appreciates the surroundings, the topography and views and reinforces identity. Buildings need to be distinctive to reflect their specific location. The sense of place needs to be unmistakably of that location, rather than one that could be anywhere else. Innovative ideas and thinking from elsewhere can still be integrated, but the local sense of place must be reinforced and not diluted; the place must be made more memorable, not less so.

Buildings and areas of architectural or historic interest are of particular importance. Their cultural and aesthetic qualities give a richness and diversity to the environment and offer a sense of place and historic continuity.

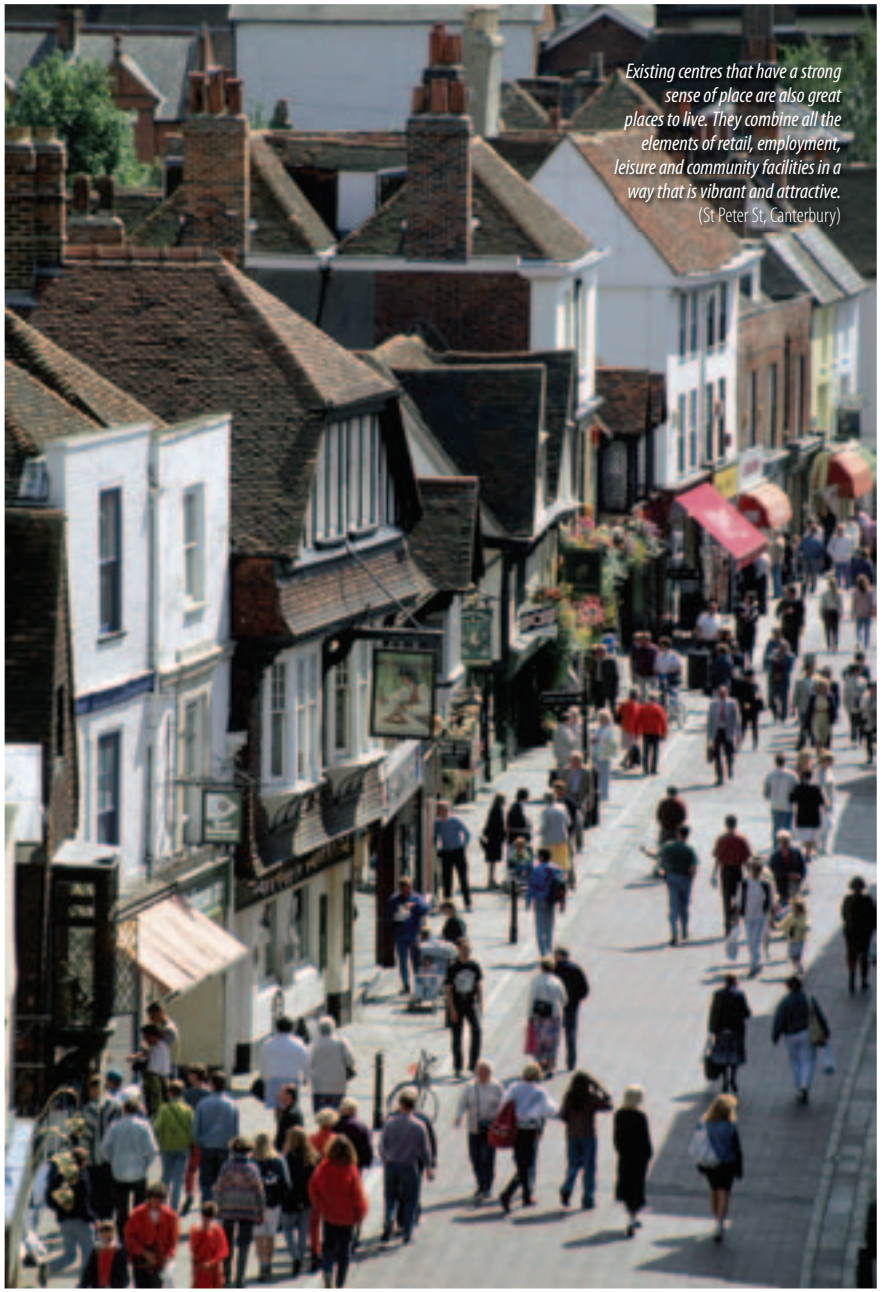
This section of the Guide sets out the important aspects of creating designs for memorable, vibrant, attractive and safe new places. Four steps can be identified:

Step 1 – Understanding the site

Step 2 – Generating the layout

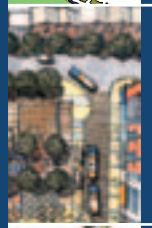
Step 3 – Designing for movement

Step 4 – Getting the detailing right

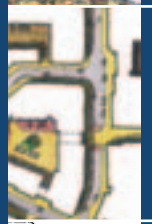


Existing centres that have a strong sense of place are also great places to live. They combine all the elements of retail, employment, leisure and community facilities in a way that is vibrant and attractive. (St Peter St, Canterbury)

Step 1
Understanding the site



Step 2
Generating the layout



Step 3
Designing for movement

Step 4
Getting the detailing right

Creating the Design

Step 1 - Understanding the site

2.1 UNDERSTANDING THE SITE

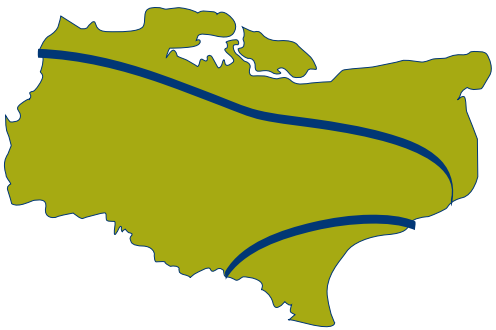
To be successful, any new development needs to be based on a good understanding of the local context.

Kent is a large and diverse county exhibiting a variety of building characteristics in different areas.

External perceptions of Kent are mainly based on 'Garden of England' images, for example the orchards, market gardening and hop farms of West and North-West Kent, but also the former industrial areas of North Kent, particularly along the River Thames and the Medway. These perceptions help us to define character landscape areas of Kent:

- The **coastal** strips – North and East Kent *(visions of seaside holidays)* to The White Cliffs and Folkestone *(the gateways to and from continental Europe)*
- The **North Downs** and **Greensand Ridge** from Farnham in Surrey to the coast at Dover
- The flat areas of **Romney Marsh**.

This has resulted in a variety of vernacular forms of historic architecture in Kent. These mainly stem from the use of localised materials, maritime influences, and proximity to means of transport.



'One of the keys to a successful project is to achieve an understanding of its physical context through an urban design analysis; it is unwise to try to change a place without first understanding it. This analysis should go beyond the view from the site boundary. The site's context includes the neighbourhood and the town or city as well as the street'.
CABE 'Design Review'

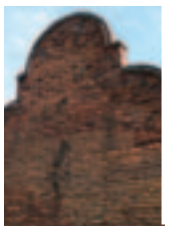
Character areas of Kent. *Familiar images of Kent's coast, downs and marsh help us form an overall impression of character.* (The beach at Dover; Northdowns Way near Trotiscliffe and Fairfield church on Romney Marsh)

The positive features of the area should be identified and reinforced in any new proposal.

To achieve a well-integrated design, the established character of existing towns, villages and countryside must be understood and respected. The layout and appearance of buildings should be based on an appraisal of the character of the site and the adjoining land and buildings (an approach advocated in PPS1). Many modern developments fail to do this; being larger in scale, having greater uniformity of building type and needing to accommodate the intensive use of vehicles.

New buildings in places with architectural or historic character need to enhance that character.

Sometimes it may be best to reflect the predominant period style. But a design that interprets the character in a contemporary way using modern or traditional materials will work well if designed to a high quality that respects its context. A legacy of good buildings that reflect the spirit of our age without detracting from the historic context is a primary aim.



Building character in Kent. *A variety of home grown architecture exists in Kent. There are traces of outside influence historically such as the Dutch Gable. Many new buildings choose to follow closely a 'Kentish Style' where the context is largely historic.* (Homegrown architecture at Broadstairs, curved corner building in Canterbury and Dutch gable end at Sandwich)

Kent and the history of its built environment

Although previously settled by Belgic and Roman invaders, Kent's distinctive pattern of small settlements stems primarily from its Saxon past. Market towns evolved on this pattern to provide the economic hubs whilst isolated churches met the needs of remote communities. While Kent has splendid examples of Elizabethan, Jacobean and Palladian architecture, much of the county's built heritage has been defined by the practice of dividing land into small plots, resulting in a substantial heritage of small, timber-framed houses.

Kent's scattered interior contrasts with the character of the coastal towns. Here, there are fine examples of defensive castles and military strongholds. The influence of continental trade on domestic architecture remains in curved Dutch gables, particularly in East Kent.

Kent's religious buildings include Augustinian 7th Century churches, fine 12th – 14th Century parish churches, and the cathedrals at Canterbury and Rochester. Windmills, oasts and agricultural buildings also make a significant impact on Kent's heritage and landscape.

Detailing in context is important. Some external features that add to an urban scene can detract from a rural one (for example, ornate walls, railings and lamps, ornamental plants and trees). The inappropriate use of hard paving and kerbs can also be detrimental to the rural environment.

2.1.1 THE SITE APPRAISAL

A rigorous investigation of the site will be required for all development.

Proposals should be accompanied by a thorough 'Site Appraisal' which should include as a minimum:

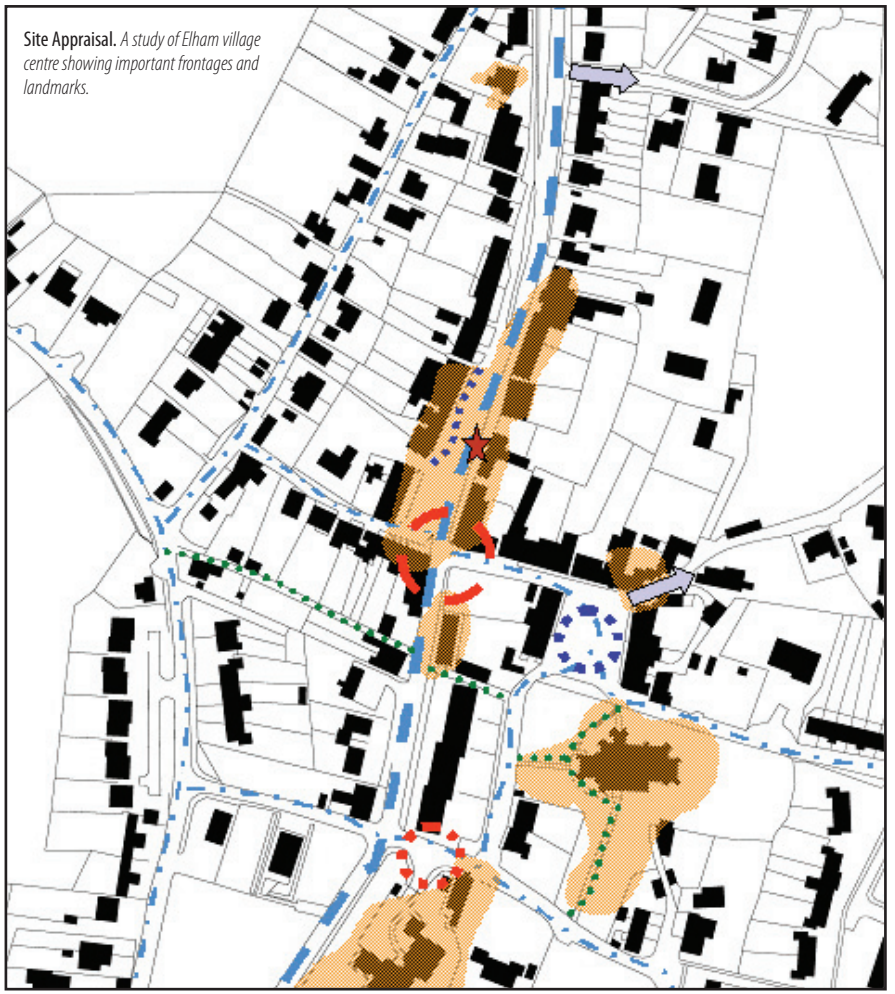
- the historical development of the area
- existing qualities that will influence new development
- the level and lie of the land
- the historic influences and design quality of the built environment
- the pattern of streets and movement
- constraints and opportunities
- statutory protection provided in conservation areas and for listed buildings

A Site Appraisal Checklist is included at the end of section 2

Features of 'local distinctiveness' may appear elusive, but clues usually lie in the history, landscape or deeper evaluation of an area. The appearance of previous buildings should be researched. The more challenging sites without distinctiveness can offer the opportunity for innovation and an opportunity to create a new identity.

Conservation areas, listed buildings and their settings and scheduled monuments make an important contribution to local character, provide important landmarks and legibility, and have statutory protection. Consent is required for the demolition, alteration or extension of any building or part of a building or structure, and for the removal of trees. There are many examples of buildings that have been successfully converted to new uses. Significant views to, from or across a site should be safeguarded since they will help to confirm a sense of place. Particular care in design is needed where new development will be seen against the skyline. Scale, bulk and detailing are all of equal importance.

An urban design analysis of a site's context will include assessing whether or not it is a 'gateway' or deserves a 'landmark'. This may result in a radical design solution, even an 'icon' building that could stand out from its surroundings, break existing views in a controlled way, and contribute to the area's identity and 'legibility'.



Site Appraisal. *A study of Elham village centre showing important frontages and landmarks.*

Climate Change

Climate patterns are predicted to change at an increasing rate. This will need to be taken into account at all stages in the design process, from layout/siting to the detailed design of buildings and landscape.

Building designs should be flexible to cope with future changes.
With climate change likely to bring higher tide levels, increased storms and more frequent flood events, it is even more important to take account of flood risk when considering new development. The development itself may increase the amount of surface water run-off, increasing the likelihood of flooding to the site or to other locations. Overall, the government's objective is to reduce flood risk, and it urges the use of the 'precautionary principle'. Government guidance is set out in Planning Policy Guidance Note 25 (PPG 25) 'Development and Flood Risk' due to be superseded by Planning Policy Statement (PPS) 25.

Flood Risk Assessments prepared by the Environment Agency with the local planning authority will indicate flood risk and set policies on how this is to be managed. For more information refer to the Glossary.

More information on Sustainable Drainage Systems and Sustainable construction can be found in 'Making It Happen', available 2006.

Preventing flooding. *Existing historic centres use the assets of a riverside location to their advantage but run the risk of flooding from time to time. New riverside development can create distinctive new open spaces but must be based on a careful appraisal of flood risk.* (Tonbridge and Canterbury)

Landscape Setting

The landscape setting of a development site should be understood, extended and enhanced within the site.

Landscape is a combination of nature and culture; it is formed by topography, trees, hedges, paths, roads, structures and materials. These elements determine the landscape character of an area.

A well-designed landscape will provide:

- an attractive setting for a development, its users and occupiers
- a positive environment of wider economic benefit
- a sense of place with a clear identity
- a sense of space and enclosure
- spatial benefits including integrating the visual impact of the built environment with nature
- environmental benefits including micro-climate creation, pollution attenuation and the reduction of water and energy consumption
- noise and visual screening, and
- retention of cultural associations with the natural environment.

Planting takes a long time to reach maturity so existing features which contribute to amenity and biodiversity should be retained to make the development attractive in its early years. It is important to recognise that biodiversity can be significant on brownfield sites and needs to be carefully handled.

Dover, street improvements have introduced soft landscaping to an exposed sea front street (top). Bluewater includes public open space, linking the building with large areas of water, a characterstic of the site's former use as a quarry (above left). In Gravesend a pond and mature trees forms the centrepiece of a local park (above right). In St Margaret at Cliffe, a new development of houses creates a new edge to the village using a mature existing hedge (above right)

New open space within a development can carry the character of the natural landscape into the heart of a built up area. Choice of species and management regime will be important.

Let locally distinctive landscape features define the site. Historic plot boundaries, mature hedges and natural assets like streams and rivers can help determine orientation and enhance the setting of a development.

It will not be appropriate in all cases for an otherwise rural landscape to determine the character of denser urban townscape. Nevertheless, using indigenous species of trees and shrubs throughout an urban space can tie it back to its surrounding rural area.

Contaminated land

Designers, developers, landowners and local authorities, should investigate and assess risks of potentially contaminated sites.

The issue of re-using brownfield sites can be closely bound up with issues of site contamination. Ground contamination and its treatment should be investigated and identified at the earliest stage in the design process, before a planning application is considered. This is a requirement of Section 57, Environment Act 1995. The treatment required will depend on the use and location of the site A precautionary approach should be taken to the issue of contamination *(PPS23 refers)*.

Few sites will be so badly contaminated that they cannot be used at all, but a thorough analysis must be made prior to deciding on an appropriate form of development and effective treatment. An 'Integrated Pollution Control' approach should be agreed with the Environmental Health Authority to identify:

- the type, extent and level of contamination
- the risk of displacing contaminants and affecting groundwater
- measures needed to protect users
- the treatment appropriate for the proposed uses
- the monitoring required to ensure the treatment has been effective.

Advice on contamination is given in the 'Desk Reference Guide to Potentially Contaminative Land' produced by the Incorporated Society of Valuers and Auctioneers and 'Model Procedures for the Management of Contaminated Land' produced by the Environment Agency.

2.1.2 MOVEMENT APPRAISAL

A movement and accessibility appraisal should be carried out for proposed developments to ensure a clear understanding of existing and possible future movement patterns.

The movement appraisal will inform the preparation of a movement framework for the development and should include the following elements for each mode of transport:

- how the site relates to existing routes
- how the best connections to these routes can be made
- what improvements need to be made to these routes
- The mean journey time

Walking and Cycling

Developments should be 'permeable' *(easy to move through in all directions)* and linked to the surrounding network, allowing safe, direct routes for pedestrians and cyclists. Walking and cycling can be encouraged with schemes such as 'Safe Routes to Schools' www.saferoutestoschools.org.uk. Convenient cycle storage should be provided in homes and outside community facilities, workplaces, colleges, shops, stations and other public destinations. Other considerations are:

- existing routes and approximate walking times to key facilities from the site. (A distance of 400metres usually equates to a 5 minute walk)
- how the site will connect with existing routes
- identification of barriers to walking *(e.g. the need to cross a busy road)*
- facilities for people with disabilities *(e.g. the need for alternative routes to avoid steep gradients)*. Note that those who walk the most in residential areas or town centres tend to be those who are least able to walk far – the very young and the very old.
- existing routes and approximate cycling times from the site. *(A distance of 1Km usually equates to 5 minutes cycling)*
- how the site will connect with existing routes
- identification of barriers to cycling, e.g. missing sections of existing cycleways or very steep gradients.

Horse Riding

- existing bridleways should be retained
- new developments, where appropriate, should include provision for horse-riders. Some access ways may be multi-user, i.e. walkers, cyclists and horse riders.

Public Transport

The appraisal should assess:

- access to existing routes together with the frequency of services. *(A frequent service is one that usually runs at 20 minute intervals or less)*
- exisiting facilities for bus or train travel *(e.g. bus shelters or real time information systems)*
- proximity of new bus or train stops. As a general rule, it is desirable for dwellings to be within 400 metres of a bus stop
- need for taxi waiting areas at an integrated transport node or mixed use area.

Vehicles

- existing road network
- existing levels of traffic and an assessment of capacity issues. Note: For larger sites a more detailed Transport Assessment will be required.

The above information should be recorded on maps and diagrams as part of the site appraisal documentation. Examples are shown overleaf. Maps and diagrams can be used for discussions with local planners and the public and can help compile a statement of design principles.

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

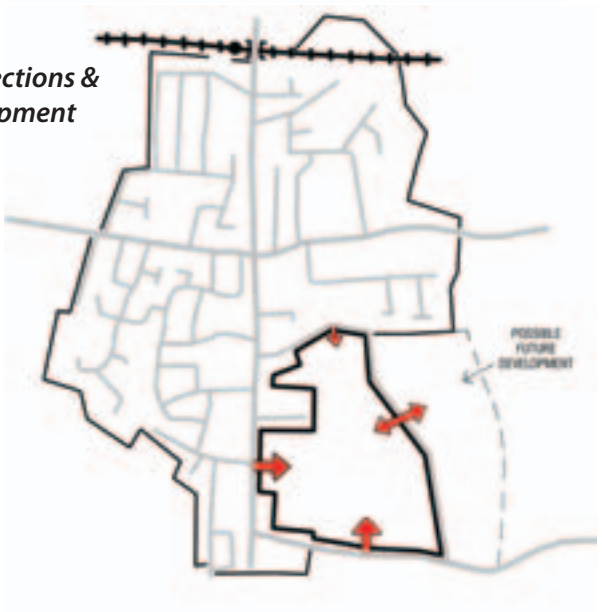
Walking

Public transport

Diagrams showing how the findings of a movement appraisal can be represented graphically. These can be used to supplement information contained in the site appraisal and inform a statement of design principles for the development.

Cycle/Horse riding

Vehicle connections & future development



Access for Mobility Impaired People

From the outset consideration must be given to the needs of people with disabilities to ensure their comfort and mobility.

A movement and access appraisal should cover the needs of people with disabilities. Around 7% of people suffer from some form of disability which affects mobility. This figure may rise as life expectancy increases.

Consideration must be given to the comfort and mobility of people with disabilities. The documents 'Inclusive Mobility' *(Department for Transport 2002)* and `Reducing Mobility Handicaps' (www.iht.org.uk) cover highway design aspects.

In some cases the Local Planning Authority may require submission of a Disability Discrimination Act (DDA) audit with the planning application. The requirements of the Disability Discrimination Act came into force in October 2004.

The Building Regulations, Part M. requires both internal and external spaces to accommodate users with disabilities.

In domestic buildings and external circulation areas connected with them the avoidance of steep ramps and steps will ease access for all. External ramps and handrails may also be appropriate where they do not conflict with the needs of the partially sighted or walking disabled. For further reference see 'Designing Lifetime Homes', 1997. This includes guidance on:

- approaches that are level
- internal spaces large enough to manoeuvre a wheelchair
- passages of an appropriate width
- electrical sockets located at a convenient height.

In public buildings, the provision of suitable arrangements is a material planning consideration. Access and facilities for mobility impaired people, including parents with small children, need to be considered from the outset.

If considered from the outset, access for people with disabilities can be achieved successfully in even the most challenging and remote places. Shorne Country Park Sculpture Trail.

2.1.3 SITE APPRAISAL CHECKLIST

Any detailed appraisal should cover the following points:

Level and Lie of the Land -

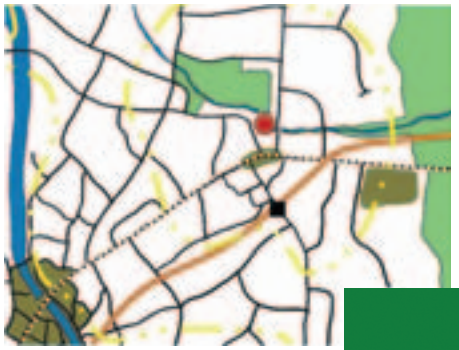
- ☐ relationship between settlements
- ☐ historic landscape setting
- ☐ orientation of the site and how it is approached
- ☐ form of the skyline
- ☐ views from the site or into the site from any public right of way crossing the site
- ☐ ground conditions, contamination, land stability, water table
- ☐ availability of natural resources for energy generation
- ☐ flood risk, streams and drainage
- ☐ nature of open spaces and how are they connected
- ☐ open spaces close to the site that could be linked to the site
- ☐ local climate
- ☐ significant or designated wildlife habitats
- ☐ existing slopes, sheltered areas and shaded areas
- ☐ proximity to existing and potential sources of noise nuisance
- ☐ archaeological remains at the site or in the vicinity
- ☐ boundaries and whether they are clearly defined
- ☐ orientation and natural daylight.

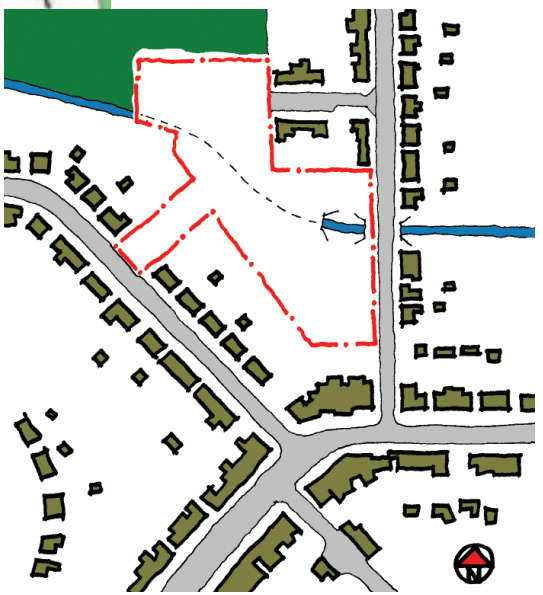
Built Environment

- ☐ relationship between buildings and spaces
- ☐ building types, scale, height, styles and density
- ☐ historical appraisal
- ☐ listed buildings and conservation areas
- ☐ boundary treatments – walls, fences, planting and verges
- ☐ important local detailed design elements such as materials, corner treatments, horizontal or vertical rhythms, windows and doors, roof lines and roof pitches, eaves heights and elevational treatments.

Pattern of Streets and Movement Appraisal

- ☐ surrounding street pattern, public rights of way and bridle ways
- ☐ existing pedestrian or cycle desire lines across or around the site
- ☐ local provision of public transport
- ☐ levels of local traffic and assessment of capacity
- ☐ width, curvature and dimensions of streets
- ☐ surface textures
- ☐ access provision – cars, pedestrians, cyclists, horse riders and people with disabilities





The findings of a site appraisal should be marked on maps and diagrams. These can be used to help other people such as local planners and the community understand the origins of a design proposal.

Use the check list to identify the main constraints and opportunities that will help shape the development

Constraints

- ☐ planning policies that specifically apply to the site's land-use, conservation, preservation, or height restrictions
- ☐ utilities, easements, rights of access and public rights of way that cannot be built on
- ☐ trees, hedges and boundary features that should be retained
- ☐ features that act as wildlife corridors
- ☐ all habitats and wild species using a site
- ☐ watercourses to be retained and any flood risk areas
- ☐ areas of sensitivity where community pressure may require additional consultation
- ☐ localised ground conditions or contaminated areas that could affect a layout
- ☐ surrounding uses which need to be protected or pose specific problems
- ☐ archaeology
- ☐ potential contribution of the proposal to existing noise levels and proximity of the site to sources of noise *(local Environmental Health officers should be contacted to identify local area designations).*

Opportunities

- ☐ mix of uses and intensification
- ☐ location of the site relative to local and main centres, public transport, health services, schools, etc.
- ☐ potential entry points to the site
- ☐ potential for use of renewable energy, local energy and combined heat and power (CHP)
- ☐ potential for creating semi-natural habitats as wildlife corridors or stepping-stones
- ☐ focal points for open space, landmarks and new facilities
- ☐ potential for improving safety and security in the area
- ☐ open spaces that could be made safer if overlooked by new buildings
- ☐ opportunities for linking open spaces and creating links to the public rights of way network
- ☐ opportunities to allow for archaeological and historic influences.

This site appraisal will allow the preparation of:

- a brief statement of design principles, explaining how the site was analysed and the design concept evolved
- an outline sustainability strategy, including how resources are to be used and recycled.

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.

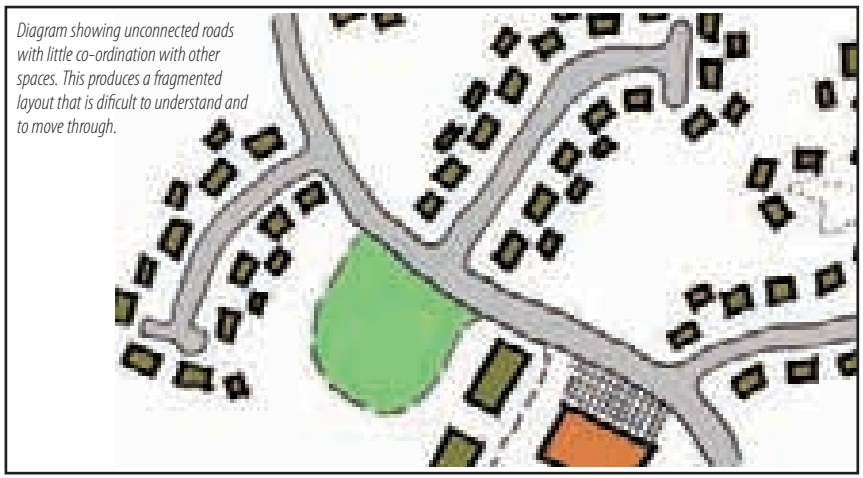
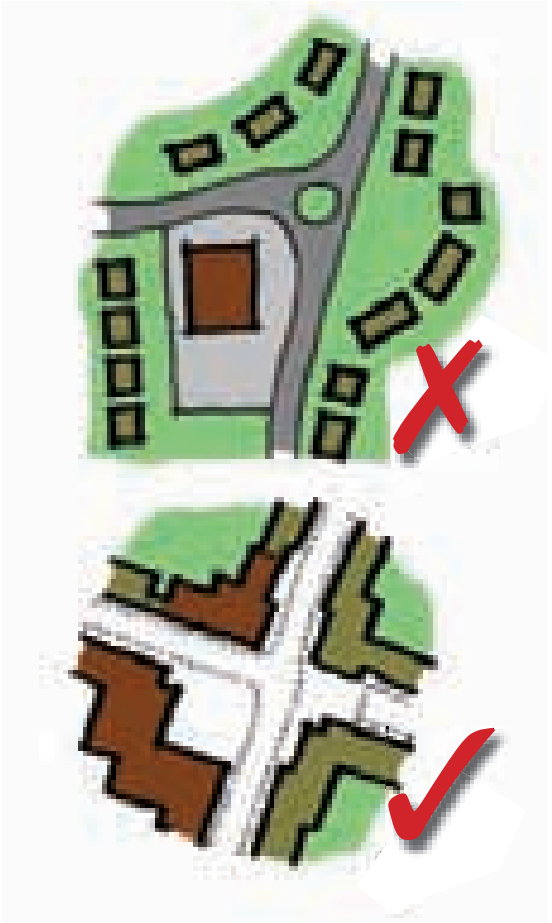


Diagram showing unconnected roads with little co-ordination with other spaces. This produces a fragmented layout that is difficult to understand and to move through.

Unsuccessful 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

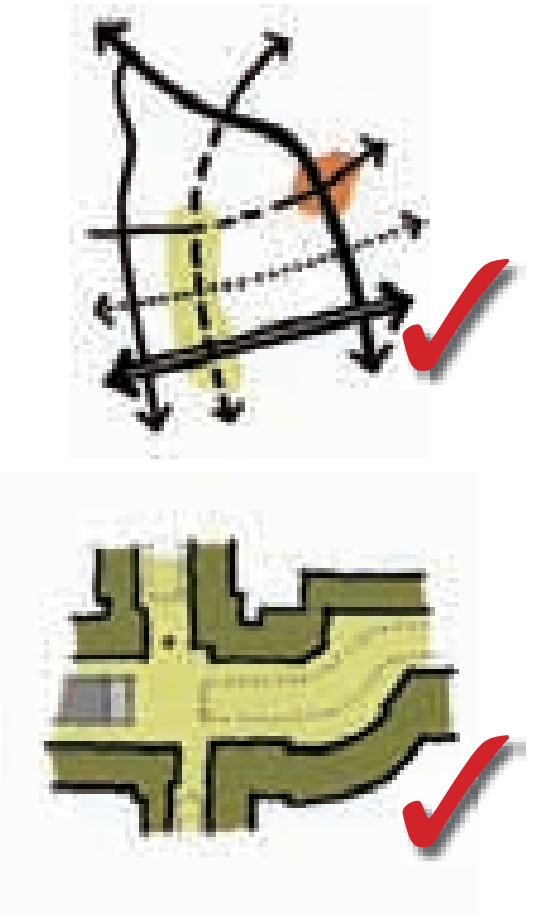
Common problems with unsuccessful commercial layouts are unattractive expanses of carparking and bulky buildings with blank elevations or service areas overlooking streets or public spaces. Left

The Features of a Successful Layout



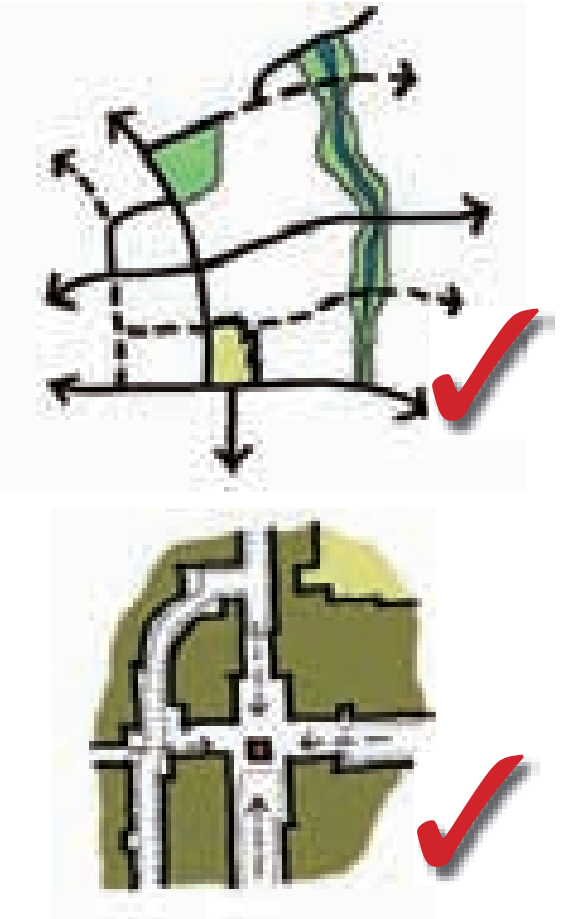
MUST HAVE ACTIVE STREETS

- 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.



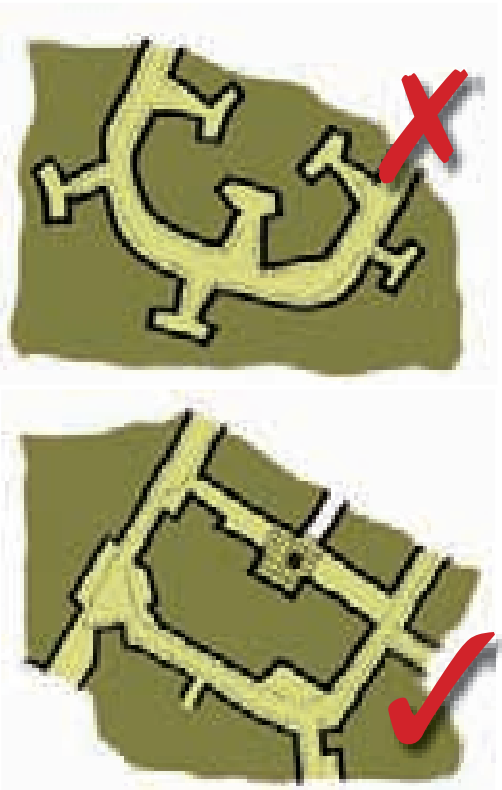
MUST HAVE EASE OF MOVEMENT

- Ensure good linkages between spaces
- Provide direct routes
- Ensure that cars will not dominate
- Provide for pedestrian and cycle priority.



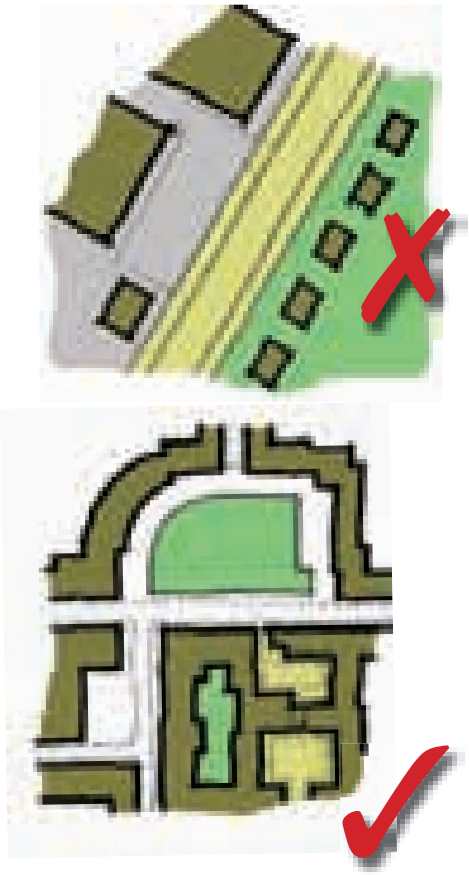
MUST BE LEGIBLE

- Have a clear street hierarchy
- Include some landmarks - distinctive buildings and public art
- Allow for vistas to existing features of the landscape.



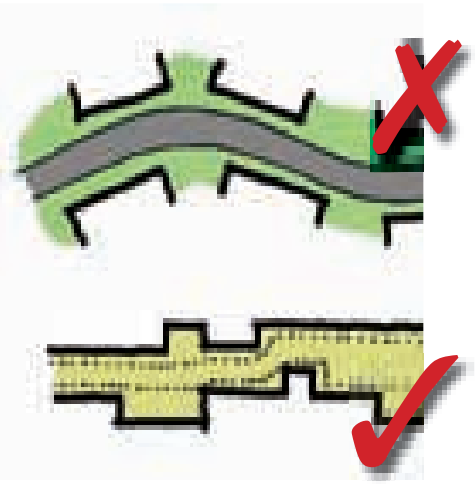
MUST BE SAFE

- 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.

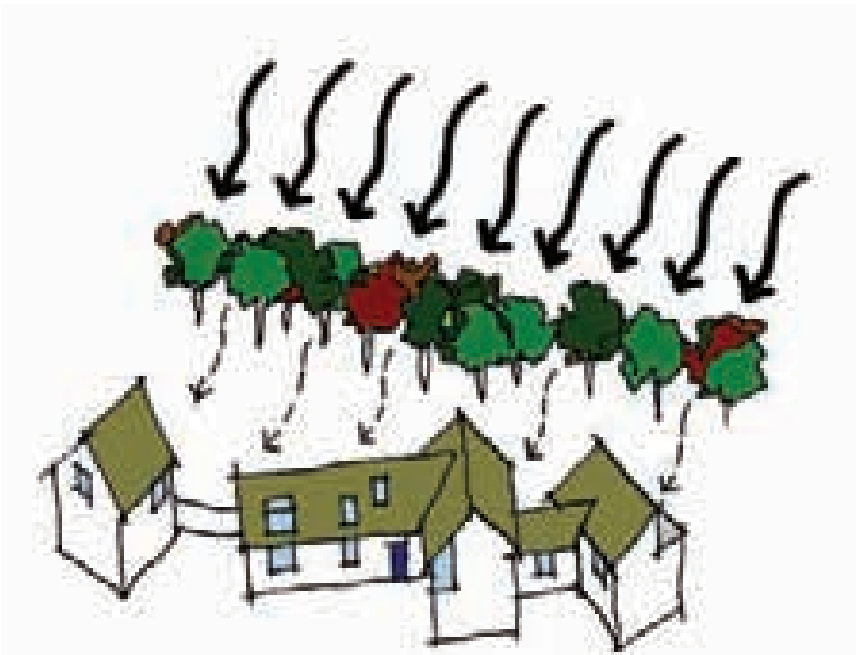
Generally the site's natural contours should be respected, but in some cases some remodelling can help provide a screen for noise and a strong visual boundary.

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



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

Existing earth remodelled to provide visual impact to green space on an otherwise flat site.
(St Mary's Island, Chatham)

Heavily wooded sites can be developed and still retain much of their character
(Guys Court, Kings Hill, John Walker Developments)

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).

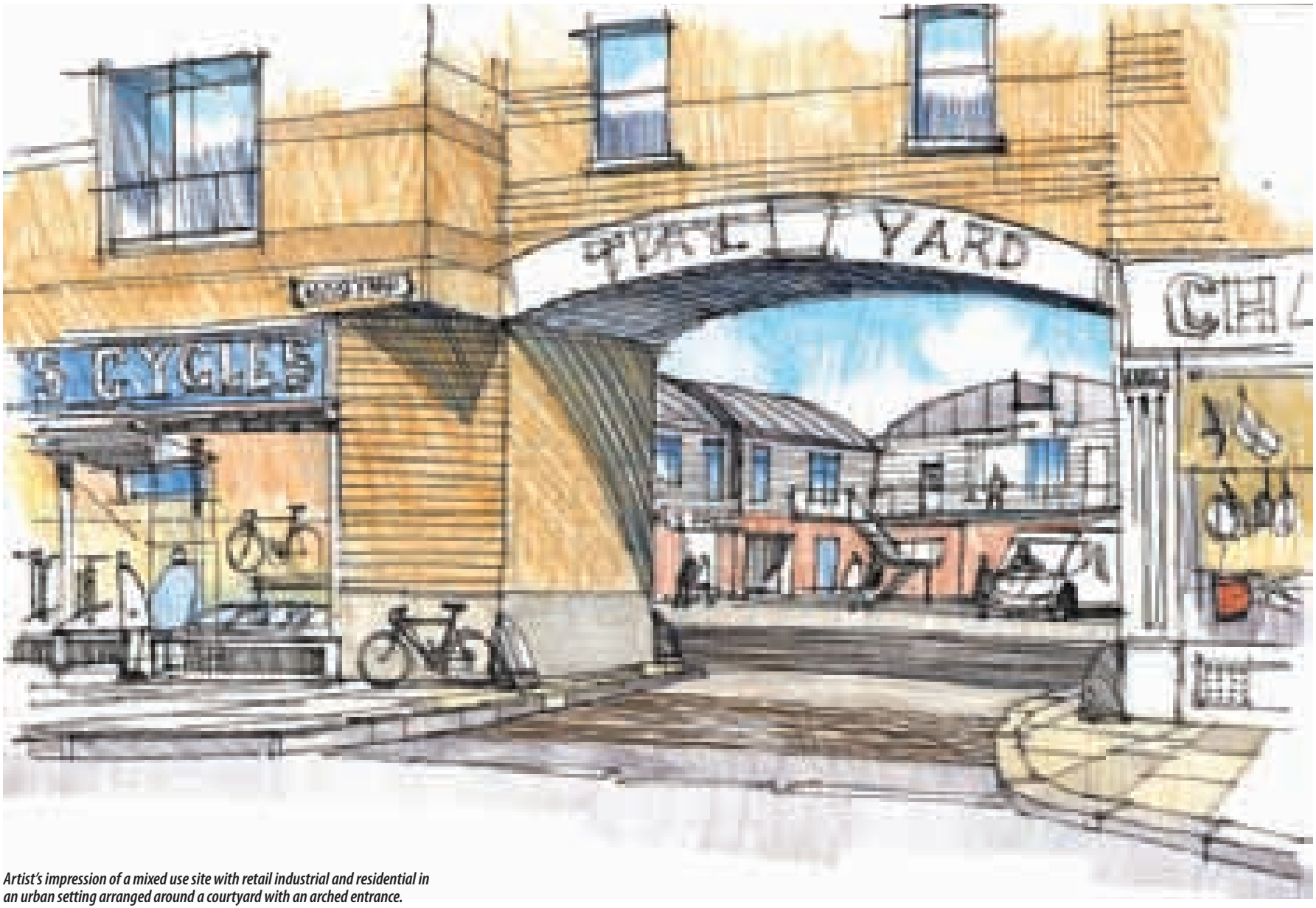
Artist's impression of a new street within a village centre.

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.



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.

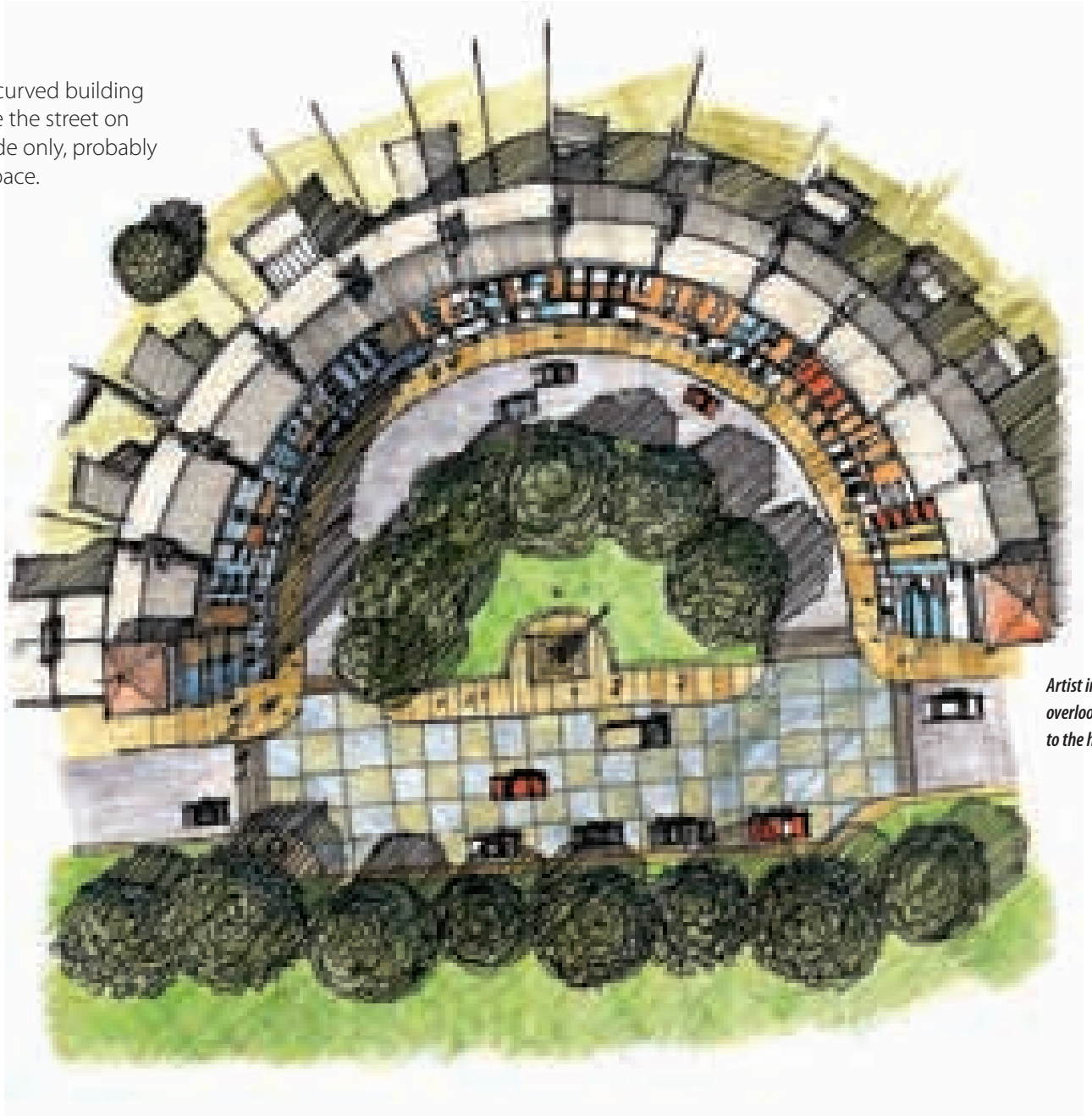
Artists impression of an urban street where residential and commercial uses are mixed. *The scale provides a strong sense of enclosure. Active frontages and building entrances at ground floor open directly onto footways.*

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

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.



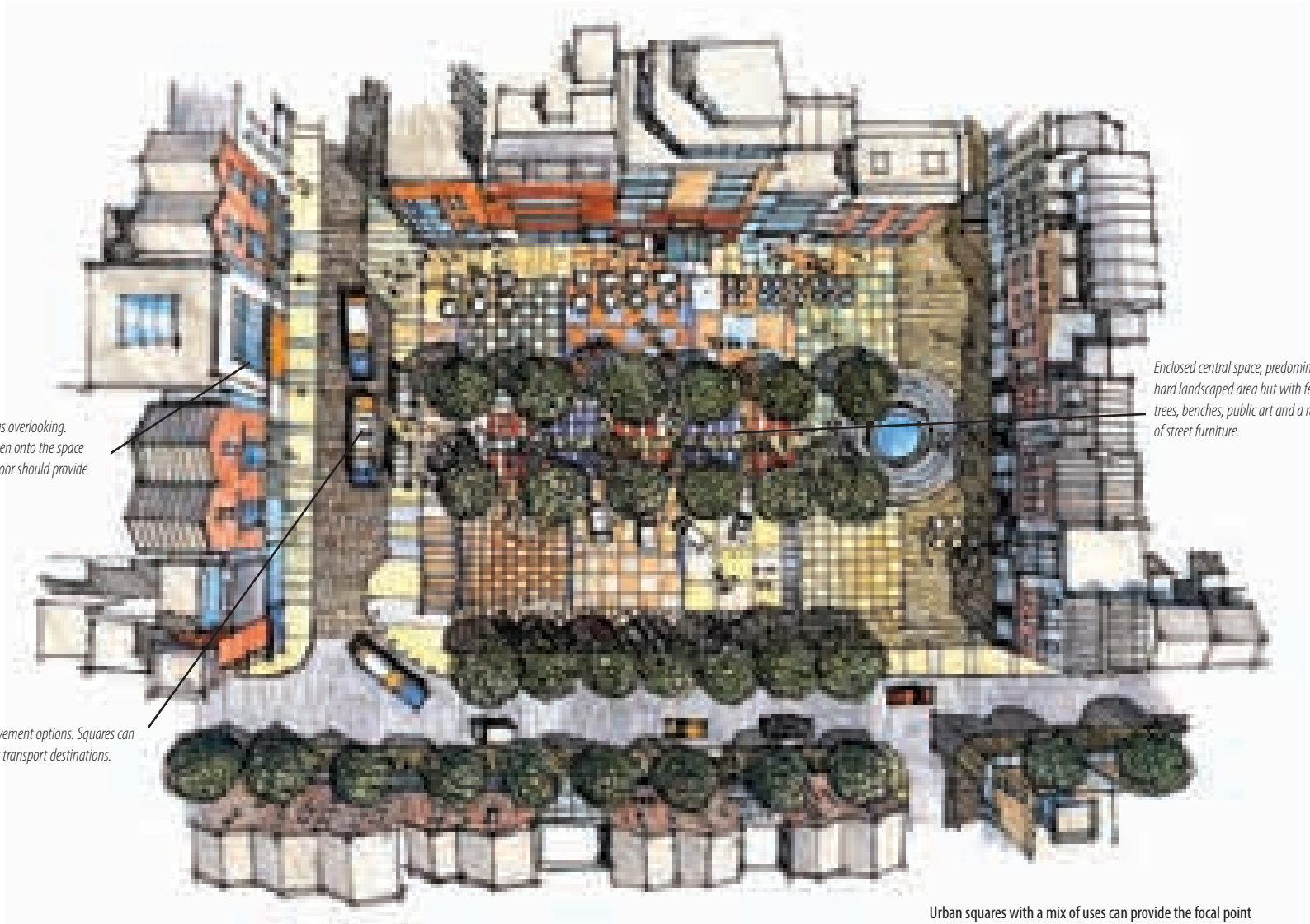
Artist impression of a formal crescent overlooking open space but connected to the highway network.

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 residental 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.



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.

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.

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

Artist impression of a formal mews arranged around a narrow access road.

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.

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.

Artist's impression of a homezone layout

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).

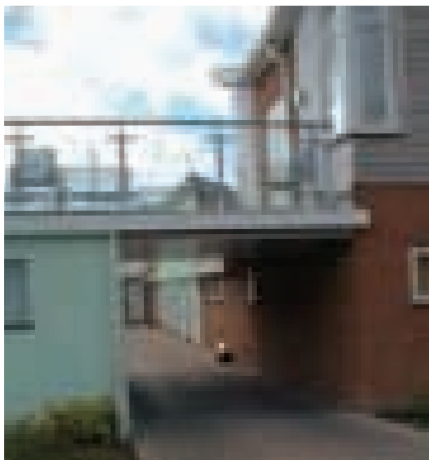
Parking provision should satisfy the overriding objectives of:

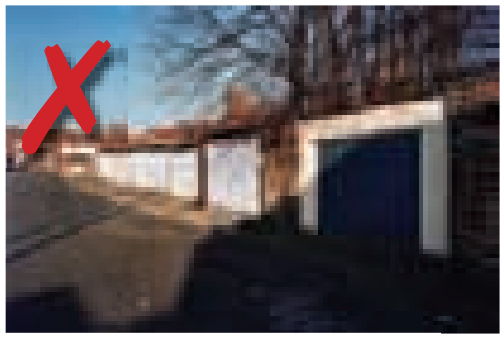
- maximising the use of land
- minimising car use
- promoting the safety of all highway users
- catering for people with disabilities
- providing security and showing sensitivity to the locality.

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

Features of well designed parking areas

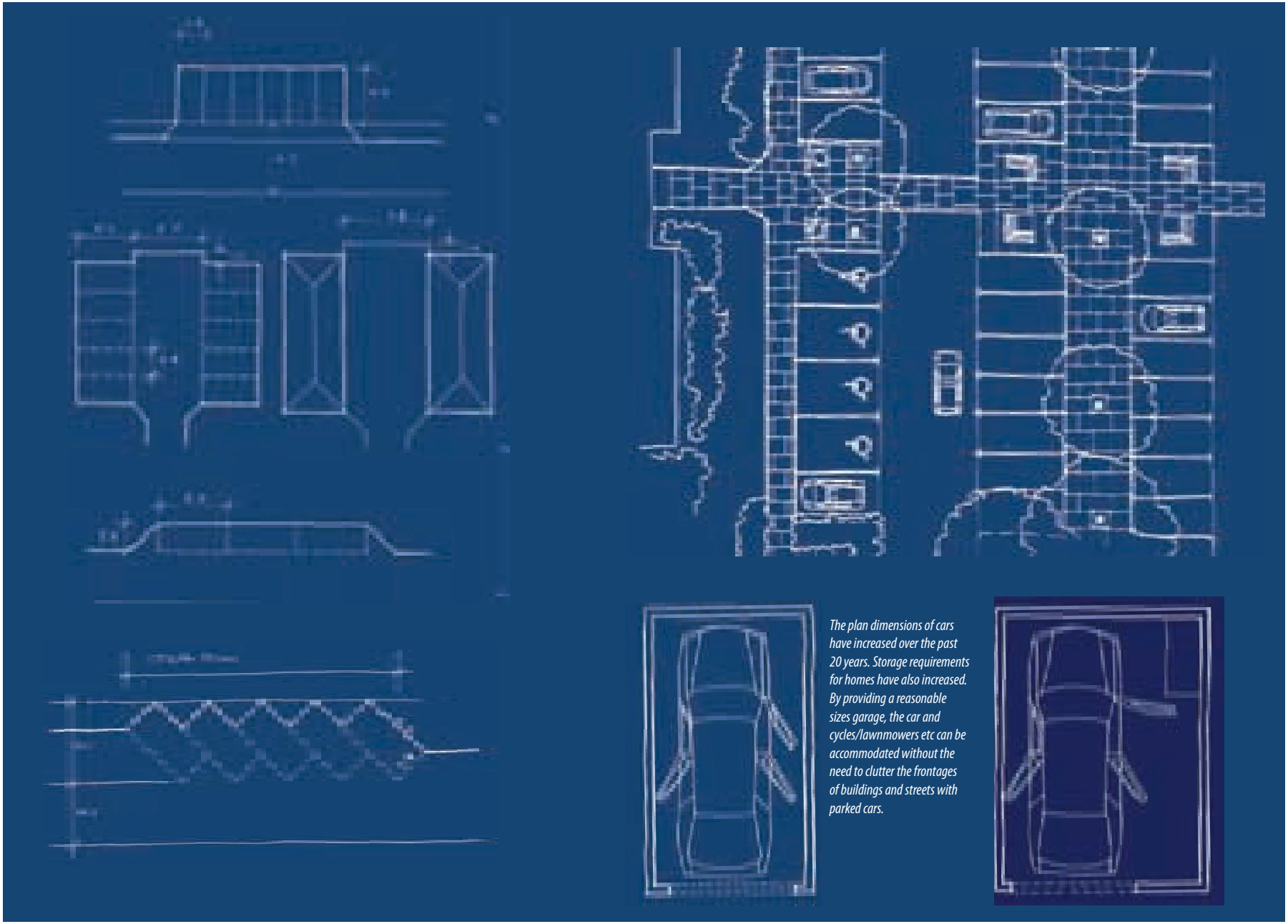
The number of spaces in a development should be agreed at an early stage with the local planning authority. Sufficient provision should be made for car parking related to the use.

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:

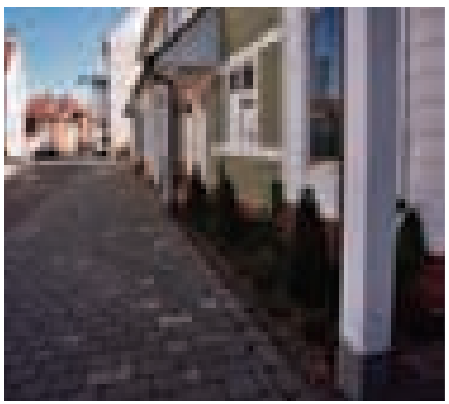
- culs-de-sac – if integrated into a permeable street network, can make strangers conspicuous, but they require careful design so that passive surveillance is not compromised
- perimeters to properties should be secure
- meters should be readable from outside houses, but sited to avoid visual intrusion
- 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.

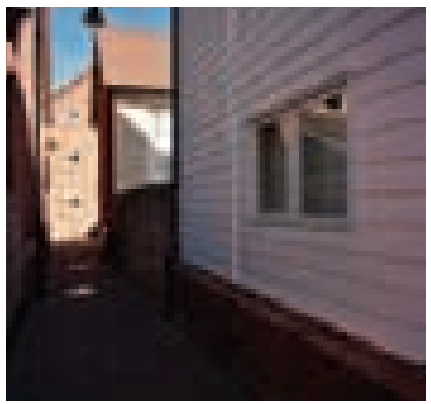
Detailed guidance on issues of security and safety in the public realm can be found in Circular 5/94 - 'Planning Out Crime" and 'Secured by Design" produced by the Police, and through the Safer Kent Initiative; a partnership between the police, local authorities, the fire service and health authorities.

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.





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

Protection from Noise

The need for aural privacy (protection from noise) is as great as the need for visual privacy.

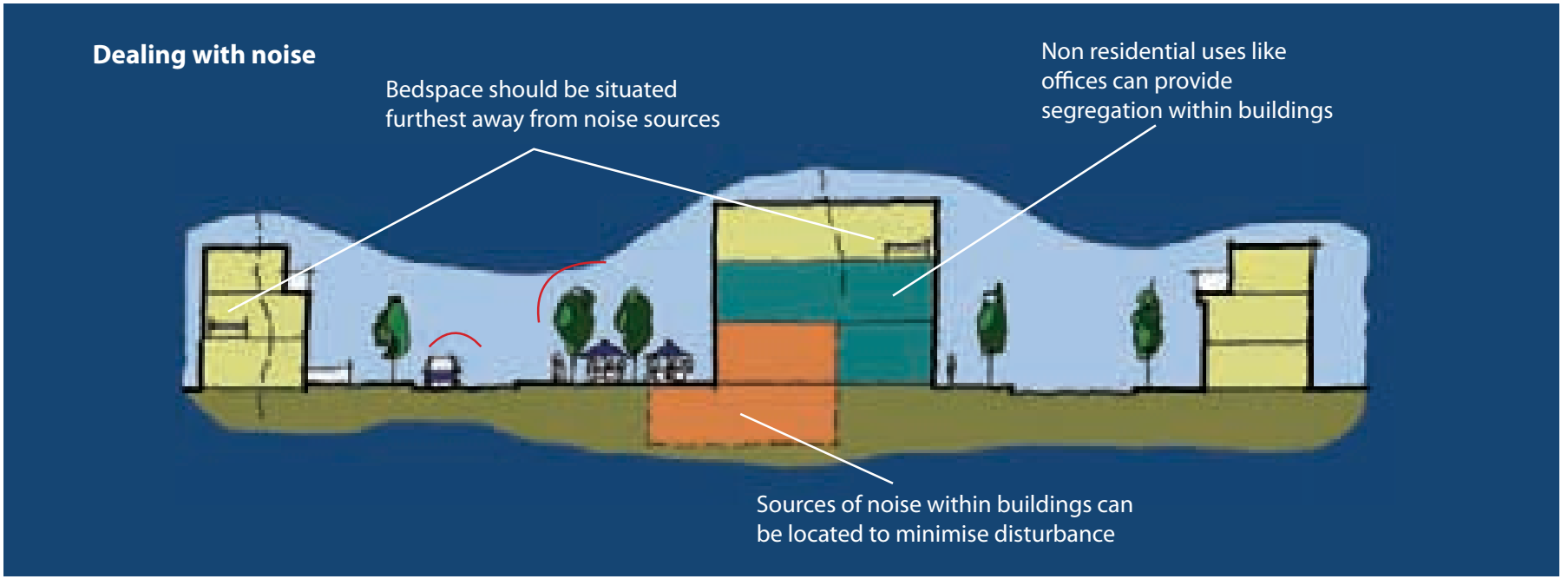
A satisfactory standard should be achieved in relation to noise from adjacent land uses, and from road, rail and air traffic. Reference should be made to PPG23. Regard should be paid to the relevant Building Research Establishment *(B.R.E.)* digests and to government publications to achieve this.

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.



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'.

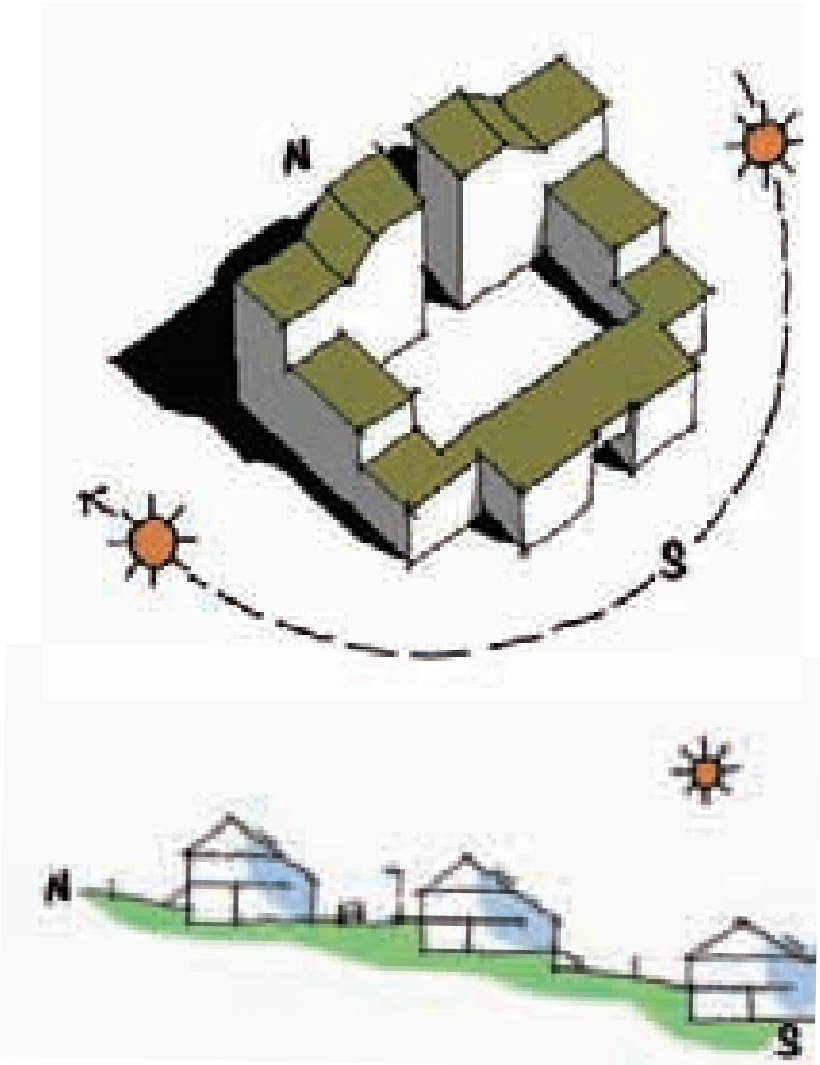
An ecology park has been created at the Greenwhich Millenium Village using water that naturally collects on site. It provides a haven for birds and other wildlife as well as an educational resource.

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.



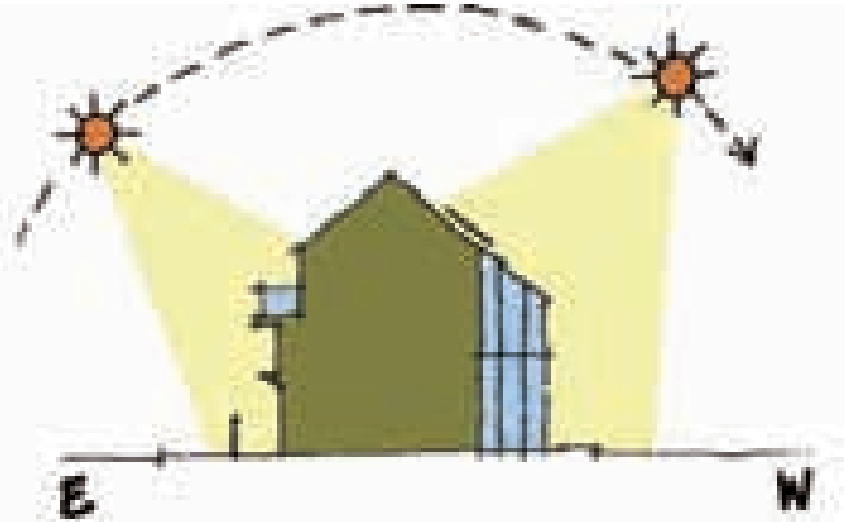
Streets and squares that are sunny but sheltered become popular, lively places that people want to be in (Sevenoaks)

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

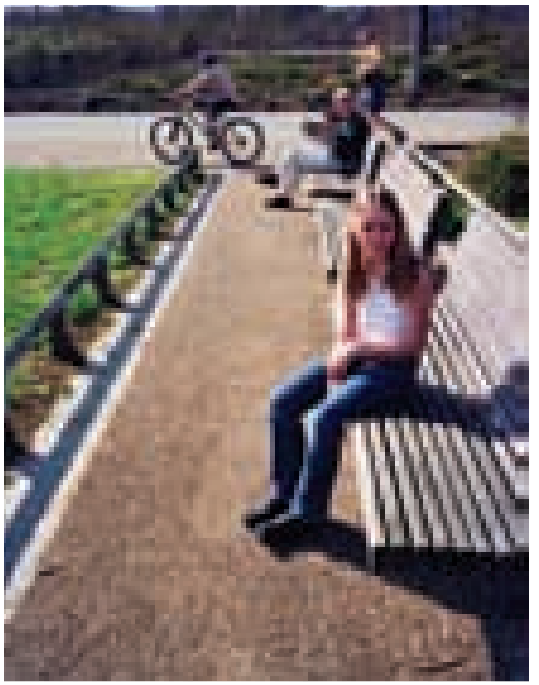
Convenient access to open space is important for quality of life and personal well-being and should be provided for in all new development.

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; excercise, 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)

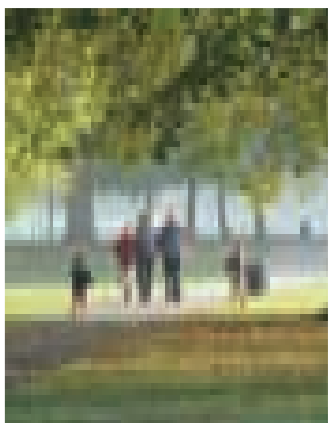
In making open space provision, consider:

- 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.

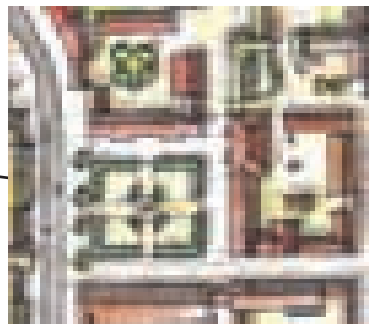
A variety of linked urban and non-urban green space contributes to a strong sense of place.

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:

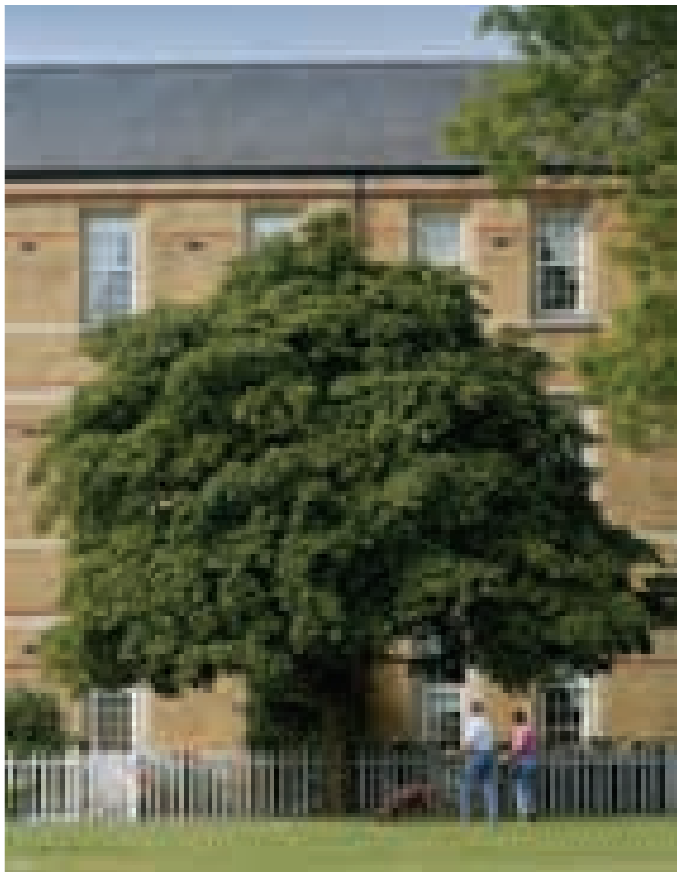
- the requirement to retain or enhance local biodiversity
- educational benefits – wildlife areas can provide informal or formal field laboratories for biological, geographical and environmental sciences, and
- plants and animals that keep people in touch with their natural environment.

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)

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

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

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

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.

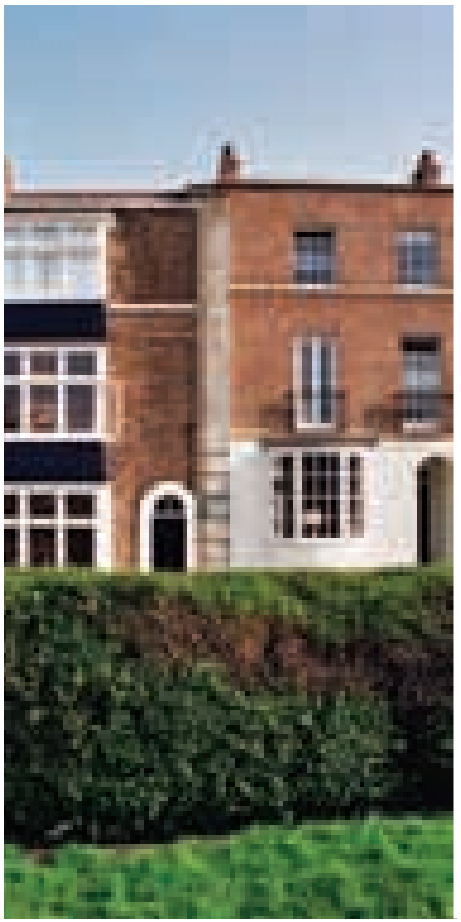
The Local Planning Authority will expect to be presented with a reasoned argument for the adoption of the design approach. This must stem from a detailed appraisal of the surroundings of the site as well as from client requirements and site content.

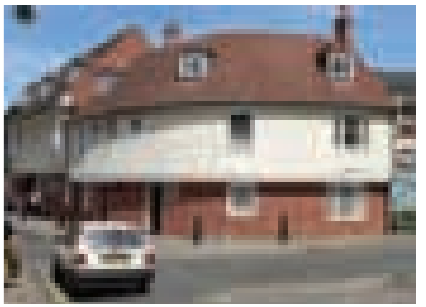
Landmark buildings can lift a design from the ordinary and may be justified on the basis of a sound urban design appraisal of their context and a perceived environmental uplift to the quality of the area. But generally, new building proposals in established contexts should avoid bold, strong or iconic 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.*

Creating the Design

Step 3 - Designing for movement

2.3 DESIGNING FOR MOVEMENT

Activity is the life blood of a successful community. The ease with which people can move within and between neighbourhoods fundamentally affects activity. Once the fundamental elements of the layout are fixed, a strategy for movement can be designed.

Designing for Pedestrians and Cyclists

Developments should be 'permeable' *(easy to move through in all directions)* and linked to the surrounding network, allowing safe, direct routes for pedestrians and cyclists.

Streets and paths should be naturally overlooked. Walking and cycling on safe routes is a requirement,. Schemes such as 'Safe Routes to Schools' are encouraged (www.saferoutestoschools.org.uk). Convenient cycle storage should be provided in homes and outside community facilities, shops and other destinations.

It is particularly important to ensure that pedestrian and cycle routes are safe, secure and convenient; if they are not, people will feel forced back onto the roads resulting in conflict over the use of road space. In certain locations and street types eg homezones, pedestrians should have clear priority. 'Trim trails' and attractive walking routes will encourage residents to take regular exercise.

New footpaths should reflect the following:-

- footpaths should lead to where people want to go rather than follow a contrived geometric preconception
- people prefer to walk along streets where they can be seen
- dropped kerbs / at-grade crossings, and tactile paving should be provided at all junctions to assist people with disabilities.

The use of tactile paving and the choice of materials for paving must be carefully considered in order to avoid disfiguring attractive streetscapes.

Routes that link key areas should be considered at the outset so that, over short distances, residents are encouraged to walk or cycle.

Many development sites will include existing footpaths and bridleways which can be incorporated into more strategic routes for walkers and riders. Safety is enhanced by increasing the number of walkers and cyclists, and children will benefit from routes segregated from traffic. Routes should be designed to allow for the needs of blind or partially-sighted people.

People with disabilities benefit from direct links to and from services that have a smooth and well-maintained surface. The Kent County Council Public Rights of Way advice note provides further information on the design of rights of way.

Ribbed tactile paving should be used and raised line markings can be used to assist visibly impaired pedestrians to use the appropriate part of the path and to indicate the presence of side accesses or crossings.

Direct routes through developments should be provided for walkers and cyclists.

These may either be segregated or combined, but must be 'user-friendly'. They should not be too far removed from surveillance or hidden from roads or houses. Walking and cycling should be promoted as a dominant mode of travel for short trips, so these routes should be more direct than those for cars. Strategic foot and cycleways should be well lit to encourage use, unless they are primarily for leisure use where night time use is unlikely, or in rural surroundings where lighting would be inappropriate.

Cycle routes need to be planned strategically, rather than on a piecemeal basis. Where cyclists will share the use of a path with pedestrians and it is considered that conflicts will pose an unacceptable risk, it is desirable

to segregate the two uses. Where it is intended to include provision for cyclists on a public right of way, the 'Cycle Tracks Act 1984' should be referred to.

Space for cyclists should be designed to ensure safety of cyclists and pedestrians and encourage use. However the need to provide and indicate segregation should be balanced against the need to minimise the clutter and confusion created by small areas of different coloured surfacing, tactile paving, line markings and signs.

Factors such as the width of paths, cycling speeds, likely levels of use and the frequency of interruptions from side accesses and crossings should be considered at the initial design stage. The forward visibility requirements of cyclists should also be considered.

Adequate secure storage for cycles must be provided at dwellings and at destinations such as workplaces, shops, community facilities and transport nodes. It should be integrated with the design of buildings and streets, be weather protected and either within a lockable curtilage or have good natural surveillance.

Public Transport

Good public transport should be available at the initial phase of a new development, either by linking to existing networks or by establishing new routes. A coordinated approach between different transport modes should be encouraged with cycle pedestrian routes and taxi ranks linked to stations and all key transport nodes.

Designing for Bus Passengers

Bus stops should generally provide shelter facilities. Where real-time information services can be made available, such facilities must also be incorporated. Other considerations are:

- bus stops should be within a convenient walking distance
- shelters should be designed as an integral part of the streetscape and should be in context with the local area and the form of the development.
- Kerbs adjacent to bus stops should have a height of 185mm above the carriageway to facilitate boarding.
- bus priority measures should be considered where appropriate
- provide accessible routes to bus stops with dropped kerbs and tactile pavings as appropriate *(routes should be overlooked)*.

Motor Vehicle Provision

Access provision for motor vehicles should cater for the size and frequency of essential vehicles and should reflect the need for public safety and the requirements of all modes of transport.

Support for Sustainable Transport

A comprehensive movement framework will not be effective unless people are aware of it and are willing to support the more sustainable forms of transport. With the more major forms of development, schools, businesses and developers should submit 'travel plans' which encourage staff and, where appropriate visitors, to think about their travel choice and consider alternatives to the car. It is not an all-or-nothing choice. The essence of a travel plan is travel blending, where an alternative to the car is used perhaps once a week. Incentives can be offered to those supporting such initiatives.

2.3.1 SPATIAL TYPES

A development, depending on its scale and the context, will require a range of streets and spaces with differing characteristics *(spatial types).*

The range of spaces is outlined below. It is explained in more detail in step 2.

Industrial, Commercial and mixed use areas
Predominantly urban in character - usually serving areas with a high volume of traffic generation and usually with heavy peak flows.

Street
Urban or village in character with buildings providing enclosure.

Avenue
Usually suburban with tree planted verges.

Boulevard
Wide urban or suburban street characterised by further tree planting.

Crescent
Curved development - usually terraced, which excludes open space. More formal curved building lines which either enclose the street on both sides or on one side only overlooking an open space.

Square
Buildings formally arranged to define an open space. Squares should have a distinctive character and be regarded as places rather than streets. 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.

Green
Buildings less formally arranged around an open space. As with squares, they should have a strong identity.

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

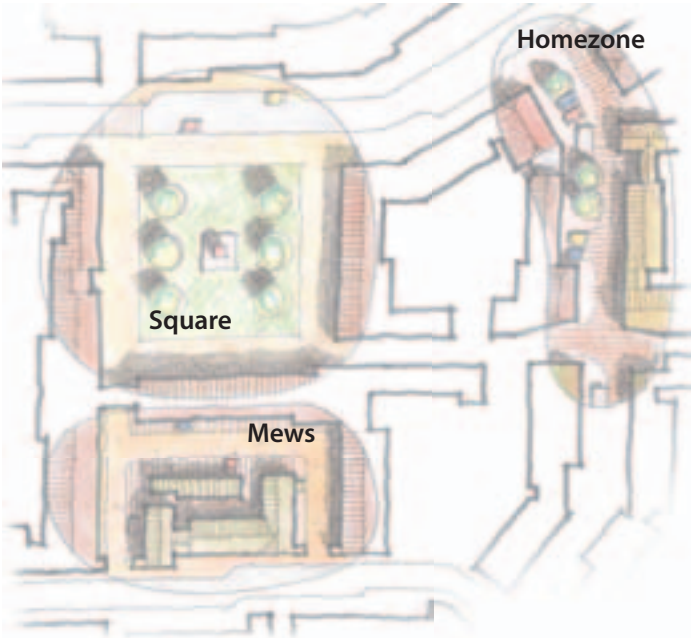
Mews
Set closely around a semi-public street. Parking is usually accommodated within the mews and in directly adjacent parking spaces or garages

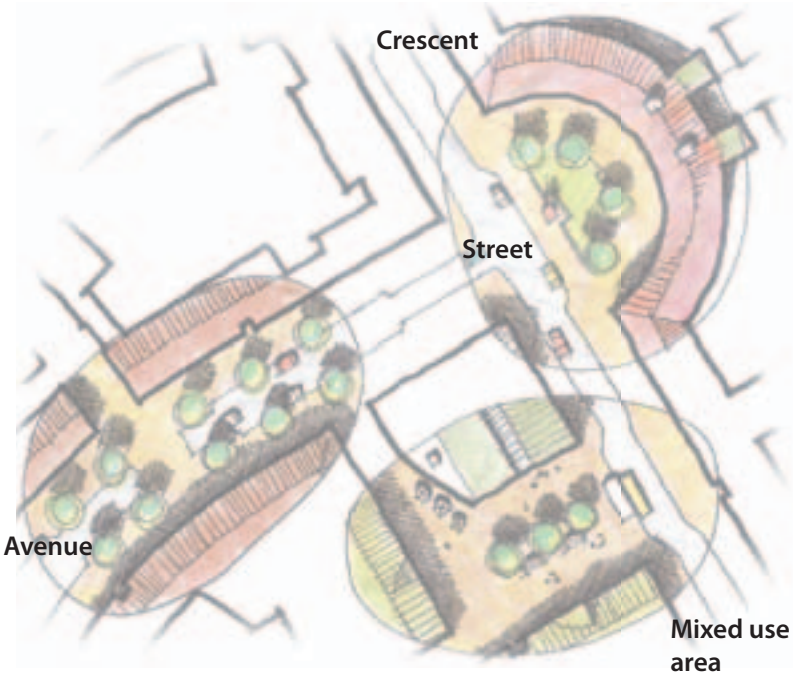
Courtyard
Courtyards are generally found in urban or village centre locations. They are tightly enclosed spaces that are on a smaller scale than a square. They should have an intimate feel and can be enhanced with one or more feature trees.

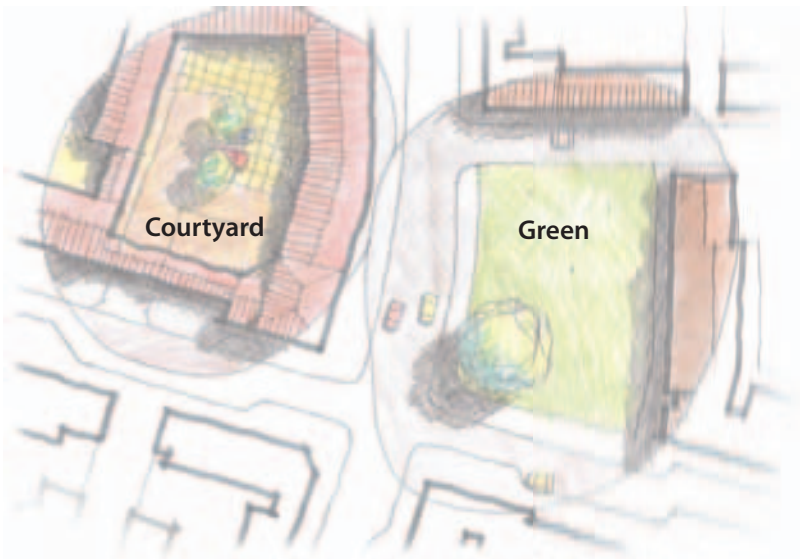
Private Developments
There may be exceptional circumstances when development characteristics are such that adoption of the road or roads within new housing developments is inappropriate or unnecessary. This may be due to the historic character of the site, its relationship to neighbouring development 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.

Culs de sac
These are often suburban in character. The absence of through traffic creates a semi-private character.

Homezone
A residential street designed for very low traffic speed where people clearly have priority over vehicles.







Combining spatial types with a movement framework. *A skillful process turns roads and paths into attractive safe and practical public space.*

Getting Highway Geometry Right

Highway design should relate to a specific spatial type, use, form and function.

Guidance on the design of roads has previously tended to rely on a strict application of geometric standards related to road type and design speed. This may simplify matters for designers but it often restricts the ability to create attractive places and thoroughfares complementing surrounding buildings or open spaces. So, in addition to outlining the usual parameters applicable to each road function, this section gives guidance on flexibility of use and where in some cases minimum or maximum standards must apply. The tables should be used as guidance – flexibility is permitted to produce well-designed solutions.

STANDARD SPATIAL TYPE	Local Distri-Road	Major Access Road	Minor Access Way	Minor Access	Country Lane	Shared Drive	Path	Home Zone
Ind, Comm & Mixed use areas	•	•	•				•	
Street	•	•	•	•			•	
Avenue	•	•	•	•	•		•	
Crescent	•	•	•	•			•	
Square			•	•				
Green			•	•	•	•		
Lane			•	•		•		
Mews			•	•		•		
Courtyard/Private Dvts.				•		•		
Cul-de-sac			•				•	
Home Zone								•

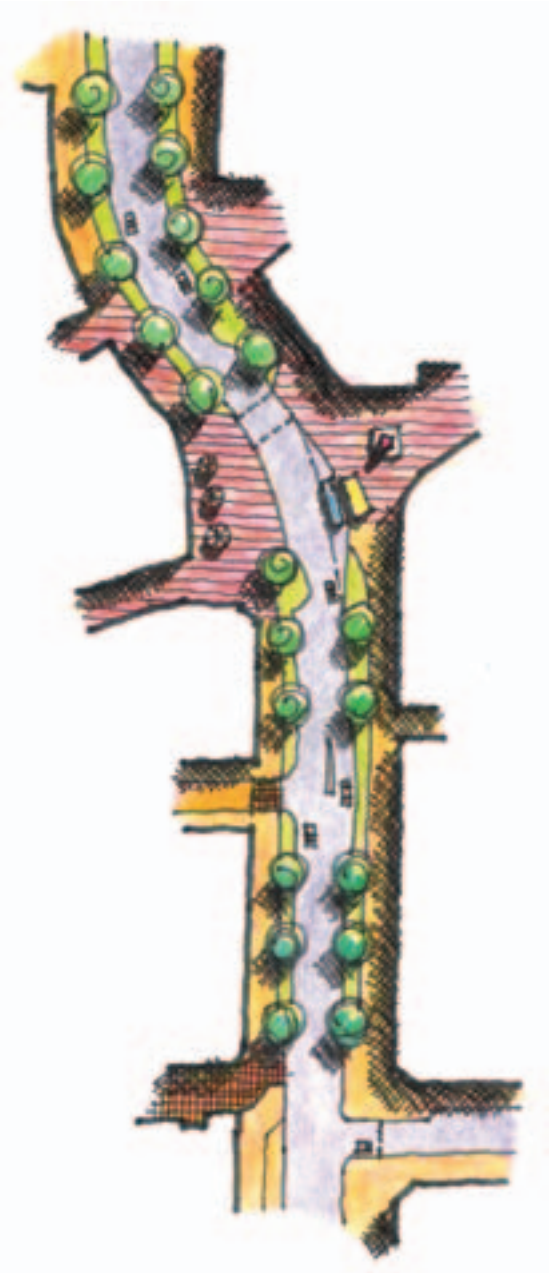
Diagram showing how an urban layout combines different types of highway to produce a variety of public spaces.

Lacuna at Kings Hill. Highway geometry and choice of surface materials are used to create a square at a cross roads. (Sunley Environ Homes).

Local Distributor Road

1 a busy road linking other distributor roads and residential access roads, distributing traffic within the primary residential districts of a town
2 a road type applicable to all sites on the outskirts of main towns or infill sites within existing suburban areas
3 generally serves over 300 dwellings
4 provides an opportunity for boulevard or avenue planting and cycleways.
5 for new developments, direct vehicular access to dwellings would not normally be provided, the exception being shared private drives with turning within the site

Diagram showing a Local distributor road with scope for an avenue of tree planting, cycle way and footway combined.



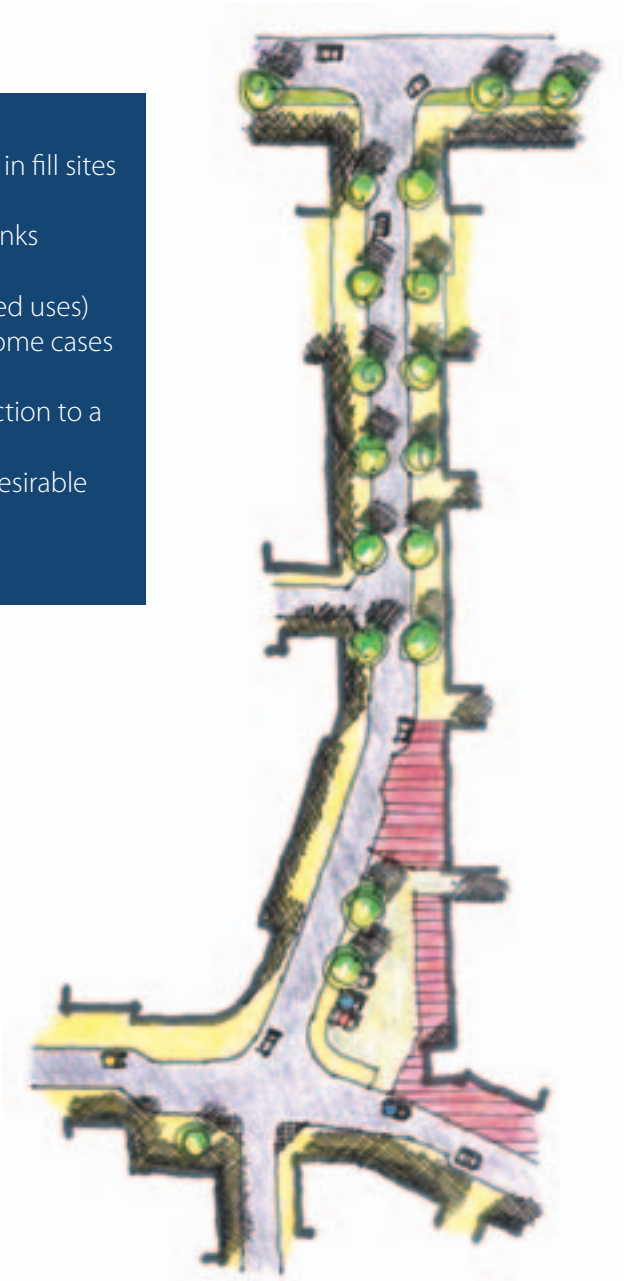
	Typical parameter	**Notes**	**Recommended parameter range** (mandatory shown in **bold**)
Carriageway width	6.75	may vary to suit building massing and to include features such as central islands minimum standard subject to tracking demonstrating that 2 anticipated vehicles can pass	**6.00m** / 10.50m
Anticipated vehicle types	to HGV all other types	assessment of likelihood of HGVs should be made depending on type of development and context of area	**pantechnicon**
Verge width	2m	verges less than 1 m wide will normally need to be paved	**0.5m** / 5.0m
Footway/cycleway width	3m	may be reduced if a nearby alternative cycle route is being provided, should be increased where pedestrian levels are expected to be higher than normal such as outside schools, shops etc, and limit should be 20mph where there are likely to be high levels of pedestrian and cycle movements	1.8m/5.0m
Target speed	20-30mph	must be 20 mph in the vicinity of schools and play areas. See also guidance on paths	< **30mph**
Distance between speed restraint features	150m	maximum distance should be reduced to 60m for 20 mph target speed	0 / **150m**
junction visibility x	4.5m	may be reduced if side road is a minor access road or lower category	**2.4m**
junction visibility y	70m	may be reduced if it can be demonstrated that vehicle speeds will be less than 30mph. Left sightline may be taken to centreline of road if measures are taken to deter vehicles travelling in the offside lane	>**33m**
forward visibility	60m	may be reduced if it can be demonstrated that vehicle speeds will be less than 30mph.	> **28m**
min junction spacing adjacent	60m		>30m
min junction spacing opposite R/L	15m	Cross roads fine if traffic speeds 20 mph or less. Cross roads should be avoided unless other feature such as roundabout is provided	> 15m
min junction spacing opposite L/R	30m		> 15m
right turn lanes	3.5m	normally only required if 2-way traffic levels from side road exceed 300 vph	3.0m
min longitudinal gradient	080%	1.25 for block paved surfaces	0.80%
Max longitudinal			
gradient	6 %	gradients may only be increased if unavoidable due to local topography	8%*
Cross section			
gradient	2.50%		**1.0%/5.0%**
Vertical curve min K value			
	11	may be reduced subject to a minimum curve length of 30m	5
Junction kerb			
Radius	10.5m		6.0m
Kerb height	125 mm		>**100** / 185

All figures are for guidance; design specification should be guided by local context and agreed with the local authority.
* To meet design requirements for the mobility impaired, footways should generally be restricted to a maximum gradient of 5%

Major Access Road

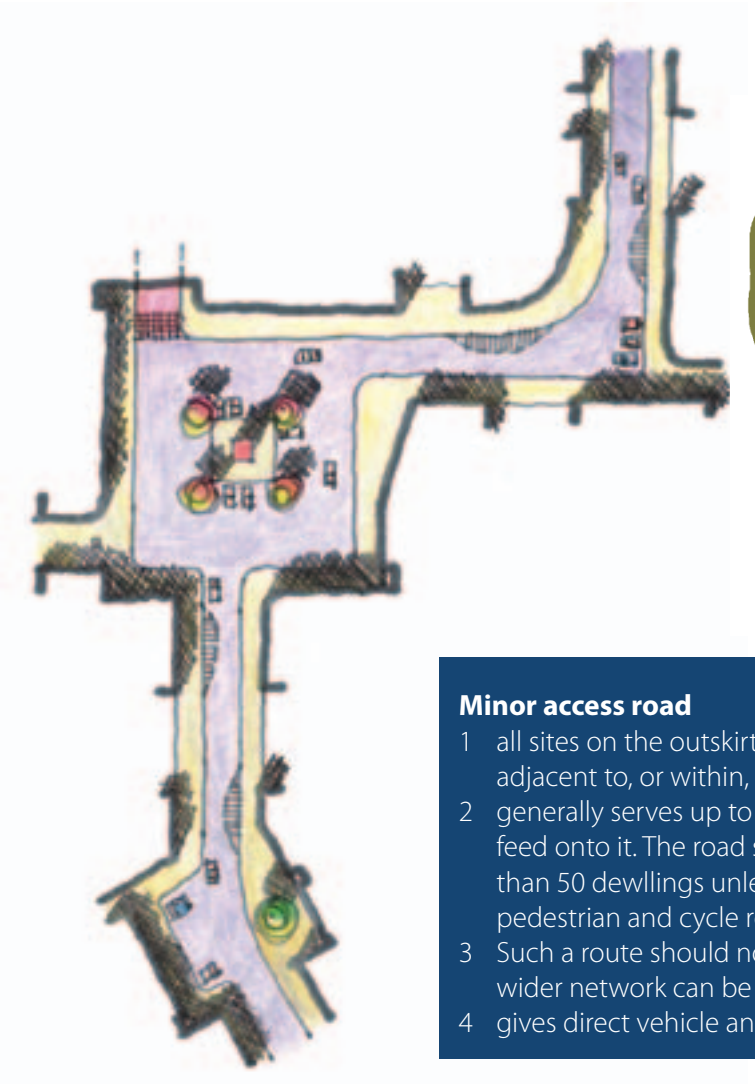
1 a road type applicable to all sites on the outskirts of main towns or in fill sites within existing suburban areas
2 gives direct vehicle and pedestrian access to dwellings and often links several residential areas to a local distributor road
3 generally serves between 50 and 300 dwellings (or equivalent mixed uses) including those located on other access roads feeding onto it. In some cases it could serve as a bus route.
4 preferably has two points of access or is a loop with a short connection to a single point of access and a secondary emergency access link
5 discourages non-essential through traffic but only where a more desirable alternative through-route exists
6 provides an opportunity for boulevard or avenue planting.

Diagram showing a section through a major access road with widened footway with cycle way on one side.



	Typical parameter	Notes	Recommended parameter range (required min or max standard shown in bold)
Carriageway width	5.5m	carriageway width not necessarily constant	4.8m / 10.5m
Anticipated vehicle types	low pantechnicon, possibly bus, fire tender, car	passing places for larger vehicles may be appropriate where their frequency is likely to be high	pantechnicon
Footway width/Cycleway	1.8m	footway width not necessarily constant min 1.2m width to be kept clear of obstructions. A verge may replace footway where there is no frontage development and not essential	**1.2m** / 3.0m without cycleway **1.8m** / 5.0m with cycleway
Target speed	25mph	must be reduced to 20 mph in the vicinity of schools and play areas and should be 20mph where there are high pedestrian and cycle movements	< **25mph**
Distance between speed restraint features	100m	advice on speed restraint features is contained in this section	< **120m**
junction visibility x	2.4m		**2.0m**
junction visibility y	45m	may be reduced in accordance with advice on visibility contained in this section	> **23m**
forward visibility	45m	may be reduced in accordance with advice on visibility contained in this section	> **23m**
min longitudinal		1.25% for block paved surfaces	
gradient	0.80%		0.80%
Max longitudinal gradient	6 %	gradients may only be increased if unavoidable due to local topography	*8%
Cross section gradient	2.50%		**1.0% 5.0%**
Junction gradients	5 % rising 4 % falling for a distance of twice kerb radius		
Vertical curve min K value	7	may be reduced subject to a minimum curve length of 20m	4
Junction kerb radius	6m		4.5m
Kerb height	125mm		50mm / 185mm

All figures are for guidance; design specification should be guided by local context and agreed with the local authority.
* To meet design requirements for the mobility impaired, footways should generally be restricted to a maximum gradient of 5%



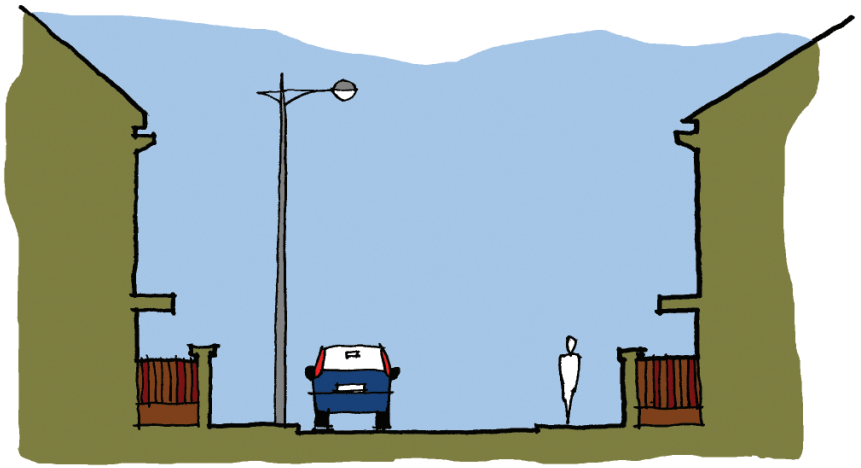


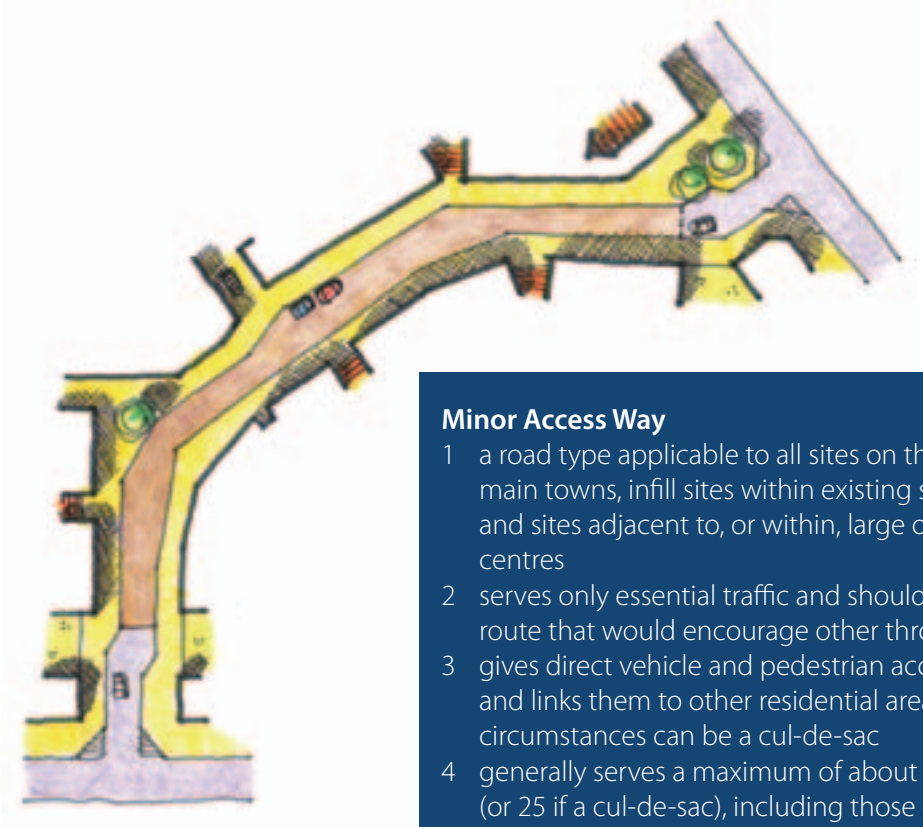
Diagram showing a minor access road with tightly enclosed space but retaining separate footways.

Minor access road

1 all sites on the outskirts of main towns, in fill sites within existing suburban areas, sites adjacent to, or within, large or small village centres
2 generally serves up to 100 dwellings, including those in other residential areas which feed onto it. The road should either be a through-road or, if a cul-de-sac, serve no more than 50 dewllings unless an alternative emergency access route, to serve also as a pedestrian and cycle route, can be provided
3 Such a route should not be provided below 50 dwellings if suitable connections to the wider network can be made
4 gives direct vehicle and pedestrian access to dwellings and links other residential areas.

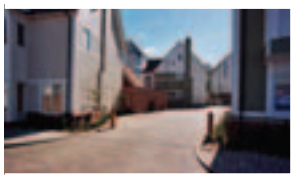
	Typical parameter		Notes	Recommended parameter range (required min or max standard shown in bold)
Carriageway width	4.8		carriageway width not necessarily constant but there should be sufficient space for two cars to pass each other at least every 40m, these spaces should be intervisible	> **3.0m subject to tracking**
Anticipated vehicle types	low pantechnicon, refuse vehicle, fire tender, car			fire tender
Footway width (where provided)	1.8m		footway width not necessarily constant	**1.2m** / 3.0m
Margin/Verge width (shared surfaces)	1.0m		margin width not necessarily constant	**0.5m** / 3.0m
Target speed	20mph	15mph		
Distance between speed restraint features	60m	40m	advice on speed restraint features contained in this section	not more than **120m**
junction visibility x	2.0m	2.0m		**2.0m**
junction visibility y	33m	23m	may be reduced in accordance with advice on visibility contained in this section	> **14m**
forward visibility	33m	23m	may be reduced in accordance with advice on visibility contained in this section	> **14m**
min longitudinal gradient	0.80%		1.25% for block paved surfaces	0.80
Max longitudinal gradient	6 %	7 %	gradients may only be increased if unavoidable due to local topography	***10%**
Cross section gradient	2.50%			**1.0%/5.0%**
Junction gradients	5 % rising 4 % falling for a distance of twice kerb radius			**for a distance > 6m**
Junction kerb radius	6m			> **3.0m**
Kerb height	100mm		50mm	0 / 125mm

All figures are for guidance; design specification should be guided by local context and agreed with the local authority.
* To meet design requirements for the mobility impaired, footways should generally be restricted to a maximum gradient of 5%

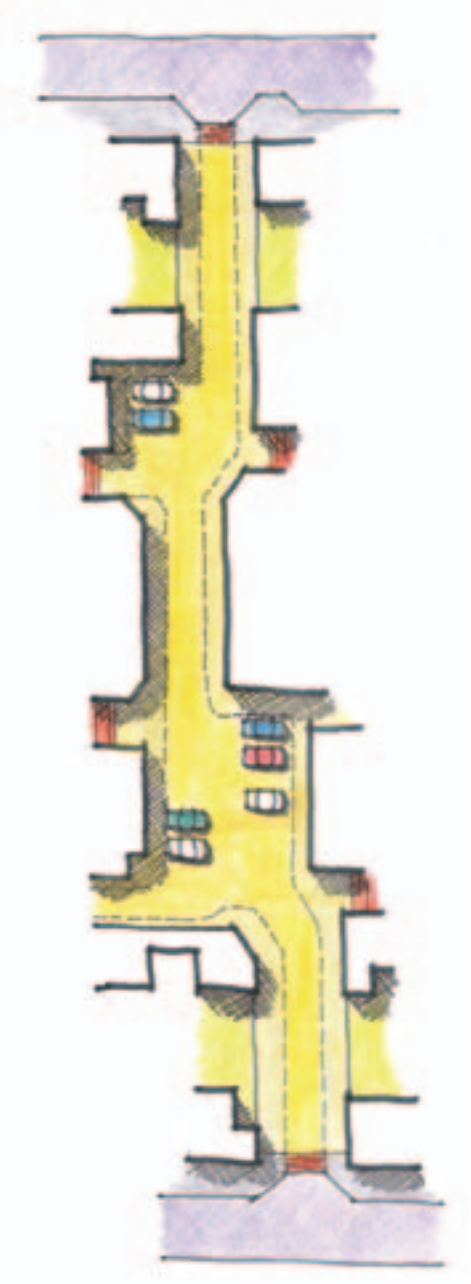


Minor Access Way

1. a road type applicable to all sites on the outskirts of main towns, infill sites within existing suburban areas and sites adjacent to, or within, large or small village centres
2. serves only essential traffic and should not provide a route that would encourage other through traffic
3. gives direct vehicle and pedestrian access to dwellings and links them to other residential areas but in some circumstances can be a cul-de-sac
4. generally serves a maximum of about 50 dwellings (or 25 if a cul-de-sac), including those dwellings from other areas feeding onto it
5. includes measures to prevent on-street parking except where designed into the layout through localised widening.



Minor acccess ways can service a range of layouts. Far left: Serving a courtyard. Middle: A town centre road leading to a quiet residential district. Right: An alley serving new and existing properties.

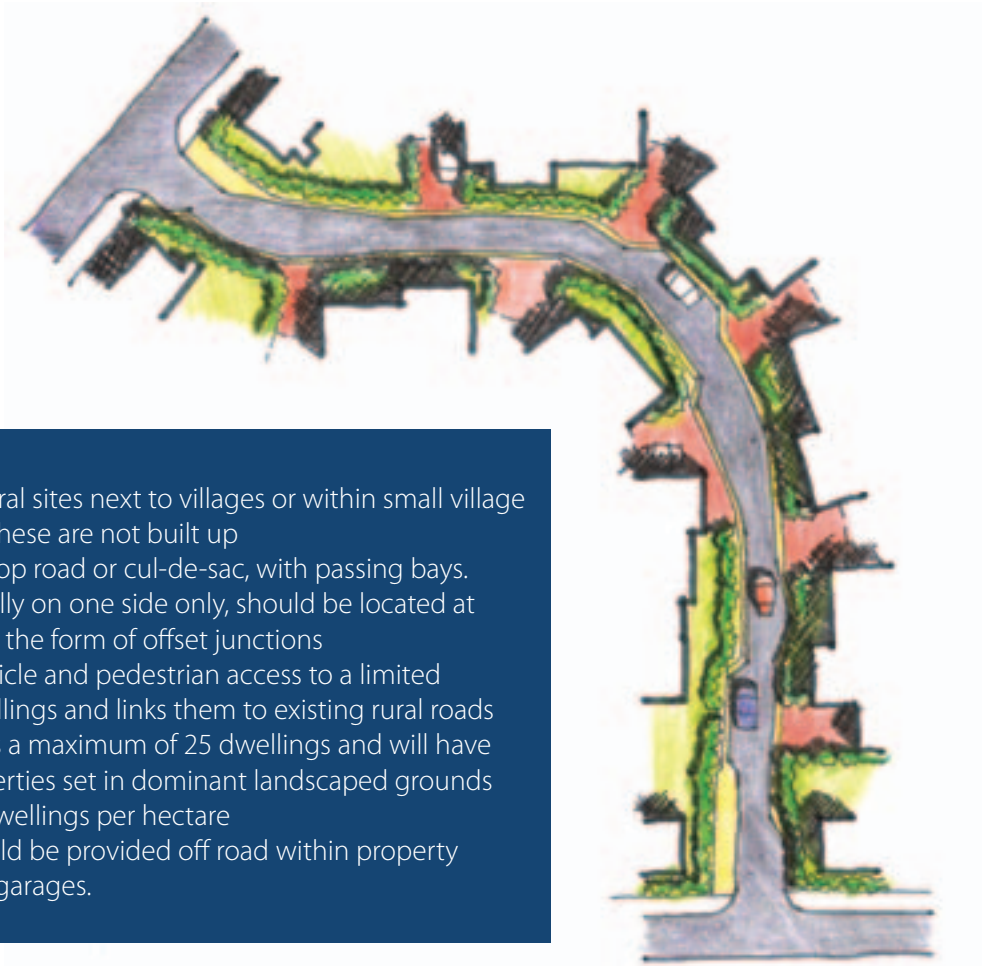


	Typical parameter		Notes	Recommended parameter range (required min or max standard shown in bold)
	with footways		**can be a shared surface**	
Carriageway width	4.1m*		carriageway width not necessarily constant. There should be sufficient space for 2 cars to pass each other at least every 40m. These spaces should be intervisible	> **3.0m subject to tracking**
Anticipated vehicle types	low pantechnicon, refuse vehicle, fire tender, car			fire tender
Footway width	1.8m		footway width not necessarily constant	**1.2m** / 3.0m
Margin/Verge width (shared surfaces)	1.0m		margin width not necessarily constant. The need to accommodate services should also be considered	**0.5m** / 3.0m
Target speed	20mph	15mph		
Distance between speed restraint features	60m	40m	advice on speed restraint features contained in this section	< **60m**
junction visibility x	2.0m	2.0m		**2.0m**
junction visibility y	33m	23m	may be reduced in accordance with advice on visibility contained in this section	> **14m**
forward visibility	33m	23m	may be reduced in accordance with advice on visibility contained in this section	> **14m**
min longitudinal gradient	0.80%		1.25 for block paving surfaces	0.80
Max longitudinal gradient	6 %	7 %	gradients may only be increased if unavoidable due to local topography and alternatives can be provided for the mobility impaired	***10%**
Cross section gradient	2.50%			**1.0%/5.0%**
Junction gradients	5 % rising 4 % falling for a distance of twice kerb radius			**for a distance > 6m**
Junction kerb radius	4.5m			**3.0m**
Kerb height	100mm	50mm		0 / 125mm

*4.1 may need to be increased if HGVs use the road: footway/service strip parking and / or over-run is probable

All figures are for guidance; design specification should be guided by local context and agreed with the local authority.

* To meet design requirements for the mobility impaired, footways should generally be restricted to a maximum gradient of 5%



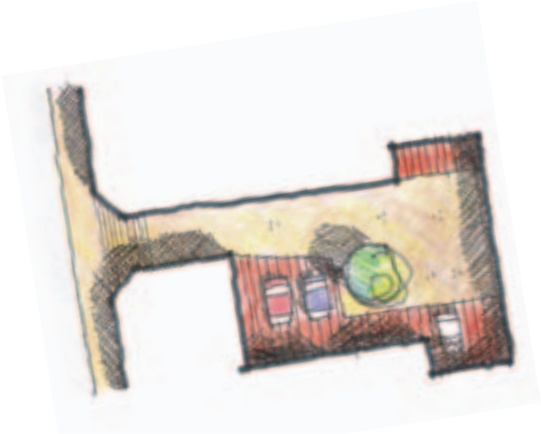
Lane

1 applicable to rural sites next to villages or within small village centres where these are not built up
2 a single track loop road or cul-de-sac, with passing bays. A footway, usually on one side only, should be located at access points in the form of offset junctions
3 gives direct vehicle and pedestrian access to a limited number of dwellings and links them to existing rural roads
4 generally serves a maximum of 25 dwellings and will have individual properties set in dominant landscaped grounds with up to 15 dwellings per hectare
5 all parking should be provided off road within property curtilages or in garages.

Left: A lane leading from a village centre. Middle: A country lane style new housing layout at the edge of a village. Right: A country lane serving a number of individual properties forming the soft edge to a village.

	Typical parameter	Notes	Recommended parameter range (required min or max standard shown in bold)
Carriageway width	3.0m	intervisible passing bays at < 40m spacing	3.0m / 4.8m
Anticipated vehicle types	cars, refuse vehicle, occasional pan-technicon fire tender		fire tender
Footway width	1.8m	footway, where present, normally on one side only	**1.2m** /2.0m
verge width	2.0m		1.0m / 2.0m
Target speed	20 mph		
Distance between speed restraint features	60m	for advice on speed restraint features see para 5.17	< **60m**
junction visibility x	2.4m		> **2.0m**
junction visibility y	33m	may be reduced in accordance with advice on visibility contained in para 5.31	> **14m**
forward visibility	33m	may be reduced in accordance with advice on visibility contained in para 5.30	> **14m**
min longitudinal gradient	0.80%		0.80
Max longitudinal gradient	6 %	gradients may only be increased if unavoidable due to local topography	*8%
Cross section gradient	2.50%		**1.0%/5.0%**
Junction gradients	5% rising 4 % falling for a distance of twice kerb radius		
Vertical curve min K value	7	may be reduced subject to a minimum curve length of 20m	4
Junction kerb radius	6m	entry treatment as shown in fig #	**3.0m** / 6.0m
Kerb height (where required)	125mm	kerbs may be omitted where this is in keeping with a rural context and are not required for drainage purposes	0 / 125mm

All figures are for guidance; design specification should be guided by local context and agreed with the local authority.
* To meet design requirements for the mobility impaired, footways should generally be restricted to a maximum gradient of 5%



Far left: Diagram showing a private drive serving a courtyard. Left: A central courtyard in an urban mixed use development.

Shared Private Drive

1 private ways not being part of the public domain
2 provides direct vehicle and pedestrian access to a limited number of individual dwellings, usually from residential access roads and in some cases local distributor roads
3 a single track serving between 2 and 5 dwellings but with support for HGV (fire appliance, delivery vehicle) access and turning.
4 excessive distances between dwellings and the highway should be avoided, and a maximum distance of 25m is recommended.

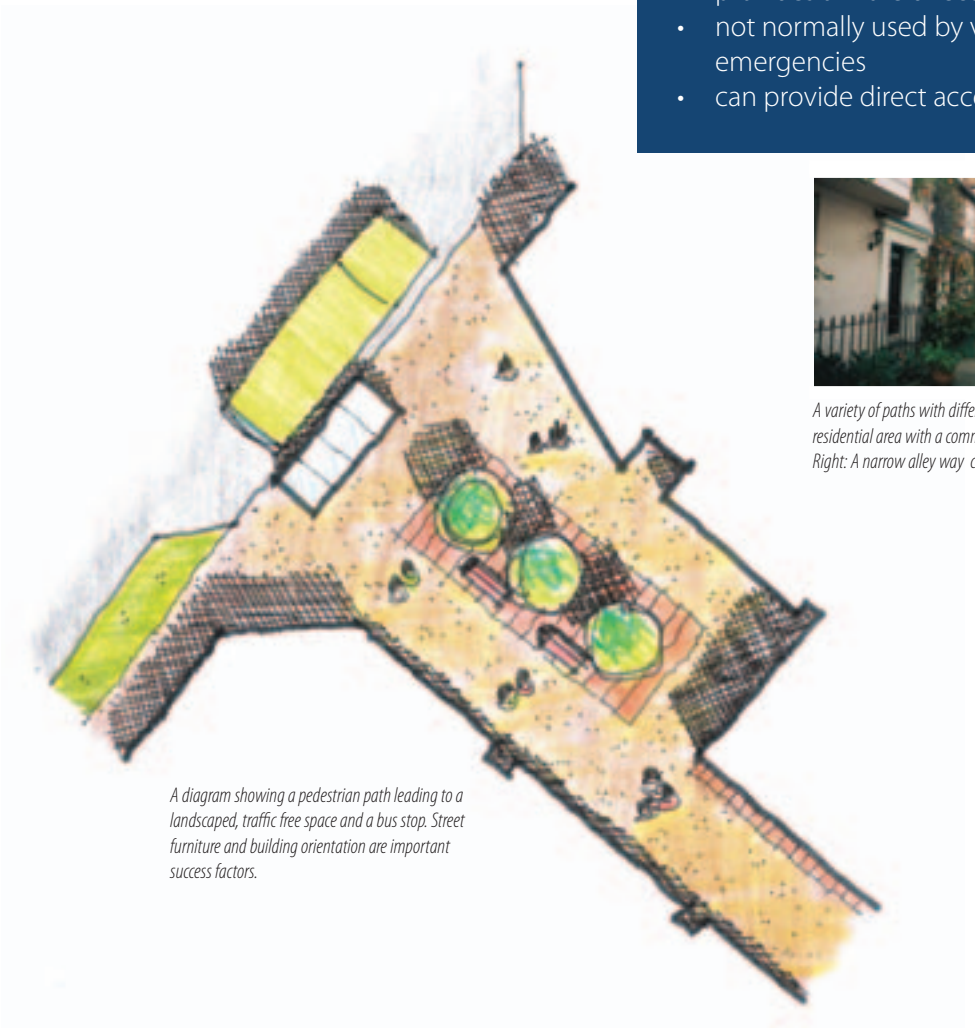
Above: A private shared access in a village setting using boundary walls to mark a line between public and private space. Left: A diagram showing a shared access to a cluster of properties in an informal layout.

	Typical parameter	**Notes**	**Recommended parameter range (required min or max standard shown in bold)**
Width	3.0m	minimum width 3.0m if access required for fire tender	2.4 m / 4.8m
Anticipated vehicle types	car, fire tender	see section 6.16 for guidance on access for fire appliances	
pedestrian visibility at junction with highway	2.0m x 2.0m		**>1.0m x 1.0m**
Maximum gradient	10%	measures may be needed for driveways having a steep downward gradient to prevent vehicles grounding . This can include providing a roll over as shown below or modifying footway cross fall gradients	0.13

All figures are for guidance; design specification should be guided by local context and agreed with the local authority.

Path

- provides a more direct route between different areas for walking and cycling
- not normally used by vehicles but can be an alternative access in emergencies
- can provide direct access to groups of dwellings.

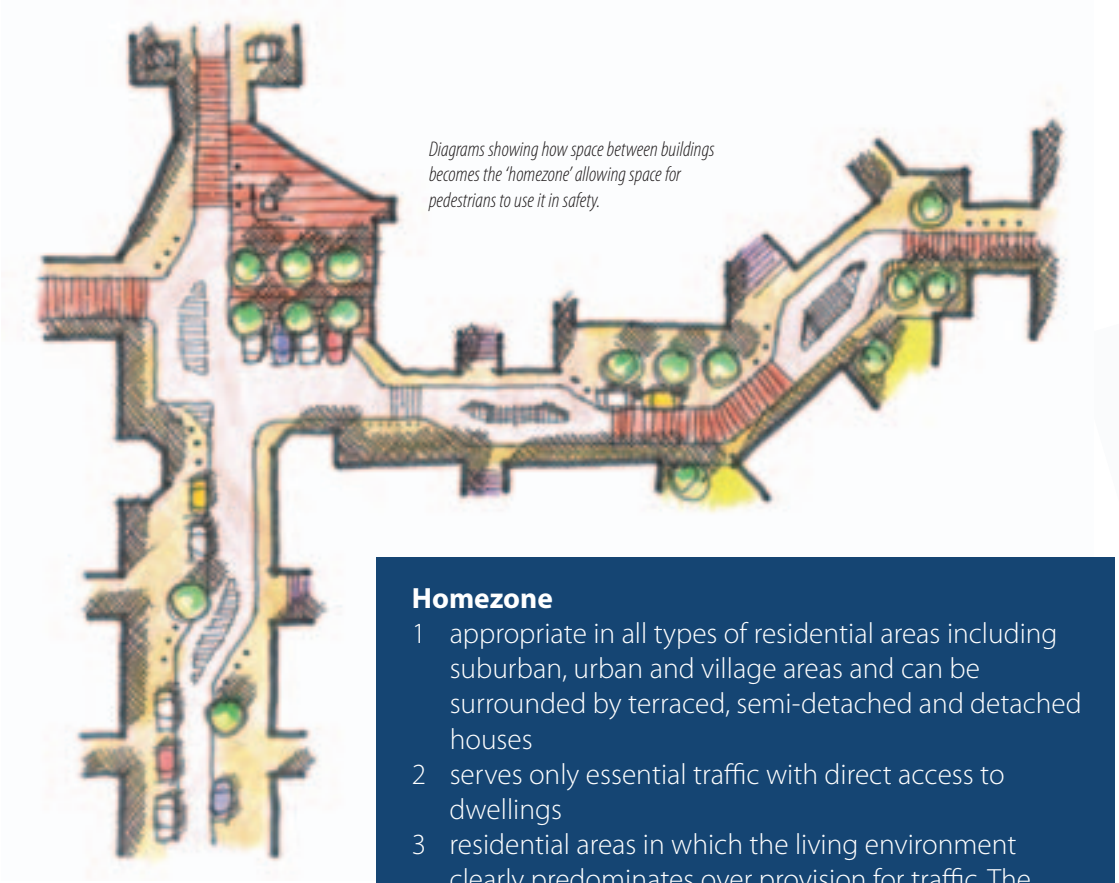


A diagram showing a pedestrian path leading to a landscaped, traffic free space and a bus stop. Street furniture and building orientation are important success factors.

A variety of paths with different functions. Above left: Town centre housing served by a path with no through route. Middle left: Path connecting a residential area with a commercial centre. Middle right: Suburban housing with parking at the rear served by a path giving access to front doors. Right: A narrow alley way connecting a lively mixed use centre with quieter residential areas.

	Typical parameter	Notes	recommended parameter range required min or max standard shown in bold).
Footpath width	2.0m	Minimum width 3.0m if access required for fire tender. Minimum 3.25m width is suggested where it is considered appropriate to indicate segregation between pedestrians and cyclists. Where the footpath width is less than 1.8m, care should be taken to avoid locating street furniture in such a way as to reduce the available clearance below 1.2m	1.2m /4.0m
Cycle/ footpath width	3.0m		2.5m/5.0m
cycleway forward visibility	20m		>10m
Longitudinal gradient	<5%	Cycle paths should not exceed 5% wherever possible.Steps may be provided in footpaths where the topography makes this unavoidable. However, reasonably convenient alternative provision must be made for wheelchairs	<10%
Cross fall	2.5%	steep crossfall, for example where there are long lengths of dropped kerbs, should be avoided by adjusting footway levels	<10%
Tactile paving	-	should be provided where pedestrans are required to cross Local Distributor roads and other places where pedestrian movements are likely to be high.	

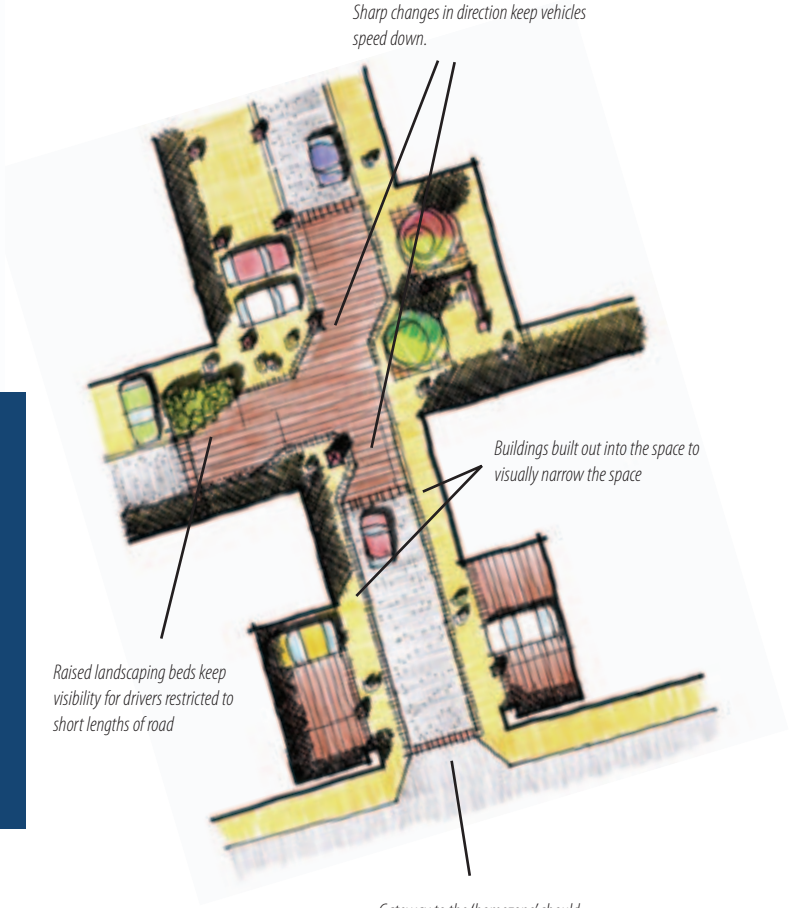
All figures are for guidance; design specification should be guided by local context and agreed with the local authority.



Diagrams showing how space between buildings becomes the 'homezone' allowing space for pedestrians to use it in safety.

Homezone

1 appropriate in all types of residential areas including suburban, urban and village areas and can be surrounded by terraced, semi-detached and detached houses
2 serves only essential traffic with direct access to dwellings
3 residential areas in which the living environment clearly predominates over provision for traffic. The aim is to promote neighbourliness, quality of life and social interaction.



Homezone Design

'Homezones' are residential streets where people come first and have priority over drivers. The Transport Act 2000 enables highway authorities to designate them. They must be designed from the outset with designation in mind as specific regulations apply. The benefits of homezones are that they provide additional outdoor leisure space with the associated health benefits; they can help prevent crime as well-used streets contribute to surveillance, and they encourage social interaction. There are also significant benefits for people with disabilities.

In conservation areas it may be possible to relax the vision splays required at the Homezone entrance; for instance, where there is space at the entry from the major road to include a waiting bay. Garages may be 'on-plot' or may sometimes be sited in small blocks. On no account should the blocks be allowed to become through routes to large parking areas elsewhere. Such arrangements encourage children to play in large groups where they are not wanted. Car parks are likely to form major areas of hard-surfacing within any scheme and be heavily used. If not 'on-plot' then, as an absolute minimum, all visitors' parking should be within the Homezone and the design of the rest of the layout ensuring that such spaces are not permanently occupied by residents' cars. This can be done by ensuring that all residents' parking is close and convenient to homes.

The key design characteristics of 'Homezones' are:

- traffic speeds are restricted to around 10mph
- high quality hard paving
- strong enclosure of the public access space
- minimal front gardens
- careful planting of trees within the public area *(the Highway Authority should be consulted on this)*
- integration within the overall network of streets, making them part of a through route system

In exceptional circumstances Homezone culs-de-sac will be permitted serving an upper limit of around 25 dwellings. Where the Homezone links other residential areas, or is part of a series of linked areas, it can be a through route serving up to 100 dwellings, where the maximum distance to any point within the Home Zone from the entrance or exit is 400m and the maximum traffic flow in any part of the Homezone does not exceed 100 vehicles per hour Pedestrians are given priority over vehicles by virtue of distinctive design, or communal features.

Diagram showing arrangment of planting and car parking in a homezone street. Paving is used to mark out play areas from the carriageway.

Homezone play area in Denton, Gravesend. Although this scheme is a 'retro-fit' scheme it contains many of the elements found in successful pedestrian priority new designs.

Further advice on the design of Homezones is contained in Homezone design guidelines *(Institute of Highway Engineers, 2002)* and Homezones-a planning and design handbook *(Mike Biddulph-Joseph Rountree Federation)*.

2.3.2 DESIGN TO CONTROL SPEED

Speed reducing features should be an intrinsic part of any layout and should be a combination of urban form and carriageway alignment.

The street pattern can have just as significant an impact on speed restraint as some traffic calming techniques. Building close to the edge of the road and building tall both help to emphasise the 'narrowness' of roads. This may be enhanced by controlled on-street parking. A variety of features should be used.

Raised measures such as road humps and speed tables are effective in keeping speeds low, but they are often visually intrusive and unsuitable for bus routes. They have the disadvantages of creating additional noise, increasing emergency service response times and raising pollution levels.

Horizontal restraint measures are preferable to vertical ones. Planting and differentiated surface textures can achieve speed restraint while some streets may provide a through route only for pedestrians or cyclists.

Target speeds should be self-enforcing. Sensitive design is needed, with the minimum inclusion of elements such as bollards that can clutter places and cause problems for people who are blind or partially sighted.

The main factors affecting vehicle speed are:

- driver perception of appropriate speed. For example, long clear vistas with little evidence of pedestrian or other activity will encourage higher speeds. Restricted forward visibility, combined with uncertainty about what lies ahead, will tend to make drivers more cautious
- physical features such as lateral shifts, narrowings, ramps and humps
- enforcement of speed limits by the Police or by the use of cameras. The need for such measures usually indicates that the design in itself has failed to promote sufficiently low vehicle speeds. Safety cameras are not an alternative way of achieving design speeds and can produce 'street clutter'.

A combination of highway geometry and building line restrict forward visibility, reducing vehicle speeds. (St Duntstans Gate, Canterbury, Berkeley Homes)

A gentle ramp and change in surface material slows vehicles at junctions whilst allowing larger vehicles to manoeuvre. (St Mary's Island, Ventura)

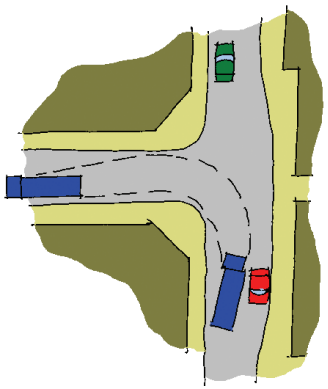
Speed cameras are an indication of a design problem and should not be needed to keep vehicle speeds down if the highway has been designed well.

Vehicle speeds in historic places tend to be reduced by narrower roads, tightly enclosed streets and congestion (Sandwich)

A simple feature built out to create a road narrowing will make drivers slow down. (Leybourne Lakes, Berkeley Homes)

Built Form

The layout of buildings enclosing the highway is an important factor influencing vehicle speed as well as offering a more attractive townscape. Articulation of buildings and frontages can be used to prevent long straight vistas. Buildings close to the highway help restrict visibility.

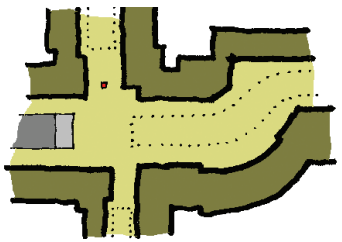


Junctions

Tight kerb radii encourage vehicles to turn into side roads at lower speeds. Slightly widening the main carriageway at the junction will enable larger vehicles to turn without the need to overrun the footway. Tracking can be used to establish the extent of any widening required. Where the frequency of large vehicles is likely to be low, such as in residential access roads, it is acceptable for their turning manoeuvres to use the full width of the side road.

Table Junctions

Raised carriageways at junctions can reduce vehicle speeds and may be particularly useful at cross roads. They can also tie a key public space together, announcing a sense of arrival to a place. They can also benefit pedestrians by providing a level surface and by increasing driver perception that pedestrians may be crossing. Where reduced kerb heights encourage vehicles to deviate from the carriageway, consideration should be given to the use of bollards. But this should be balanced against the desirability of minimising clutter. As with all features involving vertical deflections, designers should minimise the use of raised tables and should balance their advantages against disadvantages such as noise generation, unsuitability for cycles and buses and their effect on emergency services.



Ramped Pedestrian Crossings

In addition to speed restraint, a raised table/ramped crossing can help pedestrian movement and may be particularly suitable where a busy footway or cycleway crosses a road. Generally, the length of the flat section should extend for 1m either side of the crossing.

Narrowings

Narrowing the carriageway can be effective in reducing vehicle speeds, but care must be taken to ensure the safety of cyclists. It is likely to be more effective where vehicle flows are high or where drivers perceive that there is a strong possibility that they might need to give way to oncoming traffic. In urban situations, variation of carriageway width should result from the building layout and the process of tracking. But there may be opportunities to introduce this feature in other situations. Designers should ensure that there is inter-visibility between drivers approaching a narrowed section of carriageway. Generally this needs to be twice the appropriate stopping sight distance. Care should also be taken to ensure that vehicle access to frontages from narrowed sections can be achieved where necessary.

Gateways

The change in character to roads with a lower target speed can be emphasised by the creation of gateway features, for example at the entrance to a village or pedestrian dominated environment. These can range from an alteration of surface material to the provision of enhanced landscape or building forms combined with carriageway narrowing. Gateways should not normally take the form of structures that span above adopted highways.

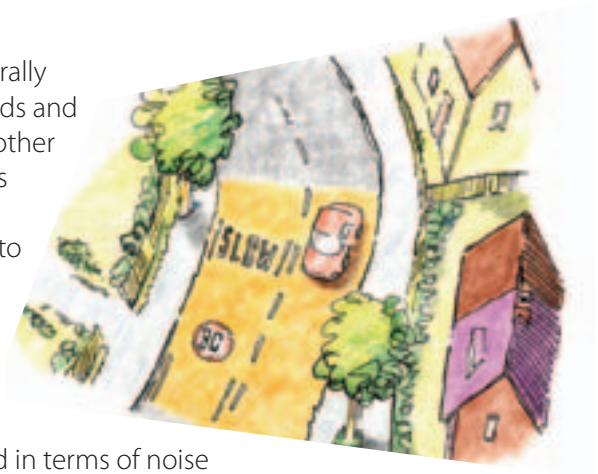
Bends

Tight radius bends force drivers to reduce their speed. They should not be used in isolation but should form part of the overall layout with other speed reducing features. Where a significant number of larger vehicles is anticipated, and it would be inappropriate for them to make use of the full carriageway width to negotiate the bend, over-run areas should be provided. Tracking should be used to establish the extent of the area required.

Lateral Shifts

These consist of deviations to create horizontal deflection. As a general rule, deflections should be sufficient to allow an alteration of direction of at least 70 degrees. Care should be taken to ensure that mild chicanes are not created, particularly in lightly trafficked areas with generous visibility as these may actually encourage high vehicle speeds.

Surface Texture



Uneven surface textures generally encourage lower vehicle speeds and can be useful to supplement other features. Proprietary surfacings such as Rippleprint® may be suitable for roads which have to accommodate large vehicles and where other features are difficult to incorporate. Designers need be aware of the drawbacks, particularly to pedestrians and cyclists and in terms of noise nuisance. Generally the use of cobbled surfaces should be restricted to short lengths in very low speed environments, such as on trackways through a Homezone. Loose gravel surfaces can be very effective in keeping vehicle speeds low. They should only be used in private parking courts and unadopted areas to avoid the risk of loose stones being transferred to the highway. An efficient gravel trap at the junction with the adopted highway is an alternative solution. Bound gravel works well visually where greater traction is required or where loose gravel may be disturbed. Visual demarcation between the adopted highway and land in private ownership is important, and should be provided by way of a clear change in materials or, where appropriate, subtle but identifiable indicators.

2.3.3 VEHICLE VISIBILITY

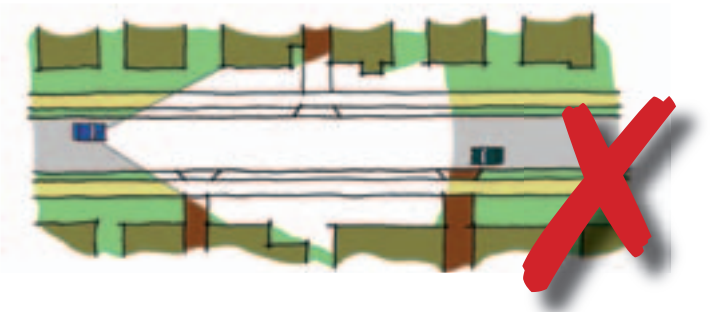
To enable drivers to both see and be seen at junctions, around curves and at entrances to premises, it is necessary to provide clear unobstructed visibility related to the anticipated vehicle speeds.

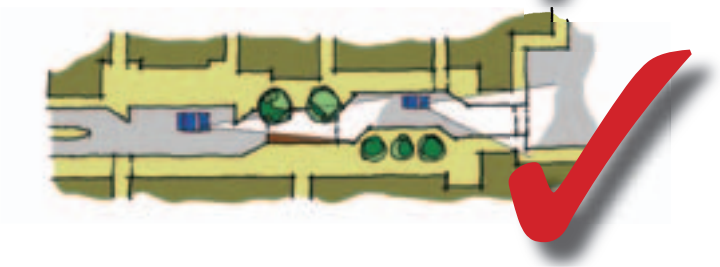
Previous guidance on sight line requirements has been based on the blanket application of minimum standards such as that contained in DB32. This has tended to result in wide, open areas detrimental to the built form and compromising the creation of attractive places.

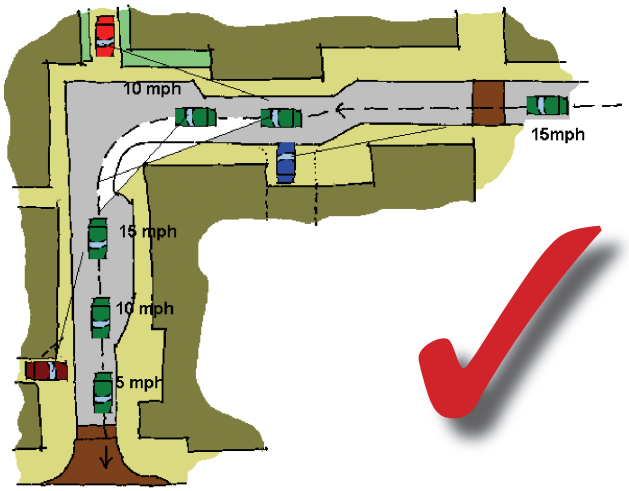
It is accepted that the provision of over generous visibility encourages higher speeds and, conversely, that the effect of a dense urban form with restricted visibility can contribute to speed reduction. Accordingly designers need to balance the need to provide adequate visibility for safety with the aims of achieving human-scale places and encouraging low vehicle speeds.

Ideally, to gain the greatest impact on vehicle speeds, forward visibility should be restricted to little more than that required for the target speed. The process should involve analysis of the proposed road network to establish anticipated vehicle speeds followed by the plotting of appropriate sight lines.

Forward visibility should be plotted along the line likely to be followed by a car driver. Generally this is at a distance of 1.5m from the kerb; visibility is required from a driver eye height of 1.05-2m to an object height of up to 600mm. It is important to prevent parked vehicles obstructing vision – there is a need for site specific risk evaluation. Junction visibility should be based on the distances given in the table below, appropriate to anticipated vehicle speeds. *[Check if diagram relates properly to the table]*. Visibility is required from a driver eye height of 1.05-2m to an object height of up to 600mm.



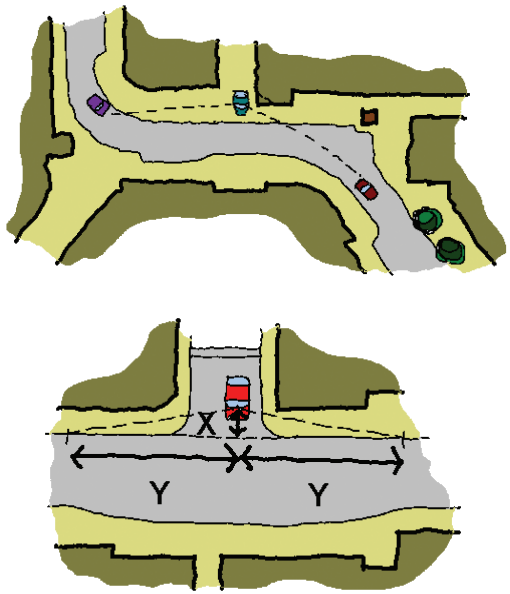




vehicle speed (mph)	forward visibility / Y distance (m)-
10-	14-
15-	23
20	33
22	37
25	45
30	60

Feature	design speed (mph)
bend - centreline radius (m)-	
10	10-
15	15
20	20
25	22
30-	25-
40-	30
vertical shift	15
lateral shift	20
narrowing to single lane	20
roundabout	20
narrowing to reduced width	30
2m wide central island-	30
4m wide central island-	20

distance from T junction or cul-de-sac- (m)	design speed (mph)
10	5
20	10
30	15
40	20



Visibility at junctions. *All aspects of layout design need to combine to produce safe places. Highway geometry by itself should not be used to the detriment of townscape. Buildings and landscaping can be used to restrict visibility safely to keep vehicle speeds down.*

2.3.4 VEHICLE TURNING

The need for turning facilities should generally be avoided by designing layouts with through routes.

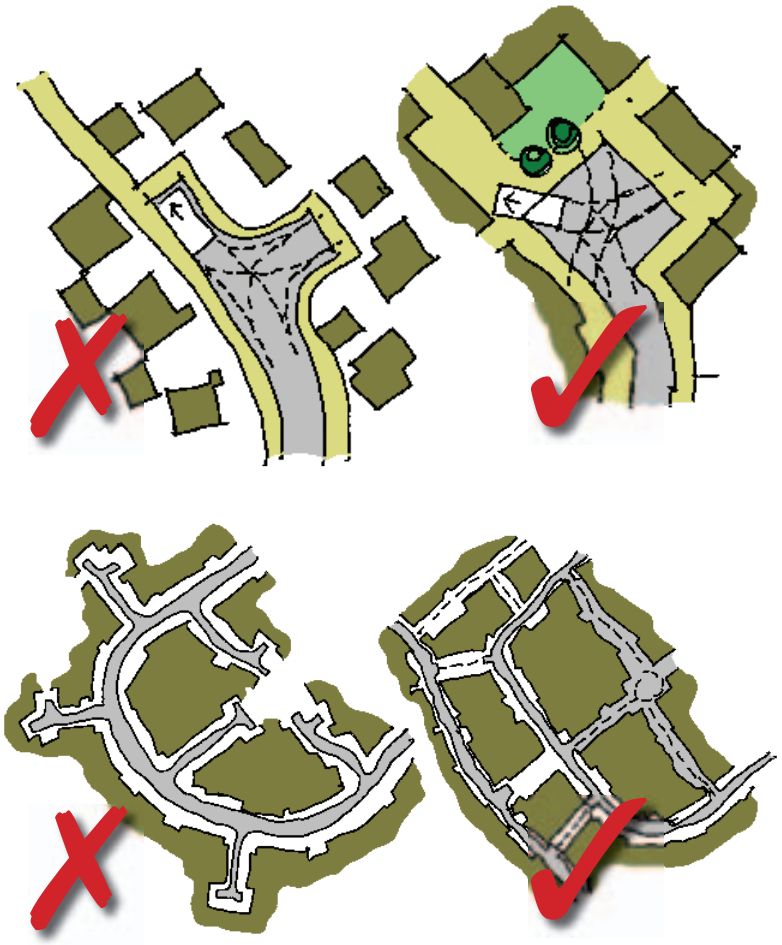
Where this is not possible, turning facilities should be provided wherever:

- vehicles would otherwise have to reverse for long distances
- vehicles might turn in places that could be unsafe or cause damage to verges.

Vehicle Turning Considerations

- large service vehicles should not be expected to reverse more than 40m
- refuse vehicles should not be expected to reverse more than 20m
- pantechnicons should not be expected to reverse more than 60m
- cars and smaller service vehicles should not be expected to reverse more than 25m.
- designers should note that poor provision for parking of large vehicles will affect accesses.

Designers should ensure that turning facilities do not dictate the form of layout but are incorporated within it. Templates for a variety of turning manoeuvres for different vehicles are given in Design Bulletin (DB32) available from HMSO. Some authorities may require higher standards for the refuse vehicles used in their areas. Manoeuvring requirements can also be checked using tracking. Generally it is desirable to provide sufficient space for a 3-point turn within the carriageway, but where turning will be infrequent a more complicated manoeuvre may be acceptable. Also where pedestrian flows are generally low, it may be acceptable to accommodate the turning requirements of infrequent larger vehicles within the whole highway envelope, subject to strengthening of footways and margins. Parked vehicles in turning heads can become a problem, so it is normally better to have through routes. Where large vehicles will have to carry out tight turns, ensure that surface materials specified are sufficiently robust.



Maintenance Access

A permeable layout will normally provide alternative routes in the event of a section of street having to be closed. However, where it is likely that main services or underground structures will be located in the carriageway of a cul-de-sac, the street must be of sufficient width to maintain access during maintenance.

Emergency Service & Refuse Vehicles

Consideration should be given in new development to the size and type of vehicles that need access and – for emergency service vehicles – the provision of 'standing' space.

Although it is important to avoid creating unnecessary road space, adequate provision for these vehicles must be made. Care is needed at an early stage in the design to ensure that there is a strategy for accommodating buses and larger vehicles. Early consultation with the Kent Fire and Rescue Service (www.kent.fire-uk.org) and the waste authorities is recommended. Waste collection and recycling points should normally not be more than 25 metres from the edge of the carriageway, with a preference to locate them as close as possible to the publicly-maintained road for convenient collection. The carry distance for larger bins used for flats should be considerably less. Careful siting can go a long way to minimising road space. With early consideration in the design process it is expected that collection distances will be considerably reduced. It should be recognised that larger refuse collection vehicles are coming into use.

Access for Fire Appliances and Other Heavy Vehicles

Access for fire appliances must be considered at the initial design stage.

Poor or inconsiderate vehicle parking can result in the loss of vital time when attending incidents. The Fire Brigade must be able to manoeuvre its equipment and appliances to suitable positions adjacent to any premises and, in the case of dwellings, suitable access maintained for fire-fighting to within 45 metres of all dwellings. Closer access may be required by The Building Regulations 1991 Approved Document B5). The maximum reversing distance for fire engines is normally 20 metres. Kent Fire Brigade publishes a Guidance Note 'Kent Estate Adoption Guide' and in *('Kent Fire Brigade Technical Bulletin No. G18')* on access for fire appliances. The fire service should be consulted before layouts are finalised.

Consideration must be given *(particularly for tall buildings)* to the access requirements of refuse freighters, oil tankers, furniture removal vans and cesspool emptying vehicles

2.3.5 MATERIALS

The materials used in the public realm are important in the creation of quality places.

This applies as much to the types of paving and character of kerbing as to the materials used on buildings. Materials should reflect the function of the street and the character of the area. Block paving can be acceptable for carriageway surfacing on roads that are to be adopted. A co-ordinated approach to street furniture and materials *(including tactile surfaces)* is particularly important when considering the needs of visually impaired people – to avoid hazards. For special areas the use of materials other than the standard black material is encouraged.

Paving and kerbing materials should be chosen with the same care as building materials. Concrete paving blocks or brick pavers, having proportions related to brick, give easily understood scale. They provide texture through their joints and slight variations of surface. Further variety and the visual "breaking down" of large scale areas can be achieved by colour changes and pattern. These can also be used as methods of demarcation. In domestic situations, block paving helps to give a sense of location. Tarmac surfaces may be seen as an extension to a highway-dominated environment.

In road construction, materials suitable for recycling could include granular materials arising from the site, asphalt planings, kerbs, channels, gully grates and pots, manhole and inspection covers. In building construction, aggregate may be sourced from on-site demolition of existing buildings.

Surfacing Materials

Macadam - The use of macadam for carriageways and footways, particularly when combined with standard drab grey kerbs, suggests car-dominated environments. Reinstatement of excavations by service companies can often result in an unattractive patchwork. A short, simple palette of materials should be used.

Block Paving - A large variety of types and colours are available. Generally block paving indicates a less car dominated environment. Reinstatements can be carried out that do not detract from the original appearance.

Stone Setts - Useful for providing demarcation between public and private domain. Can provide an uneven textured surface to deter vehicles in over- run margins or to deter high speeds.

Paving Slabs - Available in natural stone or textured concrete. Generally more attractive and easier to reinstate than macadam.

Bound Gravel - Less durable and not suitable for areas of high vehicle traffic. However, this is an attractive alternative to macadam or block paving for use in lightly trafficked areas and footpaths.

Kerb - Natural stone or textured concrete offer a much more attractive and equally durable alternative to standard plain concrete kerbs. Conservation style kerbs with a larger width and a shallower depth than standard concrete kerbs are also appropriate and attractive for many locations.

Varied materials - Designers should restrict the number of different types of materials. A limited amount of natural material can dramatically lift the quality of an area.

Creating the Design

Step 4 - Getting the detailing right

2.4 GETTING THE DETAILING RIGHT

2.4.1 Public realm: the spaces between buildings

Public realm is the streets and open spaces that make up the area between buildings. It can create an environment where people come together to meet or sit down, or simply form an attractive walking route. The quality of detailing, including choice of materials, street furniture, lighting and signage *(and their maintenance)* all send out a message about the character of a place and whether it is a safe and hospitable environment.

Streets are places in their own right and not just movement corridors; they should be designed as a cohesive component of the buildings that front them. The best public realm follows the same rules as a well designed highway network:

- The hierarchy of routes and spaces is easily identifiable through the scale and proportion of the space or street, the degree of privacy/ visibility and selection of materials and street furniture
- Nodes of activity are created that are easily identifiable and offer places to sit down as well as space for children to play
- Routes reflect natural desire lines between destinations
- The design and detailing reinforces local character and identity
- Street clutter is avoided

English Heritage 'Streets for All – South East – 2005' provides detailed guidance on the design of the public realm (www.englishheritage.org.uk).

Public art

Public art is encouraged in development proposals and planning for its provision should be an integral part of the design process.

Works of art on existing and new buildings or within developments can be a potential means of improving the quality of the environment. Distinctive works of art can contribute to and enhance the creation of a sense of place and local identity.

Successful public art will:

- engage with the public and develop their understanding and appreciation of these works
- involve educational projects and promotional activities
- encourage collaboration and partnership with both public and private sector organisations, and between arts organisations.

The provision of public art will vary according to the nature of the proposal and its location. There are layout and detail design implications in making provision for public art, which need to be embedded in the development process from the beginning rather than as an add-on.

Suitable locations for public art might include public open space, key gateways to districts, arrival points within towns and villages and integral parts of buildings and structures themselves.

Public art might be found in:

- new infrastructure - for example within the design of roads, viaducts, bridges and public utilities structures
- landmark buildings - with public access such as retail centres, civic buildings, stations, ports, schools
- new and existing public areas - enhancing streets, open spaces, cycle ways, bridleways and footpaths with, for example, signage, street furniture, paving and lighting
- new landscaping - using land form and planting
- temporary or moveable structures – for example on construction site hoardings or moveable light shows

Development of larger sites that could accommodate a series of public art pieces should have a strategy for their location, design and commission. There are a number of ways to achieve this including art masterplans, public art strategies and policies included within local plans, local development frameworks, development briefs and community participation programmes. It is recommended that specialist public art consultants are engaged at an early stage to develop such strategies.

Public art. *Individual pieces of public art can lift a public space and form a focal point. The most successful public art relates to the history or character of its location. At Kings Hill (top left) the figure of a pilot represents the site's previous use as an airfield and serves as a memorial to those who served there. At St Mary's Island Chatham (above) a large scale sculpture celebrates the sites long history as a naval dockyard. Chummey's Folkestone (left) this fish stall was designed and built following a competition and incorporates seafood and seafaring motifs throughout. A mosaic produced by school children enlivens this blank frontage in Snodland (far left).*

Street Furniture

Good quality street furniture including seating can play an important part in creating the character and enhancing the function of a place.

Designers should always avoid street clutter. This includes new types of street furniture such as electronic surveillance and security equipment, speed cameras, etc. It is all too easy to spoil sensitive urban and village environments by over-engineered solutions. Reference should be made to guidance from English Heritage 'Streets for All – South East – 2005' provides detailed guidance on the design of the public realm (www.englishheritage.org.uk).

In addition to street lighting columns and sign posts, items such as railings, bollards, service kiosks, substations, etc., that need to be included require careful consideration as to their necessity and to location. It is unacceptable for these to be an afterthought imposed onto a layout with no regard to the overall design. Service providers should be consulted at an early stage so that requirements can be properly integrated. Street lighting can produce unacceptable levels of street clutter. Wherever possible, lamps should be fixed to walls.

Street furniture. *Distinctive and individual street furniture can greatly enhance the street scene.*

Above. Dover. A new sea front shelter provides a memorable landmark and takes its inspiration from a more traditional example.

Top right. Electronic surveillance need not be obtrusive. A CCTV camera in Broadstairs installed in a traditional street lamp.

Middle right. Benches provide resting points when sensibly placed within public spaces or on well used pedestrian routes.

Bottom right. Dramatic new structures bring new life to public open space but should be robust and relatively maintenance free (Maidstone)

Signs

Signs should only be provided where they are absolutely necessary.

In a legible place with a strong sense of character there should be little or no need to direct people or to warn them against the unexpected. In rural areas through signing should be avoided if this is likely to encourage rat-running. Tourist destination signs will help visitors locate attractions but should be located only on appropriate routes.

Where signs are considered essential or are a legal requirement, designers should carefully consider their size, type and siting and possible contribution to 'visual clutter' in order to ensure that they detract as little as possible from the quality of the place. The number of sign posts should be minimised by attaching signs to lamp columns and walls or to existing signposts provided that this does not result in clutter. If proposing wall-mounted street furniture, consider the location and design of supply boxes, cable runs and access for maintenance.

Street name plates should be in keeping with the locality and, where possible, should be mounted on buildings or walls. *(The naming of new streets is dealt with by local councils).*

Street clutter caused by street furniture signs and public utilities infrastructure can detract from 'sense of place'

A comprehensive approach to traffic management, location of utilities and the sensitive location of street furniture can protect and enhance an area's 'sense of place'

Co-ordinated signage. *Commercial schemes and street improvements offer the opportunity to think comprehensively about a range of signage. Co-ordinated designs will enhance public space (Right and below right, Whitefriars, Canterbury and Bluewater).*

Lighting

High quality lighting is fundamental to safety and can lift environmental quality in terms of the illumination and the design of the lighting equipment itself. Development should result in a high quality public realm with streets and public spaces that enhance sense of place.

Carefully considered or innovative lighting can enhance buildings and outdoor spaces by highlighting architectural features and displaying form, materials, colour and texture. Lamp-posts can be a feature, reinforcing the identity of an area or creating a gateway. It helps to reduce crime levels including arson. Lighting will generally be required in all urban public areas. A lighting strategy should be prepared as appropriate. Provision should be made for maintenance access for lighting fixed to buildings.

Fear of personal crime often results in people staying off the streets after dark. The separate lighting of public areas, particularly footways and cycleways where these are segregated from the carriageway, can do much to ensure the safety and security of pedestrians. There is a direct correlation between the quality of lighting and the levels of casual vandalism. An appropriate overall level of street lighting for carriageways, footways and footpaths will help reduce the need for intrusive and high energy-consuming security lighting. Adequate access must be allowed for maintenance. Design specifications for lighting are contained in the technical specifications produced to accompany this guide and in 'A Guide for Crime & Disorder Reduction through a Public Lighting Strategy (Institution of Lighting Engineers 1999).

Lighting should be regarded as an integral part of the design rather than being purely to illuminate the highway and superimposed onto the layout at a later date. Lighting should be for people and particular care should be taken to ensure that places are well lit for pedestrians.

Street lighting around the harbour side in Folkestone. The distinctive lamp column designs are co-ordinated with a range of street furniture and reflect the maritime heritage of the site (Shepway District Council and Kent County Council).

Street lighting

The design and performance of street lighting needs to relate to the function of the space being lit.

Lighting should generally be provided by overhead street lamps. To minimise clutter, these should be attached to buildings wherever possible. However illumination from lamps that are lower in height can meet the needs of pedestrians, minimise light pollution and spillage, and be attractive in their own right.

Light pollution has become a prominent environmental concern and the subject of advice in 'Guidance Notes for Light Pollution' (Institution of Lighting Engineers, 2000). External lighting should be integrated with the fabric and character of the environment and based on the needs of users, the location, the space and the activities to be lit. Skill and careful planning can avoid overpowering lighting or inappropriately large equipment. Many dwellings in sensitive locations have minimal external lighting. These locations are not necessarily rural; they can include streets or districts within towns and villages where light levels have traditionally been low. External lighting should be positioned to avoid light penetrating bedroom windows.

Right, Lamps mounted on the sides of buildings reduce the ammount of street clutter and are particularly effective in narrow historic streets or intimate new spaces. (Sandwich)

Above and far right, a comprehensive approach to district lighting in Gravesend shows how effective a lighting strategy can be in making public spaces attractive and safe. High Street is lit by conventional street lamps and unique lighting blocks in specially designed gateway features. Low energy lighting brings an historic facade to life at night (Gravesend Old Town Hall and High Street, Gravesend by Urban Projects).

Services

All services should run below ground in common trenches.

Where possible, service and drainage runs should share common trenches to minimise disturbance to the site around the buildings, and be sited under verges and service strips rather than roads or footways. Dimensions for the relative location of service and drainage pipes in a common trench can be obtained by reference to the Highway Authority. Proposed private foul drains that affect proposed or existing highways should be discussed with the Local Authority.

Services and drainage runs should be located in such a manner as to:

(a) prevent damage to the root system of any retained tree including those along highways and in paved areas

(b) be on routes which avoid areas reserved for new tree planting. Service runs should not be located within tree root spreads, but where absolutely unavoidable and in exceptional circumstances, there is provision for moling services within tree spreads *(BS5837 (Trees in Relation to Construction) and NJUG10 (Guidelines for the planning, installation and maintenance of utility services in proximity to trees)*.

Service Runs, Sub-stations and water pumping stations

Detailed planning applications should indicate main service runs *(water, gas, electricity, telephone and television)* and drainage runs.

Where public utilities require sub-stations, their enclosures should form an integral part of the overall layout, using the same type of walling or fencing as elsewhere in the development. Where they can be overlooked from a higher level they should be roofed over if possible, or screened by planting.

Rectangular manhole covers in paved areas should be placed parallel or at right angles to the line of the path or paving. They should not straddle two different paving materials, nor should they be closer than 100mm to the edge of the paving. Covers should never be positioned partly within a paved area and partly in a grassed or planted area.

When in sloping surfaces, whether paved or not, manhole covers should be laid parallel to the slope, to ensure an unobtrusive appearance and to ease maintenance.

Mobile phone masts

The Mobile Operators Association (MOA) have published ten best practice commitments to help address concerns relating to the siting and design of mobile phone masts or 'radio base stations'. Launched in 2001, the aim of the Ten Commitments is to provide more information to the public and local planners including a commitment to involve the community in the siting of radio base stations. A copy of the best practice note 'Developing Mobile Networks - Ten Commitments to best siting practice' can be found at www.mobilemastinfo.com.

Masts can be designed to blend in with the surrounding landscape. This mast is clad in timber and sited within a heavily wooded area.

Top, a manhole cover showing how paving can run accross the top within a recessed cover.

An enclosure for river navigation equipment on the Thames in London. Design and materials used make this an atttractive building rather than a utilarian structure.

Above, where existing paving is disturbed to allow for the installation of services it should be reinstated with the original or closely matching materials, particularly in the case of traditional brick, stone, stone setts and cobblestone pavings.

2.4.2 BUILDING DESIGN

The most successful buildings and places are the result of careful attention to detail, including the choice of materials.

Style

New design should avoid the confused application of architectural styles or inappropriate historic imitation. Emphasis should be placed on the quality of the design solution, whether it is a reflection of a historic style or a contemporary approach. An applied veneer of cladding in a traditional material can weaken the integrity of the building. This form of design often lacks the detailing or sense of scale of the original and imitations offer a poor copy. Details derived from local buildings should retain the scale of the original.

A modern house dressed up in 'period' costume is immediately obvious and merely devalues the original concept. Local constraints normally dictate the design approach, but there may be circumstances where freedom of design is possible. Infill developments will almost always be expected to harmonise with their context. Quality and detail of all materials and components will be of paramount importance. Such matters can easily be settled at feasibility stage through informal discussions with the Local Planning Authority.

Historic building styles. *Domestic architecture in Kent relied, in part, on the availability of inexpensive sources of local materials. But along with distinctive 'Kentish' looking buildings, there are many building styles in Kent that could be found in the rest of the country.*

New Kentish vernacular *Top, at St. Mildreds Mews Canterbury, designers Clague have taken a vernacular look and re-interpreted it as a clean contemporary design.* (Ward Homes)

Below, the same designers adopted a different approach to vernacular at Stonegate Place in Wye. Authentic detailing and careful use of materials make this scheme a seemless extension to an historic village centre.

Local distinctiveness *Top, a former fisherman's hut in Dungeness has been extended to form an attractive modern beach house. Recycled materials have been used to give this a contemporary appearance in keeping with the black tar coated timber huts and cottages that surround it. (Architect, Simon Conder)*

Above, this new house near Tunbridge Wells replaced an existing bungalow and is a unique response to the challenges of a multi levelled site. A more traditional form would have failed to capitalise on the site's topography. (MKA Architects)

Attention to detail

New buildings and alterations to existing buildings need to be designed around the requirements of modern life. The arrangements of a building's services can have a fundamental impact on the layout of the building and its appearance in context. These include:

- **Roof top plant** – lifting gear, air conditioning units, ventilation and heating ducts
- **Telecommunications equipment** – satellite dishes, aerials, mobile phone masts
- **Ventilation** – vents for boilers or fan assisted room ventilation for bathrooms
- **Power** – internal sub-stations and generators, power plants, solar panels and wind turbines and externally mounted meters

Telecommunications masts compete with church spires and towers as skyline landmarks (above). New buildings need to be designed from the outset with the location and appearance of mechanical and electrical plant in mind. (top)

***Above,** conversions to other uses presents the challenge of accommodating important plant within buildings that were not designed for their new purpose.*

***At Bluewater,** building services create a distinctive silhouette inspired by the classic Kentish oast house coving.* (Lend Lease)

***Air vents,** close attention to material specification can lead to attractive and distinctive features instead of 'off the peg' solutions.*

Colour

Colour of materials and finishes should be carefully considered as an integral part of the character of new development and should be used to complement and enhance the site's context.

Colour, both of materials and as applied, makes an important contribution to the character of buildings, groups of buildings and their setting and may be subject to planning control – particularly on listed buildings and in conservation areas.

With the exception of black and white, harsh contrasts of colours should be avoided. Care should be taken to blend the colours of new developments into the existing context. The most successful colours are generally variants of those found naturally in Kent's building materials such as browns, earth reds and creamy sandstone or flint grey, perhaps with a complementary colour applied to details *(doors, windows, and rainwater pipes)*. There are exceptions to this in Kent, particularly the pinks, blues and yellows in the architecture of some coastal towns. Colour does not have to be bound by tradition but careful consideration should be given to context and to the shade, intensity, reflectiveness and area of coverage of the colour.

Top. Gravesend High Street. The colours used in this infill scheme help it blend seamlessly into the strong existing street frontage.

Bottom left. Hextable Dance Studio. A distrinctive modern faclity uses colour to highlight the building entrance. (Architects Lee Evans Partnership)

Bottom right. Leybourne Lakes. A distinctive colour palette helps define the new area's character and strengthens legibility. (Berkeley Homes)

Building Materials

Development should result in a palette of new materials that are attractive, durable and complement the character of the sites' context.

The number of different materials used should generally be kept to a minimum - attempts to include brick, stone, render and timber in a single elevation are rarely successful. The roofing material can provide a unifying element when the tile or slate is of good quality and the walling material changes within a group of houses.

A series of designs using a variety of materials and colours to express individuality set side by side along a street will cancel each other out visually. In the event one will be no more or less noticeable than another. Individuality is undermined by the use of mass-produced materials and components and can only be achieved in the way a building is related to its site, to other buildings, and to the space enclosed.

Building Materials & Local Character

Good quality design relies on the choice and combination of materials. This is crucial to the success of a scheme. A richness of design and texture can be achieved through careful detailing and use of materials, and through a fine balance between variety and uniformity in a building or development.

Materials and combinations of different materials used historically vary in different parts of the county. Using local materials reinforces the character and identity of an area whilst reducing the need for transport of materials. Depending on context, contemporary materials can be used to produce innovative and unique buildings and these are encouraged.

Materials for walls should conform to the dominant local character, colour and texture where these are of a consistent quality and type. The use of tile hanging, stained or painted boarding, render and brick varies across the county. These differences should be respected and used to reinforce local character.

The recycling or re-use of building materials, particularly tiles and bricks, can assist in integrating a development into its setting as can the use of new but traditionally produced materials sourced from local suppliers.

Information on Materials for Planning Applications

Detailed planning applications must give precise descriptions of materials, whilst samples may be required by the Local Planning Authority as part of the application. Sometimes, as in areas intended for adoption, the Local Authority may instruct the use of a certain range of materials. This also applies to listed buildings and to conservation areas.

Sustainable Materials

The lifecycle environmental cost of construction materials and components should be considered, Including their suitability for adaptation or re-use.

This should cover:

- the costs of extracting raw materials
- the renewable nature of raw materials
- energy costs in the manufacture of materials
- the environmental costs of transportation to site.
- the ease of re-use and/or recycling

The Building Research Establishment (BRE) Green Guide and British Council for Offices Fit-out Guide provide relevant guidance.

Specification and procurement should consider:

- use of Forestry Stewardship Council *(FSC)* certified timber
- avoiding PVC
- low VOC paints, varnishes etc
- no CDS and low GWP insulation and coolant materials

'Sustainable Settlements: a guide for planners, designers and developers (Barton, H. et al 1995)' offers a good basic evaluation. The Building Research Establishment and the Construction Industry Research & Information Association can also provide more detailed data, and organisations such as the Forestry Stewardship Council provide information on sustainable sources of timber.

Kent buidlings use a variety of materials in their construction. Some materials are closely associated with the character of that area or building type. Contemporary materials can be successfully blended into such areas by careful selection and application. Texture and colour are important considerations in combining modern and traditional materials.

Building Alterations and Extensions

The external fabric of new or altered buildings needs to be considered as a whole and all details affecting its design submitted for approval.

For major alterations and extensions to buildings, the main principle is that the character of the building and surroundings must be maintained or improved by the work done. This is particularly important in conservation areas. Further detail is given in the Glossary/Advice Pages. Many Kent planning authorities also produce their own detailed guidance on this and the advice of the local planning office should be sought before embarking on a design.

Alterations and Extensions to Historic Buildings

The restoration, modification or extension of any building requires a sympathetic approach and this is particularly the case with heritage areas including historic buildings and townscape. Even a seemingly minor alteration can be damaging to an individual building or group. Features and ornamental details are often important elements of character. But there may be scope for new additions or alterations to old buildings to be innovative if they remain sensitive to the original design and do not overwhelm it.

The conversion of historic buildings should always keep the characteristic features which give the buildings their identity and show their past use. This applies whether or not a building is 'listed' as a 'building of architectural or historic importance', or is located within a conservation area. This means, for example, keeping the cowls on oasts, the hoists and loading doors on barns, the bell cupolas and clocks on chapels and schools. New features necessary for the conversion must respect the character of the building. This means that the sweep of an original barn roof should not be broken by dormers or inappropriate roof-lights *(where sensitivity is needed in determining the location, size and number of openings)* and that oast kiln roofs should be left intact and the kiln brickwork only punctured by narrow windows.

The restoration of redundant rural buildings can benefit the local environment and economy. The merits of re-use are subject to considerations such as traffic generation and the impact on rural character.

Proposals to alter or extend buildings neeed to be accompanied by good quality drawings showing how the original building will be affected.

This redundant 18th Century barn has been renovated and a new wing built to house an office. (Home Barn, Forum Design)

This former gymnasium at Deal Barracks has been converted into new homes with entrances facing onto a central atrium. The architectural integraty of this deep plan building has been preserved as a result.

This listed farmhouse has been extended with a contrasting modern design with a 'garden wall' creating a central courtyard space. (Iden Farm Cottage MKA architects)

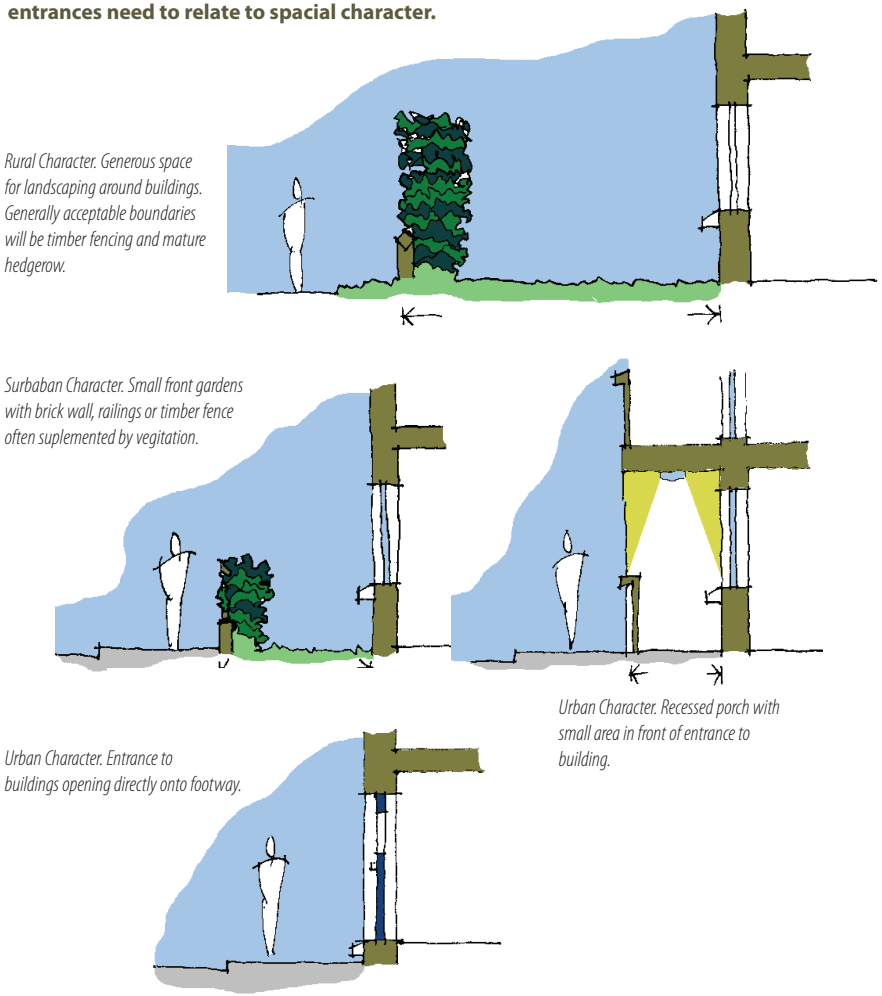
Boundaries

The boundaries to new development should clearly define the edges of the site and mark the division between public and private space.

Many new developments are made less attractive by the use of unsightly boundary treatment. Boundaries work well where:

- Walls, railings and fences have a character appropriate to their location and should be selected with durability in mind, particularly on public boundaries.
- Their form varies according to their surroundings and to the degree of enclosure required.
- an existing wall, hedge or fence, which already gives an overriding form to an area is retained and incorporated into the new development.
- an existing watercourse is used as a boundary as well as a positive asset for the development. They should not be culverted, fenced-off or excluded from proper maintenance, unless required for safety reasons.

Boundary treatments and their relationships to building entrances need to relate to spacial character.



Rural Character. Generous space for landscaping around buildings. Generally acceptable boundaries will be timber fencing and mature hedgerow.

Surbaban Character. Small front gardens with brick wall, railings or timber fence often suplemented by vegitation.

Urban Character. Recessed porch with small area in front of entrance to building.

Urban Character. Entrance to buildings opening directly onto footway.

2.4.3 WASTE MINIMISATION AND RECYCLING

New development should incorporate facilities which encourage reuse and recycling.

Communal facilities should be designed in at the outset.. Provision should be made for the storage of recyclable waste so that it does not deteriorate or become contaminated, particularly in the case of commercial operations. Dwellings should be designed with adequate refuse storage for disposal containers and for waste separation for recycling. Recycling collection points should not normally be more than 25m from the carriageway . Careful consideration also needs to be given to the security of litter receptacles for the avoidance of anti-social behaviour, arson, vermin and the creation of street litter.

The EC and UK Government are putting stringent reductions on landfill, and stressing that waste management must be sustainable. This has led to compulsory recycling targets for all authorities, plus a need to minimise the waste that households generate. All Councils are therefore running initiatives to reduce and recycle waste. This may entail different collections of recyclables, green waste and general refuse, with local collection cycles in place. Developers and designers must be very aware of which scheme operates in the area they are working, and early consultation with the Waste Collection Authority *(usually the Borough/District Council)* is essential.

All new development, including homes, offices, industrial premises and shops must be designed to:

- Encourage residents to minimise their waste through good design, and deal with what they do produce in a responsible manner.
- Provide adequate storage space for segregation of recyclables and general waste.
- Consider the routes for collection vehicles. Recycling collection points should not normally be more than 25m from the carriageway.
- Consider providing specific waste disposal facilities e.g. static recycling centres near to communal facilities in larger developments.
- Avoid opportunities for fly tipping, which has a significant detrimental environmental impact.
- Communal recyclable / refuse storage areas can be misused for dumping and as they are not the responsibility of any one household, lack of "ownership" does nothing to foster waste minimisation or recycling. Where it is necessary to include such areas (eg in the case of flats) they should be designed to encourage recycling.

Waste minimisation and recycling also applies to the construction process – Site Waste Management Plans should be produced to ensure this has been thought through at an early stage.

A design advice note on designing for waste management will be produced to accompany this guide.

Communal bin stores within apartment buildings and mixed use buildings need to be capable of being accessed by workers, residents and collection service alike.

Storage of waste for collection or recycling must not be left to chance.

An external, communal bin store in Ingress Park, Dartford. This attractively landscaped store is screened, but the paths to it are accessible and overlooked to provide security. ***(Crest Nicholson)***

A bin store for an individual house. If designed from the outset, these need not be unattractive afterthoughts.

Recycling points should be encouraged within developments but need to be carefully located and managed.

2.4.4 ENVIRONMENTALLY SUSTAINABLE DESIGN

All development should contribute to a sustainable pattern of movement, economy, community well-being and use of natural resources.

A sustainable approach to development requires that location, transport connections, mix of uses and community facilities, together with careful husbanding of land and energy resources all combine to produce social and economic benefits:

- healthier living and working environments
- improved efficiency and productivity in use
- reduction of fuel costs and the costs of vehicle ownership.

SEEDA Checklist

The South East England Development Agency (SEEDA) has produced a comprehensive checklist for use when planning or constructing all kinds of development including regeneration projects, housing estates, urban villages etc. The checklist is designed to be a flexible framework that can be adapted to the user's needs. It is aimed primarily at planners, developers and land owners.

The Checklist enables the user to identify good practice for their development by considering positive measures to reduce environmental impact and enhance social and economic benefits. The key issues are grouped under ten headings that represent the underlying principles of sustainability.

The checklist, provided on CD-Rom and on the web (www.sustainability-checklist.com) is comprehensive and designed to ensure that all sustainability issues in a site's development have been addressed; it is not just a test.

Sustainable construction

The UK strategy for more sustainable construction, 'Building a Better Quality of Life' *(DEFRA 2004)*, suggests key themes for action by the construction industry. These are:

- design for minimising waste
- lean construction
- minimise energy consumption in construction and use
- do not pollute
- preserve and enhance biodiversity
- conserve water resources
- respect people and the local environment
- monitor and report *(i.e. use benchmarks)*.

Further information on sustainable construction can be found in 'Making It Happen', available from 2006.

This new ammenity block at Trosley Country Park has a number of sustainable construction techniques designed in. It houses office and storage as well as public toilets and Rangers at the park were heavily involved in its design. The building was built using timber felled in the park. Cutaway panels show its construction (below). Mouchel Parkman for KCC

Canadian technology went into creating this highly insulated timber framed house cutting energy bills to a minimum. Kings Hill

Highly efficient modern design cutting energy consumption and helping protect our environment through sustainable construction methods. The Boundary House, Tunbridge Wells

Romney Marsh visitor centre was built using a simple timber frame construction with straw bale infill with lime render and loose aggregate on floor and walls. Everything is either 100% salvageable or bio-degradable. (BBM for Shepway District Council)

Measures of Environmental Performance

The Local Planning Authority will require developers to demonstrate how sustainability has been addressed in the design.

A comprehensive assessment of the environmental performance of a building should go beyond the conventional evaluation of energy efficiency.

The assessment will typically consider:

- materials choice – embodied energy and transport costs including the use of local-sources
- use of renewable energy, for example passive solar heating, photovoltaic cells, wind turbines
- assessment of the feasibility of using combined heat and power *(CHP)* in larger developments
- indication of how the proposal encourages use of public transport, cycling and walking
- assessment of the use of natural light, natural ventilation, sound insulation and non-toxic materials
- water conservation through storage of rain water, grey water recycling and permeable storm water drainage systems
- waste minimisation – the use of recycled materials and re-using demolition waste.

Buildings and open spaces will tend to be designed to allow for climate change i.e. increases in year round temperatures, humidity and rainfall. Greater shading and protection from heavier rainfall is likely to be needed in external areas in future.

Whole-Life Costs

Local planning authorities, the Highways Authority, developers and occupiers all have a responsibility for the stewardship of a development over its whole life.

Sustainability mechanisms should be put in place relating to the durability of construction, and the care and management of planting and amenity space. Investing in quality design, construction and materials will result in less maintenance over the life of the development. It will lower overall costs and ensures that resources are used more efficiently. This should be embodied from the outset of the design for all development projects. The Green Guide *(BRE)* and the forthcoming ODPM Guide to Sustainable Construction contain more guidance.

Adaptable Buildings

Spaces and buildings should be designed for a broad range of present and future uses.

Genuinely sustainable buildings have the ability to adapt over time to different occupiers and uses. Some of our best loved older buildings have changed successfully from industrial buildings or institutions to offices or homes, and residential areas have seen conversions from single dwellings to flats and back again. Terraces and other traditional urban forms have proved to be adaptable over time, and buildings that accommodate a variety of uses vertically can be a versatile model. Adaptability can be aided by:

- providing separate entries from the street to upper floors of mixed use buildings
- configuring rooms so that internal uses and circulation can be changed easily
- allowing adequate 'breathing space' between uses and activities
- ensuring access for all, including people with disabilities, those with pushchairs and the elderly
- providing good acoustic insulation between units and activities
- allowing for future extension.

Kent has many historic buildings that are adaptable enough to accomodate new uses. Ths former railway goods shed has been converted to a farmers market and restaurant. It has become a new community hub at the edge of Canterbury city centre.

2.4.5 UTILITIES & ENERGY

Developers should consider options for efficient and renewable sources of energy at the earliest stage of the design process.

Global warming is related directly to the emission of carbon dioxide and other gases through fossil fuel use . A resulting climate change will have adverse consequences for the UK environment and economy. Energy-efficiency measures should reduce energy demand substantially and there will be further benefits if energy can be supplied from renewable sources occurring naturally and repeatedly in the environment.

Currently only around 3% of UK electricity is generated from renewable sources. Government proposes that 60% reduction in CO2 emissions be achieved by 2050. To this end, local authorities are encouraged to promote renewable energy in design briefs and supplementary planning documents.

Energy Efficiency

The buildings of today will dictate the future pattern of energy consumption. It is important to invest in energy-saving technology now to reduce future demand. It is easier and more economical to incorporate this in the initial design than later as an add-on. A number of developments with zero or low-energy use offer examples of good practice within a limited budget.

To improve the thermal efficiency of a building, the design may include:

- a south-facing conservatory or atrium buffer zone to trap heat
- insulation to the north elevation through reduced glazing, location of lower occupancy rooms such as bathrooms or garages, or setting the building partially into the ground
- a compact plan form to reduce the external wall surface
- passive energy and natural ventilation
- glazing part of the roof, particularly on very tight sites with limited natural light
- well-insulated roof and walls, and good quality double glazing
- high thermal mass to retain heat, if this is appropriate for the use pattern of the building
- solar ventilation and cooling.

Action Energy and Envirowise both provide free advice on energy reduction. Designers should aim to exceed the minimum standards. *(Further information can be obtained from the Creative Environmental Networks' (CEN) web-site at www.cen.org.uk telephone 020 8683 6625.)*

The use of combined heat and power *(CHP)* which utilises the heat created in the generation of electricity should be considered. This is particularly effective when building uses are balanced between daytime and evening use *(for example housing and offices)* or within hospitals. CHP is highly efficient and affordable. The CEN website has a case study of a small scale CHP plant.

Mechanical Energy Savings

Timers and thermostats to control heat, hot water and light are an inexpensive way of saving energy. Building management systems in larger buildings operate on similar principles and can provide significant cost savings.

Mechanical ventilation, air-conditioning and lighting incur major energy loads in commercial buildings. Overheating can be overcome with screens or shutters, overhanging eaves and opening windows. These features allow occupants to control their internal environment rather than through a centrally controlled heating or air conditioning system. Buildings which are shallow in plan or provide atria can offer greater use of natural ventilation and lighting.

Renewable Energy Technology

An advantage of renewable energy is that it can be harnessed close to the point of demand for electricity, reducing the power losses associated with long-distance transmission. Some renewable energy technologies can be integrated into buildings and neighbourhoods.

The following should be considered:

- active solar systems
- photovoltaic (PV) systems
- wind Energy
- biomass Heating
- heat Pumps

Water Supply and Conservation

Developers should take a long-term view of the impact of their proposals on future water consumption and how changes to the water table will affect the local landscape and natural habitats.

They should consult with water companies and the local planning authority. According to PPG12, water availability should be a consideration for the local authority in its development plan.

Much of the potential for saving water cannot be realised without behavioural changes by consumers. Metering of water supplies provides a financial incentive and has proved successful in pilot studies, it is now compulsory in new buildings and efficiency measures will save water and hence money. In addition, water companies may wish to manage the pressure and flow rate to individual properties as a means of moderating peak water demands where this can be achieved within accepted standards of service.

There are many simple measures that can be incorporated into new buildings to reduce water consumption and save money. Water tap controls are inexpensive and effective. Spray taps can halve water flow. Push top taps switch off automatically after a pre-set time delay. Electronic sensor taps work on the same principle. Shower restrictors can halve water use by adding a flow valve to the shower hose. Power showers are particularly water intensive.

A design guidance advice note will be produced to accompany this guide on measures for conserving water.

Historically, Kent residents and businesses have used the earth's natural resources to provide energy efficiently. Bottom, Swadelands Comprehensive school in Lenham was the first secondary school in Kent to receive eco-school status in 2001. They have installed a solar thermal space heating system with the help of Creative Environmental Networks (CEN).

2.4.6 SUSTAINABLE SITE MANAGEMENT

All new development should minimise waste and disturbance during its construction

Construction can have a destructive impact on the soil and land surface. *This can be minimised by:*

- preventing unnecessary disturbance of soils which have an ecological or agricultural/food-producing function
- minimising the removal of topsoil and retaining that which has to be stripped so that it may be re-used, or exported to another site
- preventing cross-contamination of weeds and other imports by the monitoring of new soil
- preventing unnecessary use of earthmoving equipment which can erode or compact soil
- using geotextile mats, planting or environmentally-friendly forms of land engineering
- preparation of an Environmental Management Plan for the construction process
- aiming for zero construction waste going to landfill
- treating soils which have been damaged
- using plants suited to specific site conditions.

The amount of material wasted on site can be reduced by introducing regular audits to monitor and control site activities. Detailed attention to the quantity of materials purchased and the way that these are stored and handled, can significantly reduce waste.

'Considerate Construction'

Formal environmental management systems such as ISO 140016 are beginning to be adopted in construction. These will reduce costs and nuisance during construction when the impact of potential disturbance on the surrounding area needs to be considered.

Examples include:

- equipment and traffic – noise levels and vibration
- mess – dust, spoil, stock heaps
- waste – burning is generally unacceptable
- time – certain working times for a variety of trades
- lighting – position, direction, glare, intrusion, light pollution
- management – workers and site processes
- security – plant and tools should be secured to avoid opportunities for crime.

Construction *(Design and Management)* Regulations

Client Duties

Clients must make appropriate arrangements to ensure that projects are properly managed at all stages. Under the Construction *(Design and Management)* Regulations clients who do not have sufficient knowledge or resources to do this must appoint one or more competent people to help them.

A client is an organisation or individual for whom a construction project is carried out whether by others or in-house.

Designers Duties

Designers have specific duties under the Construction *(Design and Management)* Regulations and all designers must be familiar with those requirements.

In general, designers have to:

- ensure that their clients are aware of their duties under CDM
- seek to eliminate or reduce hazards and risks in their design
- co-operate with the planning supervisor and other designers
- provide information for the pre-tender health and safety plan and health and safety file

Designers should note that clients are required to provide the planning supervisor/designers with information that they could reasonably be expected to obtain, which will be relevant to the management of hazards and risks.

Design Risk Assessments

Designers need to examine ways in which hazards can be avoided or mitigated or, if neither is possible, designed so that the level of risk is acceptable *(given proper controls)*, applying the principles of prevention and protection. This process is known as design risk assessment and is an iterative process whereby a designer can logically identify, assess and manage risks.

The stages of the assessment are:

- identify the hazards in a proposed design
- eliminate each hazard, if feasible *(or substitute a lower risk hazard)*
- reduce the risk during construction work – this includes cleaning, maintenance or demolition
- provide information necessary to identify and manage the remaining risks

This involves making judgements between possible courses of action and may significantly influence design. The approach should be structured to suit the particular project, including consideration of foreseeable hazards, the site and the local environment.

Checklist for Creating the Design

This checklist is intended as an aide memoir for the design process. It is not exhaustive, but should cover the key issues relating to most development scenarios. It can be used as a framework for discussing a proposal with local planners.

Step 1 Understanding the site

- ☐ Has everyone involved in the design visited the site?
- ☐ Has the site been surveyed?
- ☐ What are the key characteristics of the site's context?
  - ☐ Urban
  - ☐ Coastal town
  - ☐ Suburb or urban fringe
  - ☐ Rural area or village
- ☐ Has a site appraisal been carried out?
- ☐ Did this include a movement and access appraisal?
- ☐ Has a statement of design principles been prepared?
- ☐ Is a flood risk, contamination assessment, archaeological survey or tree survey required?

Does this cover :

- ☐ how the site was analysed?
- ☐ how the design concept has evolved as a result?

Has an outline sustainability strategy been prepared? Does this cover how the development might contribute to:

- ☐ Developing on 'brownfield' or recycled land rather than on 'greenfield' sites
- ☐ Promoting more mixed-use development to reduce commuting
- ☐ Planning to reduce car use
- ☐ Reusing buildings and minimising waste during the construction process
- ☐ Designing buildings which are adaptable for different uses over their lifetime
- ☐ Designing and adapting buildings that use less energy to build, heat and light
- ☐ Using materials that take less energy to produce and are easy to recycle
- ☐ Provision of recycling facilities for waste in the home and neighbourhood
- ☐ Use of water saving devices and natural drainage to prevent depletion of the water table
- ☐ Reducing long term maintenance costs
- ☐ Community development

Step 2 Generating the Layout

Are existing features being removed to accommodate the layout?

- ☐ Historic buildings or structures
- ☐ Walls or other means of enclosure
- ☐ Existing road, paving or hard surfacing
- ☐ Soft landscaping
- ☐ Mature trees
- ☐ Existing vegetation
- ☐ Hedgerow
- ☐ Water features (ponds, drainage ditches, brooks)
- ☐ Paths, and informal pedestrian desire lines
- ☐ Utilities infrastructure (drainage, power lines, underground services etc)
- ☐ Topsoil or other land form

Do any of these contribute to local distinctiveness or character?

- ☐ has the current pattern of movement around the site affected the design of the layout?

What spatial types have been adopted for the network of streets and open spaces within the layout?

- ☐ Industrial, commercial and mixed use area
- ☐ Street
- ☐ Avenue
- ☐ Crescent
- ☐ Square

- ☐ Green
- ☐ Lane
- ☐ Mews
- ☐ Courtyard
- ☐ Private development
- ☐ Culs de sac
- ☐ Homezone

Does the layout provide for:

- ☐ Active streets with buildings fronting public spaces
- ☐ Ease of movement without the car dominating
- ☐ Connection with the existing street network
- ☐ A clear and understandable pattern of movement
- ☐ Safety and security for all users
- ☐ A human scale of development in a walkable neighbourhood
- ☐ Variety in form and function
- ☐ Access to local facilities

☐ Has the impact of the development on the surrounding context been assessed?

☐ Has an Environmental Impact Assessment been produced?

☐ Has a Transport Assessment been produced?

☐ Has adequate parking been designed into the scheme in a way that does not dominate the development?

☐ Have opportunities for illegal or inconsiderate parking been eliminated?

What measures have been taken in the layout to protect new and existing residents from:

- ☐ Crime and disorder
- ☐ Loss of privacy
- ☐ Impact of noise
- ☐ Potential pollution
- ☐ Does all external space within the development have a future owner and a use?

Is new public open space within the development :

- ☐ accessible by pedestrians, cyclists and the less mobile
- ☐ overlooked by buildings and at the heart of the layout
- ☐ well sited for sunlight, shade and a good quality environment
- ☐ meeting the needs of residents outside the site
- ☐ linked to the availability and quality of existing public open space, and maximising opportunities to enhance this
- ☐ designed with young people in mind
- ☐ capable of accommodating kick-about areas
- ☐ to include play equipment
- ☐ to include seating
- ☐ designed for dog walking

Does new green space within the layout:

- ☐ Incorporate features of existing landscape
- ☐ Work with the landscape grain
- ☐ Allow the extension of the site's bio-diversity

Does new landscaping within the site:

- ☐ Contain predominantly native species
- ☐ Extend the use of distinctive local materials

- ☐ Has a strategy for the aftercare of all new public space within the layout been developed and agreed with future maintenance providers?
- ☐ Has the layout been designed to maximise sunlight, daylight and solar gain?

Does the layout accommodate a mix of uses?

- ☐ Residential
- ☐ Retail
- ☐ Commercial
- ☐ Industrial
- ☐ Leisure
- ☐ Public buildings

- ☐ How does the development complement the broad mix of uses contained in the area of the site?
- ☐ Does the development provide new facilities likely to be used by people living outside the site?
- ☐ How does the scale and massing relate to the site's existing context?
- ☐ Are there opportunities for landmark buildings within the layout?
- ☐ Are any tall buildings proposed? (See page111)

Step 3 Designing for Movement

Have the movement needs of different users been considered?

- ☐ Pedestrians
- ☐ Cyclists
- ☐ Horseriders
- ☐ People with disabilities
- ☐ Cars
- ☐ Public transport
- ☐ Taxis
- ☐ Service vehicles
- ☐ Emergency services

What highway design has been adopted for each of the spatial types contained within the layout?

- ☐ Local Distributor Road
- ☐ Major Access Road
- ☐ Minor Access Road
- ☐ Minor Access Way
- ☐ Lane
- ☐ Shared Private Drive
- ☐ Path
- ☐ Homezone

What measures have been taken to keep vehicle speeds low?

- ☐ Arrangement of buildings – narrowings
- ☐ Junction design – turning restrictions
- ☐ Junction design – pedestrian tables
- ☐ Highway geometry – gateway features
- ☐ Highway geometry – restriction of forward visibility and bends
- ☐ Lateral shifts
- ☐ Roadway surface texture

- ☐ Has the road and pattern of movement layout been subject to a safety audit?

Do you feel the layout has been adversely affected by the need to accommodate one or more of the following users?

- ☐ Pedestrians
- ☐ Cyclists
- ☐ Horseriders
- ☐ People with disabilities
- ☐ Cars
- ☐ Public transport
- ☐ Taxis
- ☐ Service vehicles
- ☐ Emergency services

Are the materials used in the construction of roads, footways and paths:

- ☐ Robust and fit for purpose
- ☐ Attractive
- ☐ Sympathetic to local character
- ☐ Co-ordinated with the design of buildings within the layout

Step 4 Getting the Detailing Right

- ☐ Has the design resulted in a public realm (streets and open spaces) that all users can be proud of?
- ☐ Has the scope for public art within the scheme been pursued?
- ☐ Is every item of street furniture essential to the success of the scheme?
- ☐ Is signage kept to a minimum?
- ☐ Are all public areas lit to an appropriate standard relating to their use?
- ☐ Are there opportunities for lighting key features within the scheme?
- ☐ Do the utilities and services needed for the development enhance or detract from the appearance and operation of the scheme?

Has a waste management plan been compiled? Does it deal with:

- ☐ adequate storage space for segregation of recyclables and general waste
- ☐ the routes for collection vehicles
- ☐ static recycling centres near to communal facilities in larger developments
- ☐ prevention of fly tipping
- ☐ security of communal recyclable / refuse storage areas
- ☐ and does it encourage residents to minimise their waste through good design and deal with what they do produce in a responsible manner

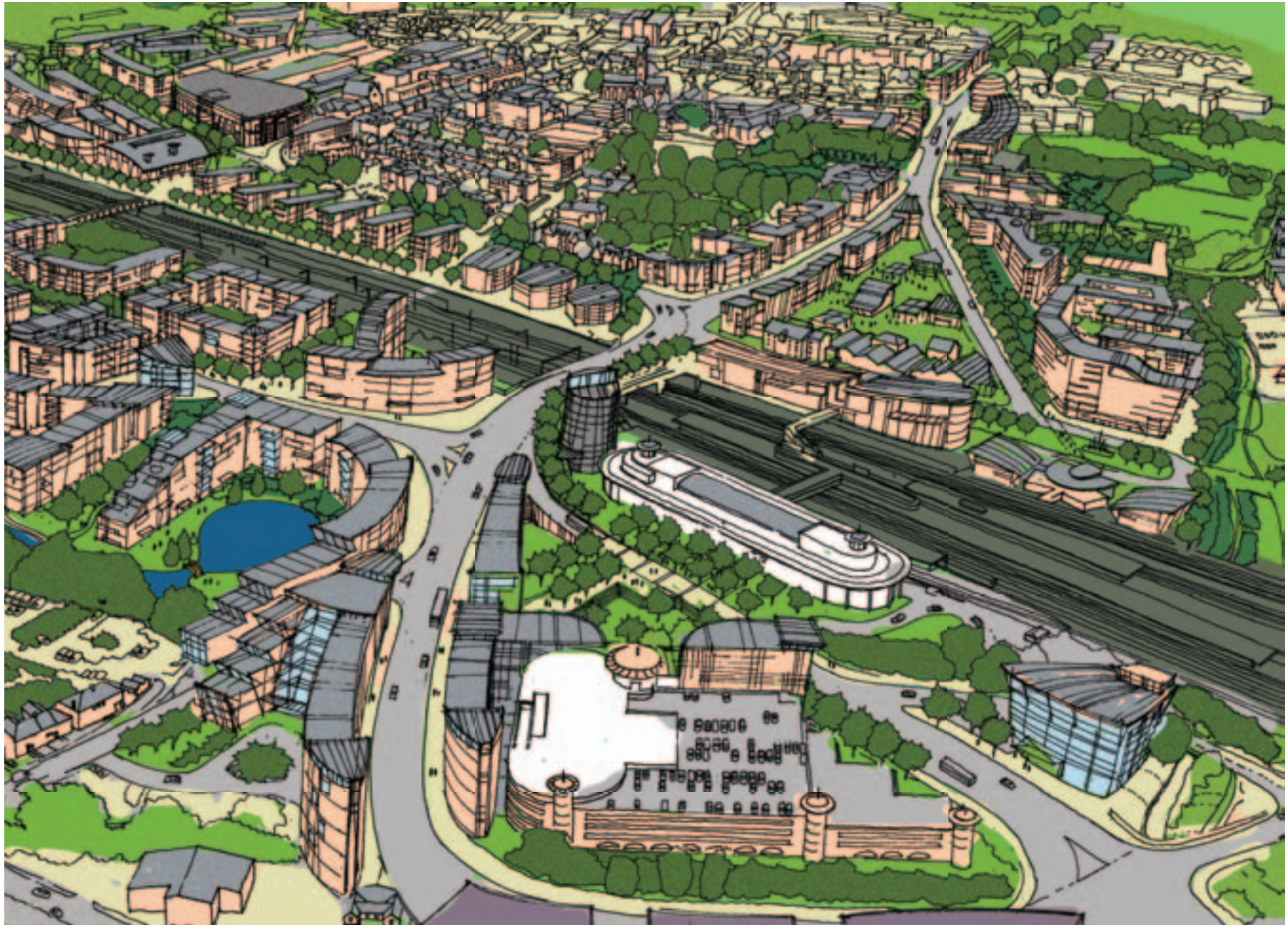
Can you demonstrate how local distinctiveness has been brought into the design of buildings and public realm through:

- ☐ Architectural style
- ☐ Colour
- ☐ Materials
- ☐ Boundary treatment
- ☐ If the proposal involves alterations or extensions to existing buildings does it maintain or enhance their character?
- ☐ How does the proposal maintain or enhance their character?

Would future generations applaud the design for the way:

- ☐ the buildings can be easily adapted for different uses?
- ☐ the buildings are constructed?
- ☐ the buildings are not expensive to maintain?
- ☐ energy is gained from renewable sources?
- ☐ water consumption is minimised?

Getting the Planning Process Right



Ashford Town Centre Development Framework. (Urban Initiatives)

section 3

getting the planning process right

Key to achieving a quality product is a quality process.
At an early stage it is vital to establish collaboration between all parties and ensure that design excellence is made a priority for all.

A fast route to a successful planning application will be helped by:

- Appointing a professional architect-led **design team** with all necessary skills
- Holding early **discussions with planners** and carrying out a project appraisal
- Preparing an effective **development brief** for the site
- Using **best practice guidance**
- Preparing a sound and thorough **statement of design principles** for the scheme to explain the design rationale
- Submitting good clear **drawings, illustrations and models**
- Encouraging **community involvement**.

Good quality and informative drawings and visuals *showing a development in context help to sell the scheme.* (Chatham Maritime.)

Models *are a great way of helping people to understand how a proposal works in context.*

"Proactive planning through pre-application discussion and design guidance can help the council meet its planning deadlines."

CABE, The Councillors Guide to Urban Design

Good design *rarely happens without a skilled and experienced design team.* (Kent Design Award winners - Cheney Thorpe and Morrison Architects).

Community participation. *To shape a proposal and ensure local buy-in is the cornerstone of successful design.* (Lord Street/Parrock Street, Masterplan Consultation).

3.1 Assemble a Design Team

A good design will add value to any development and a strong design team led by a skilled architect is the fastest route to achieving a high quality design. The RIBA will provide advice on the appointment of a suitable architect and the selected architect can then advise on the make-up and range of skills required. An architect should be selected who has a track record in designing similar projects. References should be sought from previous clients and occupants.

For larger more exciting projects, consider a design competition which will provide a choice of concept designs and design approaches before you finalise the choice of design team. The design competition will incur time and cost but the end result will be an early scheme design that can be taken to outline planning stage more quickly. This may save time and money in the long run, as well as helping with publicity, marketing and consultation.

The Kent Architecture Centre can advise on design competitions and, for a fee, may be prepared to manage the design competition process.

3.2 Discuss with Planners

Developers need early advice about the planning issues and local planning constraints and aspirations to get the best out of the design team and to avoid abortive work. An early meeting should be arranged with the local authority planners to identify key guidance, relevant issues and the best way to engage with key stakeholders and produce a scheme that everyone can sign up to. The local authority is encouraged to set up its own 'development team' of professional advisers to assist the developer during the scheme design and planning submission stages.

Pre-planning advice is essential if the scheme is in an area where there are environmental, conservation or other development sensitivities. It will be beneficial to carry out the 'site and project appraisal' before meeting with the planners so that the key issues are focused upon.

The planners will advise at an early stage whether the scheme will require a Transport or Environmental Impact Assessment. They will also advise on what is expected of the Statement of Design Principles and the Sustainability Strategy.

For a major scheme, it will be beneficial to hold an early 'design workshop' in which key local authority officers, neighbours and local interest groups can participate so that the developer becomes aware of the primary issues of concern from the start. Ideally, all participants should sign up to a broad 'masterplan' that will then generate a development brief for the site.

Local Authority Development Team Approach

To meet the need for an efficient and integrated response by the local authority, an effective approach is to establish a development team for major and strategic sites, bringing together all those with an interest in an application. Depending on the nature of the development, this may include planners, urban designers, conservation officers, transportation/highway specialists, archaeologists, landscape architects, ecologists, legal representatives, education and social services, health services, fire and police.

Good leadership of a development team is essential. Co-ordination of feedback to the developer will usually rest with the local planning authority's case officer.

More complex schemes are likely to draw in a wider range of interests, but the principle of ensuring that the appropriate advice is fed back to the developer at the appropriate time will apply whatever the scale of development.

3.3 Prepare a Development Brief

The development brief should set out the main planning issues from the Kent and Medway Structure Plan and the Local Plan. There may be Supplementary Planning Guidance or local design policies to which the development brief should refer, such as design codes, Village Design Statements or, indeed, *the Kent Design Guide*.

The development brief should identify the overall quantity of accommodation and mix of uses within the scheme; storey heights; location of different uses, public and private space, traffic and highways and other issues from the client design team. It may also express aspirations in terms of materials, form, scale, massing and other design matters. A brief which includes a high level of design detail for a very large scheme is effectively a 'design code'. This will ensure that, even if each plot is developed separately over a long period of time, the overall development retains design integrity and cohesion.

3.4 Use Best Practice Guidance

There is a plethora of design guidance available. The key national, regional and local guidance is available from the following sources. Contact details are found in 4.2 Further Reading and Guidance.

A site visit to the area and pre-application discussion is an invaluable way to assess a proposal. (Lacuna, Kings Kill)

CABE: For major schemes with a significant impact, the Commission for Architecture and the Built Environment (CABE) will review your scheme at an early stage. The review panel's comments will be helpful in shaping the design or reinforcing the main points of your design statement. Any member of the public can ask CABE to review a scheme that has been submitted for planning consent if the scheme is important enough and they have concerns about any aspects of the design. If there is a chance this may happen, then the developer should contact CABE first and make sure that the scheme will secure CABE's approval if challenged. CABE produces a significant amount of design guidance and also provides a design advisory service.

SERDP: For major schemes with a regional impact, valuable advice on architectural and urban design quality is provided by the South East Regional Design Panel (SERDP). SERDP can arrange an independent review of a scheme on behalf of a developer, site owner or local authority and provides a neutral forum for debate. SERDP involvement at the concept/design stage can assist with the formulation and application of design principles and the subsequent Design Statement. SERDP can be contacted via the Kent Architecture Centre which manages the panel on behalf of SEEDA and with the support of CABE.

Kent Design Initiative: Locally, *the Kent Design Guide* provides design guidance specific to the character and context of Kent as well as general good practice for most forms of development. Local plans, design codes and village design statements will provide more detailed guidance. If developers have followed expert design guidance, used a good architect and are proud of their project, they should consider entering it in the Kent Design Awards Scheme, when completed on site. The aim of the awards is to create a legacy of outstanding buildings – these could become the listed buildings of the future. A Kent Design Award will not only add prestige to a scheme, but to the neighbourhood and to Kent as a whole.

3.5 Prepare a Statement of Design Principles

A statement of design principles (Design Statement) must accompany the planning application. It is a summary of the design objectives for the scheme and the philosophy and rationale behind these objectives. The design statement will explain the development proposals to the Planning Authority and take them through the thought processes that have led to the design. The Statement should demonstrate that proposals take account of the content of Local Development Frameworks and Supplementary Planning Documents, show how the scheme relates to the site's character and context and how it has developed from the site appraisal.

If design objectives broadly fit the Kent Design Guide and any local Supplementary Planning Documents, the scheme is more likely to gain approval. If the scheme contains big departures from existing guidance it will be wise to discuss these aspects with the local authority before submission of the application and agree on any points of contention.

Landscape Plans, a Transport Assessment and an Environmental Impact Assessment will be required for most large schemes as well as the Design Statement.

3.6 Use Good Drawings, Illustrations and Models

It is important that the drawings and illustrations that accompany the planning application are of high quality – unambiguous, easy to read and show all aspects relating to the development, including its immediate surroundings. If a good architect has been employed, good, clear drawings will usually result. The better the drawings and presentation material, the easier it will be for the planners and the planning committee members to understand the scheme.

Plans, sections and elevations should show the surrounding context so that appropriate judgements can be made about how the development fits in with its surroundings. If there is adjacent development, then the scale, form, massing, proportions, building and shoulder lines, connecting routes and paths should relate in some way to produce a sense of integrity, harmony and cohesion – and this must be readable from the drawings.

Artists' perspectives will help show how the development will look and feel at eye level. But however good drawings are, they are never as good as a 3D model for demonstrating how a development can fit in and add value to its context. Modern computer visualisation can show how it feels to move through a scheme and its surroundings but nothing beats a physical model for appreciating the reality of a future development and its impact on its surroundings. A model does not have to be expensive to show this – a simple working model in wood, card or sprayed polystyrene will often work well, providing it is to scale and shows the context and surroundings accurately.

Computer modelling *can give a feel for how a development sits in its context and the character of new streets and spaces.* (Horsebridge and Brownings Yard, Whitstable).

3.7 Involve the Community

The public and their representatives have an important role to play at key stages in the development of projects and in the preparation of Local Development Frameworks, conservation area appraisals, Development Briefs and Village Design Statements. Participation should be encouraged as a scheme develops. It is important to identify and involve those groups and individuals affected by a proposed development in order to increase the understanding of development ideas and local priorities. Community involvement in the design process can help designers and developers become fully aware of local priorities and concerns as well as helping the community develop understanding and interest in the scheme and its constraints and opportunities.

For a major scheme, there may be a number of potentially negative impacts, so gaining the support of the community may rely on demonstrating the benefits from any new facilities, or the way in which the new development increases the cultural, economic or environmental value of its surroundings. A new development should integrate well with its surroundings and not turn inward or away from its neighbours.

3.8 Monitor the development

Monitoring should occur after completion of the development on the effectiveness and achievement of objectives relating to built form, car parking, landscape, open space and nature conservation.

Monitoring will be important, especially in terms of understanding local characteristics and comparing design ideology with the realised scheme. In addition it can ensure that the key elements and conditions of planning permissions are properly implemented during the construction process and that the desired quality of design is achieved.

Monitoring allows the effectiveness of design features to be measured for future comparisons; for instance, water-demand management, reduced car parking, higher development densities. With innovative schemes it may also assist in identifying planning conditions or legal agreements to address otherwise unforeseen problems.

There may be cases where it is reasonable for the Local Planning Authority to impose planning conditions which require a developer to establish a monitoring regime responsible for dealing with problems arising from the failure to meet specified tolerances. Examples include noise emissions or air quality. Local authorities can also carry out monitoring.

The Glossary provides further information on a toolkit of documents and techniques to support the planning application process.

CHECKLIST FOR THE PLANNING PROCESS

1 Have you appointed an architect-led professional design team that has a track record in high quality design?

2 Has your design team carried out a thorough site and project appraisal?

3 Has your design team met with the local planners and its internal development team and identified the key planning issues?

4 Is there a Local Development Framework, design code, Village Design Statement, Conservation Area Appraisal or relevant Supplementary Planning Guidance?

5 Is a Transport Assessment, Environmental Impact Assessment or Landscape Scheme required?

6 Has your design team sought and followed CABE, SERDP and Kent Design guidance?

7 Has your design team consulted with key stakeholders and the local community?

8 Has your design team prepared high quality plans, perspectives and a model?

9 Has your design team prepared a convincing Statement of Design Principles?

10 Have you got a regime for monitoring the effectivness of the development in place?

11 Will the scheme be good enough for a design award or future listing?

12 Would you want to live or work there?

This checklist appears in Appendix X and can be copied to help assess the scheme and discuss it with local planners.

Appendices

Case Studies

THE KENT HABITAT SURVEY

SUPPORTED BY: KCC, MEDWAY COUNCIL, KENT DISTRICT COUNCILS, ENGLISH NATURE, ENVIRONMENT AGENCY, DEFENCE ESTATES, KENT DOWNS AONB, KENT WILDLIFE TRUST

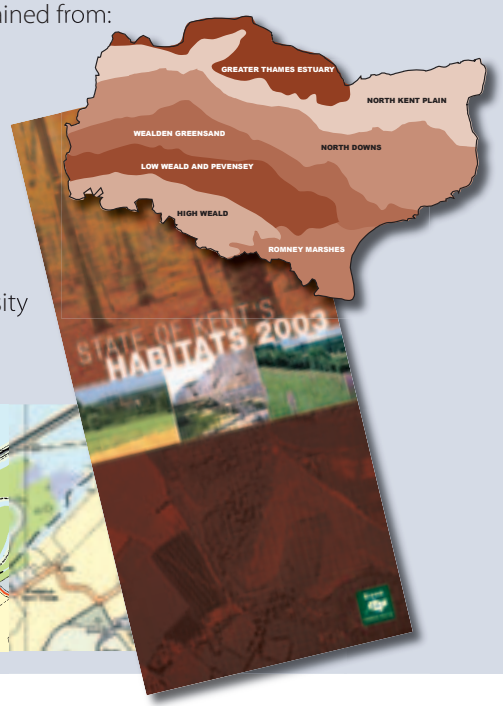
The Kent Habitat Survey is a comprehensive study of the countryside and coast of Kent and Medway. The survey provides up to date information on the extent and quality of semi-natural habitats. Where possible, changes to this resource between 1995 and 2003 have also been identified. These results will help guide current and future activities and inform plans to conserve and enhance Kent's wildlife.

METHODOLOGY

The Survey involved interpreting aerial photographs of the county with selected field surveys of key habitats including UK Biodiversity Action Plan (BAP) Priority Habitats. Habitats were classified using the Integrated Habitat System (IHS).

Further information may be obtained from:

Biodiversity and Habitats,
Environment & Economy,
Strategic Planning,
County Hall,
Maidstone
Kent ME14 1XX
tel: 01622 221538
web: www.kent.gov.uk/biodiversity
email: biodiversity@kent.gov.uk



Green spaces and links

GREEN GRID KENT THAMESIDE

A scheme to provide a network of green links and open spaces across the northern parts of Dartford and Gravesham, including the riverside areas.

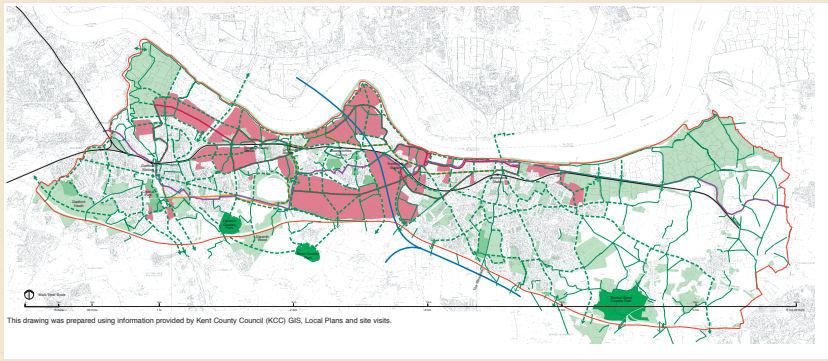
It will connect existing neighbourhoods with new development areas where residents will live and work, providing access to both new and existing open spaces.

It includes improvments to existing streets and open spaces providing an open space strategy for the whole of the area.

"Green Grid" is one of the key components for creating a new sense of place for the growth area.

The scheme depends on public and private sector funding, including developer contributions.

Part of the grid has been delivered around key development sites including Bluewater regional shopping centre and Ingress Park.



Mixed Use and Urban Renewal – Respecting Context

HORSEBRIDGE AND BROWNINGS YARD

ARCHITECT: Clague Architects

DEVELOPER: West Beach Homes Ltd (a subsidiary of Banbury Estates)

This project, the subject of a design competition, is located in the centre of Whitstable, close to the beach on a site that previously comprised a former 19th Century slipper bath, a car park, a bus depot and an old community building alongside redundant buildings of a poor condition. The resulting contemporary scheme fits well within the Whitstable context, capturing the unique atmosphere of the town with its winding alleys and timber boarded houses.

Phase I of the development was a Kent Design Award winner in 2004. It included the Horsebridge Centre - a public art gallery and performing arts space and housing. Phase 2 opened in 2005 and has received a Kent Design Award for this year. The new buildings are grouped around a small, newly-created town square complete with a circular freestanding bandstand and new public toilets, five retail shops and a restaurant. The overall scheme now includes 17 apartment units and 17 houses. The square provides a setting for other existing buildings, notably Pearson's Crab & Oyster House, The Oyster Fishery and the Prince Albert public house. The internal community space is owned by Canterbury City Council, as is the public square. Around 25 jobs have been created as well as thirty-four new homes.

The success of the scheme reflects the architects deep understanding of the local context and morphology and an ability to translate this into a contemporary Kentish style.

Phase II has been given a 2005 Kent Design Award.

Public Realm – a sense of place

KINGS HILL CENTRE – LIBERTY SQUARE

ARCHITECTS: Lee Evans Partnership. A collaborative venture between Rouse Kent Limited and KCC

The challenge for the designers was to create a vibrant new heart for the Kings Hill residential and business communities. The architects set out to create a place which reflected the character of a small traditional Kent town centre in a contemporary way, with a locally distinct urban fabric. The architects developed the masterplan prepared by Clague (working with architects Kilgour and Skinner), and then went on to implement the detailed design.

The architectural vocabulary of Liberty Square has emerged from a study of Kentish vernacular with echoes of Tenterden, West Malling and Faversham and other traditional village locations, but with the architecture interpreted in a contemporary way. A mix of local materials has been used, including timber, ragstone, weatherboarding, plain tiles and brick. The streetscape has a human scale. Pedestrian green routes and cycleways lead from the surrounding business park and residential areas. It has a mix of restaurants, shops and medical facilities and was designed to encourage a 'café society'. A sculpture by the artist Rick Kirby forms a striking focal point.

A development in context

ST DUNSTANS GATE CANTERBURY

ARCHITECTS: CLAGUE, CANTERBURY

Traditional street layout with houses giving access directly onto pavement. The layout was designed to reflect the fine grain of the surrounding city townscape. The road layout was then designed to complement this, inobtrusive speed reduction being a key objective.

Although through traffic has been eliminated the tight bends, short road lengths between junctions and buildings closely defining the street give a clear signal to drivers to slow down. This has been achieved without the use of measures such as road humps.

Iconic building, culture led regeneration and contribution to a sense of place

TURNER CONTEMPORARY

Turner Contemporary is a proposal for a new gallery in Margate. It is one of the most exciting building projects in the UK, not only for the design and construction of a building, but for the process leading up to its opening in 2008.

This memorable building will have landmark status. It is located on the stone pier in Margate, highly visible from all over the town. It will have two elements: 3 floors of galleries housed in the sail-like form on the seaward side; and the cafe, restaurant, shop and administrative block on the pier. The two separate buildings will be linked by a wide glass bridge.

A Norwegian and British team, Snøhetta + Spence, developed the design for Turner Contemporary following an international architectural competition. Lord Rogers described the design as 'an exceptional piece of architecture.'

The project is more than an inspiring building. It is the aim of Turner Contemporary to stimulate and promote understanding and enjoyment of contemporary art. Working alongside the development of the winning design has been a team of project staff commissioning new work from artists and having an influence on education.

Further information: Turner Contemporary 17-18 The Parade Margate Kent CT9 1EY England www.turnercontemporary.org/contact/

Innovative Housing reflecting Kent's Vernacular

LACUNA, WEST MALLING

DEVELOPERS: Sunley Estates plc, Environ Country Homes
ARCHITECTS: Clague, Canterbury, Kent
LOCAL PLANNING AUTHORITY: Tonbridge and West Malling District Council

Formerly a Battle of Britain airfield, Kings Hill *(263 ha)* is being developed as a new settlement near West Malling by Rouse Kent. The mix of uses includes a business park and housing alongside retail, educational, recreational and community facilities.

Lacuna sits at the heart of Kings Hill. Both the overall layout and the individual housing designs are imaginative. The far-sighted brief from the developers was to create a mixed variety of house types and elevational treatments while respecting local architectural context and detailing. Lacuna offers modern design, using traditional building materials and Kentish vernacular forms and styles. The homes are constructed of eco-friendly timber frames and meet the 'Super E' home standard *(adopted by the Canadian government)*. The layout of the houses has been designed to create safe streets, with the emphasis on pedestrian circulation and cycleways.

This innovative design approach was supported by planning officers from Tonbridge & Malling Council, who took a flexible attitude to existing planning standards for residential areas. The result has been a radically new approach to the treatment of streetscape, well removed from pastiche but acknowledging the Kent vernacular tradition.

Increasing safety and security

NORTHVIEW ESTATE, SWANLEY

ARCHITECTS: Fry Drew Knight Creamer

Northview Estate was built in the mid 1970's. Blocks of 3 storey walk up flats stood in a bleak open desert of tarmac and worn grass. Extensive consultations with the residents and Kent Police lead to proposals for improvements. The estate is now subdivided into new neighbourhoods with colour and name themes and provides controlled access to the flats with improved stairs and balconies. Segregated secure parking areas, private and small scaled communal gardens and play areas sit amidst extensive landscape planting. On completion, the improvements showed an up to 60% reduction in recorded crime and a significant improvement in the wellbeing of residents.

Subsequent studies and crime statistics have confirmed that this has been sustained. The estate was chosen as a case study of good practice in "Safer Places. The Planning System and Crime Prevention" published in 2004 by the ODPM.

Homezone - Safer streets

DENTON GRAVESEND

Gravesham Borough Council with Kent County Council

Following a successful bid to the Home Zones Challenge Fund, three home zones on a 1940's council estate in Denton were proposed - Rose Avenue, Shamrock Road and Thistle Road. These streets were selected because Denton had already benefited from urban regeneration funding and met the necessary physical criteria, being wide with low traffic volumes and plenty of space. This enabled shared space to be created with clever car parking schemes to slow traffic and individual features.

Rose Avenue was completed first due to a high level of local support and consensus. The project was used to show other streets what could be accomplished. It has been successful in highway terms and informal feedback from residents has been very positive. The project has brought about a community spirit and shared sense of achievement that did not exist before.

Innovative new public transport system in North Kent encouraging higher density mixed use development along its length

FASTRACK

Fastrack is the first step in a comprehensive, integrated transport system linking key development sites in the Kent Thameside area of Dartford and Gravesend.

The concept for Fastrack is to encourage development within the Kent Thameside area to be less reliant on private vehicles. It makes possible higher density mixed use development clustered around the new fastrack network making it easier to move about without a car.

The new high quality bus service will link the two town centres of Gravesend and Dartford, passing through a number of key housing and employment sites within the area. Running part of the route on dedicated track, the first phase between Dartford Town Centre and Greenhithe will be complete early in 2006. By 2020 it is hoped that 35 kilometres of network will be in operation.

Subsequent phases of construction will take the network on to Bluewater Regional Shopping Centre and Gravesend town centre where regeneration plans for the town are to provide a major new transport interchange around the existing station. It will link in to other public transport initiatives in the area including the international passenger station at Ebbsfleet, opening in 2007.

Much of the wider Fastrack network will be provided by the private sector as development of major sites within Kent Thameside proceeds. Use of a bus instead of a fixed tram network allows the scheme flexibility to adapt as opportunities to extend the route emerge.

Further information: **www.kent.gov.uk/transport-and-streets**

Energy efficient home

THE BOUNDARY HOUSE, TUNBRIDGE WELLS

ARCHITECT AND OWNER: Michael Winter

Architect Michael Winter's house, in a woodland setting in Tunbridge Wells, sets new standards of self-sufficiency. The roof, walls and floor are so well insulated with cellulose fibre made from recycled materials that there is no need for a central heating system. A wood burning stove and heat gain through the triple glazing are sufficient to heat the whole house even on the coldest day in winter. The annual bill for gas is about £10. Rainwater for domestic re-use is stored in an underground tank – the annual bill for water supply is around £10 for the drinking water supply. Hot water is supplied by solar panels installed on the roof. These provide around one third of the heating needs with an electric immersion as backup.

In selecting materials for the house, the designer considered the environmental impact of materials used, including the embodied energy (the energy used in the production of the material) as well as the scarcity of natural resources used in production. The structure and cladding are in wood, with salvaged timber flooring used throughout the house.

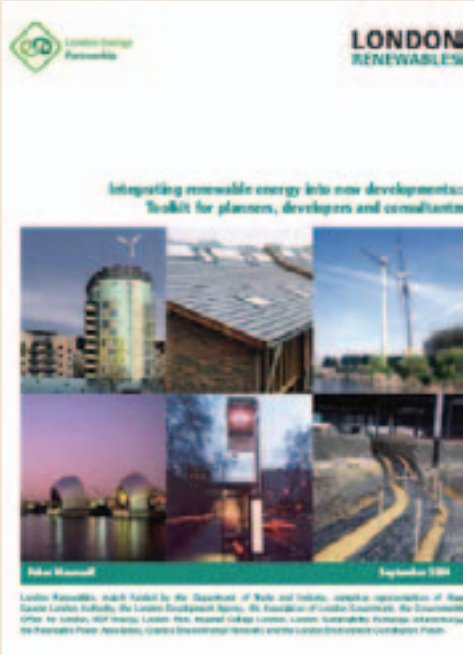
Although located on a heavily-wooded site only three trees were felled to make way for the building. The foundations are not conventional – the house rests on concrete pads which have been placed between tree roots. The whole building rests lightly on the soil and the potential for damage to tree roots is minimised.

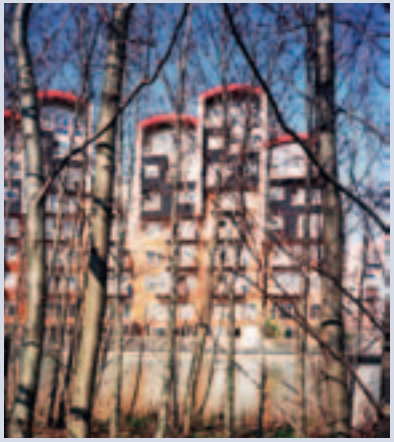
Renewable Energy - Policy

INTEGRATING RENEWABLE ENERGY INTO NEW DEVELOPMENTS

This toolkit offers advice on which renewable technologies are suitable to London including aesthetic issues, risks and reliability. It gives an insight into the cost benefit analysis of installing renewables, and provides on successful case studies and suggestions on how problems can be overcome. It offers in-depth calculations for use by consultants to help determine the most appropriate renewables for individual schemes.

The work was funded by the Department of Trade and Industry and the London Development Agency with support from Creative Environmental Networks amongst others.





Designing for Ecology

ECOLOGY PARK GREENWICH MILLENNIUM VILLAGE

ARCHITECTS: DESIGN FORUM

Client: Greenwich Millennium Village Ltd
(a joint venture between Taylor Woodrow Developments Ltd and Countryside Properties plc, in association with English Partnerships)
Planning Authority: London Borough of Greenwich

An ecology park has been created that provides not only essential habitats for birds and invertibrates but a natural, green backdrop to high density urban housing.

The masterplan for the Greenwich Millenium Village set out to allocate nearly 15% (20 ha) of land for public open spaces. Three parks and a riverside walkway have been laid out early in the development of the site. These are linked by a network of footpaths and cycleways.

The Ecology Park contains open freshwater, marshland, meadow and woodland habitats. The park has proved to be a popular asset to the development with 54% of people identifying it as a key reason for moving there. The park is managed by the Trust for Urban Ecology (TRUE) on behalf of English Partnerships.

Sustainable Construction

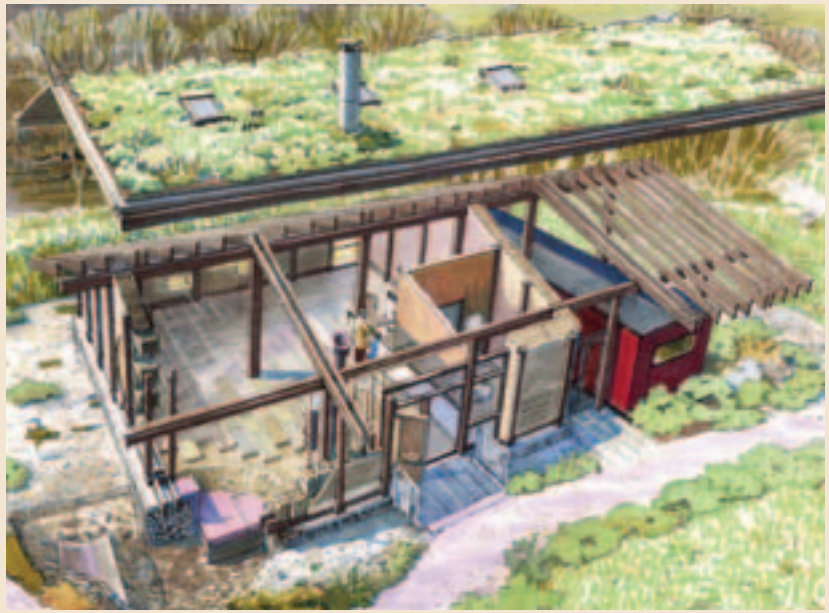
ROMNEY MARSH VISITOR CENTRE

ARCHITECTS: Baker-Brown McKay Owner: Shepway District Council

Straw bale construction has been used for this new visitor centre at Romney Warren, near Hythe – a Site of Special Scientific Interest. This structure houses an exhibition about the origins and current attractions of Romney Marsh.

A number of unique design challenges have been resolved by the designers, particularly the straw bale construction that had not been fully tried and tested before. The construction had to be simple so that it could be built by relatively unskilled people. Locally sourced aggregates are used in the gabions and floor slab, with coppiced chestnut and the straw bales supplied from the Kent Weald and local farms respectively. Use of these materials helped to reduce energy consumption in delivery and fabrication.

A prefabricated cabin provides toilet facilities and there is a stand alone sewage treatment system with vertical and overland flow reed beds.



A sustainable venue designed for living, learning and working.

THE PINES CALYX, ST MARGARETS BAY, DOVER

The Pines Calyx is a 370m conference and events venue built within six acres of organically managed gardens and parkland, immediately adjacent to the White Cliffs of Dover. The design team were tasked with providing a structure that would be sensitive to the existing landscape and built with local materials wherever possible.

Using a 'whole systems' approach to the design the following, key attributes of the building are:-

- A healthy interior environment – an optimum learning environment
- A visually interesting design, complementing the natural setting
- A practical demonstration project on sustainable construction blending centuries' old methods and latest technologies
- Embodied Energy and waste material generated in the construction process is a fraction of that from conventional methods due to predominant use of on-site and local materials for construction
- Flexibility in design for different uses and future changes in energy management
- Annual Energy Consumption at 10-15% of conventional *(initial energy consumption est. @ 35KWh/m p.a. from both non fossil & fossil sources)*
- Zero (fossil) energy and CO2 emissions over lifetime of building
- Very low maintenance costs and economical build costs

The building has an earth-bermed/earth sheltered construction, cut into the natural shape of the ground. South facing windows provide passive solar heating and the heat gained will be absorbed by the thermal mass of the building to virtually negate the need for artificial heating. Rammed chalk, using chalk from the site itself, is used for most of the walls, avoiding the need for unsustainable concrete structures.

This project is being managed and co-ordinated by a predominantly Kent based design and build team but universities from the UK, Europe, USA and Africa are providing support on a number of sustainable building methods and technologies.

The project is part of an ongoing programme of environmental initiatives in the vicinity by the St Margaret's Bay Trust.

Further Details

Project Information: **www.pinescalyx.co.uk**
Project Owners and Co-ordinators: **www.baytrust.org.uk**
Project Facilitators and Concept Developers: **www.helionix.com**
Contacts: Alistair Gould **alistair@baytrust.org.uk**
Olivia Clark **olivia@baytrust.org.** 01304 851737

Renewable Technologies – Use in Existing Buildings

KENWARD TRUST (Rehabilitation Charity), YALDING, KENT

Consulting Engineers: Troup Bywaters & Anders, Energy + Environmental Solutions

Kenward Trust has been working with its consulting engineers to investigate incorporating renewable technologies into the Kenward House building. The Trust was about to undertake refurbishment works, including an extension to Kenward House, providing additional accommodation. The project has realised the opportunity to incorporate various renewable and sustainable technologies to minimise both the existing farm house and new extension energy costs and associated environmental emissions.

It is believed that Kenward house could achieve "Zero Energy Consumption" and "Zero Emission" at different times over the summer and winter seasons. More importantly, the implementation of renewable technologies has given a flexible approach to the energy management for the site, with reduced running costs. Features include:

- Rainwater harvesting
- External photovoltaic cells
- Active solar heating
- Wood pallet and oil fired CHP

All options considered require significant capital expenditure and have, wherever possible, been offset by incentive programmes funded by the various Government organisations which can provide up to 65% funding for the capital cost and reduce the initial expenditure and pay-back period. Once payback has been achieved on the technology, ongoing savings will be achieved throughout the life of the equipment.

To demonstrate renewable energy in practice, the Kenward House Charity proposes to offer site visits and training seminars on its experiences with introducing renewable energy.

Sustainable and innovative houring

INTEGER ('INTELLIGENT GREEN') HOUSING

Integer homes are designed to minimise the consumption of natural resources and energy from the construction process and pass these benefits on to the occupiers. The partnership of housing associations and like-minded construction professionals and suppliers has built a number of new homes across the country which are exemplars of sustainable construction and low energy consumption. Often such projects depend on the speculative research of partner organisations. Many of the Integer houses have been built without having a budget; the bulk of materials being donated the projects.

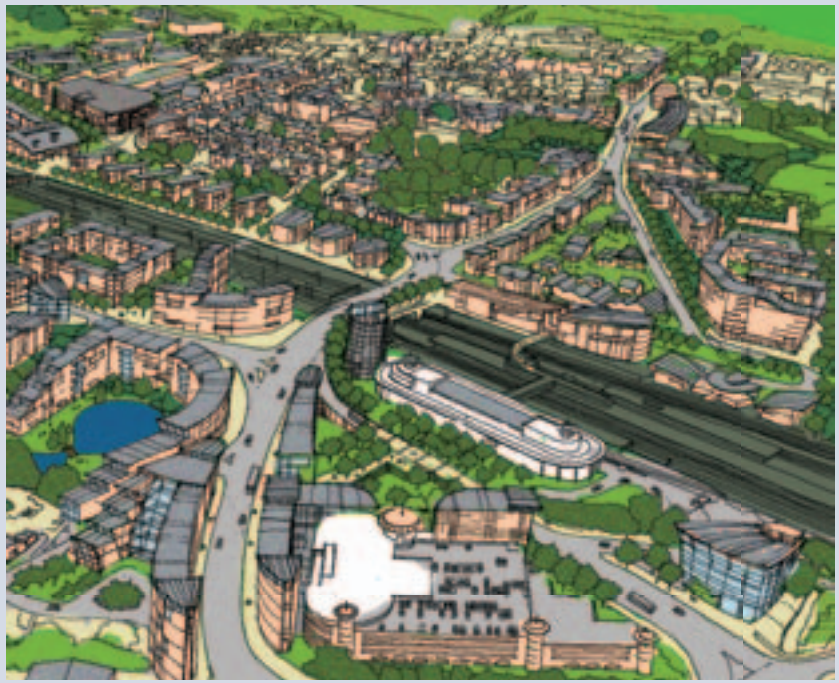
Find out more about the Integer initiative at www.integerproject.co.uk

Engaging the community in master planning

ENQUIRY BY DESIGN

Enquiry by Design establishes principles for development of a site at an early stage in the process through collaborative design workshops that involve all stakeholders with an interest in the site. It was devised as a technique by The Princes Foundation in partnership with the Campaign for the Protection of Rural England. The objective is to raise design quality and sustainability of major new developments; promoting mixed use, walkable developments and 'Placemaking'. Participants include planners, engineers, local Members, developers, representatives from local interest groups and the local community. A professional facilitator provides a creative input and challenges participants.

Ashford Borough Council is committed to applying collaborative design-led approach based on Enquiry by Deign for all major sites across Ashford, and has worked with a range of different developers. Starting a dialogue early has helped address potential conflicts and difficult issues, raised aspirations for design quality and encouraged a collaborative rather than adversarial approach to development.



Defining the wider picture

GREATER ASHFORD DEVELOPMENT FRAMEWORK

Ashford is one of four of the government's growth areas in the south east, targeted for 30,000 new homes and 29,000 jobs over the next 30 years. Ashford benefits from an existing international high-speed rail terminal with domestic services planned as part of the growth.

New development at Ashford is planned as a series of urban villages close to a revitalised town centre with traffic calming, a civic square and a learning campus. Greenery and water are central themes creating a vision of city-style living within a calm setting of lakes, canals and parkland.

Urban Initiatives was commissioned to oversee the production of the development framework which will set out a long term framework to deliver growth.

Helping mend the urban fabric

LORD STREET AND PARROCK STREET MASTERPLAN, GRAVESEND

This is an example of a local authority led masterplan. Gravesham Borough Council's bold aspirations for regeneration have resulted in a highly praised plan for the Lord Street and Parrock Street area of Gravesend.

The masterplan is recognised as an example of best practice by CABE and as a demonstration of commitment to quality design by a forward thinking local authority. A consultant team led by Penoyre and Prasad designed the proposals with the close involvement of the community. The scheme comprises high density housing and car parking on the site of two public car parks. It brings together the historic town centre and a nearby public housing estate, repairing the urban fabric.

Improving the planning process

MAKING YOUR PLANNING APPLICATION

Maidstone Borough Council recently produced a leaflet "Grand Designs – Talk to Us About Your Plans for Maidstone". It underlines the need for applicants to talk to the local planning authority before a planning application is submitted.

The leaflet sets out the level of information applicants should provide for pre-application discussions, along with a list of policy documents to be aware of. It a list of questions for discussion so that the authority can understand the impact of the proposal, including constraints such as listed buildings and existing landscape features; noise and air quality; flooding and economic prosperity.

The document puts an emphasis on the need to consider the design issues, including:

- Ensuring that the proposals meet the Kent Design standards
- Landscape and views
- Understanding of the context and character of the area
- Loss of any facilities, space or features
- Consideration of neighbouring properties – windows, private areas, light etc.

The booklet gives developers clear guidance on how to put together a well thought through application and the importance of discussing proposals as they evolve. This is likely to speed up the application process once submitted.

For further information contact
Maidstone Borough Council,
Development Control
01622 602000

Monitoring the development

IWADE

Developer: Hillreed Homes and Ward Homes
Consultants: Roger Tym & Partners

Iwade, a small village to the north west of Sittingbourne, was identified for significant development in the Swale Borough Council Local Plan (2000). A masterplan for around 1,200 dwellings centred around the existing village was prepared by the developers. Given that the development would be phased over a number of years with increasingly progressive and innovative approaches to design anticipated, the expansion created an excellent opportunity to monitor the success of the homes post-occupancy. The project became a Kent Design beacon scheme, supported by developers Hillreed Homes and Ward Homes in partnership with Swale Borough Council and the Kent Design Initiative.

The monitoring, which took place over 5 years, tested the satisfaction of homeowners; the approach to environmental sustainability; use of local facilities and transport patterns. The results of the research could then be tested against assumptions made at the design stage. It identified that occupants were generally very happy with their homes and the wider village environment, but raised some problematic issues such as parking. It suggested that people were interested in environmental issues and would take this into account when selecting a house. The work will be valuable in informing other new development across Kent. The final report is expected in 2006.

Glossary

Some terms and concepts used in this Guide explained.

Adverse Environmental Impacts of Development

Sometimes, existing features of value may be at risk. Where this is unavoidable, proposals should identify mitigation measures to compensate for lost habitats and landscape features.

These might include:

- planting to screen or enhance the appearance of a development
- creating new habitats or open spaces to encourage wildlife
- enhancement of retained features
- landscaped footpaths to improve opportunities for walking and cycling
- noise attenuation measures
- links between existing or proposed green spaces, including access for the less mobile.

Mitigation and compensation measures should themselves be assessed to ensure they do not cause adverse impacts. Opportunities should be taken to enhance the existing and planned environment by the creation, restoration and enhancement of habitats. Appropriate surveys together with character appraisals should help identify suitable mitigation measures.

Archaeological Remains

A development layout can be influenced by more than surface issues. It is important to assess and evaluate the archaeological potential of a site at an early stage since this may dictate a required form of design avoiding disturbance of important remains. Scheduled and unscheduled archaeological remains and areas of potential can be identified by the County Archaeologist. Early discussion can avoid delay and expense later. A desk study, field evaluation, and excavation and recording of remains may be necessary. Archaeological remains are a material planning consideration, and planning authorities may refuse planning permission where a proposal does not accommodate them. Where development is allowed, the principal aim will be to preserve archaeological deposits in situ.

Architecture in Kent - vernacular materials

Before the advent of cheap transport the need to use readily available materials meant that timber construction characterised Kent's buildings. By the Tudor period the use of brick became more widespread. In the 15th and 16th centuries buff-coloured and red brick were mainly used but the richness and quality of Kent clays later produced diversity from red-brown to the bluish Wealden bricks, with paler colours in the east and, in North Kent, the strong influence of Gault clay.

As with brickwork the colour of clay tiles varies across the county. The use of slate roofs above yellow brickwork is traditional in north Kent and in the towns with a significant railway heritage. Mathematical tiles were sometimes used for wall cladding, as in Faversham and Canterbury. Other popular local materials include sandstone, flint and chalk from the North Downs, and ragstone.

Even after the advent of brickwork as the most common form of walling, timber continued to be used for roof shingles, church spires and weatherboarding (coated in tar, unpainted or painted white or cream). Hung tile and rendered walls were sheltered by thatched, tiled or slated roofs. In inland Kent the vernacular thatching material was long straw. Many of these materials and styles co-exist in the same village or even in the same building, and contribute greatly to local character.

Area Action Plan

Document used to provide the planning framework for areas where significant change or conservation is needed. A key feature will be the focus on implementation.

Area Appraisal

A document that assesses the land uses, the built and natural environment and other characteristics. A 'character appraisal' will fulfil a similar role, but may be in more detail. Both will define the context of a place. Character Appraisals were originally introduced by English Heritage for areas, particularly conservation areas, with a distinct character and quality through urban design analysis so that such areas could be protected and enhanced by planning policy or intervention.

Areas of Outstanding Natural Beauty

Areas of Outstanding Natural Beauty (AONBs) are designated by Government under the National Parks and Access to the Countryside Act 1949, solely on account of their natural beauty and with the aim of conserving and enhancing it. The criteria for designation of AONBs are:

- Quality of landscape, natural beauty, unspoilt or special quality of national significance;
- Extent and continuity;
- Unusual or unique characteristics.

  Designation demands that planning policies and decisions should focus on the conservation and enhancement of the landscape.

Two parts of the county have been designated as AONBs. These are Kent Downs and High Weald. Contact your local planning authority if you are in any doubt as to whether a site falls within one of these areas as specific policies apply.

Specific design guidelines have been produced to cover the Kent Downs AONB and these have been adopted by some local authorities and can be a material planning consideration. For further information refer to Kent Downs Area of Outstanding Natural Beauty Landscape Design Handbook (Jan 2005). Visit www.kentdowns.org.uk/landscapehandbook.html to order a copy.

Biodiversity Action Plans

Biodiversity Action Plans provide a planning framework together with appropriate delivery mechanisms for achieving national and local targets in the protection of habitats and species. The use of Kent's Biodiversity Action Plan can assist in identifying habitats and species of importance and the appropriate action to help ensure their long term survival.

BREEAM

'BREEAM' is the Building Research Establishment's benchmark Environmental Assessment Method. 'BREEAM' is one of many methods of measuring environmental performance The new homes equivalent is 'EcoHomes'. The assessment can be used in support of planning applications. The reward to developers is a certificate and report that give marketing advantages by demonstrating that the development will be energy-efficient and have lower running costs. BREEAM goes beyond basic Building Regulation requirements to encourage best practice in building location, transport issues, ecology, health and building design. New homes should be built to at least 'very good' standard, with an 'excellent' standard to be achieved by 2010.

CABE

The Commission for Architecture and the Built Environment. A non-departmental public organisation set up by government in 1999. Through public campaigns and support to professionals, CABE encourages the development of well-designed homes, open spaces, schools, hospitals and other public buildings. CABE produces a wide range of advisory documents that should be in any planning authority's, designer's, consultant's or developer's library.

Community Involvement by Groups and Individuals

The public and their representatives have an important role to play at key stages in the development of projects and in the preparation of Local Plans, Conservation Area Appraisals, Development Briefs and Village Design Statements. Participation should be encouraged as a scheme develops. It is important to identify and involve those groups and individuals affected by a proposed development in order to increase the understanding of development ideas and local priorities. Community involvement in the design process can ensure that designers are fully aware of the local context and of local priorities and concerns. There are many advantages to be gained by involving the community at an early stage in the design process.

Conservation Areas

Conservation areas are areas designated by the local authority as having special architectural or historic interest that makes a significant contribution to local character. The local authority will seek to preserve or enhance the character and appearance of conservation areas, not just restricted to building developments but to forms of enclosure, landscape, paving, signs and street furniture. There is a need to assess what characteristics make an area special - any available local authority Conservation Area character appraisals or management plans should be referred to, together with any detailed Supplementary Planning Documents. If these are not available a character assessment should be carried out as part of the site appraisal to aid the design process. (Advice is available in PPG15 and English Heritage's leaflet on development in historic areas). Conservation Areas, Listed Buildings and their settings, and Scheduled Ancient Monuments make an important contribution to local character and are protected by law. Whilst there are many examples of historic buildings that have been adapted or converted to new use, consent is normally required for works affecting Conservation Areas, Listed Buildings and Scheduled Ancient Monuments. The are protected by law.

Note that:

- listed building consent is required for the demolition, alteration or extension of listed buildings
- conservation area consent is required for the demolition or partial demolition of buildings within conservation areas and
- planning permission is required for extensions and some alterations to both listed and unlisted buildings.

Many minor alterations and additions to buildings can be carried out without a specific grant of planning permission as they are deemed to have permission

using "permitted development" rights, as explained in the booklet "Planning Permission - A Guide to Householders". However, where even minor changes could spoil the character of a conservation area, the local planning authority may make a Direction under Article 4 of the Town and Country Planning (General Permitted Development) Order, 1995 giving control over minor developments. Outline planning applications are normally unacceptable in Conservation Areas. Applications must include illustrations of the proposal in its context so that a proper assessment of the effect on the local scene may be made. Core strategy (of Local Development Framework) Sets out the key elements of the planning framework for the area. It should include a spatial vision and strategic objectives for the area.

Design champion

A person responsible for ensuring that a particular organisation - a district authority or county council, for example - promotes high standards of design in the area.

Design Codes

A design code is a document, usually with detailed drawings or diagrams, setting out with some precision the design and planning principles that will apply to development in a particular place. It provides guidance on how design and planning principles should be applied. Codes can be both design and technically based, visual and functional, and measurable. They can be used as a set of guides for the designer or as a means of assessing the design. They may be included as part of a development brief, masterplan or area development framework where a degree of prescription is appropriate and cover a group of buildings, a street or a wider area.

Codes and guides can:

- inspire innovative design
- illustrate and describe how principles can be implemented
- help to avoid possible design failings
- provide a basis for consistency
- deliver rewards for compliance (e.g. higher densities at transport nodes, speedier planning process).

CABE suggests that codes can be a three-dimensional masterplan of the development area showing the intended arrangement of spaces and buildings, including massing, orientation, distribution of uses, densities, building lines, spaces, etc. Supporting text explains the plan, provides dimensions where relevant, and addresses detailed issues such as use of materials, landscaping and tenancy mix, depending on the level of prescription required. Codifying design against the unwanted or undesirable is likely to find its way into the statutory planning process in due course since it ensures that thought is given to the achievement of design quality.

Design Competitions

Competitions are an excellent way of generating ideas that can lead to outstanding buildings.

Clients, developers and local planning authorities need to be fully committed to the process. They should take professional advice on writing the development brief and organising the competition. These can be arranged in a number of ways, including open competitions and limited entry competitions (from a short list of appropriate design teams/architects). Adequate funding should be allocated for prizes (many competitions provide honoraria for a number of selected designers so that they can produce concepts for judging), with the award of the full design work being the main prize. Care should be taken to advertise the competition in areas according the anticipated value of the building. Some competitions need to be advertised in Europe. Advice can be sought from the Kent Architecture Centre (KAC) and from the RIBA. KAC has experience of setting up competitions, forming judging panels, interviewing designers and acting as a 'critical friend' to designers and clients.

Design guidance

A generic term for documents providing guidance on how development can be done in accordance with the planning and design policies of a local authority or other organisation. Guidance often refers to a specific type of development such as shops or household extensions.

Design Quality Indicators (DQI)

Supported by CABE and the Office of Government Commerce (OGC), the Construction Industry Council (CIC) has launched DQI Online - www.dqi.org.uk - which can be used at all stages of the construction process to evaluate design quality. DQI Online is straightforward to use and provides instant results in a graphical form. The long term aim of the project is to influence best practice by harvesting data from accumulated DQI returns.

Design panel (or Design advisory panel)
A panel of design professionals (architects, planners, urban designers and landscape architects are included) that is available to local authorities, developers and others on the design merits of schemes before they reach the formal planning application stage.

Design Statement by Planning Applicant
Design Statements are useful in explaining development proposals to the Local Planning Authority, taking them through the thought processes that have led to a design. They allow the planning authority to give an initial response to the key issues raised. Appropriately skilled professionals should be employed by the applicant to prepare development schemes and the associated Statement. The cost and time involved will be more than offset by reducing the time taken in the determination of an application. The Statement should demonstrate that proposals take account of the content of Local Plans and Supplementary Planning Documents, and show how the scheme relates to the site's character and its wider context.

The degree of detail in a Design Statement depends on the type and size of the proposal. It is important that the Statement outlines how design principles have been applied.

Government's PPG1 - General Policy and Principles - states: 'Applicants for planning permission should, as a minimum, provide a short written statement setting out the design principles adopted as well as illustrative material in plan and elevation'.

A Statement will need to contain:

- a written report with illustrations sufficient to describe the proposal
- details of how access is proposed and where rights of way must be kept
- information on the surrounding area as well as on the site itself
- any conservation area requirements
- information on how the design proposal (built form and open space) has developed from the site appraisal and the application of design principles.

On sensitive sites the statement should include a contextual appraisal showing how the design responds to local distinctiveness, the grain and street pattern, etc.

Development Briefs
A development brief is an illustrated document providing guidance on how a specific site of significant size or sensitivity should be developed in line with the relevant planning and design policies. It will usually contain some indicative, but flexible, vision of future development form. 'Planning brief' and 'design brief' are terms that are also used. A local authority, landowner or developer can promote the development of a specific site with a development brief defining land use, movement, and infrastructure requirements. Development briefs address design opportunities, ground conditions, existing and new built form, public areas, indicative site layout, and key infrastructure. They can supplement Local Development Framework policies and are particularly useful for large or complex sites which are of strategic importance, of a sensitive character, involve brownfield land, are of mixed use, or in a town centre. A development brief sets out the general parameters of what will be acceptable in a planning application. It will identify:

- key opportunities and constraints
- links with surrounding development
- alternative solutions that meet the design objectives
- scale, massing and height of buildings
- types of use required to ensure financial viability
- guidance on planning and design policies, and any scope for flexibility
- significant concerns raised during initial consultations.

Development Plan Documents (DPDs)
Parts of the Local Development Framework (LDF) which form the development plan - not including for example, supplementary planning documents or the statement of community involvement. DPDs are subject to more rigorous community involvement and inquiry procedures than other parts of the LDF, and as such receive greater weight in the planning process.

Doors and Windows in Alterations
The most common problems arising over building alterations relate to doors and windows. If original, these are a key part of the history of the building and should be repaired and kept whenever possible. Joinery replacement should be custom-built in the original material as exact copies of the original doors or windows. Special care should be taken when providing roof-windows (when permitted). The introduction of small 'conservation' roof-lights may be appropriate in certain

locations. Refer to Building Regulations Part L and English Heritage advice on double-glazing and heat loss issues.

Environmental Capital

The Environmental Capital approach defines the character of an area and identifies its environmental benefits and disbenefits together with the projects proposed there. It considers how important each benefit is and to whom and why. In some locations the Environmental Capital may be found to be so valuable and irreplaceable that development should be rejected. Ancient woodland, for example, cannot be recreated except over hundreds of years. Other sites may have attributes that warrant substitution. The approach can inform decisions about the provisions to be made in a development to ensure sustainability and may suggest solutions based on compensatory action and enhancement.

The approach focuses on the way in which natural features and characteristics matter by identifying their attributes and contribution to biodiversity, historical character and recreation. These are evaluated in the local and global context by considering:

- the scale at which the attribute assumes importance
- how important it is at its current scale
- whether enough of the resource can be anticipated in the future
- what if anything could replace or substitute for the attribute.

Environmental Impact Assessments

Environmental Impact Assessment is compulsory for certain categories of development. It involves describing the existing baseline environment, predicting proposed environmental impacts of a development and attempting to eliminate, minimise or mitigate negative effects. Historic environmental issues will need to be identified and addressed. Further information on Environmental Assessments is given in Circular 2/99, Assessment of Environmental Regulation. Historic environment issues will need to be identified and assessed. The Interreg Planarch project provides guidance on how this should be approached. Landscape, physical and ecological surveys should be submitted with development proposals showing clear links between the survey results and the design. Landscape surveys should include information on growing conditions, existing vegetation and trees (including their condition) and those species which are appropriate to the area. Physical surveys should deal with topography, geology, soils, water flows, (catchment areas, position of aquifers, streams and ponds - earth modelling can be used as a solution to reducing excess run-off), water quality (nutrient status, acidic or neutral) and site orientation. Ecological surveys should identify habitats, features and species affected by a development. They should evaluate the importance of the features identified, determine the type, duration and significance of potential effects arising from the development and assess the overall balance of losses and gains, taking any proposed mitigation measures into account.

Extensions

Location and scale of a building and whether or not it is listed will affect the size of any permitted extension. Where a modern building has a relatively formal front and an informal rear, the design of a rear extension may be straightforward. Similarly, the addition of a side extension may in many cases be a simple matter. Extending a well-preserved 18th century house may prove difficult without adversely affecting its architectural integrity.

Small cumulative changes can destroy an area's special character. It is the precise historical detail of buildings which matters. If inaccurate features are added to buildings then the character will be muddled and the value of the area will decline. The best way to ensure that alterations improve rather than spoil an area's character is to seek expert advice.

Extensions to pitched roof buildings should also have pitched roofs. Flat roofs are unlikely to be acceptable, particularly if two-storey and attached to pitched roofed buildings. Extensions to detached or semi-detached houses should not be of such a size or form that they result in the terracing of an originally well-spaced development. Wide dormers to loft conversions should be avoided; poorly-designed dormers to front elevations or other publicly visible elevations can seriously damage the quality of the streetscape.

In some cases, side extensions, particularly two-storey ones, will have an unexpectedly strong effect on the balance of pairs of houses, or the regularity of buildings in the street scene. This may be so severe as to spoil the character of the wider area as well as the house itself. The spaces between buildings are often as important to the character of an area as the buildings themselves - the loss of such space may itself be unacceptable.

Extensions to a building of historic or architectural interest must be justified and not impair its scale, balance or proportion. A break in the façade between new and old may help the overall effect particularly where the extension is to be symmetrically arranged. Junctions between new and old roofs require particular care. The following principles apply:-

- use of materials of equal quality and sympathetic colour, form and texture is essential
- materials must usually closely match the existing colour, type and texture
- the overall style and design will generally need to match the existing but a modern imaginative interpretation can often be successful.

Local standards and guidance may differ from one local planning authority to another so advice should be sought from the planning officer and conservation officer. Generally the following principles apply:-

- extensions must respect a building's form, scale, proportions, materials and detailing
- the use of the same materials and components, proportions and arrangement of elements will generally be necessary
- if imaginatively handled, extensions can be of differing design; if the existing building is of mediocre character, it may even be desirable
- if the original building is of a formal design it may be necessary to separate the extension from the formal facade to avoid upsetting the symmetry
- with informal designs it may be possible to extend facades without damaging character
- extensions should not impinge on the amenity of neighbours by overshadowing adjacent windows and private open spaces.

Care should be taken to ensure that building character is retained. Where radical alteration is needed to make buildings fit for occupation, conversion may prove unsuitable. Most local planning authorities provide guidance on the appropriate re-use of redundant agricultural buildings.

Extensions to barns and other historic agricultural buildings
Many ancillary farmstead buildings in mid-Kent were traditionally built with the expectation of occasional flooding. Rehabilitation of these buildings for modern uses will need to take account of this.

Design elements that should be conserved include:

- form, massing and roof-line
- materials
- openings such as windows and barn doors
- overall simplicity of form and design
- tone and colour of materials
- setting in the landscape (access and parking provision must take this into careful consideration) and the impact of the use of space around the building
- the extent of the residential curtilage.

Flammable Materials

Consideration should be given to fire safety with flammable or toxic construction being materials avoided, and sprinkler systems installed in larger buildings. Any new building or refurbishment provides the opportunity to install mains-powered smoke detection. Installing both smoke detection and domestic sprinklers should be standard practice.

In the case of social housing, care premises, homes in multiple occupation, hostels and private homes where people with disabilities reside, sprinklers offer the most effective method of reducing deaths and serious injuries as a result of fires. Sprinklers permit a greater degree of flexibility when designing properties allowing architects to move away from the prescriptive methods of Building Regulations Approved Document B. Details on water provision for building types are outlined in 'National Guidance Document on the Provision of Water for Firefighting'.

Flood Risk

With its long coastline, extensive low-lying areas (such as the North Kent marshes and Romney Marsh) and its major river systems, flood risk is an important issue in Kent.

Traditionally the defence against flooding has been to provide 'hard' structures to protect property at risk, but this is non-sustainable and the latest guidance seeks to manage flood risk. With climate change, the probability of flooding is set to increase. Accordingly there must be a focus on reducing the consequences of flooding, best achieved by effective design and planning. Whilst the best way of managing flood risk is to build in areas where the risk is low, historically development has usually been built on low-lying flat land. Indeed most important settlements contain areas at risk to flooding; Ashford, Canterbury, Tonbridge, Maidstone, Medway, Dartford and Gravesend being examples. It is recognised that further development in flood risk locations in urban areas is likely. Even where flood defences are provided it is still important for design to take account of the residual risk of flooding from a breach or over-topping of defences. Consideration should be given to locating less vulnerable forms of development in higher risk areas and to position vulnerable development, such as housing, in low risk

areas. Some development, for example hospitals with accident and emergency provision, should never be positioned in high flood risk areas. Where, exceptionally, vulnerable development is placed in high-risk areas the design should minimise the risk, by, for example, raising living accommodation above predicted flood levels.

Flood Risk Assessments

Strategic Flood Risk Assessments will be prepared by Kent's local planning authorities in collaboration with the Environment Agency. These will give an indication of flood risk within districts and set policies on how flood risk is to be managed. Local planning authorities will apply a sequential test - allocating low risk sites in preference to higher risk locations. The flood risk from tidal and riverine sources is shown on the flood zone maps produced by the Environment Agency and these should be the first points of reference.

A Flood Risk Assessment (FRA) must accompany all planning applications in identified flood risk areas, and all others extending to more than one hectare in any location. The scale and nature of the FRA will depend both on the risk and the development. Again the sequential approach should be adopted with lower vulnerability uses, for instance public open space, situated in the higher risk locations.

Generic Development Control Policies

The Local Development Framework should contain a limited suite of policies which set out the criteria against which planning applications for development can be tested and accords with the spatial vision and objectives set out in the core strategy.

Green Grid

Forms part of a comprehensive long term plan consisting of many individual projects which, in combination, will implement an improved and co-ordinated landscape structure for future generations.

Health impact assessment (HIA)

It is now part of good practice to integrate health and social issues into other forms of impact assessment. HIAs provide a key opportunity to address health issues at the earliest stages of the plan-making process and can be built in to large scale masterplans.

There are six key stages:

Stage 1 Screening
Deciding whether to undertake an HIA. It may not be necessary in every case and there may be little identifiable impact on health issues resulting from a development proposal

Stage 2 Scoping
Deciding how to undertake a HIA, including who needs to be involved and in what depth the assessment needs to be carried out

Stage 3 Appraisal
Identifying and considering a range of evidence for potential impacts on health and equity.

Stage 4 Developing Recommendations for decision-making
Based on the best available evidence and consensus discussion, deciding on and prioritising specific recommendations.

Stage 5 Engagement
Discussions with decision makers to help reinforce the value of the recommendations and encourage adoption or adaptation.

Stage 6 Evaluation
Ongoing monitoring to assess if the adoption (or adaptation) of any specific HIA recommendations did occur and if they had a positive effect on health and equity and, if not, to review and consider the reasons for this and how plans might be further adapted. www.publichealth.nice.org.uk

Milton Keynes has produced a spatial planning checklist to assist in the assessment process. Putting Health Impact Assessment at the centre of the planning process (Produced by Ben Cave Associates).www.mksm.nhs.uk

Kent Architecture Centre

Based in north Kent, but operating over the whole of the south east the centre (KAC) is an independent not-for-profit organisation which facilitates quality design and urban regeneration. It works with the community and its decision makers to promote innovation and create a wider understanding of the importance of design and also provides a forum for sharing knowledge. Clients and supporters include Kent's local authorities, CABE, English Heritage, English Partnerships, and the Arts Council of England. KAC manages the South East Region Design Panel on behalf of SEEDA.

Kent Habitat Survey
The Kent Landscape Information System
SUPPORTED BY: KCC, ENGLISH NATURE

The Kent Landscape Information System (KLIS) is a web-based system holding information on Kent's landscape and biodiversity that will help take forward planning for biodiversity and identify opportunities for landscape restoration. It can also help farmers and land managers in decision-making and farm planning.

Opportunity maps have been created to locate the best places for habitat creation. These maps reflect the priority habitats found in Kent and have been developed by applying a number of landscape ecology rules such as size, connectivity and landscape character. The site can be found at www.kent.gov.uk/klis.

Landscape and Amenity Space Adoption and Long-term Maintenance
A long-term maintenance strategy for proposed amenity space, landscape and nature conservation areas must be provided for a development proposal. Management plans and identified sources of funding for future management should be described. It is likely to prove beneficial to encourage local stakeholders, such as parish councils and community groups, to contribute to management plans and agree their objectives and the rights and responsibilities of all parties. The arrangements for maintenance should be simple, cost effective and promote sustainable after-care of landscape, habitats and species. They should also promote a sense of ownership amongst residents and stakeholders. Options for management include the parish council, district council, a management company, or a trust. Management proposals should be flexible over time, as the needs of the users change. While tidiness is often equated with maintenance there are schemes which require less intensive maintenance such as meadow grass and naturalised landscape and woodlands.

Landscape and Nature Conservation Policy Context

Policies dealing with landscape and nature conservation designations are defined by national, regional or local plans. Wherever possible, development should avoid areas that have significant value for nature conservation. Development proposals that could materially harm the nature conservation or scientific value of internationally or nationally designated sites will normally be refused. Information on designations should be sought at an early stage to ensure the special characteristics of such areas are given due attention.

The various protecting designations include:

International - Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar Sites.

National - Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNRs) and Areas of Outstanding Natural Beauty (AONB).

Local - Special Landscape Areas (SLA), Sites of Nature Conservation Interest (SNCI), Local Nature Reserves (LNR), Tree Preservation Orders (TPO), Hedgerow Protection Orders (HPO), Protected Species, Regionally Important Geological Sites (RIGS) and Historic Landscapes.

Landscape Character Assessments

The Countryside Agency has produced a Landscape Character Map for England which has been refined for Kent by KCC. It describes landscape patterns as the basis for analysing the condition and sensitivity of the county's landscapes. District wide assessments are encouraged at a more local level.

Character areas are a combination of physical features of the landscape (landforms, soils etc.), ecological profiles and cultural associations. Landscape Character Assessments analyse the condition and sensitivity of an area and describe characteristic features. Guidance is given on the type of change that may be appropriate to the area; for example, restoration, conservation or improvement. (See also 'Landscape in Kent')

Landscape in Kent

It is important to establish the landscape character of a site and its setting, so that it can inform the design and layout of new development. The Landscape Character Assessment of Kent - to be adopted as a Supplementary Planning Document - details 115 different character areas. These vary from flat marshland to undulating chalk downland; from heavy clay weald, to the rolling wooded High Weald in the south; and from the generally open character of the east, to the enclosed wooded character of the south and west. More detailed local Landscape Character Assessments and Landscape Guidelines have been prepared for some local authorities but, where there is no local landscape study, the County study should be referred to (contact Kent County Council, Environment Division).

Landscape design should complement the existing landscape setting and the scale and form of buildings and open spaces. It should protect or conserve sensitive sites and minimise impact during construction. Buildings should be kept within the fold of the landscape to preserve vistas. Consideration should be given

to re-creating or restoring habitats that have been lost or are in poor condition. Landscape design can reinforce or create local identity. There may be opportunities to introduce new water features or woodlands and to create links between existing habitats for wildlife corridors, for example, by joining two woodland areas with a new hedgerow.

Landscape Plans to Accompany Planning Applications

According to the type of development proposed and the context of the site, planning applications should be accompanied by a detailed drawing of external works showing contours, proposed levels, areas of new planting and retained existing planting. Species, size of stock and density of planting should be clearly indicated. Areas of land to be adopted by the Local Authority or Highway Authority must be clearly shown. Landscape proposals should demonstrate how the new development fits with its setting. It should take into account the existing site features, conserve or increase biodiversity, provide useable and accessible amenity space, create a clear structure and hierarchy of external spaces, respond to positive views and screen negative views. The proposals should include landform; spatial arrangement; water and planting including trees and shrubs.

Protecting and enhancing existing flora and fauna can lessen the need to replant and establish new landscapes. The suitability of plants and trees chosen for retention or planting is important; native plants are generally most suitable but ornamental species may sometimes be appropriate in new urban developments. Wherever possible seed of local provenance should be used. Planting should be appropriate to local ground conditions and consideration given to long-term growth characteristics and maintenance requirements so ensuring survival and avoiding damage to other features.

It is essential that the landscape and biodiversity proposals are an integral part of the design process so that appropriate mitigation measures can be developed at an early stage and integrated into the design rather than "bolted-on" at the conclusion of the development. When new trees are added as an afterthought, there is invariably insufficient space for a proper scheme of planting.

A full tree survey should be submitted as part of the planning application to show the position, species, girth, height, spread of branches and condition of existing trees. This should be superimposed on a contoured site survey plan to enable essential decisions to be made before sketch plans are prepared. The survey should conform to the guidance provided in BS 5837: 1991 - 'Trees in Relation to Construction'. A report may be required to confirm that building or engineering operations can be carried out without damage to trees whilst a report by an engineer or building surveyor may be necessary to demonstrate that buildings will not be adversely affected by trees.

Listed Buildings

These are an important element in the built heritage giving character and historical continuity to localities. It is necessary to be aware that:

- Listed building consent is needed for alterations, extensions or demolition affecting the character of a building. This may include other structures within the curtilage of the site
- Having listed building consent does not negate the additional need for planning permission or approval under the building regulations
- Carrying out work on listed buildings without listed building consent is an offence
- Unoccupied listed buildings in need of urgent preservation work can be repaired and protected by the Local Planning Authority and the owner recharged with the costs
- Consultation with conservation officers and English Heritage, at an early stage, can provide helpful guidance and advice on a range of issues including possible grant aid.

Poorly preserved listed buildings may be the subject of a Repairs Notice. If the work which the Local Planning Authority specifies as being reasonably necessary for preservation is not carried out, a local authority has powers to compulsorily purchase the building.

With listed buildings the presumption is very firmly for preservation. Only in the most exceptional cases will the granting of consent for demolition be possible. There is a wealth of advice from the government and from local planning authorities on alterations to listed buildings. It is important that expert qualified advice is sought at an early stage, including the advice of the planning authority and its conservation officer. Reference should be made to guidance from English Heritage.

Local Development Document

The parts of the development plan that are prepared by the local planning authority (i.e. not part of the regional spatial strategy).

Local Development Framework (LDF)
The document which sets out, in the form of a portfolio, the local development documents which collectively deliver the spatial planning strategy for the local planning authority's area.

Masterplans
The term 'masterplan' describes a study of how a site or a series of sites is to be developed, showing phasing and programming. Masterplans set out in flexible terms the principles on matters of importance including land use, public facilities required, transportation and circulation connections, public spaces, routes and places, phasing and timing. Masterplans should not prescribe the design of development. They are mainly used for major development projects that are likely to take place over a long time-scale. Accordingly they need to be flexible. Masterplans are usually prepared by or on behalf of the site owner or the local planning authority, and provided there has been public consultation, can become Supplementary Planning Documents. CABE has produced a handbook on the commissioning and preparation of Masterplans entitled "Creating Successful Masterplans - A Guide for Clients".

The three main elements of a Masterplan, as defined by CABE, are:-

1. Strategic Framework. A statement of aims and objectives for a large area of land or part of an urban area. It acts as the brief for the spatial masterplan, is based on data analysis, and incorporates potential implementation processes.
2. Spatial Masterplan. Plans and written material setting out the proposed design approach and establishing a three-dimensional framework of buildings and public spaces which:

- allows understanding of the spaces between buildings
- shows how streets, squares and open spaces are connected
- defines heights, massing and bulk of buildings
- controls the relationship between buildings, public spaces and the network of movement patterns
- determines the distribution of uses
- allows an understanding of how well a new neighbourhood is to be integrated into its context and natural environment
- defines use of available natural resources.

3. Implementation Plan

   A written strategy including information on costs and phasing as well as programming for implementation of a Masterplan.

Parish & Town Councils
Parish Councils and Town Councils are experienced in representing the needs and aspirations of their communities. They also have a deep understanding of their locality and its history and are statutory consultees at planning application stage. It can be beneficial to seek their input at an early stage in the design process to obtain beneficial local knowledge and to avoid difficulties later on.

Permitted Development
Smaller scale, usually residential development which does not require formal planning permission provided it complies with the criteria set out by the government. Projects that are deemed to be 'permitted development' generally will need to comply with the requirements of the Building Regulations or part of them.

Placecheck
A type of urban design audit advocated by professional design body the Urban Design Alliance. A local collaborative alliance or partnership uses checklists to investigate how a place could be improved. (http://www.placecheck.info/)

Planning Agreements
At the planning application stage it is likely that the local planning authority will require a developer to enter into a legal agreement to ensure that necessary features are provided and that new neighbourhoods can be sustainable. In Kent, the Local Planning Authorities will be strong in seeking developer contributions to the costs of community infrastructure through Section106 legal agreements or whatever 'tariff' system may come into being. These agreements may include transport infrastructure and green travel arrangements; definition of the number, tenure and size of units; open spaces for amenity recreation and play; shops, pubs, community and health service facilities; schools; leisure and other such services. In addition to the principle of provision, phasing of Section106 provisions may be required.

Planning for RealTM
A participation technique, pioneered by participation agency the Neighbourhood Initiatives Foundation, that involves residents and other stakeholders making a model of their area and using it to help them determine priorities for the future.

Planning Policy Statement (PPS)
Guidance on planning issues provided by government - replacing PPGs (Planning Policy Guidance Notes).

Ponds and Watercourses

The retention of existing ponds and watercourses and the creation of new ones is of value for land drainage, biodiversity and amenity. Public access will often be desirable, but there will be requirements for safety and maintenance. The Drainage Authority, if involved, will have standards that can have a strong impact on design. The piping (culverting) of watercourses should be avoided if possible but if unavoidable the Environment Agency must be consulted as consent may be required. The inclusion of new ponds and watercourses, which are particularly effective as drainage measures, is encouraged.

Pre-Application Discussions

This eases the process and can avoid abortive work. It need not protract the planning application process. Advice is given in the 'Councillors Guide to Urban Design', one of many useful booklets published by CABE. Maidstone Borough Council also produces a useful guide.

Public Rights of Way

(PROW) are highways established in law and should be viewed as a positive benefit to development schemes.

Incorporated into a development PROW can add significantly to the quality of life and to the amenity of the area. Kent has some 4,273 miles (6,876 kms) of public rights of way. They can provide opportunities for leisure and a healthy alternative to the car when undertaking short local journeys.

It is recommended that developers give thought at an early stage to:

- How the PROW network is affected by their proposals
- How the impact of development on the PROW network can be minimised
- And how the network can be enhanced

Furhter information is contained in the Publci Rights f Way Document 'A guide for planners and developers available from the Public Rights of Way team based at Kent County Council. www.kent.gov.uk/countrysideaccess or phone 0845 3450210.

Renewable Energy

It is particularly important that speculative developers place greater emphasis on the energy use of a building even though they will not be directly responsible for paying future running costs. The building user will have a vested interest in the durability and costs of running the building, and may base the decision to occupy partly on running costs. Where known, the potential occupier should be consulted early in the design process.

The main sources of renewable energy which should be considered are as follows:

- Active solar systems. Include panels that collect solar energy to provide heat by the passage of water through matt black pipes in a shallow glazed box. This is typically roof-mounted, facing south on buildings in order to maximise exposure to the sun.
- Photovoltaic (PV) systems. These use solar radiation to stimulate an electric current in photovoltaic (PV) cells. They can be mounted in panels on the exterior of buildings, or integrated into building materials such as cladding, glass and roof tiles. PPG 22, 1994 states that the UK has enough sunlight for viable solar heating. Grouped solar heating systems have the advantage of levelling out demand, as low use at a particular time from one occupier can compensate for the use of another. Solar panels located next to the area they are serving minimise heat loss. Outdoor swimming pools often follow this principle.
- Wind Energy. A mature technology capable of generating power at prices comparable with that of fossil fuels. It can take the form of a single large wind turbine at the edge of a development or small wind turbines supplying power direct to single users, such as homes, schools and businesses.
- Biomass Heating. Organic materials including straw, wood, energy crops and industrial waste can be used as a source of heat. A well-proven technology that has widespread applications from a domestic level through to district heating or combined heat and power (CHP) systems. The availability of large volumes of wood chips from Kent from the maintenance of parks, woodlands and roadside vegetation could provide a ready source of fuel. Kenward House, a charitable institution near Yalding, is developing a renewable energy strategy that includes a replacement biomass heating system based on free supplies of damaged wooden pallets as fuel.
- Heat Pumps. Ground warmth can be collected by circulating water through pipes embedded in the ground under or adjacent to a building. In Kent, soil temperatures only a little way below ground are high enough to allow energy to be abstracted from the ground and condensed, providing useable heat for space heating systems. The greater the depth of the pipes the greater the soil temperature and heat made available.

Shrubs and Low-level Planting
Low-growing closely-knitting hardy shrubs (up to 450-600mm high) can be used on 'soft' areas of public spaces in housing developments, such as those carrying statutory services or the adoptable areas resulting from highway sight lines. Such areas of three-dimensional planting can be used to produce variety and reduction of scale in what would otherwise appear as left-over parts of the layout.

Sunlight and Daylight to Dwellings and Gardens
Sunlight and daylight to dwellings should be not less than the minimum laid down in the DoE Publication 'Sunlight and Daylight: Planning Criteria and Design of Buildings' (HMSO 1971) as updated, unless there are strong overriding environmental considerations such as the maintenance of existing townscape form. Appropriate levels of sunlight are important to health and wellbeing. For residential uses, health-care buildings, cafes and restaurants, windows facing south, east and west are most desirable. For office, industrial, educational and studio buildings, south facing windows should be avoided or shaded. This is often an issue for flats but sensitive layout design will ensure that at least one main living room can receive a reasonable amount of sunlight. A sensible approach is to try to match internal room layout with window wall orientation so that living rooms and balconies face south or west. However, measures may need to be taken to reduce heat gain and to encourage natural ventilation.

Site-Specific Allocation
Where land is allocated for specific uses (including mixed uses) in one or more development plan document. The identification of sites is founded on a robust and credible assessment of the suitability, availability and accessibility of land for particular uses.

South East Regional Design Panel Advice (SERDP)
Valuable advice on architectural and urban design quality is provided by the South East Regional Design Panel. This can arrange an independent assessment of a proposal on behalf of a developer, site owner or local authority. It provides a neutral forum for debate on schemes. Design Panel involvement at the concept/sketch design stage can assist with the formulation of a Design Statement to ease the planning process. SERDP's advice is freely available and can be sought via the Kent Architecture Centre - info@kentarchitecture.co.uk - which manages the panel on behalf of SEEDA with support from CABE. The use of the Regional Design Panel is not mandatory and the local planning authority takes the decision as to whether or not planning permission is granted for a proposed development, taking into consideration the Panel's views.

Statement of Community Involvement
Sets out the standards to be achieved by the local authority in involving the community in the preparation, alteration and continuing review of all development documents and planning applications. These have to be presented as part of the development plan documents under the proposals of the Planning and Compulsory Purchase Bill 2003.

Statement of Design Principles (Design Statement)
To accompany the formal planning application. Covers a number of points. It has the benefits of clarifying the design approach for the particular site for both the designer/developer and for the local planning authority. The statement overall should show that all site constraints have been properly considered, that the local context has been understood and has been respected and demonstrates the rationale of the design. Always required for larger development proposals, but may be useful even for extensions and small developments, depending on sensitivity or special circumstances.

Supplementary Planning Document
Document forming part of the Local Development Framework but which does not form part of the development plan due to lower requirements in community involvement and inspection and, as such, carries less weight.

Sustainability Statements
Sustainability Statements indicate how resource management has been taken into account in the design and implementation of a proposed development. The design should aim to enhance the best of the built and environmental resources of the site and set out the contribution to be made to the reduction in greenhouse gas emissions and attainment of sub-regional targets. Sustainable practices should minimise the use of scarce resources (including water and energy-intensive materials), facilitate recycling and re-use, ensure safe disposal and minimise future maintenance. Sustainability Statements assume a greater importance as the size of the development and/or its likely environmental impact increases but some criteria will be valid for any scale of development. The Government's document 'UK Strategy for Sustainable Development' (1999) is a valuable source of information.

Trees - Services, Buildings and Foundations
Some trees possess characteristics which make them unsuitable for retention close to development so sufficient space should be provided to accommodate their long-term growth, both above ground (to avoid overshadowing) and in their root zone, since failure to do so may lead to pressure to fell later. Where buildings are

proposed close to trees, a tree survey prepared in accordance with the guidelines in BS5837 should accompany the planning application.

Steps should be taken at all stages to protect existing trees and an indication given on the survey of how this will be done during construction. Compaction of the ground must not be allowed over the root spread and the ground below the canopy should not be surfaced with impervious material. If existing hard paving around a tree is removed, it must be replaced immediately with topsoil before surface roots dry out.

Trees do not adapt easily to nearby trench works or alterations in ground conditions so that changes within the spread of the roots should be avoided. In those exceptional cases where such excavation is unavoidable hand digging will be required under strict control to preserve and protect the root system. Detailed guidance is provided in BS 5837: 1991 - "Trees in relation to Construction" and N.H.B.C. Supplementary Practice Notes "Building Near Trees" and "A Quick Way to Find the Right Depth of Foundations on Clay Soils".

Petroleum products and other chemicals must be kept away from the roots. The best protection is achieved by fencing off an area of ground around the tree equivalent to or greater than the area of crown spread, and preventing intrusion. Damage to foundations from tree root action can be a problem in shrinkable clay soils particularly in the case of oak, ash, elm, poplar and willow. Advice should be sought when building close to these species. The problem is less marked in chalk soils. Sound drains will not normally be disturbed by roots unless very close to a tree. The local planning authority may, in the case of large developments wish to impose conditions or to ask for details of major service runs since their position needs to be taken into account at an early stage. Services and drainage runs should be located so as to:

(a) prevent damage to the root system of any retained tree, including those along highways and in paved areas

(b) avoid areas reserved for new tree planting.

Urban Design Frameworks

Urban Design Frameworks are usually prepared by the site owner or developer and provide a context for more detailed Development Briefs. They may have gained a statutory significance through adoption by the local planning authority. They describe and illustrate how planning and design policies and principles should be implemented in an area of anticipated change (such as urban quarters, transport interchanges, housing estates, areas of special landscape value, conservation areas and villages). They often show phasing of development, perhaps by different developers, where land is in multiple ownership. An Urban Design Framework is characterised by :

- broad design principles to promote, or guide change, in villages, neighbourhoods and districts, town extensions, town centres and conservation areas
- a strategy for implementation and phasing of developments
- the context for detailed development briefs for specific sites
- a framework for development control.

Village Design Statements

An advisory document, usually produced by a village community, showing how development can be done in harmony with the village and its setting. Village Design Statements define features of local character and distinctiveness that deserve to be protected and enhanced by new development. They help ensure that the character of a village or smaller town is fully understood and taken into account in planning decisions. describe the character of the village and its landscape setting by addressing its distinctiveness and the relationship of the settlement to the surrounding landscape, by drawing up design principles related to distinctive local character, and co-ordinating with existing statutory Local Planning policy. Village Design Statements are particularly effective when they are representative of the views of the village as a whole; and when they involve a wide section of the local community in their production so that they are firmly based on local knowledge, ideas and views. The research used to develop the statements may also provide useful information for developers. Where compatible with the statutory planning system, Village Design Statements may be approved as Supplementary Planning Documents unless there is a conservation area appraisal adopted as SPD.

Vision Statement

The main objectives for the development or redevelopment of an area - to be used as a constant reference point throughout the development of the project.

Site Waste Management Plans

– GUIDANCE FOR CONSTRUCTION CONTRACTORS AND CLIENTS

All those who produce or handle wastes from demolition, earthworks and construction activities have a duty of care for its safe keeping, transport and subsequent recovery or disposal. Failure to comply can result in an unlimited fine. Guidance has been produced for the Dti. This voluntary code of practice sets out 9 steps for a successful site waste management plan:

Step 1 Identify who is responsible for producing the SWMP and ensuring that it is followed
Step 2 Identify the types and quantities of waste that will be produced
Step 3 Identify waste management options
Step 4 Identify waste management sites and contractors
Step 5 Ensure trained in-house and sub-contract staff
Step 6 Plan for efficient materials and waste handling
Step 7 Measure how much waste and the types of waste produced
Step 8 Monitor the implementation of the SWMP
Step 9 Review how the SWMP worked at the end of the project

The document can be obtained from the dti website www.dti.gov.uk

Wildlife and Habitat

Development that could have an adverse impact on a statutorily designated Local Nature Reserve or non-statutory County Wildlife Site will only be considered for approval if the adverse impacts can be adequately compensated for. Meeting the statutory requirements relating to protective species is an obligation upon all developers. It is important to commission a scoping survey at an early stage in the design process, before any site clearance is undertaken. Timing of surveys is critical - detailed surveys may be required for particular species at certain times of the year.

Further reading

SECTION ONE **THE VALUE OF GOOD DESIGN**

'The Value of Urban Design', CABE, UCL, DETR 2001

'By Design' The companion guide to PPG1, CABE/DETR 2000

Good Design and Policy Framework

Planning Policy Statement 1 PPS1: 'Delivering Sustainable Development' ODPM 2005 and its companion guide 'By Design, urban design in the planning system: towards better practice' DETR and CABE 2000, Thomas Telford Ltd. London

'Our Towns and Cities: The future', ODPM 2000, www.odpm.gov.uk

'Sustainable communities: Building for the future', ODPM 2003

'County Structure Plan for Kent and Medway'

'PPS12, Local Development Frameworks'

Getting the process right:

'Protecting Design Quality in Planning', CABE 2003, www.cabe.org.uk

'Creating Excellent Buildings: A Guide for Clients', CABE 2003

'Creating Excellent Masterplans: A Guide for Clients', CABE 2004

Respecting context and character

'Building in Context', English Heritage and CABE
www.cabe.org.uk www.english-heritage.org.uk

Urban Areas

Planning Policy Statement 6 PPS6 *'Planning for Town Centres'*

'Sustainable Urban Extensions: Planned through Design' English Partnerships, DETR, CPRE, The Prince's Foundation – a collaborative approach to developing sustainable town extensions through Enquiry by Design.

The Prince's Foundation 0207 6213 8500. enquiry@princes-foundation.org

'Vernacular Architecture', R W Brunskill, Faber & Faber, 2000

'Building the 21st Century Home: the sustainable urban neighbourhood', D Rudlin and Nicholas Falk, Architectural Press, 1999

General housing

'Building for life' standard www.buildingforlife.org

'Winning Housing Designs – lessons from an Anglo-French housing initiative', CABE, supported by the Kent Architecture Centre, November 2005, downloadable from www.cabe.org.uk/publications/

'In Detail – High Density Housing Concepts, Planning, Construction', Christian Schittich, 2004. ISBN: 3764371137

General

Planning Policy Guidance 3 PPG 3, Housing and companion guide *'Better Places to Live'*, DTLR and CABE 2001, Thomas Telford Ltd. London

Safe and Secure Design

'Safer Places: The planning system and crime prevention', ODPM and the Home Office 2004, Thomas Telford Ltd London

'Design out Crime', Ian Colquhoun, 2004

Travel Plans

'Making Travel Plans Work' Department of Transport, 2002

'Travel Plan Resource Pack', Department of Transport, 2000

Disabilities

'Disability Discrimination Act 1995' DDA and 'Rights of access, goods, facilities, services and premises' Disability Rights Commission www.drc-gb.org

'Highways suitable for the mobility impaired' Kent County Council *'Reducing Mobility Handicaps',* Institution of Highways and Transportation www.iht.org.uk

Green Space and Health

'The Value of Public Space', CABE Space 2004

'Start with the Park', CABE Space 2005 ISBN: 1-84633-000-9

'Improving urban parks, play areas and green spaces', DTLR 2002

General - about sustainability

www.sustainability-east.com

'Sustainable Renewal of Suburban Areas', Civic Trust and Ove Arup, 1998

'Sustainable Settlements', University of the West of England Bristol

'Sustainable Urban Design – an environmental approach', Randall Thomas and Max Fordham

'Shaping Neighbourhoods – A guide for Health, Sustainability and Vitality' Barton, Grant and Guise, 1995: ISBN 0-415-26009-4 Publisher: E+F Spon

'Making design policy work – How to deliver good design through your local development framework', CABE 2005

'Designing Lifetime Homes' www.jrf.org.uk/housingandcare/lifetimehomes

'Streets for All', English Heritage, www.english-heritage.org.uk

'Sustainable Urban Extensions – planned through design: The Enquiry by Design Approach', The Prince's Foundation. Details from enquiry@princes-foundation.org

Energy Systems and Sustainability', Godfrey Boyle, Bob Everett and Janet Ramage editors Oxford University Press, ISBN 0 19 926179 2

'Renewable Energy', Godfrey Boyle editor

Car Sharing: www.carclubs.org.uk

SECTION TWO **CREATING THE DESIGN**

'The Urban Design Compendium' – English Partnerships with The Housing Corporation, 2000. www.englishpartnerships.co.uk or www.rudi.net

K-LIS – Kent Landscape Information System search KLIS on www.kent.gov.uk

Kent's built environment history

Pevsner's *'Buildings of England'* series:

John Newman, *'Kent: North-East and East'* – revised 1983, ISBN: 0 300 09613 5

John Newman, *'Kent: West and the Weald'* – 1976, ISBN: 0 300 09614 3

'A History of Kent', F W Jessup, Phillimore & Co Ltd, 1995, ISBN o 85033 916 2

Climate Change

'Adapting to climate change – a checklist for development', via the South East Climate Change Partnership, www.climatesoutheast.org and www.sustainability-east.com

Flood Risk

Website of the Environment Agency: www.environment-agency.gov.uk/subjects/flood

Landscape Design

'Landscape and Sustainability', John Benson and Maggie Rowe, 2000

'Environmental Planning for Site Development – a manual for local planning and design', Anne Beer and Catherine Higgins, second edition, 2000

'The Planting Design Handbook', Nick Robinson, 1992

'Beazley's Design and Detail of the Space Between Buildings', Elisabeth Beazley, 1990

'Designing Lifetime Homes', www.lifetimehomes.org.uk

Designing in Context

'Building in Context Toolkit – New Development in Historic Areas', English Heritage , CABE and the Kent Architecture Centre, www.building-in-context.org

'Building in Context – new building in historic areas', English Heritage www.english-heritage.org.uk

Designing Streets and Spaces

'Places, Streets and Movement', DETR

'Paving the Way', ODPM/CABE

Safe and Secure Design

'Safer Places: The planning system and crime prevention', ODPM and the Home Office 2004, Thomas Telford Ltd London

'Design out Crime – creating safe and sustainable communities', Ian Colquhoun, 2004

Noise

BRE Digests, www.bre.co.uk

'Acoustics in the Built Environment – advice for the design team', Duncan Templeton, editor.

Sustainable Drainage Systems

'Framework for Sustainable Drainage Systems SuDS in England and Wales', Environment Agency/National SuDS Working Group, 2003

Ecology

'Guide for Trees in relation to Construction', British Standard 5837, 1991

Planning Policy Guidance 9 PPG 9 *'Nature Conservation',* ODPM 2005

'Working with Wildlife' CIRIA www.ciria.org.uk

'Biodiversity Indicators for Construction Projects', CIRIA

Urban Villages

'Urban Villages', Tony Aldous, The Urban Villages Forum

'Urban Villages – An Introduction', Institution of Civil Engineers, www.ice.org.uk/rtfpdf/BS-Urban Villages.pdf

Tall Buildings

'UK Tower Proposals – Tall Buildings', Michael Short.

A paper for debate, www.glasgowarchitecture.co.uk/tall_buildings.htm

'Guidance on Tall Buildings – London', English Heritage and CABE

'Tall Buildings: A Strategic Design Guide', Ziona Strelitz, editor

Homezone Design

'Homezones – A planning and design handbook', Mike Biddulph, The Joseph Rowntree Foundation

The spaces between buildings

'Streets for All' – English Heritage, 2004 www.english-heritage.org.uk

Public Art

'Art in Public: What, Why and How' 1992 Editor: Susan Jones. ISBN 0 907730 18 3

Street Lighting

'A Guide for Crime and Disorder Reduction through Public Lighting Strategy', Institute of Civil Engineers, 1999

Building Materials

'Material Architecture: Emergent materials for innovative buildings and ecological construction', John Fernandez

Adaptable Buildings

'Architecture in a Climate of Change: a guide to sustainable design', Peter F Smith

Energy Efficiency

'Ecohouse 2: a design guide', Sue Roaf and others, 2003 *'Rough Guide to Sustainability',* Brian Edwards and Paul Hyett, 2001 *'Daylight Design of Buildings',* Nick Baker and Koen Steemers, 2002

'Adapting to Climate Change – a checklist for development', South East Climate Change Partnership, c/o SEEDA, Guildford.

Sustainable Construction:

'The Green Guide to Housing Specifications', J Anderson and N Howard, BRE, 2000

'Environmental Site Layout Planning', Littlefair et al, BRE, 2000

'Renewable Energy', Godfrey Boyle, editor, Oxford University Press, ISBN 0 19 926178 4

'Waste minimisation and recycling in construction', CIRIA

Development Briefs

'The Councillor's Guide to Urban Design', CABE, www.cabe.org.uk

Design Management

Design management flowchart in: *'The Urban Design Compendium',* English Partnerships and CABE, by Llewelyn-Davies, 2000

Design Process – Masterplans

'Creating Successful masterplans – a guide for clients', CABE, 2004

Design Codes

'Building Sustainable Communities: The use of design codes', CABE, 2003

'Upton Northampton Urban Framework Plan and Design Codes', English Partnerships, www.englishpartnerships.co.uk

Statement of Design Principles

Design Statement *'By Design',* ODPM and CABE, 2000

'The Dictionary of Urbanism', Streetwise Press, 2003

Design Competitions

Refer to Kent Architecture Centre, 01634 401166 www.architecturecentre.org

'Environmental Planning for Site Development', E & FN Spon, 1990

'Planning and Development Briefs – a guide to better practice', Llewelyn-Davies, DETR, 1998, ISBN 1 851120 69 6

'Planning and Design', The Planning Officers' Society, Local Government Association, 1999

'The Community Planning Handbook', Nick Wates, Earthscan Publications, 2000

'Placecheck – A User's Guide', Urban Design Alliance, 2000

Contacts

The Architecture Centre
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Chatham
Kent ME4 4TZ
T 01634 401166
F 01634 403302
E info@kentarchitecture.co.uk
www.architecturecentre.org

British Urban Regeneration Association
63 – 66 Hatton Garden
London EC1N 8LE
T 0800 018 1260
F 020 7359 9614
E info@bura.org.uk
www.bura.org.uk

Civic Trust
Essex Hall
1 – 6 Essex Street
London WC2R 3HU
T 0202 7359 7900
F 020 7539 7901
E info@civictrust.org.uk
www.civictrust.org.uk

Commission for Architecture & the Built Environment (CABE)
1 Kemble Street
London WC2B 4AN
T 020 7070 6700
F 020 7070 6777
e enquiries@cabe.org.uk
www.cabe.org.uk

Creative Environmental Networks (CEN)
Kent Energy Centre
3rd Floor International House
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Kent TN23 1HU
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F 01233 646966
E enquiries@cen.org.uk
www.kentenergycentre.org.uk

English Heritage
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F 01483 252001

English Partnerships
Central Business Exchange II
414 – 428 Midsummer Boulevard
Central Milton Keynes MK9 2EA
T 01908 692692
F 01908 691333

Environment Agency
Orchard House
Endeavour Park
London Road
Addington
West Malling
Kent ME19 5SH
T 08708 506506
www.environment-agency.gov.uk

Institution of Civil Engineers
1 Great George Street
London SW1P 3AA
T 020 7222 7722
E engineering@ice.org.uk
www.ice.org.uk

Kent Design Initiative
c/o Regeneration & Economy
Kent County Council
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Maidstone
Kent ME14 1XX

T 01622 696875
F 01622 676768
www.kent.gov.uk (search Kent Design guide)

Kent Wildlife Trust
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T 01622 662012
E info@kentwildlife.org.uk

Landscape Institute
6 – 8 Barnard Mews
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F 020 7350 5201
E mail@l-i.org.uk
www.l-i.org.uk

Office of the Deputy Prime Minister
Enquiry Service
T 020 7944 4400
F 020 7944 6589
www.odpm.gov.uk

Royal Institute of British Architects (RIBA)
66 Portland Place
London W1N 4AD
T 020 7307 3700
F 020 7436 9112
E info@inst.riba.org
www.architecture.com

Royal Institute of Chartered Surveyors (RICS)
c/o Elite UK Serve
Internet House
33 Kingston Crescent
Portsmouth
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T 0870 741 5898
E admin@ricsonline.net

Royal Town Planning Institute (RTPI)
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F 020 7929 9490
www.rtpi.org.uk

South East Regional Design Panel
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Sustainable Development Commission
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T 0202 7238 4988
F 020 7238 4981
E sd.commission@defra.gsi.gov.uk
www.sustainable-development.gov.uk

Urban Design Group
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London EC1M 6EJ
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F 020 7250 0872
www.udg.org.uk

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Ashford Borough Council
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Tannery Lane
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T 01233 330240
F 01233 330682
E media@ashford.gov.uk
www.ashford.gov.uk

Canterbury City Council
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Military Road
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Kent CT1 1YW
T 01227 862157
F 01227 862020
www.canterbury.gov.uk

Dartford Borough Council
Civic Centre
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Dartford
Kent DA1 1DR
T 01322 343631
F 01322 343047
E webdev@dartford.gov.uk
www.dartford.gov.uk

Dover District Council
Council Offices
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T 01304 872480
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E ce@dover.gov.uk
www.dover.gov.uk

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Windmill Street
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T 01474 337555
F 01474 337531
www.gravesham.gov.uk

Kent County Council
County Hall
Maidstone
Kent ME14 1XQ
T 08458 247247
F 01474 337531
www.kent.gov.uk

Medway Council
Compass Centre
Chatham Maritime
Chatham
Kent ME4 4YH
T 01634 331721
F 01634 331125
www.medway.gov.uk

Sevenoaks District Council
Argyle Road
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Kent TN13 1HG
T 01732 227494
F 01732 451283
E information@sevenoaks.gov.uk
www.sevenoaks.gov.uk

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Castle Hill Avenue
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F 01303 258288
E shepway@shepway.gov.uk
www.shepway.gov.uk

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East Street
Sittingbourne
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T 01795 417375
F 01795 417417
www.swale.gov.uk

Thanet District Council
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PO Box 9
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T 01843 577153
F 01843 298610
www.thanet.gov.uk

Tonbridge & Malling Borough Council
Gibson Building,
Gibson Drive
Kings Hill
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T 01732 876268
F 01732 876317
E admin.services@tmbc.gov.uk
www.tmbc.gov.uk

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F 01892 554076
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www.tunbridgewells.gov.uk

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West Kent Division
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Kent Design Guide Review: Interim Guidance Note 1
20 November 2008

QUALITY AUDITS

KENT DESIGN GUIDE REVIEW: INTERIM GUIDANCE NOTE 1

Kent Highway Services

KentDesign

INTRODUCTION

Quality Audits are nothing new. But the title, as used in Manual for Streets (Department for Transport, Communities & Local Government and Welsh Assembly Government, March 2007), gives formal recognition to the process by which proposed developments are assessed for their overall potential to be 'good places to live'. They focus on the public realm, that is, the areas within a proposed development where people will move and meet. These areas are also important service corridors, above and below the surface.

The Kent Design Guide (Kent Design Initiative, December 2005) clearly embraces the Quality Audit concept. Vision for Kent (Kent Partnership, April 2006) seeks 'attractive, safe and friendly' developments. Intelligent application of Quality Audits will help to deliver good places to live.

The Quality Audit is carried out by the Development Team. This team is assembled by the Local Planning Authority and is made up of all relevant professionals. Its purpose is to work with the developer's Project Team to achieve a high quality development that is attractive, functional and safe. Within the Development Team there will normally be at least one Development Planning Engineer representing Kent Highway Services. All development proposals which involve the creation of new streets (as part of the public realm) should be subject to a Quality Audit, albeit the team size and detailed approach should reflect the scale of the proposal.

Development Planning Engineers are primarily responsible for assessing the public realm for functionality and safety, and for making the highway authority's recommendation to the Local Planning Authority. The recommendation should be discussed with the Development Team before it is formalised. Road Safety Audits will normally figure in the assessment, but they will not direct it.

Kent Highway Services, in liaison with Kent's District Councils, is undertaking surveys of recent developments. The results are to be used to produce case studies highlighting good (and bad) examples of new streets that have been subject to some form of Quality Audit approach. Appendices A, B and C show ratings for the three Vision for Kent criteria, along with parking. Parking is included because it can have a significant impact upon people's quality of life (- see also Interim Guidance Note 3: Residential Parking).

COLLEGE GARDENS, WESTGATE-ON-SEA
Good materials and landscaping combine with quality design to achieve high levels of occupiers' satisfaction.

ROAD SAFETY AUDITS

Before a development proposal which includes new streets is approved at the planning stage it is normal for Kent Highway Services to require that a Stage 1 Road Safety Audit should be submitted by the developer's Project Team. Before the scheme is built a Stage 2 Audit will normally be required, and before it is adopted (if such is appropriate) a Stage 3 Audit will usually be carried out.

Development Planning Engineers should have the skills and experience to carry out informal Stage 1 Audits. They should also have the ability to interpret formal submissions and report to the Development Team on the relevance of any issues raised. Similarly, the developer's Project Team is not bound to follow the recommendations of the Audits, but must issue a response to them.

Stage 2 Audits can affect the approved layout long after the Development Team has ceased to function on a formal basis. However, Kent Highway Services should report any significant recommendations to the planning Case Officer before a decision is made whether to accept them and change the design. It is important for all those involved in post-planning implementation to understand that some such changes may require planning consent.

Stage 3 Audits assess the completed development. Representatives of the original Development Team should be offered the opportunity to visit the site in the knowledge of the Stage 3 Audit. This will bring closure to the design process and inform future schemes. Increasingly, surveys will be conducted to ask what residents think of new developments. Development Team representatives should be encouraged to review the results.

There is scope for Stage 4 Audits to be conducted up to three years after Stage 3. Whilst these will normally relate to particular concerns identified at Stage 3, it will improve the evaluation and improvement process if some Stage 4 Audits are carried out routinely. The findings of a Stage 4 Audits will not normally require any involvement on the part of the developer.

MILTON LANE, LACUNA, KINGS HILL
An award-winning development which is seriously compromised by parking problems.

QUALITY AUDITS

Quality Audits bring together the various assessments of public realm. The Development Team, and not individual professionals, decides on the balance to be struck between the outcomes. As such, Road Safety Audits have no superior status. Many Development

Planning Engineers have been making value judgements on attractiveness, functionality and safety for years. Increasingly, their role will be one of 'placemakers', hence they will become adept at interpreting Road Safety Audits and understanding the risks to which the findings direct the Project Team's attention. They will also develop the skills necessary to contribute positively and creatively to the placemaking agenda, not restricting themselves to the application of standards.

The Local Planning Authority's Case Officer will keep a record of the Quality Audit inputs and decisions. This will be sufficient to deal with enquiries in the very unlikely event of an incident being attributed to the design of the public realm. A copy of the Quality Audit should be kept on the planning file(s) and any subsequent adoption agreement file.

The following information should be included in the Quality Audit, preferably in a standard format:

- Site
- Developer
- Case Officer
- Development Team members
- Key meeting dates and venues
- Main issues discussed and decisions made at the meetings
- Dates of Road Safety Audits, and summaries of issues raised and responses made to them
- Date of Development Team "approval" of scheme
- "Approved" drawing numbers
- Date of planning consent
- Kent Highway Services' Agreement Engineer, where appropriate (if not a member of the Development Team)
- Record of construction phase issues affecting consented scheme
- Record of construction phase and completed scheme site visits
- Date of commencement and closure of Quality Audit process

An enhancement of the service offered to the occupiers of new developments would be for the developer to give them a copy of, or a web link to, the Design and Access Statement in the Welcome Pack, explaining the background to where they live. Such a package could also include a summary of, or link to, the Quality Audit.

THE BUILDING FOR LIFE STANDARD

The Building for Life standard (see www.buildingforlife.org) includes 20 criteria which "embody (the) vision of functional, attractive and sustainable housing" (Building for Life website). The four headings for these criteria are:

- Character
- Roads, Parking and Pedestrianisation
- Design and Construction
- Environment and Community

The majority of the criteria are relevant to Quality Audits.

The Building for Life standard has been endorsed by government, with the aim of helping to meet housing quality aspirations in Planning Policy Statement PPS3: Housing. As such, it is recommended for use as a Quality Audit framework.

MILLER CLOSE, WINGHAM
A housing association scheme on the edge of an historic village that is very much appreciated by the residents.

COMMUTED PAYMENTS

The long term costs of the maintenance at the public expense (and sometimes replacing at the end of the design life) of non-standard materials, special street furniture, traffic signals, non-standard drainage solutions and structures are usually passed on to the developer in the form of "commuted payments". In the case of materials and street furniture, there is a strong argument against requiring such payments if the items in question can be shown to be as durable as 'standard' materials (or even have a longer design life), and if there is no doubt about their ongoing availability. This is based on the premise that higher quality materials will normally cost more, and because they are required rather than being optional it is unreasonable to 'charge' for their maintenance if they are installed properly. The best way of offering certainty to developers over whether commuted payments will be required is to agree a 'standard (locally appropriate) palette' of high quality materials which are expected to be available for many years and which will be checked for proper installation during the construction phase. Such items will not normally be subject to extra payments.

ORLESTONE VIEW, HAM STREET
What appears to be a well designed development scores badly among residents on attractiveness, safety and parking.

CONCLUSIONS

Quality Audits are not new. If the Kent Design Guide is followed, Quality Audits will be carried out. Manual for Streets confirms that Road Safety Audits will inform Quality Audits, but they are only one aspect that should be considered.

Development Planning Engineers, and, where appropriate, Agreement Engineers, will be part of the Development Team that undertakes the Quality Audit. These engineers will have a responsibility to ensure that the Quality Audit process is not undermined when the development is constructed.

Many planners and engineers already possess the experience and skills needed to participate in Quality Audits. However, training and skills sharing will be required to help raise standards and bring about consistency of approach. In time, some form of placemaking accreditation should be developed.

A positive approach to Quality Audits will help to deliver attractive, safe and friendly developments that are good places to live. The Checklists that follow will help those involved in the Quality Audit process to identify relevant steps and to ensure that they understand their responsibilities.

MUSCOVY WAY, STILLWATER PARK, HERNE BAY
The use of ponds for drainage and as landscaping features creates a very attractive setting for the houses.

CHECKLISTS

1 PRIOR TO PLANNING APPROVAL

- Has the Local Planning Authority Case Officer been identified?
- Has the Development Team been formed? If not, is it clear who is involved in assessing the proposal?
- Are relevant documents, such as the Kent Design Guide, Manual for Streets and the Building for Life standard, understood by and accessible to all those involved?
- Has the developer's Project Team submitted enough information for the Development Team to begin its work?
- If a Stage 1 Road Safety Audit is required, has it been requested?
- Unless the proposal is straightforward, has a 'brainstorming session' been arranged for the Development Team, possibly with the developer's Project Team, to discuss the scheme at an early stage?
- Are the details of street materials and furniture being discussed by the Development Team, with a clear understanding of what items may attract additional maintenance payments should they be offered for adoption?
- Are members of the Development Team clear of their responsibilities, including the programme for assessments to be made and reported?
- Is the Development Control recommendation and decision making procedure clear to all?
- Is the recommendation of the Development Team, and its individual members, properly documented?

2 CONSTRUCTION AND OCCUPATION

- If the streets are being offered for adoption, was the Kent Highway Services Agreement Engineer in question part of the Development Team? If not, has she/he been fully appraised of the approved design and how it was arrived at?
- Is the developer's consultant fully aware of the details of the approved scheme? As above, if she/he has not previously engaged with the Development Team there needs to be a thorough briefing.
- Is the planning Case Officer aware of her/his continuing role when Stage 2 and 3 Road Safety Audits are submitted? Are other members of the Development Team to be involved?
- Is the Agreement Engineer clear that all significant changes recommended during checking and construction must be referred to the planning Case Officer, preferably through the Development Planning Engineer?
- When the Stage 3 Road Safety Audit report is available, has the Case Officer (and other Development Team members) been appraised of its findings?
- If further monitoring, and/or a Stage 4 Road Safety Audit, is proposed, has the Case Officer been advised?
- Are all post-planning stages of the Quality Audit process properly documented?

APPENDIX A - RESIDENTS' SURVEYS: PARKING & VISION FOR KENT RATINGS
Ashford - Canterbury

DISTRICT Development	PARKING	SAFETY	ATTRACTIVENESS	FRIENDLINESS	TOTAL	RETURN
ASHFORD						
Highland Park (part)	-76%	+5%	+48%	+16%	127	58
Mill Court	-26%	+34%	+46%	+43%	105	35
Miller Close	+50%	+20%	+50%	+70%	22	10
Orlestone View	-57%	-19%	-14%	+29%	46	21
Sir John Fogge Avenue	-43%	+13%	+13%	+26%	56	23
CANTERBURY						
Aurelie Way	+15%	+85%	+85%	+69%	18	13
Barnes Way (part)	-40%	+44%	+60%	+56%	49	25
Blackberry Way	+60%	+85%	+85%	+80%	28	20
Canterbury Fields	+15%	+73%	+85%	+55%	123	40
Charollais Close	+17%	+33%	+25%	+42%	148	50
Chartham Heights (SE)	+14%	+64%	+79%	+79%	35	14
Chartham Heights (V Core)	+12%	+46%	+50%	+44%	28	12
Cordingham Close	0%	0%	-11%	-44%	41	9
Dextor Close	-13%	+38%	-13%	0%	20	8
Eider Close	-18%	+82%	+100%	+100%	17	11
Eversleigh Rise	+16%	+31%	+53%	+72%	73	32
Gilbert Way	+10%	+24%	+57%	+29%	72	21
Great Stour Place	+18%	+82%	+45%	+18%	31	11
Mallard Cl/Muscovy Way	+60%	+80%	+93%	+69%	30	15
Pochard Crescent	-13%	+43%	+60%	+53%	89	30
Quinneys Place	-50%	+38%	0%	+13%	16	8
Ruskins View	-22%	+67%	+89%	+56%	20	9
Scott Ave & Birch Rd	+45%	+50%	+55%	+41%	78	22
Speedwell Road	+56%	+70%	+33%	+81%	59	27
Walden Court	+31%	+46%	+77%	+31%	39	13
Wallis Court	-63%	-25%	+25%	+38%	12	8
West of Hersden	-21%	+32%	+34%	+47%	207	73
Willow Farm Way	+9%	+42%	+55%	+33%	69	33

For derivation of RATINGS and COLOUR KEY see Appendix C

APPENDIX B - RESIDENTS' SURVEYS: PARKING & VISION FOR KENT RATINGS
Dartford – Swale

DISTRICT Development	PARKING	SAFETY	ATTRACTIVENESS	FRIENDLINESS	TOTAL	RETURN
DARTFORD						
Bexley Park (part)	-21%	+34%	+39%	+55%	90	38
Palladian Circus	-29%	+52%	+90%	+67%	44	21
Stonechat Mews	-67%	+78%	+100%	+67%	23	9
Waterstone Park (part)	-39%	+20%	+48%	+20%	120	44
DOVER						
Miller Close	+54%	+54%	+100%	+77%	25	13
Sandwich Road	-44%	+31%	+78%	+47%	69	32
GRAVESHAM						
Fenners Marsh	+13%	+3%	+23%	+17%	109	30
Kendall Gardens	+7%	+36%	+50%	+57%	57	14
Rosherville Way (part)	+9%	+60%	+77%	+58%	96	43
MAIDSTONE						
Edelin Road	-85%	+8%	+38%	+62%	32	13
Shaw Close	-76%	+6%	+52%	+52%	55	33
SEVENOAKS						
Bentleys Meadow (H Zone)	-18%	+9%	+27%	0%	31	11
Parsonage Bank	0%	+88%	+63%	+88%	14	8
The Beeches	+18%	+72%	+80%	+70%	107	50
The Sidings	-31%	-6%	+13%	-13%	42	16
SHEPWAY						
Terlingham Village Ph.1	+67%	+69%	+89%	+89%	81	45
SWALE						
Finch Close	-83%	-26%	+31%	+45%	78	42
Hilton Close	-28%	+9%	+47%	+66%	56	32
Mallard Crescent	-45%	+28%	+59%	+45%	50	29
Orchard Edge	-75%	-12%	+54%	+62%	114	52
Sanderling Way	-23%	+3%	+46%	+38%	84	39

For derivation of RATINGS and COLOUR KEY see Appendix C

APPENDIX C - RESIDENTS' SURVEYS: PARKING & VISION FOR KENT RATINGS

Thanet – Tunbridge Wells

DISTRICT Development	PARKING	SAFETY	ATTRACTIVENESS	FRIENDLINESS	TOTAL	RETURN
THANET						
Brindle Grove	+14%	+78%	+71%	+50%	35	14
Chantry Park	-44%	+44%	+78%	+78%	23	9
College Gardens	0%	+82%	+100%	+100%	19	11
TONBRIDGE & MALLING						
Abbey Brewery Court	+14%	-29%	+71%	+29%	16	7
Anisa Close	-50%	-10%	+60%	+40%	17	10
Busbridge Close	+17%	+42%	+75%	+50%	22	12
Friars View	-50%	+45%	+40%	+25%	38	20
Lacuna (part) (1) & (2)	-67%	+7%	+37%	+28%	109	53
Milton Lane	-81%	-24%	+24%	+19%	48	21
McArthur Drive	-23%	+69%	+74%	+66%	58	35
Perch Close	-39%	+34%	+70%	+43%	56	23
The Gables, Friars View	-89%	-11%	+44%	+11%	18	9
Upper Mill	0%	+28%	+39%	+39%	40	18
TUNBRIDGE WELLS						
Blackberry Way	+22%	+61%	+72%	+67%	48	18
Green Lane	+50%	+43%	+100%	+63%	65	40

RATINGS are [("Very Good" + "Good") – ("Poor" + "Very Poor")] expressed as a percentage

COLOUR KEY		< 0%		>49%
		0% to +24%		+25% to +49%

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27 October 2008

Kent Design Guide Review: **Interim Guidance Note 2**

visibility

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introduction

The distance that drivers and riders need to be able to see ahead of them to avoid crashing into someone or something (or to reduce the risk of causing a crash), known technically as Stopping Sight Distance (SSD) and commonly as "visibility", can have a significant influence on the design of streets in new developments. Recent research has demonstrated what the Highway Code has long suggested: visibility distances in guidance spanning many years are unreasonably high. The **Kent Design Guide** (KDG – Kent Design Initiative, December 2005) uses these distances.

Manual for Streets (MfS – Department for Transport, Communities & Local Government and Welsh Assembly Government, March 2007) has captured the output from this research to examine:

a) the relationship between SSD, street widths and vehicles speeds, and
b) more appropriate levels of visibility.

MfS is directly relevant to lightly trafficked residential streets, albeit encouragement is given to apply its principles to busier and mixed use environments. SSD, on the other hand, is derived from three distinct factors which are not bound by this cautious approach.

In assessing planning proposals to make 'highway' recommendations, Development Planning Engineers (DPEs) have not applied visibility guidance consistently. Some have been flexible and others have adhered rigidly to what they regard as "the standards". While there is no clear evidence that connects substandard visibility with personal injury crashes in residential and mixed use environments, rigid application has often been driven by inadequate understanding (sometimes through a lack of training) and/or an exaggerated perception of risk

This Interim Guidance Note seeks to summarise SSD from first principles and then point those involved in the design and assessment of new developments towards a flexible yet safe approach to visibility in the public realm. This will help them in their "placemaking" role, which includes participation in the carrying out of Quality Audits (see Interim Guidance Note 1). Sections 7.4 – 7.8, and pages 89-94 in particular, of MfS are the basis for what follows, hence it is important that users should familiarise themselves with the detailed background. Section 7.6.3 covers driver and object heights, and how to have regard for sight line influences in the vertical plane. This aspect of visibility is unchanged, hence such aspects are not considered in this Note.

'Old standard' forward visibility curve which requires planting (except individual trees) to be maintained below reasonable growing height.

THE STOPPING SIGHT DISTANCE EQUATION

SSD is calculated using the following equation:

$SSD = vt + v^2/2d$

v = speed (or velocity) (m/s)

t = driver perception-reaction time (s)

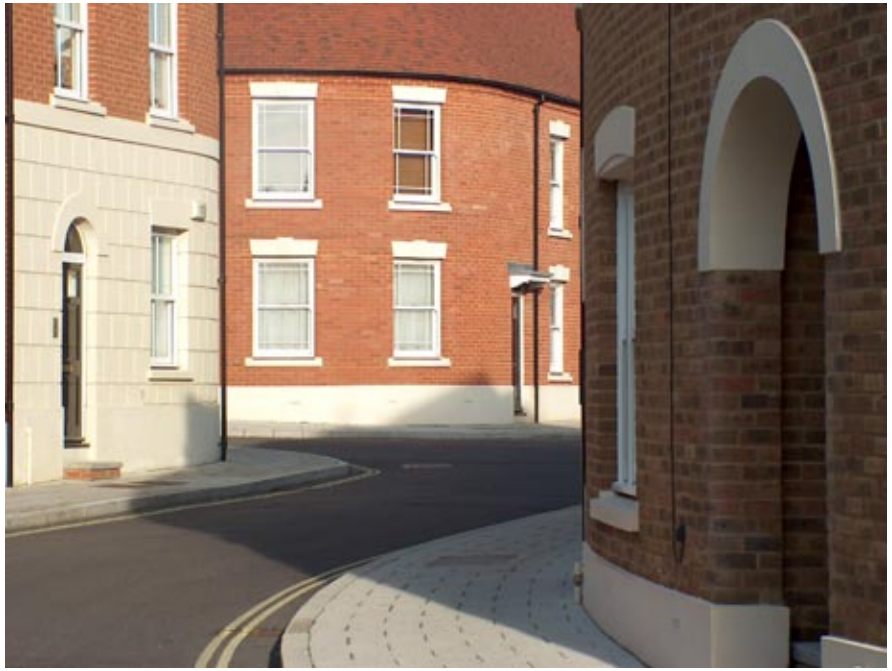
d = deceleration (m/s^2)

Speed is either a design parameter or a measured value. Driver perception-reaction time has been measured in tests. Deceleration depends on road surface and conditions as well as the braking capabilities of motor vehicles.

It is inappropriate for designers to 'experiment' with driver perception-reaction times (t), but they can use lower figures supported by credible rationale for risk assessment in difficult situations. MfS uses 1.5s, this being based on test values with a 67% increase as a factor of safety. It is over twice the value used for Highway Code distances, but the point is made that the Code reflects emergency stopping scenarios. Table 7.1 of MfS (see later) goes up to 37 mph (60 kph), hence it is reasonable to have confidence in the use of 1.5s for measured and design speeds below this figure. It is argued by some that times increase on higher speed roads because there are fewer visual influences, but it difficult to justify anything over 2s for situations where the Design Manual for Roads and Bridges (Highways Agency, 1992) is not directly applicable.

Deceleration (d) of 4.41m/s2 (0.45g) in MfS is based on a reasonable assessment of wet weather skid resistance. The Highway Code assumes 50% greater deceleration. As is the case for reaction times, there is little to commend adopting the highest possible value, but greater skid resistance due to surface type or use of the Highway Code figure can be applied for risk assessment purposes. Adjustment for gradient is necessary, to the tune of $0.98m/s^2$ for 10%, plus or minus according to the situation.

It follows from the above that for design purposes it is only speed (v) that really needs to be considered as a variable in the SSD equation. Difficult designs or tight existing situations can be tested against credible alternative values for reaction time and deceleration (derived from published research and the Highway Code). Good design should not rely on the least possible visibility. Equally, there is now no excuse for seeking excessive distances, especially when the relationship between speed, width and visibility is considered.



Acceptable forward visibility achieved without creating false building lines and/or widened footways.

SPEED RESTRAINT

Careful consideration of Figure 7.16 in MfS shows that for the kind of roads designers will normally be considering, positive speed restraint measures and/or layouts will be needed to create sub-20mph places. What the figure does indicate is that without such measures drivers tend to drive faster if there is more visibility available to them. The graphs do not encourage the use of very low visibility, in isolation, to achieve lower speeds.

Movement areas should be designed to restrain speeds to the target figure. The graphs offer reassurance that buildings and other physical influences (such as boundary treatment) can, and perhaps should, be used to reinforce such restraint. This will help with creating the built environment first and then identifying the public realm within it.

THE PROS AND CONS OF THE SSD TABLE

It has been argued that the publication of Table 7.1 (a simplified version of which is given below) in MfS simply replaces one set of "standards" with another. The authors of MfS were keen that designers should think about the equation and not rely upon a set of values: the table was imposed upon them. However, the table is a useful guide to the equation. Used properly, it indicates safe levels of visibility for a range of design speeds, without precluding reductions assessed in more detail using the equation. By definition, it also tells DPEs that they should not even consider recommending refusal of proposals which achieve the values shown, unless they have clear evidence of negative influences. As such, the values used in KDG, as shown in the DB32 (Design Bulletin 32) row of the table, are superseded.

STOPPING SIGHT DISTANCE GUIDANCE TABLE

SPEED	mph	**10**	12	**15**	16	19	**20**	**25**	28	**30**	31	37
	kph	**16**	20	**24**	25	30	**32**	**40**	45	**48**	50	60
SSD (nil gradient)	m	**11**	14	**17**	18	23	**25**	**33**	39	**43**	45	59
DB32 (superseded)	m	**14**		**23**			**33**	**45**		**60**		

(For measured speeds above 37 mph refer to the equation and earlier comments on the driver perception-reaction time)

False widening' of footway to meet junction visibility requirement.

JUNCTIONS

SSD is the 'major road distance' for junction visibility. The 'minor road distance', based on drivers being able to see along the street without their vehicles intruding into the trackway, does not need to be greater than 2.4m for the kind of environments to which MfS applies. In certain constrained situations, 2.0m will be acceptable subject to an assessment of the risks associated with longer bonnet vehicles using the junction (- for example, road debris will show how close to the channel line traffic normally passes). The key is to let the built form and placemaking lead the design: these distances will allow junctions to be tighter, in terms of appearance and use.

It will often be the case that 'visibility splays' can be wholly contained within the areas needed for safe, functional and attractive streets, without the need for awkward building arrangements or skewed boundary treatment. Designers, working with other development partners, should avoid obvious splays, since over-engineered designs are likely to be challenged through the Quality Audit process.

As regards the visibility available to drivers turning into junctions, low speeds and tight layouts will seldom warrant forward visibility envelopes beyond the public realm. However, this does mean that pedestrian crossing routes must not be set back where they might be hidden from view.

"PEDESTRIAN VISIBILITY"

Pedestrians walking (and children riding) along a street, whether on a footway or a shared surface, should not be hidden from the view of drivers emerging onto that street from driveways. This "pedestrian visibility" has historically been provided as triangular splays on both sides of the driveway, starting at 2.4m by 2.4m but reducing some years ago to 2.0m by 2.0m. Such splays have often been very obvious and unnecessarily intrusive.

Railings, planting and carefully designed walls and fences can provide drivers with a reasonable view of pedestrians, including young children, without appearing to have been imposed on the street layout. MfS (Sections 7.8.3 and 4) recommends initial assessment of need, careful design of necessary pedestrian visibility, and proper regard for the actual driver to pedestrian (and vice versa) line of sight scenarios rather than old style splays.

Examples of sight lines being achieved within necessary highway area, allowing for strong and flexible frontage treatment of properties.

CONCLUSIONS

'Visibility' is a significant safety issue. However, values used over many years have been found to be excessive. Furthermore, there is no direct correlation between inadequate visibility and personal injury crashes in residential developments. Indeed, excessive visibility can result in increased vehicle speeds. A more flexible and carefully considered approach to design, and the application of 'visibility standards', is now required.

The visibility equation has been used to produce a guidance table. Where values below those shown in the table are being proposed the equation can be used to test them. Good design will avoid making visibility requirements obvious. Refusals because of inadequate visibility should be tested against the equation.

This is a relatively simple subject, but one which requires intelligent interpretation. It is also one which can be allowed for in the design process without impacting upon the quality.

A Checklist is included below to assist with the use of this Guidance in the design and planning processes.

CHECKLIST

- What are the design speeds for each part of the development?
- Have speeds on existing streets been measured?
- What are the basic SSD distances for these speeds?
- Are gradients going to influence these distances?
- Are vertical curves going to have an impact?
- Is the layout 'design led' and subject to Development Team consideration?
- If visibility less than the 'table values' is shown, what are the risks, having regard for the equation and layout characteristics?
- Are junction sight lines accommodated within the public realm without imposing awkward arrangements of buildings and/or boundary treatments?
- When a layout is recommended for approval at the planning application stage, is it clear that it can be progressed to adoption if such is appropriate? (See Quality Audit Interim Guidance Note regarding post-planning continuation of the process)
- If refusal is recommended because of inadequate visibility, does the deficiency represent a significant risk to users of the street?
- Where "pedestrian visibility" is needed, is it accommodated unobtrusively in the design of boundary treatments?

Minimum interference with established hedge to achieve adequate visibility at junction.

Kent Design Guide Review: Interim Guidance Note 3

20 November 2008

RESIDENTIAL PARKING

Kent Highway Services

KentDesign

INTRODUCTION

Planning Policy Statement 3 (PPS3): Housing (Communities & Local Government (CLG), November 2006) requires that "Local Planning Authorities should, with stakeholders and communities, develop residential parking policies for their areas, taking account of expected levels of car ownership, the importance of promoting good design and the need to use land efficiently" (PPS3, Section 51). A subsequent report published by Communities and Local Government ("**Residential Car Parking Research**" (CLG, May 2007)) considers the various influences on levels of residential parking, pointing to data from the 2001 Census as a starting point for estimating "expected levels of car ownership".

The wording in PPS3 suggests that there may be reasons why not all guidance on levels of residential car parking needs to be expressed as 'maximum standards'. On the other hand, in certain locations it may be appropriate to limit car parking to achieve the most efficient use of land, usually in situations where there are also vehicular constraint policies. It is no longer acceptable for those involved in the development control process to cite residential parking 'standards'; rather, it is important that a range of factors should be considered before determining the appropriate levels of parking.

Travel Plans will often include maximum vehicular trip generation rates which, if exceeded, will trigger 'penalty' funding for mitigation measures. Such rates may be used in relation to reduced parking provision in appropriate locations, albeit the use of vehicles, especially at peak times, rather than ownership of them is the intended constraint. "Car Clubs" are a particularly useful feature of residential travel plans where travel flexibility without high car ownership is sought.

The previously adopted standards for residential parking in Kent, found in Supplementary Policy Guidance SPG4 of the Kent and Medway Structure Plan, are a reasonably accurate guide to the upper levels of expected ownership in the county. Further guidance in the SPG allowed interpretation of the standards down to levels appropriate in more constrained situations. However, the SPG needed to be used with proper interpretation. This Guidance Note is offered as the basis for residential parking policies in Local Development Frameworks (LDFs) across Kent, with the principles to be adopted for development control purposes as soon as possible. Adopted guidance in respect of **Cycle Parking** is not affected by the Note.

A Guidance Table is included towards the end of this Note. It suggests appropriate levels of parking for a range of situations. Local Planning Authorities may adopt this table and identify the areas within which particular levels will apply. Maps will help to support this approach. "The Census approach" is quite complicated, and is most relevant to large amounts of unallocated parking. Furthermore, it is not necessarily robust and needs to be the subject of **validation surveys**.

Kent Highway Services, in liaison with the Kent Design Initiative and Kent's district councils, is undertaking surveys of recent residential developments. Quality and quantity outputs from these surveys will assist with addressing the requirements of PPS3. At Appendices A and B, relevant results to date are tabulated, with additional comments to aid interpretation. These results represent a growing evidence base for this Guidance Note and the Guidance Table.

FACTORS TO BE CONSIDERED

Location has a significant influence on vehicle ownership. Where effectively enforced **on-street parking controls (or positively managed covenants/agreements)** limit the opportunities for residents to own cars that they cannot accommodate in dedicated parking areas, lower levels provision will not cause problems. Care needs to be taken in these situations to ensure that the reasonable needs of **visitors** are catered for, even if only in nearby public car parks. Similar considerations apply to the relevance of **garages** (as opposed to car ports and car barns without gates) as part of the parking provision. In areas without on-street controls, many people do not use garages, even if they have to park on the street as a result (see Appendices for evidence).

If on-street controls are needed to support the chosen approach to parking provision, these must be considered in relation to any potential for parking in neighbouring streets. Controls within the development can be imposed without public consultation (albeit purchasers must be advised of the intention to introduce them), but residents in streets affected by wider controls need to be involved in framing controls for inclusion in any traffic regulation orders. Section 106 Agreements can be used to secure funding for such orders, along with any additional enforcement.

Tenure is also relevant, albeit only where retention in perpetuity of tenancy controls is anticipated should the effect be considered. Census data indicates that privately owned dwellings have higher overall ownership levels than the social sector, albeit longer term high occupancy levels may undermine this in some cases. Similarly, **houses** have higher vehicle ownership levels than **flats.**

TERLINGHAM VILLAGE PHASE 1, HAWKINGE
Car barns figure in residents' appreciation of the parking provision and represent a positive aspect of the built form.

The **size** of properties is a key factor. Census data is expressed against the number of **habitable rooms**, whereas standards have normally been related to the number of **bedrooms**. Given the ranges involved, it is not difficult to move between the two approaches. Bedrooms are used in the Guidance Table.

Growth is considered in the CLG Report. Should a 25 year horizon be used with Census data? Such a precise approach to prediction may warrant the use of such a factor. The influence of **regeneration** has not yet been understood. If new development is bringing about socio-economic

improvement to an area the expectations for car ownership among its residents may be higher than exists within that area, hence the need for validation surveys of recent developments. Such surveys have already produced examples of ownership levels almost 0.9 vehicles per unit above the average Census figures for the wards in question, although there are also examples of close Census/survey correlation and some 'sub-Census' values. As such, a proper understanding of the various factors is essential if expected levels of car ownership are to be predicted with confidence.

Allocation of parking to individual units increases the amount of parking needed. **Non-allocated parking** makes use of different levels of ownership, including those without vehicles, to use the land given over to parking in the most efficient way. It can also satisfy the reasonable needs of **visitor parking** because of the occupancy patterns across the day. In Kent, few developers are currently pursuing schemes with non-allocated parking, especially for houses. However, a design-led allowance for on-street parking will normally be the best way to cater for visitors, and additional vehicles owned by residents, where there are no on-street restrictions in place.

Vans are an increasingly common sight in residential areas. Although covenants are often put in place in new developments to prevent such vans from being parked, they are seldom enforced. Modern working patterns often necessitate the parking of vans at home, hence there is a need to design with them in mind. Parking bay dimensions should be modelled on vans rather than cars.

PPS3 puts **good design** at the heart of parking provision in requiring "a design-led approach to the provision of car-parking space, that is well-integrated with a high quality public realm and streets that are pedestrian, cycle and vehicle friendly" (Section 16). English Partnerships' **Car Parking: What Works Where** (May 2006) offers detailed guidance on how to provide well-designed parking across a range of development scenarios. **Manual for Streets** (Department for Transport etc., March 2007) reinforces the need to consider a range of solutions, encouraging on-street provision in line with Section 16 of PPS3, and endorsing the guidance contained in the **Kent Design Guide** (Kent Design Initiative, December 2005) (Section 2.2.4).

It is clear from Appendices A and B that parking is a major cause of dissatisfaction, and sometimes even serious neighbour disputes, in otherwise good developments. Safety concerns are often associated with parking problems. In some cases there is enough parking but it isn't being used. A design-led approach to the provision of realistic amounts of parking will address these issues.

Residential parking is not just a 'numbers game'. On the negative side, refusals made without consideration of current guidance are likely to be criticised and may be inappropriate. On a more positive note, recent guidance offers all those involved the opportunity to get the amount, location and design of residential parking 'right' for the benefit of future residents, thus ending many years of dissatisfaction with ill-conceived approaches.

QUALITY AUDITS

Quality Audits bring together the various assessments of public realm. The Development Team, and not individual professionals, decides on the balance to be struck between the outcomes. As such, Road Safety Audits have no superior status. Many Development

Planning Engineers have been making value judgements on attractiveness, functionality and safety for years. Increasingly, their role will be one of 'placemakers', hence they will become adept at interpreting Road Safety Audits and understanding the risks to which the findings direct the Project Team's attention. They will also develop the skills necessary to contribute positively and creatively to the placemaking agenda, not restricting themselves to the application of standards.

MILTON LANE, LACUNA, KINGS HILL
Inconsiderate parking obstructs pedestrians and engenders safety concerns.

The Local Planning Authority's Case Officer will keep a record of the Quality Audit inputs and decisions. This will be sufficient to deal with enquiries in the very unlikely event of an incident being attributed to the design of the public realm. A copy of the Quality Audit should be kept on the planning file(s) and any subsequent adoption agreement file.

The following information should be included in the Quality Audit, preferably in a standard format:

- Site
- Developer
- Case Officer
- Development Team members
- Key meeting dates and venues
- Main issues discussed and decisions made at the meetings
- Dates of Road Safety Audits, and summaries of issues raised and responses made to them
- Date of Development Team "approval" of scheme
- "Approved" drawing numbers
- Date of planning consent
- Kent Highway Services' Agreement Engineer, where appropriate (if not a member of the Development Team)
- Record of construction phase issues affecting consented scheme
- Record of construction phase and completed scheme site visits
- Date of commencement and closure of Quality Audit process

An enhancement of the service offered to the occupiers of new developments would be for the developer to give them a copy of, or a web link to, the Design and Access Statement in the Welcome Pack, explaining the background to where they live. Such a package could also include a summary of, or link to, the Quality Audit.

MINOR DEVELOPMENTS

This Guidance Note relates primarily to development proposals involving new streets and places. The Guidance Table can be applied to minor (often infill) developments, but regard needs to be had for the severity of concerns about safety and/or amenity before recommendations of refusal are made in respect of numerically "inadequate" parking. Unless demonstrable harm is likely to be caused, it may be inappropriate to make such recommendations. Streets with existing parking problems (usually in the evenings and at weekends) may be identified for inclusion in Development Control and/or Local Development Framework policies.

FINCH CLOSE, FAVERSHAM
All residents who responded to a satisfaction survey feel that there are parking problems in the street.

CONCLUSIONS

Residential parking has frequently been the greatest source of dissatisfaction among the residents of new developments. This has often been because of ill-conceived experiments with the amount and/or location of spaces. Otherwise good developments have been blighted by inconsiderate, and sometimes dangerous, parking. Current guidance addresses the complex issues and leaves no excuses for poor layouts. It also encourages Local Planning Authorities to develop parking policies which take account of these factors, offering the opportunity to provide a range of sustainable solutions, including developments with low or even zero parking provision.

All parties involved in the design and assessment of new developments should be following current guidance by identifying parking provision that satisfies reasonable demand, is well-designed and makes the best use of the land available. The Checklist that follows will help practitioners to give full and proper consideration to all relevant factors.

NOTE: Retirement and other residential developments with particular occupancy controls are not covered by this Note. While some of the principles are applicable, specialist providers have tended to develop their own evidence base for such accommodation.

TERLINGHAM VILLAGE PHASE 1, HAWKINGE
Street trees provide visual interest in public realm that readily absorbs necessary on-street parking.

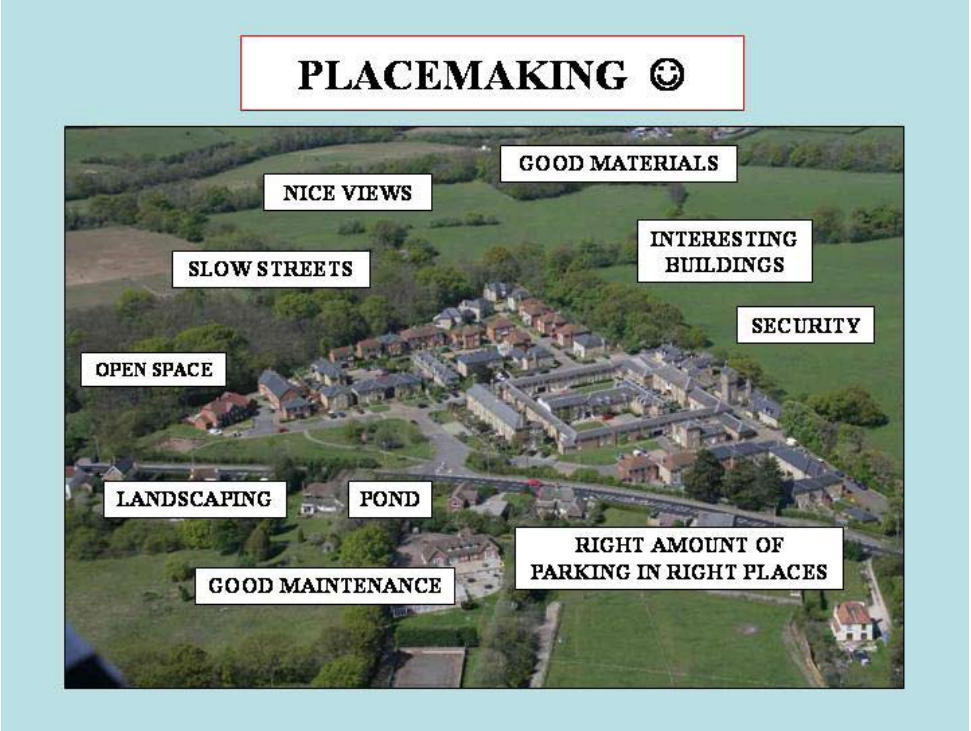
CONCLUSIONS

Quality Audits are not new. If the Kent Design Guide is followed, Quality Audits will be carried out. Manual for Streets confirms that Road Safety Audits will inform Quality Audits, but they are only one aspect that should be considered.

Development Planning Engineers, and, where appropriate, Agreement Engineers, will be part of the Development Team that undertakes the Quality Audit. These engineers will have a responsibility to ensure that the Quality Audit process is not undermined when the development is constructed.

Many planners and engineers already possess the experience and skills needed to participate in Quality Audits. However, training and skills sharing will be required to help raise standards and bring about consistency of approach. In time, some form of placemaking accreditation should be developed.

A positive approach to Quality Audits will help to deliver attractive, safe and friendly developments that are good places to live. The Checklists that follow will help those involved in the Quality Audit process to identify relevant steps and to ensure that they understand their responsibilities.



Parking is the most complained about aspect of recently completed developments.

CHECKLISTS

- Has the applicant demonstrated an understanding of current guidance on residential parking in the submission?
- Are there local parking policies for which the proposal must have regard? If not, are such policies in the course of preparation?
- If on-street controls are needed, are all necessary mechanisms for introducing these understood and funding agreed?
- Does the submission take account of location, tenure, size and type of accommodation?
- Is there a Travel Plan which includes maximum vehicular trip rates? If so, are these linked to reduced parking provision?
- Does the developer intend to establish a Car Club?
- Is the layout design-led in relation to parking provision, including on-street parking where appropriate?
- Has regard been had for expected levels of ownership?
- Should growth be considered, and are there regeneration influences to be taken account of?
- Has non-allocation of parking been considered?
- If garages are included, are they likely to be used?
- What allowance has been made for visitor parking, and are the habits of visitors understood?
- Are there any 'risks' associated with the layout, such as indiscriminate parking, commercial vehicle parking and hindrance to emergency service access?
- Would you be happy to live with the amount and design of the parking shown?

SCOTT AVENUE, CANTERBURY
A design-led approach to parking, achieved through close co-operation, has resulted in good streets and few problems

GUIDANCE TABLE FOR RESIDENTIAL PARKING

LOCATION	CITY/TOWN CENTRE	EDGE OF CENTRE	SUBURBAN	SUBURBAN EDGE/VILLAGE/RURAL
ON-STREET CONTROLS	On-street controls preventing all (or all long stay) parking	On-street controls, residents' scheme and/or existing saturation (Note 3)	No, or very limited, on-street controls	No on-street controls, but possibly a tight street layout
NATURE OF GUIDANCE	MAXIMUM (Note 1)	MAXIMUM	MINIMUM (Note 6)	MINIMUM (Note 6)
1 & 2 BED FLATS	1 space per unit	1 space per unit	1 space per unit	1 space per unit
FORM	Controlled (Note 2)	Not allocated	Not allocated	Not allocated
1 & 2 BED HOUSES	1 space per unit	1 space per unit	1 space per unit	1.5 spaces per unit
FORM	Controlled (Note 2)	Allocation possible	Allocation possible	Allocation of one space per unit possible
3 BED HOUSES	1 space per unit	1 space per unit	1.5 spaces per unit	2 independently accessible spaces per unit
FORM	Controlled (Note 2)	Allocation possible	Allocation of one space per unit possible	Allocation of one or both spaces possible
4+ BED HOUSES	1 space per unit	1.5 spaces per unit	2 independently accessible spaces per unit	2 independently accessible spaces per unit
FORM	Controlled (Note 2)	Allocation of one space per unit possible	Allocation of both spaces possible (Note 7)	Allocation of both spaces possible (Note 7)
ARE GARAGES ACCEPTABLE? (Note 4)	Yes, but with areas of communal space for washing etc.	Yes, but not as a significant proportion of overall provision	Additional to amount given above only	Additional to amount given above only
ADDITIONAL VISITOR PARKING (Note 5)	Public car parks	Communal areas, 0.2 per unit maximum	On-street areas, 0.2 per unit	On-street areas, 0.2 per unit

NOTES

1. Reduced, or even nil provision is encouraged in support of demand management and the most efficient use of land.
2. Parking/garage courts, probably with controlled entry.
3. Reduced, or even nil provision acceptable for rented properties, subject to effective tenancy controls.
4. Open car ports or car barns acceptable at all locations, subject to good design.
5. May be reduced where main provision is not allocated. Not always needed for flats.
6. Lower provision may be considered if vehicular trip rate constraints are to be applied in connection with a binding and enforceable Travel Plan.
7. Best provided side by side, or in another independently accessible form. Tandem parking arrangements are often under-utilised.

DISTRICT Development	**PARKING RATING** (Note 1)	**PARKING PROBLEMS** (Note 2)	**VEHICLES PER UNIT**	2001 CENSUS VEHICLES PER UNIT	**GARAGE USED FOR PARKING**	**COMMENTS**
ASHFORD						
Highland Park (part)*	-76%	+79%	1.40	1.36	59%	Need to check for covenants/agreements re parking
Mill Court	-26%	+14%	1.26	1.26	45%	Close to town centre and station
Miller Close	+50%	-60%	1.00	1.26	n/a	Off Mill Court
Orlestone View	-57%	+52%	1.38	1.73	43%	Near village centre
Sir John Fogge Avenue*	-43%	+30%	1.61	1.40	53%	In regeneration area
CANTERBURY						
Aurelie Way	+15%	-54%	1.46	1.35	25%	Close to Tesco and secondary school
Barnes Way	-40%	+28%	1.56	1.39	33%	Suburban edge
Blackberry Way	+60%	-60%	1.75	1.39	33%	Suburban edge
Canterbury Fields	+15%	-10%	1.48	1.49	50%	On frequent bus route
Charollais Close	+17%	0%	1.16	1.25	n/a	Housing association development fairly close to major facilities
Chartham Heights (SE)	+14%	-14%	1.43	1.65	18%	Development has convenience store and bus service
Chartham Heights (V Core)*	+12%	-8%	1.68	1.65	51%	Development has convenience store and bus service
Cordingham Close*	0%	-11%	1.00	1.44	n/a	Housing association development on suburban edge
Dextor Close	-13%	+50%	1.13	1.25	n/a	Close to major facilities
Eider Close	-18%	+27%	2.27	1.38	50%	Close to secondary school
Eversleigh Rise	+16%	-18%	1.50	1.35	37%	Close to Tesco and secondary school
Gilbert Way	+10%	+14%	1.33	1.21	45%	Close to retail park and Park & Ride
Great Stour Place*	+18%	+9%	1.00	1.25	(100%)	Fairly close to City centre, station etc.
Mallard Close/Muscovy Way	+60%	-33%	1.87	1.38	38%	Suburban edge, fairly close to station
Pochard Crescent	-13%	+13%	1.73	1.38	58%	Fairly close to station
Quinneys Place*	-50%	+100%	1.50	1.27	(66%)	Very close to station, shops and frequent bus route
Ruskins View	-22%	+33%	1.67	1.49	n/a	Village centre, close to frequent bus route
Scott Ave & Birch Rd	+45%	-27%	1.27	1.21	50%	Design led approach to parking, including on-street areas
Speedwell Road	+56%	-48%	1.89	1.44	44%	Suburban edge
Walden Court*	+31%	-23%	1.46	1.25	n/a	Fairly close to major facilities
Wallis Court	-63%	+75%	1.63	1.39	(0%)	Parking problems relate primarily to nearby school
West of Hersden	-21%	+29%	1.51	1.62	42%	Village extension in mainly rural ward
Willow Farm Way	+9%	+3%	2.21	1.49	48%	Neighbour problems over parking in two parts
DARTFORD						
Bexley Park (part)	-21%	+26%	2.08	1.56	56%	Shops at entrance to development
Palladian Circus*	-29%	+43%	1.52	1.50	50%	Fastrack frequent bus service runs past Ingress Park
Stonechat Mews*	-67%	+78%	1.11	1.50	(100%)	Fastrack runs nearby

Waterstone Park (part)*	-39%	+50%	1.41	1.50	47%	Fastrack runs nearby
DOVER						
Miller Close, Wingham	+54%	+8%	1.00	1.62	n/a	Village edge
Sandwich Road, Ash	-44%	+31%	1.78	1.35	41%	Village edge
GRAVESHAM						
Fenners Marsh*	+13%	-7%	1.33	1.11	67%	Suburban edge
Kendall Gardens	+7%	+29%	1.14	1.25	(50%)	Close to shops
Rosherville Way (part)	+9%	-6%	1.72	1.25	62%	In former quarry, fairly close to shops
*Admirals Way***	n/a	+22%	1.09	0.78	n/a	In regeneration area
*Baltic Wharf***	n/a	+90%	1.05	0.84	n/a	Close to town centre
*Covesfield**	n/a	-42%	1.33	1.25	n/a	Close to shops

(For Key see Maidstone – Tunbridge Wells)

APPENDIX B - **RESIDENTS' SURVEYS: PARKING: MAIDSTONE – TUNBRIDGE WELLS**

DISTRICT Development	**PARKING RATING (Note 1)**	**PARKING PROBLEMS (Note 2)**	**VEHICLES PER UNIT**	2001 CENSUS VEHICLES PER UNIT	**GARAGE USED FOR PARKING**	**COMMENTS**
MAIDSTONE						
Edelin Road*	-85%	+85%	1.46	1.51	(25%)	25% of properties not occupied at time of survey
Shaw Close	-76%	+76%	1.97	1.43	45%	Close to Park & Ride
SEVENOAKS						
Bentleys Meadow (H Zone)*	-18%	+27%	1.45	1.90	n/a	Housing association development in mainly rural ward
Parsonage Bank	0%	+50%	1.63	1.61	n/a	Close to village centre
The Beeches	+18%	-12%	1.64	1.61	51%	Close to two railway stations, edge of town
The Sidings*	-31%	+50%	1.19	1.52	(17%)	Adjoins railway station on edge of settlement
SHEPWAY						
Terlingham Village Phase 1	+67%	-78%	1.71	1.60	50%	Part of major expansion of village
SWALE						
Finch Close	-83%	+100%	1.45	1.34	10%	Fairly close to town centre and station
Hilton Close	-28%	+44%	1.59	1.34	58%	Fairly close to own centre and station
Mallard Crescent*	-45%	+66%	1.72	1.76	25%	Connects with Sanderling Way
Orchard Edge	-75%	+81%	1.62	1.76	36%	Need to check for covenants/agreements re parking
Sanderling Way	-23%	+18%	1.85	1.76	41%	Connects with Mallard Crescent
THANET						
Brindle Grove	+14%	+43%	1.79	1.13	31%	Fairly close to station and bus routes
Chantry Park	-44%	+44%	2.11	1.54	45%	Village location
College Gardens	0%	-9%	1.73	1.18	78%	Moderate walk to shops & station; bus route passes site
TONBRIDGE & MALLING						

Anisa Close*	-50%	+60%	2.00	1.89	90%	Close to commercial centre of Kings Hill
Busbridge Close	+17%	-33%	2.08	1.58	58%	Fairly close to station
Friars View	-50%	+40%	1.85	1.71	42%	On-street problems blamed on flat occupiers; very close to station
Lacuna (part) (1) & (2)*	-67%	+81%	1.39	1.89	76%	Need to check for covenants/agreements re parking
Milton Lane	-81%	+62%	1.67	1.89	68%	Need to check for covenants/agreements re parking
McArthur Drive	-23%	+44%	1.57	1.89	69%	Need to check for covenants/agreements re parking
Perch Close*	-39%	+65%	1.57	1.69	(80%)	Need to check for covenants/agreements re parking
The Gables, Friars View**	-89%	+33%	1.22	n/a	n/a	On-street problems blamed on house occupiers
Upper Mill	0%	-12%	1.44	1.58	n/a	Fairly close to station
TUNBRIDGE WELLS						
Blackberry Way	+22%	-56%	1.44	1.51	58%	Off Green Lane
Green Lane	+50%	-85%	1.68	1.51	51%	Edge of town

CENSUS data is the average for owner-occupied houses except those in italics, which is the average for owner-occupied flats.

* Developments with a significant proportion (20% or more) of flats, for which Census data suggests that average vehicle ownership rates are lower.

** Developments with flats only.

Note 1 ("GOOD" + "VERY GOOD") – ("POOR" + "VERY POOR") expressed as a percentage of the overall response

Note 2 "YES" – "NO" expressed as a percentage

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