

Design Standards for New Housing Areas

supplementary planning guidance
consultative draft
October 2018



Design Standards for New Housing Areas SPG

Designing for a better integration of places, people and their movement needs

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EAST LOTHIAN COUNCIL:

Design Standards for New Housing Areas SPG

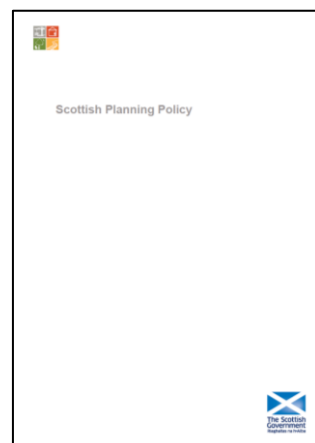
Designing for a better integration of places, people and their movement needs.

INTRODUCTION

Policy context

1.1 Scottish Planning Policy 2014 stresses the importance of integrated thinking on design, and the need to move away from standardised solutions and products and the dominance of the car in the way we shape our environment. Policy has challenged us to learn from the lessons of our past and present and to change the policies, processes and products that influence the design of housing areas that are built today. Now we must focus on what is possible: a full range and choice of house types, sizes and tenures; higher density, compact and mixed use energy efficient developments which reflect their local context and embody the best of our urban traditions; places where the needs of people and movement are better reconciled and well connected to their surroundings. Designing successful places requires commitment from all stakeholders to work together and facilitate, encourage and demand greater innovation, flexibility and detailed attention to design at an early stage. Delivering high quality development depends on a confident, successful and contemporary application of our traditional urban design principles and processes, and the willingness and ability of all involved to embrace, adapt and positively contribute to making change.

1.2 This move is supported by the Scottish Government's Creating Places, Designing Streets, PAN44: Fitting new housing into the landscape, PAN 67: Housing Quality, PAN76: Residential Streets, PAN77: Designing Safer Places, PAN78: Inclusive Design, Secure by Design and the Scottish Executive's consultation on Home Zones (published 2002). Section 74 of the Transport (Scotland) Act 2001 provides the legal basis to create Home Zones in Scotland. East Lothian Council's Standards for Development Roads set out a full range of road designs that can be used and that will be adopted by the Council. Residential layouts are at the heart of making places safe, legible and welcoming, and must support integrated land use and transport. Designing better places to live that improve the integration of places, people and their movement needs represents a move towards realising such objectives.

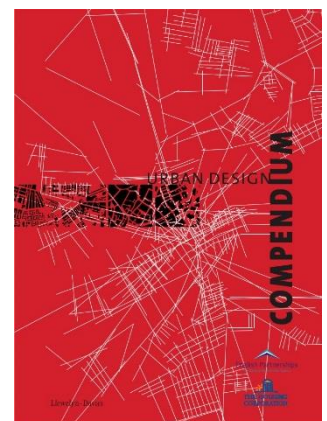
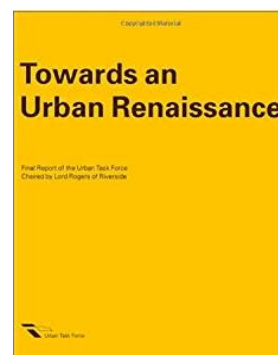
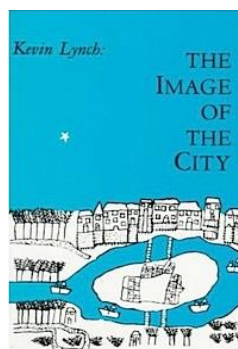


Purpose of these standards

- 1.3 These standards revise and draw together in to a single document East Lothian Council's key planning and transportation requirements for the design of new housing areas. Within this, shared surfaces and Home Zones are an important part of the Council's drive to improve the design quality of such areas, and to better integrate people, places and their movement needs. The Council's Planning Service, in consultation with other service departments, including Transportation, Landscape, Sustainability & Climate Change, and Waste, jointly prepared these standards. This approach represents the Council's commitment to raising the design quality of housing areas and to ensure that the principles and outcomes of these design standards are corporately supported, embraced and implemented.
- 1.4 The standards are to be adopted by East Lothian Council as Supplementary Planning Guidance in support of the policies of the East Lothian Local Development Plan 2018. They set out core urban design principles for new housing areas, consistent with those of Scottish Planning Policy and Advice. The standards require the design of new housing areas to be based on the careful positioning of buildings in relation to one another in a way that is responsive to the key features of the site and the surrounding environment, recognising that this is at the heart of designing successful places. To ensure this is possible the previous road design standards and road hierarchy have been reviewed and greater flexibility to them introduced. In particular, the design requirements for tertiary streets have been replaced with those for Home Zones. A great variety of housing environments can be created by a designer's creative skill and vision in the interpretation, expression and application of these standards.
- 1.5 In general terms these design standards require priority to be given to the design of public space to ensure the distribution,

composition and edge treatment of it complements how it will be used. Buildings and the selected land uses in them must be carefully positioned in relation to one another to define and produce the framework for creating people orientated public space and traffic movement and speed must be appropriately controlled in it, consistent with its intended use. The building layout is to be prioritised so roads do not dictate the form of the built environment and so vehicles do not dominate the appearance, function and use of space between buildings. Road layouts will complement building layouts and use the minimum design requirements necessary to provide satisfactory access and slow vehicle speeds, ensuring that Home Zone principles can be brought forward wherever possible.

- 1.6 The standards aim to ensure the urban design of new housing areas is improved and that the extent of shared surfaces and Home Zone treatment in them are maximised. Three-dimensional spatial masterplans that establish among other matters the distribution of development densities, development block and plot subdivisions, building types and heights, and the proposed land uses and movement patterns will be key to coordinating the delivery of high quality design as well as determining the location and extent of shared surfaces and Home Zone treatment possible in new development. Such masterplans will create a clear vision for a place, identify the shared surface or Home Zone areas and then control the form of development and the process of delivery to that end. In so doing, masterplans will establish a suitably detailed design philosophy for a site that sets the context for determining land value, and controlling the successful delivery of a housing development in the planning, design, market and commercial context.



1.7 The Design Standards SPG first identifies a Design Checklist that must be used to shape and form development layouts. It sets out the key urban design principles for establishing the layout and form of large housing areas including settlement expansion, and the principles that also apply to large scale housing developments and then smaller scale developments. It focuses on placemaking, sense of place, sustainability, inclusivity, safety and access for all. Key design requirements such as open space, green networks, housing design and tenure mix, and parking apply to all scales of residential development. The SPG then moves on to provide more detailed design techniques for these principles and looks at the technical considerations such as junction design, visibility splays, footpath width etc. The standards also set out the minimum geometric and technical road requirements that will be adopted by the Council and the importance of using correct materials and securing satisfactory maintenance arrangements is highlighted. Developers must always provide adequate information to the satisfaction of the Council to demonstrate the merits of their design. For larger sites this must be through a masterplan, as set out in LDP 2018 policy DP4.

What are Home Zones and Shared Surfaces?

1.9 Shared surfaces and Home Zones are an important part of the Council's drive to improve the design of new housing areas. A Home Zone is a particular part of a residential area where public space between buildings is designed to allow people and vehicles to share it on equal terms. These areas will be accessed from primary streets and created in tertiary streets. They can take the form of a residential street, square, circus, courtyard, mews, lane or two or more linked culs-de-sac, or a network of these, which is designed to ensure that the quality of life in the residential area takes precedence over ease of vehicle movement. For this reason

shared surfaces and Home Zones will form part of a well-connected network of public spaces which will encourage walking and cycling. They are also designed and equipped to support community activities in the public space and can include communal areas equipped with, for example, items of play, games, seating and barbeque areas etc.

1.10 In Home Zones such designs will usually result in narrow shared surface roads with built in elements (e.g. chicanes / islands and speed humps / raised tables) combined with vertical traffic calming measures (e.g. trees / hedges / planters / walls) to limit, by design, traffic speeds to no more than 10 mph. The good use of both hard and soft landscaping in Home Zones is fundamental to securing their aesthetic and speed reduction objectives.

1.11 Home Zones help promote social inclusion, encourage sustainable urban living and improve the quality of the urban environment.

In summary, Shared surfaces and Home Zones are designed to:

- Create a visually attractive environment with a distinctive sense of place and identity;
- Support community activity and play in public space that cars would otherwise dominate;
- Reduce social isolation, particularly for the elderly and those with mobility problems;
- Minimise influence of roads and vehicles on layout, appearance and use of public space;
- Spread vehicle and pedestrian traffic through a network of streets rather than focusing on one or two key routes;
- Minimise culs-de-sac to provide pedestrian and cyclist friendly layouts;
- Maintain a low risk of accident and injury on roads by ensuring a maximum vehicle speed of 10 mph by design.

The Council's detailed design requirements and standards for new housing areas and for provision of shared surfaces and Home Zones within them are set out below.

The Design Toolkit

The following is a Design Toolkit that has been developed to help built environment professionals design high quality developments that will add to the unique and rich built quality, architectural form and settlement pattern of East Lothian. The design principles and approach are based on best practice, up to date national policy and guidance, urban design theory, and professional experience, and provide a visual guide on how the policies within the Design chapter of the LDP 2018 are to be applied. The design principles can be applied to all types of development, although some will be more relevant than others depending on the scale of development being designed.

New settlement or major settlement extension

When designing a large scale development or settlement expansion, reference must be made to pages 5-8 of this SPG. The principles on the pages after this all apply to this development type and must focus in particular on establishing the urban form based on land use, infrastructure nodes and areas of greatest activity. Creating a sense of place through variety in the built environment, integrating existing natural features, and designing for movement and active travel over the car are key to developing this scale of development.

Large scale developments

Developments of 50 or more houses (major developments) can also make reference to P.5-8 of this SPG. Whilst on a somewhat smaller scale, the key principles still apply and the key to creating this scale of development is to ensure that the development integrates well with the existing settlement or urban form. Use existing features such as views outwards and the layout of existing roads to establish the best urban form. The development must form an extension to the existing area and allow the new users to interact through physical movement and social inclusion with existing neighbourhoods.

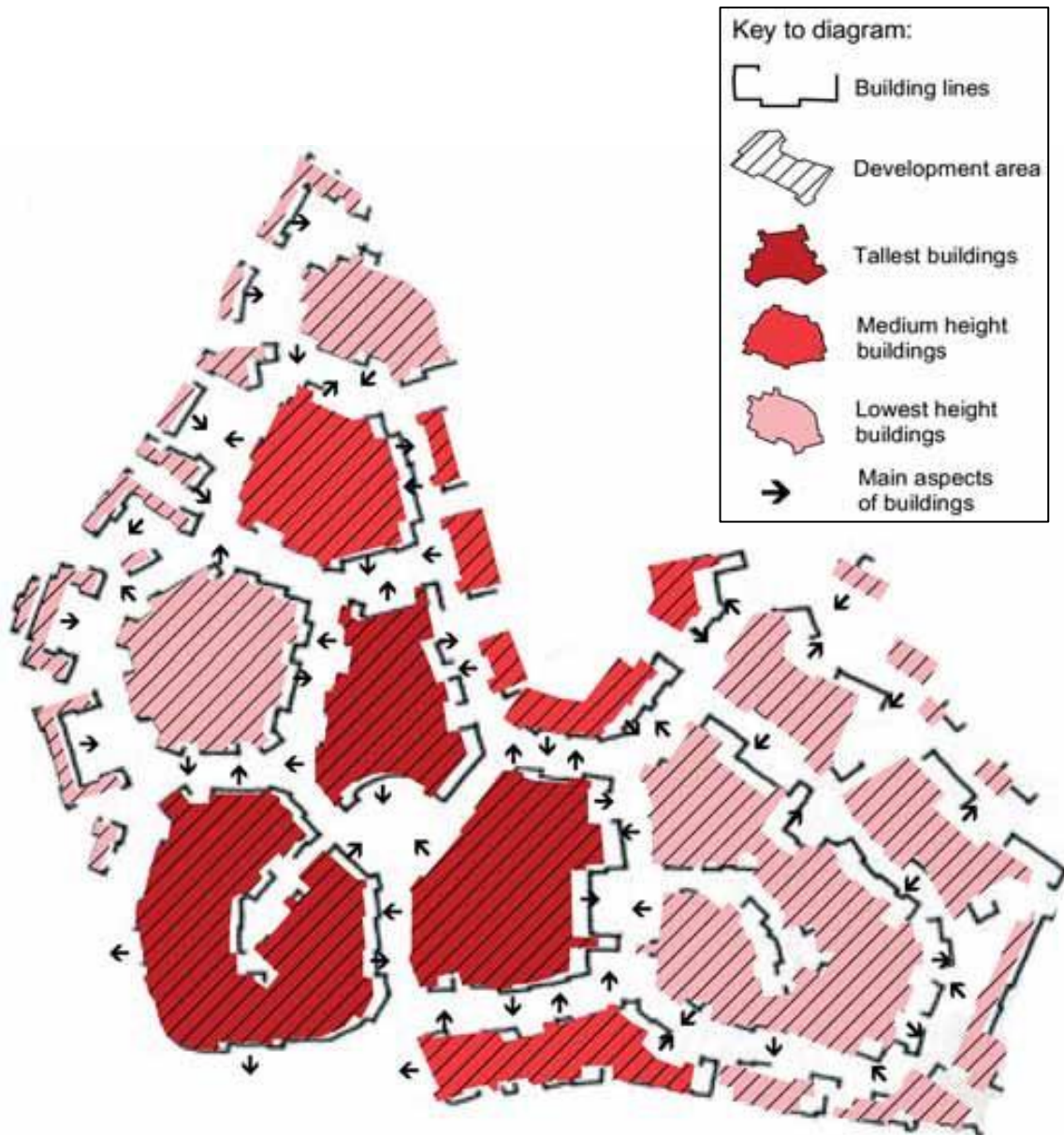
Small residential developments

Smaller scale developments below 50 residential units represent opportunities for introducing distinctive architecture into an existing urban form and an established grain. Whilst the principles of developing large scale masterplanned development are not wholly applicable e.g. establishing high and low density areas, reference can be made to good practice.

In particular, as the amount of space available will be lower, greater consideration must be given to how to provide all the features that the new users will need. In particular, careful consideration must be given to density and tenure type, making use of smaller spaces between buildings, ensuring connectivity with established walking and cycling networks and footpaths.

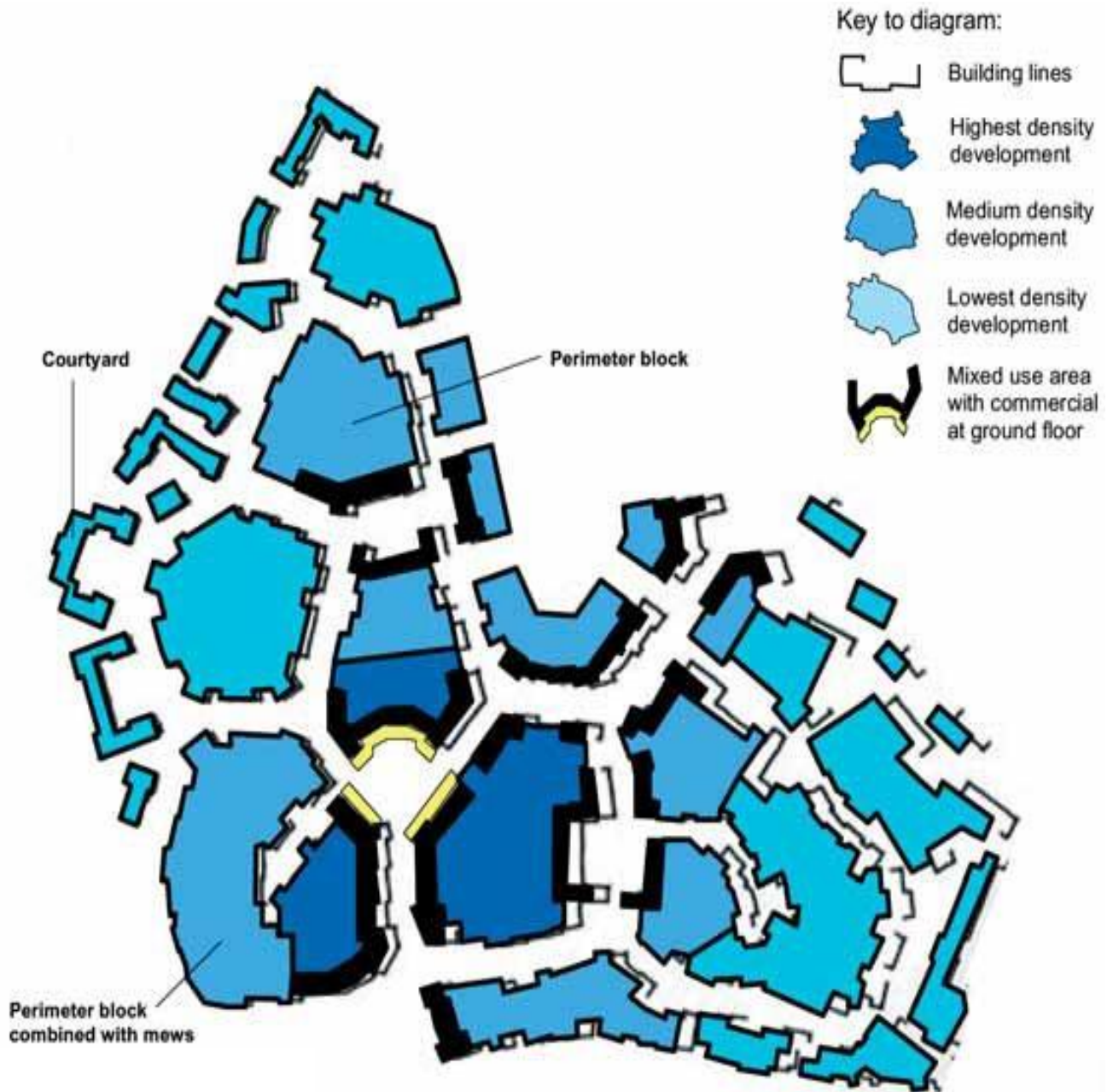
Establishing a Development Layout

Use surrounding settlement form and function to establish a context for the new settlement or site. The design should not necessarily mimic or repeat the existing built form, but it should integrate well by making use of historical development patterns or land uses, heritage assets, and features of the natural environment including green and blue infrastructure. This will lead to an effective urban design strategy for the site and help to create successful places that exhibit unique character, quality, distinctiveness and sense of place.



The urban design strategy must illustrate the layout of principal open spaces and road, development areas, development densities, land uses building heights and movement framework. LDP 2018 Policy DP4 requires the submission of a masterplan with major development proposals and sets out the criteria that must be demonstrated through this approach.

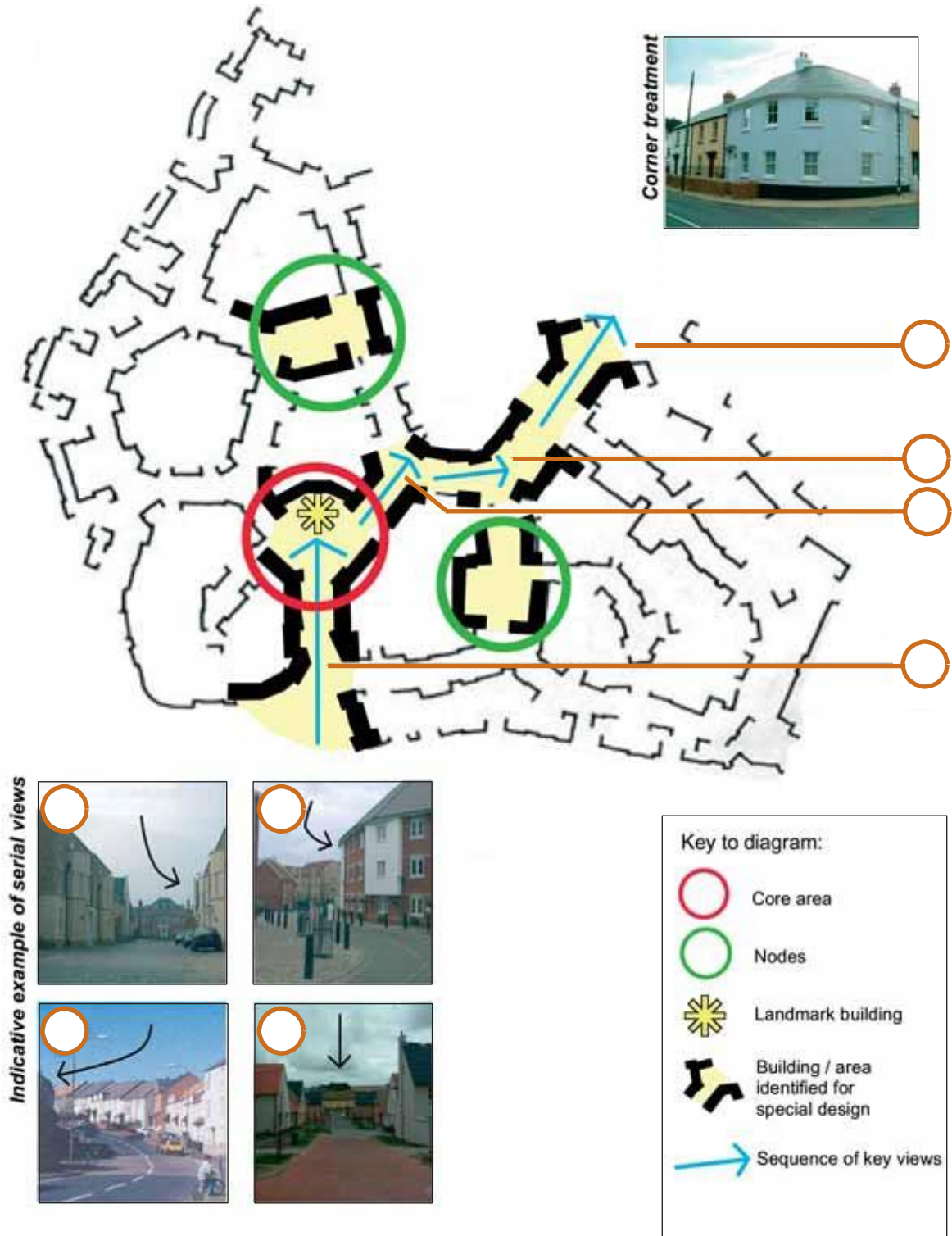
Produce a series of public spaces, views within and outwith, and a sense of place, continuity, welcome and enclosure, in the public realm using the position and orientation of edge buildings, areas of special design treatment and unique architectural style and quality. Determine areas of higher and lower density based on the location of land uses, open spaces and areas of activity within the site. Also ensure that you look beyond the site layout for existing land uses and transportation hubs etc. can help to guide density within the site.



Street design and the ability to move around these will determine the sense of place in a development. Whilst a site will require main access roads, these should be minimised and the use of quieter streets including shared surfaces should be used to establish a movement framework over car users. Design a road layout around the positioning of buildings and the landscaping strategy. Roads must serve **but not dominate** the appearance, form or function of the public realm. Design areas that can be car free and connect public spaces, footpaths and green networks where active travel is prioritised and movement is safe.



Use the layout of buildings within the housing area to create a network and hierarchy of distinctive and well-enclosed streetscapes. Use feature buildings at the end of longer street views and other design techniques to add excitement to the built environment and entice the user. Variety in architectural form is essential including building scale, massing, heights, roof designs, building lines etc. Buildings must use layout and appearance to distinguish their use



Streets must welcome the user and offer a rich experience when moving through them. Design treatment such as street width, enclosure, landscaping and boundaries all impact upon the user and their sensory experience. Development layout must allow walkability and memorability.

Maximise opportunities to create a varied development layout by designing buildings to fit with the site context. Limit the use of identical buildings placed adjacent to one another including the use of identical house types and dull external colours. Use street level visualisations to represent what the character of the development will look like.

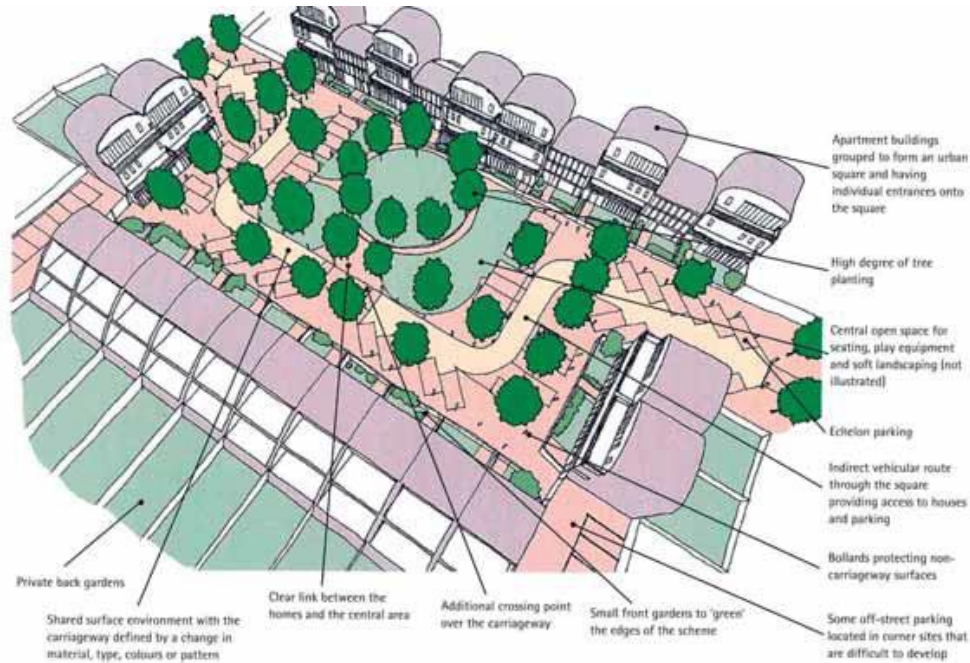


Utilise changes in the scale, positioning and external treatment of buildings. Feature buildings and landscaped areas can help the user to orientate themselves and navigate through a site.



Open Space, Green Networks & Biodiversity

Public open space is essential to ensuring a development meets the needs of the users. It offers opportunities for social interaction, adult and child recreation and play space, improves physical and mental health and wellbeing, and provides habitats for wildlife. Developments must maximise open space in all areas. Refer to LDP 2018 policies DP1, DP2, DC10, & OS3.



Sustainable Drainage Systems (SUDS) provide a range of benefits including improving surface water drainage, reduced flood risk, water quality management, biodiversity and habitats, and recreational value. Create SUDS as part of the overall useable open space strategy, orientate buildings to overlook these areas, and provide access for all user groups. Refer to Policies NH9, NH10 and DP4 and SUDS Design Guide SPG.



Green networks offer opportunities for encouraging walking and cycling and reducing car dependency, which in turn has additional benefits such as improved air quality by reducing air pollution, and improved safety.

Create a continuous network of green space by providing easy links from new open space to existing green infrastructure beyond the site. Refer to Policies DC10, DP1, DP4, NH8, T3 and T4, and the proposed draft Green Network SPG.

Path networks must be created using a surface that is accessible to all user groups. Use signage to inform users they are on a shared pedestrian/cycle way.



Biodiversity

The design of new developments must respond to the needs of and make provision for new opportunities to encourage wildlife into an area. Refer to LDP 2018 policy NH5.

In areas of open space, design this to be resilient to changes in climate e.g. including areas for wildlife to shelter from rain or sun using trees, shrubs and hedgerows as windbreaks or shaded areas.

When providing trees in large or small groups, incorporate a diverse mix of tree type that will provide for the needs of different species.

Use green roofs or roof gardens within as many individual plots as possible and close to open space to create a continuous habitat.

Public Art

Public art can be used to create a unique character and quality of a development site. This is often most effective when integrated within open space, but this is not an essential requirement as it can be situated anywhere providing it does not cause an obstruction to, or interfere with, road and pedestrian safety. Public art, other art or wildlife/tree trails etc. can be incorporated into the green network and walking/cycling routes to enhance the pedestrian experience. Public art can also be functional e.g. sun or rain shelters or it can provide habitats for certain species.



https://ncartmuseum.org/visit/the_park



<http://artbeat.seattle.gov/>



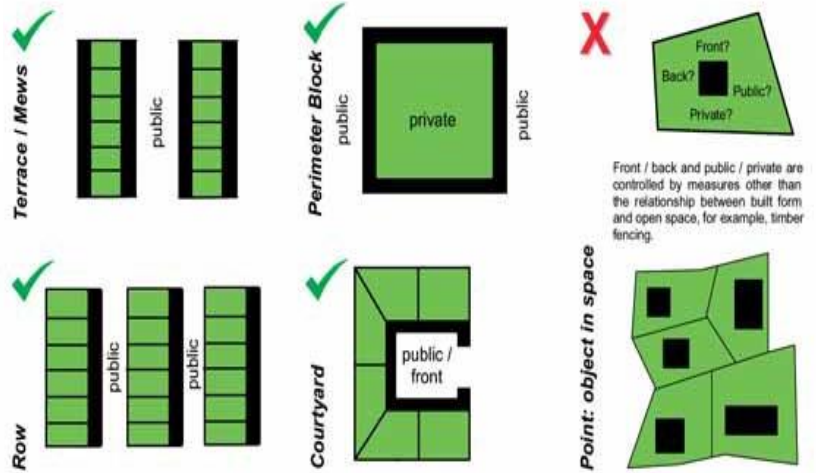
<https://www.wycombe.gov.uk/pages/Sports-leisure-and-tourism/Arts/Public-art.aspx>

Detailed Design Techniques

Buildings must be designed and oriented with a clear distinction between the front and rear, and the public and private. Use existing principles of good built form typologies to define these for users.



Urban Design Typologies



Landscaping features and other boundary treatments, appropriate to the architectural style, must be used to allow users to clearly distinguish between areas that are useable to all and those that are not. This reduces conflict between different users. A detailed plan illustrating the landscape strategy for the site will be required.



Avoid blank gables and unnecessarily high boundary walls facing areas of the public realm. This reduces natural surveillance and the sense of safety for the user. Buildings must contribute positively to the user experience and encourage walkability in each site.



Designing Space between Buildings

Shared Surface and Home Zone Principle

Consider how a development could benefit from and function with the use of shared surfaces to maximise amount of useable public realm, active streets, car free areas and reduced speeds, pedestrian movement and safety.



Where shared surfaces are introduced, use design techniques such as carriageway narrowing and vertical and horizontal deflection, the layout of buildings surrounding a shared surface area, and appropriate landscaping (e.g. trees, hedges and planters) to enable the safe transition when moving from a non-shared surface area.



When using shared surfaces, special attention and appropriate design techniques must be used to assist users who have restricted movement, disability, or those with impaired vision.



Slight changes in levels, alternating materials and use of planting and boundary definition can all help to guide the user and assist movement.

Parking and other Road Features

The quality of a developments can be significantly affected by the appearance of parked cars. They can have a dominant affect and negatively impact upon the character and function of the urban form, use of public realm and overall architectural quality. Access to public transport and designing a site for active travel must be prioritised. Refer to LDP 2018 policies DP2, DP4 and T2.

Parking must, as a starting principle, be provided to the rear of buildings where it is out of sight. However, these areas must not be neglected either, and must be enhanced through planting and screening. If parking has to be to the side of buildings, screening is essential.



It is essential to incorporate traffic calming measures and other design features such as carriageway narrowing and tree planting to reduce traffic speeds and deter illegitimate parking. Avoid long, straight uninterrupted road layouts



Provide a separation distance of 1.5 m (increasing occasionally to 1.8m) between building facades and the vehicle running track edge (where appropriate consider potential to use this space for a service strip) and use landscaping to allow multifunctional use of such space.



Consider how features such as grit boxes will be stored so that they do not become an obstruction or otherwise affect the movement and safety of pedestrians or vehicles. They should not negatively impact upon the visual character of a development. Consider how to incorporate them within bin stores for example.

Lighting and Safety

The perception of safety is an important issue to address in order for a site to be used to its full potential during the day and at night. Avoid designing public areas that will not be well lit or overlooked by surrounding buildings. Long linear footpaths surrounded on both sides by high boundary walls or fences should be avoided. Use low energy LEDs and solar powered lighting to help to reduce environmental impacts.



<https://www.designplan.co.uk/illuminating-social-housing-part-1-benefits-led/>



<https://lighting.cree.com/applications/case-studies/parma-park>

Waste

Waste storage areas and collection points must form an integral part of the design process. This includes designing to ensure that waste storage does not detract from the visual quality of a site and that refuse vehicles can sufficiently access and maneuver around sites to make collection effective. Consideration must be given to whether the provision of communal waste bins (including underground storage) could be provided within the site.



<http://www.landud.co.uk/combination-cycle-shelter-and-bin-store-units-for-university-of-hertfordshire/>

Other Services and Infrastructure

Avoid the placement of above ground infrastructure e.g. telecommunications switch boxes and electricity substations that detract from the appearance of the development or restrict use of public spaces. Planning conditions will be used in circumstances where the removal of permitted development rights for the installation of such services could negatively impact upon the visual character of a site.



Designing Small Spaces and Areas for Recreation and Play

The spaces between buildings require detailed attention in order for the development to be successful. Spaces must be designed with specific functions or allow flexibility for users to discover how a space can be used. Refer to LDP 2018 policies DP2, DP4 OS3, OS4 and OS5.



http://www.udg.org.uk/sites/default/files/publications/UD136_magazine.pdf

Include features of informal/formal recreational value designed as an integral part of the landscaping strategy, accommodating for the needs of those with disabilities.

Provide street furniture within these spaces to allow communities to have informal gatherings and use of spaces for different purposes throughout the year. Spaces must be overlooked and well lit. Also refer to Policy OS5 (Allotment Provision).

Provide features within the new housing areas where the community can get involved with the design and management of spaces (e.g. community gardens). These create opportunities for social interaction and positive experiences. The design of a site should be flexible to respond to the needs of different users.



<http://www.elgt.org.uk/projects/community-gardening/garden-gallery>

House Types, Tenure Mix and Affordable Housing

Ensure that the development is created with a varied range of buildings and architectural styles. Provide a mix of tenures to support all groups, including flats, bungalows, terraced, semi-detached and detached housing.



Affordable housing must be well-integrated and dispersed across a site. House types must ensure tenure blindness. Segregation of areas of affordable housing will not be acceptable.



Front gardens are not a design requirement, but where provided they must be short with a depth of approximately 3.5m. Use landscaping to complement the public space created.



Avoid areas of blank wasted space that do not serve a function in either the public realm or individual plots.



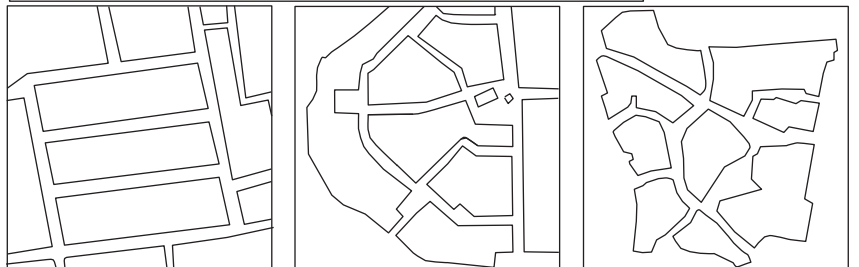
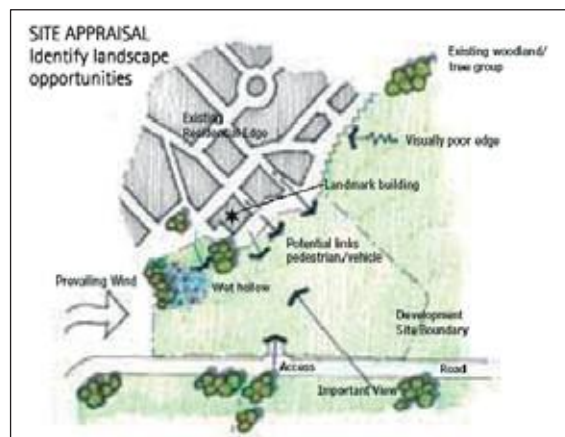
Appendix 1 – Further Guidance

Designing an Urban Form: Creating Public Space

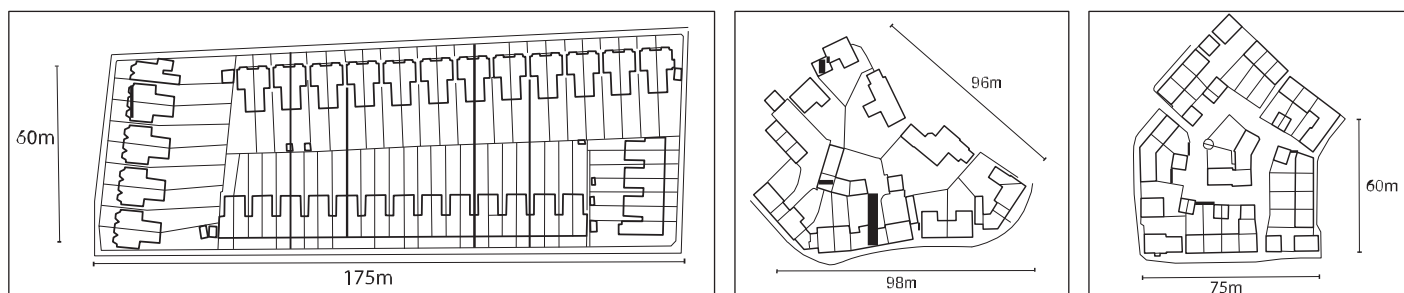
Designing an urban structure

2.1 The policies of the East Lothian Local Plan supported by Government policy require the design of new residential development to be closely guided by and be a creative response to a detailed analysis of the site and its surroundings. The urban structure to be formed must ensure that a sense of place is retained and created. To retain a sense of place new development will fully integrate with its surroundings. This is especially so for all types of movement, including pedestrian and cyclist. Development shall also be arranged to integrate with, respect and respond to the landscape, landform, urban form and townscape of the area, and to positively incorporate and enhance key natural, habitat and physical features at and around the site. Complementing and extending existing street patterns, and retaining important public views of the surroundings across and from the site, and incorporating these into the development design allows a sense of place to be conserved.

2.2 To create a sense of place the urban structure must be ordered and understandable, providing a clear hierarchy of streets and spaces, including focal points, such as mixed use areas, principal public open spaces and key public buildings. In such locations there may be opportunities to develop at higher density. The urban structure must be organised around these focal points, linking them with an interconnected layout of streets. The street layout will define 'development blocks' for housing, open space and other uses. Principal streets will define neighbourhood blocks, which will be subdivided by a network of tertiary streets that define individual residential blocks. These tertiary streets will offer greatest potential to be treated as Home Zones. The developer must demonstrate to the Council that residential blocks are big enough to allow a perimeter of buildings around garden ground



The illustrations above show urban structures where routes curve, taper, widen, narrow and change direction. They illustrate offset junctions as well as development blocks and individual buildings on special sites positioned to punctuate views. A combination of these characteristics provide foundations for creating distinctive streetscapes and a sense of place.



The plans above provide indicative dimensions for development blocks that can accommodate a perimeter of buildings including garden ground and other associated land-take requirements in the block core. (see para 2.2)



Designing the Urban Structure (see para 2.2 and 2.3)

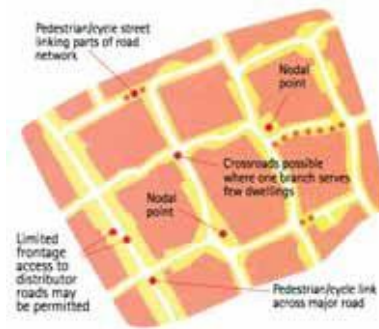
and any car parking areas to be located in the block core. This will require an indicative framework of individual building plots to be identified.

- 2.3 The design for the new residential development will therefore begin by identifying: places within the site where activity will be focused (e.g. mixed use areas, key nodes and schools etc); a movement framework that supports all site access requirements (including public transport) and maximises inter-connections with the surroundings; the arrangement, size and shape of development blocks, and the indicative framework of plot subdivisions for each; a network of public open space; indicative building lines of perimeter buildings at the edges of the development blocks; locations for the various development densities, land

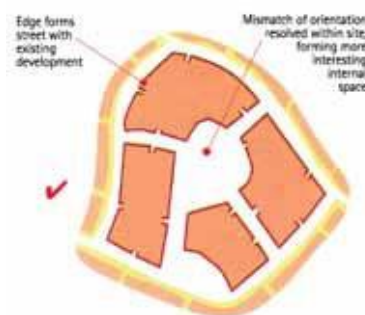
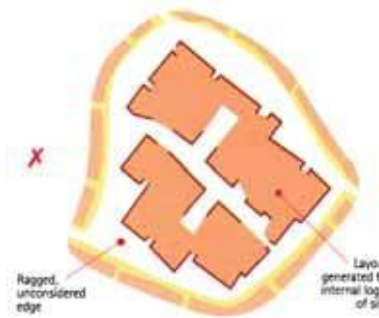
uses, building heights and character areas (including their use of building types); the areas requiring special design treatment, such as distinctive buildings, the core area, nodes, corners and landmarks. The design must create memorable public spaces, each with a sense of place and identity. See illustrations above.

Perimeter or edge buildings.

2.4 Public and private space in the housing area will be clearly defined by the relationship of built form to open space. Perimeter buildings will be at the edges of the development blocks and they will be positioned and orientated to define, overlook and present active facades to the public spaces and thoroughfares in front of them. The building lines of perimeter buildings should also be placed to provide continuity in built frontage between development blocks and to enclose the public space between them. Enough public space must be made available between buildings to accommodate the necessary landscape treatment, vehicle tracking paths, car parking and other public space to be introduced at detailed design stage (See paras 2.13–2.31 and 3.1–3.21). Along key linear routes perimeter buildings must be arranged to create a sequence of public spaces and views, which finish at, or feature, the areas of special design treatment. This will help provide a sense of place and welcome, and interest and legibility in the new urban structure to help people find their way around.



2.5 The judgment on how to arrange edge buildings on the development blocks must be taken with a vision of how the edge buildings of each development block will integrate with and complement those of the next as well as those opposite, consistent with the overall design strategy for the site. For example, the design must be establish where edge buildings should be set back from one another and building lines widened to create focal points; where buildings should occupy special sites so they can punctuate and close key views; where building lines will be used to ensure key linear routes curve, taper, widen, narrow and change direction, pursuant to creating a sequence of distinctive views through the site. Only by giving direction to how buildings will work together to create such public spaces can a design strategy be capable of co-ordinating delivery of a cohesive and understandable design for the housing area.

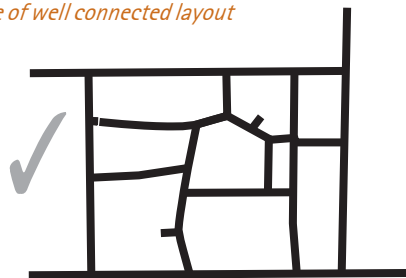


Perimeter or edge buildings (see para 2.4)

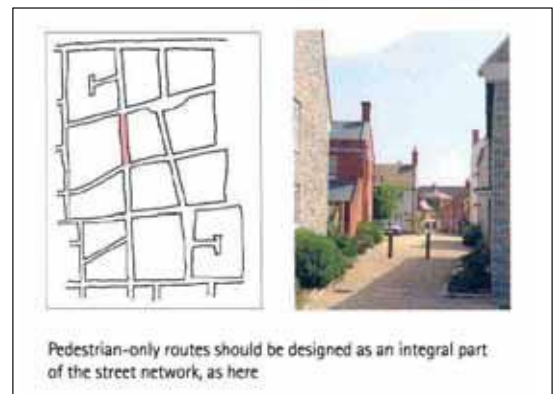
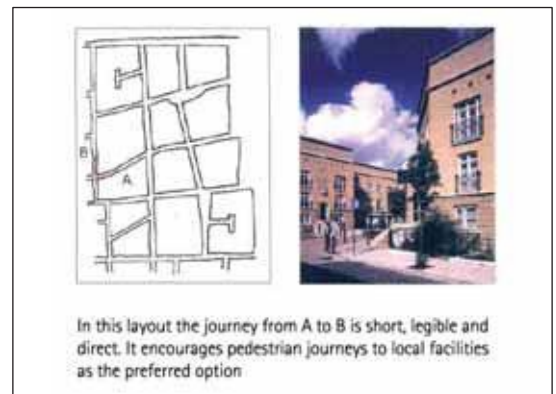
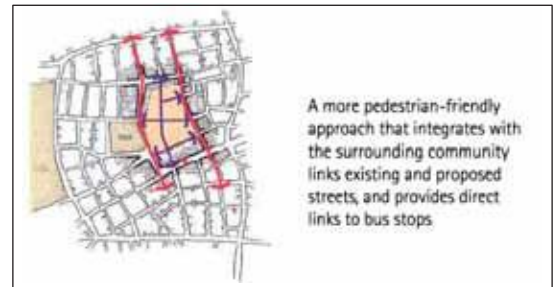
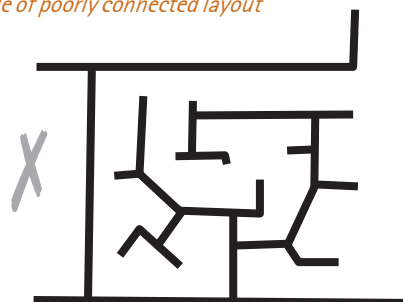
The movement framework.

2.6 New development must create a hierarchical, permeable and interconnected street layout that complements and should extend the surrounding street pattern. Such layouts spread vehicle traffic evenly through a site and to the surroundings, help prevent localised traffic congestion, and encourage walking and cycling. They are also flexible in that their design can be adapted to produce a variety of regular or more organic street patterns to complement and respond to the proposed structure of development and layout of buildings. Proposed street layouts must maximise connections within the site and to surrounding streets, and ensure the movement requirements of the development strategy are met. Such layouts will provide a range of street types, each designed to satisfy its particular role in the movement framework by providing the necessary level and type of access, including for public transport and a variety of pedestrian and cyclist routes. By the design and arrangement of street types, street layouts must influence vehicle drivers preferred route choice to ensure the tertiary streets between residential blocks are less busy.

Example of well connected layout

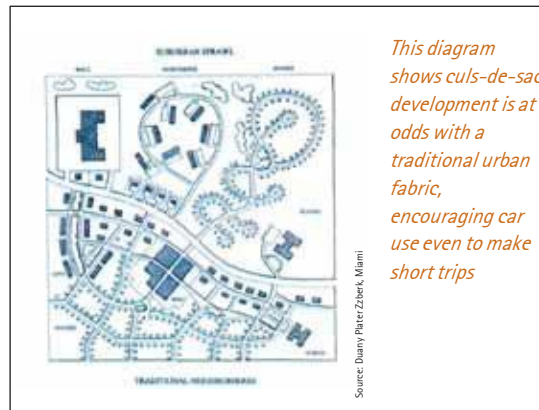


Example of poorly connected layout



2.7 Street layouts must provide enough accesses through neighbourhood blocks to ensure they are sufficiently permeable to be served by narrow, shared surface, traffic calmed tertiary roads (See Table 1, page 8). These roads will give access to individual residential blocks. Such permeability, low vehicle speed and narrow roads provide flexibility in design, allowing roads to complement building layout, and public space between residential blocks to be designed as Home Zones.

2.8 The use of culs-de-sac must be minimised in new housing areas. Such car based road designs determine road hierarchy, dictate road and building layout, and dominate the character and use of public space. Cul-de-sac developments often turn their backs to and integrate poorly with their surroundings. They will only be acceptable if the particular site circumstances do not permit two or more vehicular connections with the existing and / or proposed street pattern, and where they are a very limited part of an otherwise well connected street layout. Additionally, wherever possible, two well overlooked pedestrian and cyclist accesses should be provided from opposite ends of the culs-de-sac to the surrounding area (such pedestrian links should be designed in to large planned developments).



Number of dwellings to be contained within a new build Home Zone

2.9 Home Zones must be introduced to new development as part of a hierarchical, permeable and interconnected street layout. As the number of vehicular accesses to a Home Zone increase the more houses it can contain. Table 1 (below) demonstrates the maximum number of houses that can be contained within a Home Zone relative to the number of Home Zone vehicular accesses. To maximise the extent of Home Zone treatment, designers should give thorough and early consideration to the relationship between the amount and type of housing and any other land uses to be accommodated on the development block(s). Designers must ensure that the number of connections in the movement framework for the site serving such blocks can support the level and nature of development proposed for them.

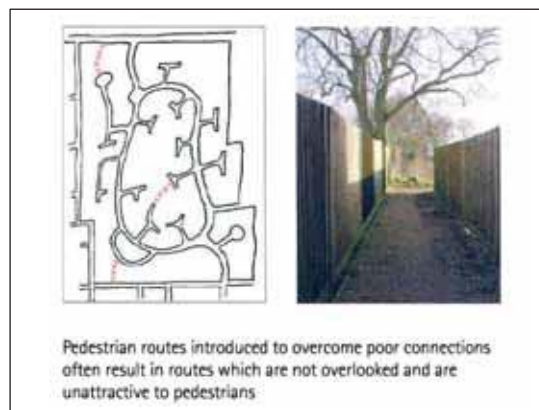
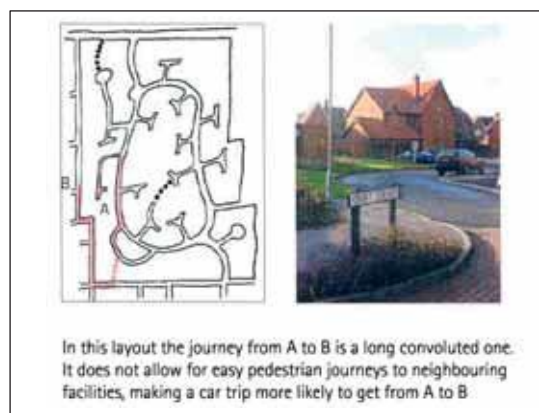


Table 1
Maximum Number of Dwellings in a Home Zone

One Access	Two Access	Three Accesses	Four Accesses
25	100	200	300

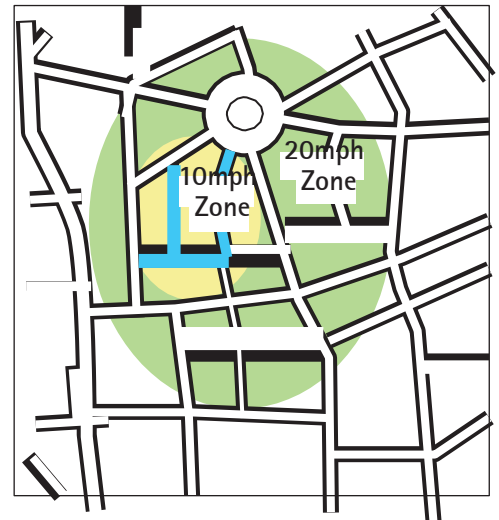
Source: Adapted from Home Zone Design Guidelines, Institute of Highway Engineers, June 2002

Note: Table 1 (left) is for guidance only. It assumes traffic will be dispersed evenly through each access. It makes no allowances for the existence of other land uses in the area and their likely impact on trip generation, or the proximity and availability of public transport. Creating suitable Home Zone locations must also be based on the ability to treat the area and satisfactorily mitigate any anticipated harmful traffic displacement effects.

Extent of Home Zone treatment

2.10 Developers must maximise the extent of Home Zone treatment within the site. Best practice from Europe and the UK indicates that Home Zone treatment must extend no further than a driving distance of 400m from any point within the Home Zone to the nearest non-Home Zone road dispersing traffic to principal roads of the network. This is the maximum distance that prevents driver frustration and the same distance the average person is willing to walk to reach a public transport node, such as a bus stop or railway station. The extent of Home Zone treatment can therefore only increase as the number of access points it has to such untreated roads increases, provided these do not cause the 400 metre driving distance within the Home Zone area to be exceeded.

2.11 For large sites developers must provide a street layout design that maximises the extent of Home Zone treatment. The Council may require such layouts to have at least one continuous length of untreated street (a principal movement route), which connects with the existing street network at more than one point. The Council may require that such an untreated street connect two existing streets together to provide a satisfactory new link. All new untreated streets will provide access to the Home Zone areas to ensure that the driving distance within them does not exceed 400 metres. Some large sites may have a requirement for more than one such untreated link street to satisfy this requirement. It may also be desirable that a non-Home Zone treated street forms part of a wider strategy of traffic management.



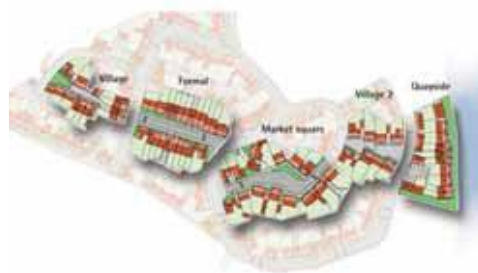
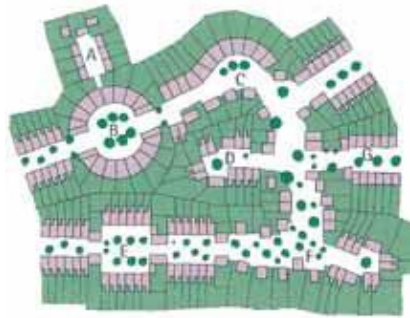
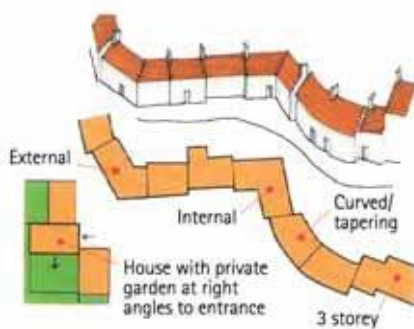
2.12 At least one untreated street in large developments must be designed for public transport use and to support any intensive access requirements through the site as well as to satisfactorily serve any proposed mixed use area.

See Appendix 1 for further information on this section.

Designing Space Between Buildings.

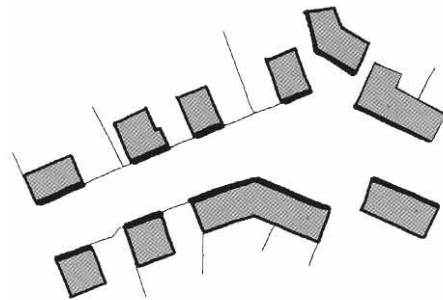
Layout and design of buildings

2.13 The urban structures of many recent housing developments have been dictated by standardised road layouts, often with predominantly standard and detached house types fitted around them. The consequence of such uniform design has often been public spaces that are poorly connected, defined, enclosed and ubiquitous in appearance. The design of new urban structures will ensure that the building layout creates a sequence of distinctive public spaces and views as well as clearly defines public from private space. This can be achieved by using a full range of built forms across the site, such as perimeter blocks, squares, courtyards, terraces, mews and lanes etc. Such built forms must be arranged so they complement one another. This will require developers to use a wider range of house types and plan forms in new housing development to ensure adaptability to such layout design. The following diagrams show how a range of house types and plan forms are used to, for example, turn external and internal corners; provide curved terraces and crescents; terminate a vista or change the direction of a road while providing continuity in built frontage and interest in key parts of the street. A wide range of house types and plan forms is required to provide the flexibility necessary to respond to the design of such urban structures and to create distinctive layouts and streetscapes with identity.

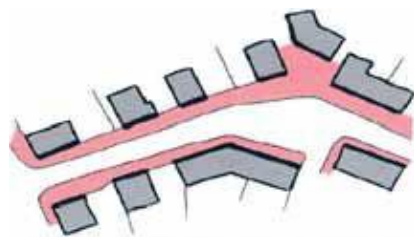


2.14 In large developments the masterplan will establish the context for detailed design. It will set design principles for particular areas, establishing development block and indicative plot shape and size, as well as the housing numbers, and the building height(s), line(s) and types(s) to be used. Detailed building layout and street design must be done together so the eventual appearance and operation of public space is conceived as an integrated whole. Buildings will be arranged to create street enclosure, subtle changes in character, and formal and informal street frontages as appropriate. Public realm landscaping and areas for community use should then be added to the public space created by the building layout. Finally, space for pedestrians and vehicles will be identified so these do not dictate building layout, and the form, function and character of public space. The following diagrams show how such designs begin with building layouts arranged to create street enclosure, identity and

continuity in built frontage, clearly defining public from private space. Space for pedestrians, vehicles and community use is then identified and designed to reinforce the intended character of the public space, while ensuring sufficient carriageway width remains for vehicle tracking path requirements (See para 3.7).

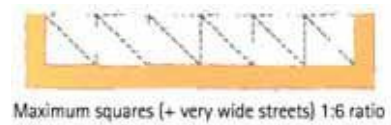


Arrange buildings to create street enclosure, identity and interest

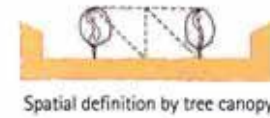


Design footways to reinforce this, and plot vehicle tracking path to check carriageway width is sufficient

provides a guide to the 'height to width' ratios that create enclosure and these should inform the position and height of buildings that will define public space. Checks are required to ensure daylight and privacy standards will be met. Hard and soft landscaping, including town trees, should be used to create an attractive public setting for all buildings and to provide enclosure where buildings alone do not secure this.



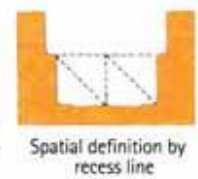
Maximum squares (+ very wide streets) 1:6 ratio



Spatial definition by tree canopy



Spatial definition by building height



Spatial definition by recess line



Mews 1:1 ratio



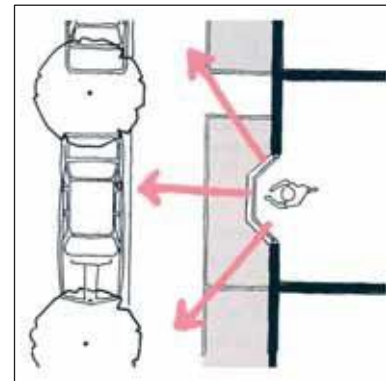
Generally effective 1:3 ratio

2.15 Opportunities to enclose public space must be maximised. This should be achieved by ensuring continuity in built frontage and that building heights and the width of public spaces are well proportioned. At higher densities continuity will be achieved by judicious use of a continuous built frontage and, at lower densities, by complementing buildings with formal landscaping arrangements, such as tree planting, hedging, walls, fences and railings that prevent space visually leaking away between buildings and harming the continuity of the frontage. Table 2

Table 2
Enclosure height to width ratios

	Maximum	Minimum
Mews	1 : 1.3	1 : 1
Streets	1 : 3	1 : 1.5
Squares	1 : 6	1 : 4

2.16 To best focus life directly into the street, provide natural surveillance and a sense of welcome, safety and security, public space should be faced by the main aspect of buildings i.e. maximise the active frontage. Orientating habitable rooms, doors and windows to public space will contribute to achieving this and help create feelings of safety and community ownership in the housing area. This principle is particularly relevant for end terrace houses and where courtyards are proposed, as these built forms will usually generate a requirement for windows and / or doors to be introduced to any street side gable elevations.

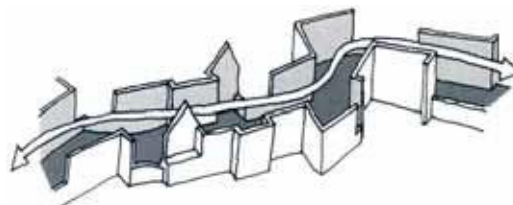


Designing for the pedestrian and cyclist.

2.17 The housing area must be designed to a human scale and for the short distance sensory perceptions of pedestrians and cyclists. Designs will create an attractive sequence of public spaces and views, preventing long, wide and unenclosed spaces that appear monotonous, unwelcoming and unattractive to the pedestrian and cyclist. This will be ensured by designing for continuity in built frontage and enclosure of public space, and by limiting the visual length of space using, for example, terminal buildings, a curve in the street, a change in the building line, a pinch point or widening to completely or partially close space. These physical characteristics should be complemented in the streetscape by the use of harmonious building materials and the careful positioning of street furniture and landscaping features to break up the visual length of space. Best practice suggests a distance of no more than 20 – 30 metres between items of interest, such as a landscaped area, a grouping of trees, and planters, benches and other features providing visual attraction and enclosure, can help secure this objective.



Continuity of frontage (above)



A sequence of linear spaces and views (above)

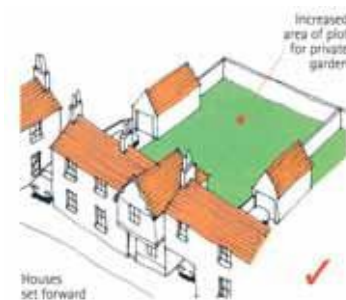
Limiting the length of space (below)



Car parking provision

2.18 The dominance of cars in new housing areas, both in terms of use of public space and visually, must be kept to a minimum to ensure the attractiveness of the area. The design for the housing area should use the limited frontage access permitted from Local Distributor Roads to ensure such streets benefit from lengths of continuous built and vehicle free frontage, proper enclosure and active frontages. Home Zone access designs can be adapted to access rear parking areas from Local Distributor Roads (See paras 3.3 – 3.6). Limited access to single house plots may also be acceptable from such roads, provided turning space is available within the plot and road safety is ensured.

2.19 Most resident parking must be provided behind or to the side of buildings in the housing area. Marked visitor bays will be provided on street. Designs should utilise these measures to minimise the amount of public space required to accommodate vehicles, allowing more to be put to community use, and to reduce the visual dominance of the car in the streetscape. Resident parking in front of buildings within plot curtilage is therefore unlikely to be acceptable, unless this is a justified design feature. In exceptional circumstances where in curtilage parking in front of buildings is justified, significant landscaping, such as low hedges / walls / railings must be provided to define plot boundaries and to help screen parked vehicles from view. Such treatment will help ensure vehicles will not become a dominant feature in the streetscape. Within Home Zones a limited amount of resident parking bays may be permissible on street provided they do not conflict with areas for community use or, by their position or number, harm visual amenity.



Front

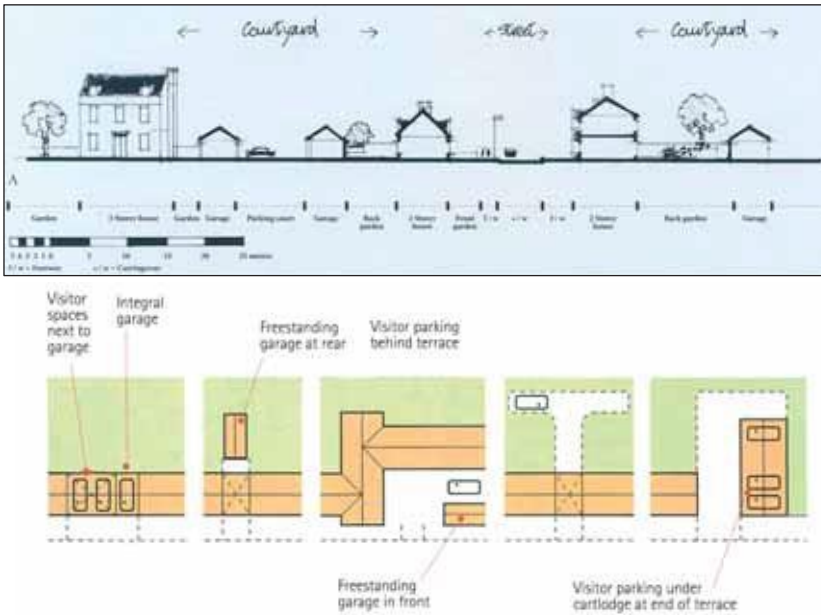


Back



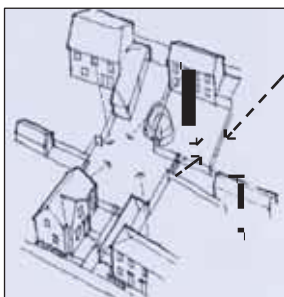
Plan

A courtyard formed by the arrangement of buildings here there is no through route for pedestrians.



2.20 Accommodating car parking to the rear of buildings will allow adjacent buildings to be joined and opposite building frontages to be drawn closer together. This will allow opportunities to create continuity in built frontage, enclose the public realm, and to create areas to the rear. These areas to the rear can be used to provide larger private gardens, and space for detached garages / garage blocks, parking courts or small groups of houses. Safety and security in rear parking areas must be maximised. This can be achieved by ensuring they are well overlooked and designed to permit private parking access by, for example, through a gated pend. Attention to the detailed design of boundary treatment at the rear of house plots where they meet semi-private space is important.

Rear parking courtyard overlooked by surrounding dwellings



Such design solutions must be robust and can include introducing bin / cycle stores, garages and walls of a suitable height to define plot boundaries. The design will ensure that built form creates clear and attractive distinctions between semi-private and private space.

2.21 The Council's existing parking requirement per dwelling applies, although concession may be made for affordable housing in certain circumstances subject to agreement from the Head of Transportation. The developer must demonstrate to the Council they have put in place private parking schemes from the outset, for example, convey rights for exclusive use of private parking bays through the title deeds of the respective property. For on street parking, private and visitor bays must be clearly defined e.g. marked with an R or V respectively.



Defensible spaces in front of dwellings.

- 2.22 The layout and orientation of housing will focus attention on the streets. Semi-private and defensible spaces in front of dwellings can help encourage this by providing a defined area for transition between private and public space, but this effect can be diluted if such semi private spaces are large and distance the buildings from the street. Plot frontage boundary treatment such as low walls / hedges / fences/ railings must be provided to define public and such semi-private space *(See paragraph 2.23 below)*.
- 2.23 In Home Zones front gardens should provide only small semi-private and defensible spaces in front of dwellings or can be completely absent. Where provided front gardens in Home Zones should be short with a depth of approximately 3.5 metres. Such small semi-private spaces may benefit amenity adjacent to children's play areas and on street parking bays, for example.



Above images show stone walls and railings used to define public from semi-private space at the front of plots

Boundary definition.

- 2.24 In the housing area hedges / walls must be used to define areas of private space from public space, such as at the end of a row of houses or at the street side edge of a courtyard where one side of a rear garden adjoins public space. Such lengths of wall / hedge etc. must be minimised to ensure that the active frontage to public space is maximised in the development. The design boundary treatment must clearly and positively contribute to as well as complement the design quality and amenity experienced in the public space in front of dwellings; walls should be designed to complement the materials used on buildings, for example. The use of timber board fencing will only be acceptable to define areas of private space from one another. Public to private boundary definition, including that required at the front of plots, will be important to secure the design objectives described above. Provision should therefore be made through title deeds of property for boundary treatment to ensure it be retained and if it is to be replaced by any alternative the original objectives of such provision will be sustained.



Above images show stone walls used to define public from rear private boundaries

Home Zone street furniture.

2.25 To encourage greater community use of public space useful permanent street furniture, such as tables, benches and chairs must be provided. The design of all such features should be robust, durable and respond to the needs of those with disabilities / mobility problems, for example, leaving a seating space free at tables to accommodate a wheel chair. Grouping such features together, or placing them at the edges of public spaces, often increases their use while encouraging the use and passive surveillance of the adjoining public space itself.



2.26 Incidental hard landscape features that develop the identity and character of public space should be provided. These may also become features of play or recreational value. The developer must agree with the Council areas to be equipped with suitable art works to the satisfaction of the Council. These will form part of the Percent for Art contribution.



2.27 Suitable areas for formal play and recreation must be provided and designed as small focal points in the street. Such play areas should be sited in appropriate locations and at the required distance from one another. Play areas should not be completely fenced off from the remainder of the public space when located in Home Zones, but must be clearly defined by changes in surface texture and colour as well as trees, low hedges / planters and other landscaping features.



- 2.28 All street furniture must be well overlooked and take advantage of suntraps and windbreaks, which may be created by the layout of buildings, or by the positioning of landscaping or other suitable features. Such areas should be positioned and designed to minimise misuse and antisocial behaviour.



Participation in the design process.

- 2.29 The Planning Bill stresses the importance of transparency and clarity from developers before submitting a planning application. This is to minimise the time required to determine major planning applications and to ensure effective public engagement and participation in the design process. The level of information provided by a masterplan is the key to helping the public and other stakeholders understand a design concept, to ensure meaningful participation is possible, and to ensure that stakeholders can give informed comments to, where appropriate, influence a design at the appropriate stage. This should prevent abortive work and reduce the resource burden on the Planning Authority, as detailed applications for parts of large development sites will conform to an already approved masterplan. Substantive discussions and joint working among

stakeholders before applying for planning permission, as well as providing suitable information at an early outline stage – i.e. before matters which dictate subsequent design parameters have been fixed – is essential if the objectives of a modernised planning system are to be achieved. This approach will help speed the delivery of major developments and developers must seek the early views of all stakeholders when formulating their masterplan proposals.

- 2.30 Home Zones should not be fitted out entirely by the developer for the end users. The essential components such as planters, benches, play equipment and hard and soft landscaping features integral to the functional and aesthetic design must all be provided and fitted out by the developer in appropriate locations to the satisfaction of the Council. However, at detailed design stage, agreement can be made between the Council, the developer and existing residents (and if possible future residents) for small features / areas in the Home Zones to remain undeveloped and set aside for treatment and maintenance by the existing / new community. Such areas can be small communal overlooked greens, or planters capable of accommodating water features as well as flora, so that residents can decide on and evolve the design, appearance and use of public space themselves should they so desire. When proposed such features must be identified on the detailed planning application drawings and grassed over on completion of the development by the developer.

- 2.31 For retrofit Home Zone schemes community consultation and participation will be essential to identify issues an existing community has with the design and operation of their existing street, and to ensure that they support and benefit from a proposed Home Zone design.

See Appendix 2 for further information on this section.

TECHNICAL DETAILS FOR SHARED SURFACES AND HOME ZONES

N.B. Sections 3.1 to 3.6 are only relevant for simple priority junctions. For other types of junction reference should be made to the Design Manual for Roads and Bridges (DMRB) Volume 6. The Roads Authority shall also be consulted.

Home Zone gateways

3.1 Entrances and exits of Home Zones must be clearly defined so that all road users understand the change in the environment and behave accordingly. Design features such as carriageway narrowing, providing ramps up to the shared surface and textured carriageway materials must be used. Combinations of other features, including trees and shrubs and flowers in planters, will also be used to ensure a pleasant gateway feature and to help ensure slow vehicle speed. The treatment of gateway features must complement one another and the character of the surrounding area. Design coding may be required to secure this objective.



Narrow carriageway width and planters provide attractive gateway feature and help reduce sight line. Footway could extend over gateway using a dropped kerb access.



Wall reduces sightline around bend encouraging reduced vehicle speed. This is combined with shift in horizontal carriageway alignment.

3.2 A Home Zone entrance can incorporate an appropriately positioned statutory Home Zone sign to give proper indication that the operational nature of the street has changed.

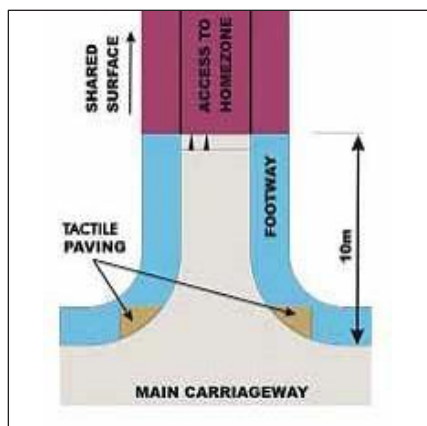


3.3 A Home Zone can take access from all street types of the hierarchy within a 30/40 mph speed limit. This flexibility allows the full range of street types to be used in the design of street layouts. For such comprehensive access a range of Home Zone junction designs will be required. Junction design must always be driven by the characteristics of the major street from which access is to be taken. For example, at a busy street with high vehicle speed, Home Zone junction set back distance and corner radii may need to increase. Junction spacing and visibility into and out of a Home Zone must always be satisfactory. Vehicle access for the largest vehicle entering/exiting the Home Zone shall be demonstrated (i.e. swept path/vehicle track analysis).

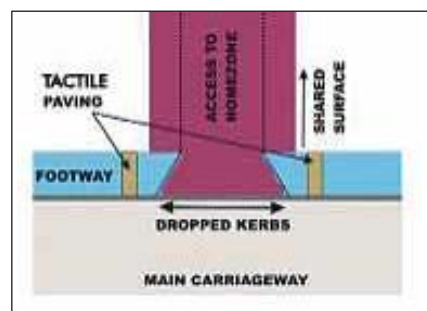
3.4 Where access is taken to a Home Zone from a busy street, for example, a Local Distributor Road, the Home Zone gateway must be set back by a minimum of 10 metres and a carriageway width of 5.5 metres provided over this distance before Home Zone gateway narrowing to a 3.5 metre width. This will

allow two vehicles to pass and queuing traffic in the set back area. Drivers entering the Home Zone must be able to see through the Home Zone gateway and beyond any narrow section of road when waiting in the set back area. Junction radii for such gateways must not be less than 9m and trees / planters must be provided as gateway features. Junction spacing and visibility must be adequate.

- 3.5 Where access is to be taken from a less busy street, such as a General Access Road, the Home Zone gateway must be set back by a minimum of 6 metres and a 5.5 metre carriageway width is required before Home Zone gateway narrowing to a 3.5 metre width. Drivers entering the Home Zone must be able to see through the Home Zone gateway and beyond any narrow section of road when waiting in the set back area. Junction radii should be shortened to 6 metres where appropriate. Trees / planters should be provided at such short radii corners to prevent large vehicles mounting kerbs. Junction spacing and visibility must be adequate.

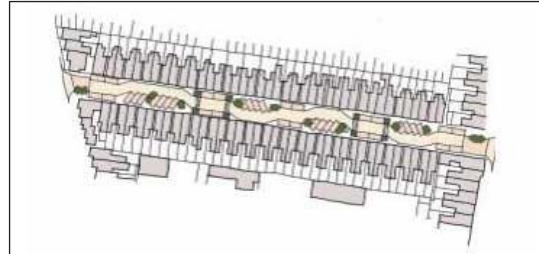
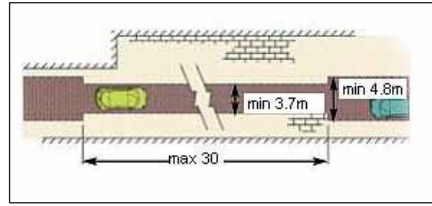


3.6A Home Zone can also be entered directly from a General Access Road. The Home Zone surface material shall extend up to the General Access Road channel (see diagram below). A minimum set back of 6 metres must be provided to allow a passing place at the Home Zone entrance before Gateway narrowing to a 3.5 metre width. The carriageway must be 5.5 metres wide over the length of the set back. Drivers entering the Home Zone must be able to see through the Home Zone entrance and beyond any narrow section of road when in the set back area. Short corner radii of 4–6 metres (or equivalent splays) may be appropriate and bollards/ trees / planters will be required to prevent vehicles overrunning the footpath. Junction spacing and visibility must be adequate.



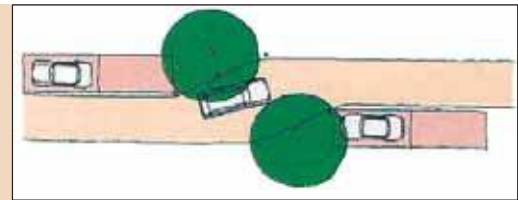
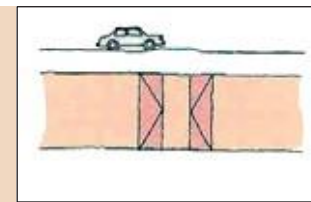
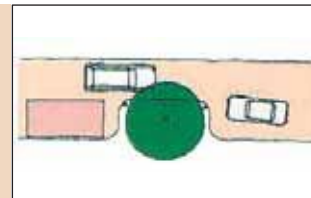
Road widths.

3.7 Home Zone streets must support two way traffic movements. One-way systems will not be acceptable. The vehicle running track through a Home Zone must be the minimum practicable (See section on Vehicle Tracking Paths at para 3.11 below). In stretches of no longer than 30 metres this can be as narrow as 3.7 metres provided drivers can see to the end of the narrow section. Between the narrow sections the vehicle track width must increase to no less than 4.8 metres to allow one light and one heavy vehicle to pass. In such wider sections indiscriminate parking may be possible and careful design will be required to prevent this by, for example, ensuring that any indiscriminate parking would prevent access to private parking areas (See Parking Layouts para 3.14 below).



Speed and forward visibility.

3.8 In Home Zones short forward visibility standards must be applied to discourage high vehicle speed. As a general guide forward visibility should not significantly exceed 30 metres. Occasional horizontal deflections in the vehicle track, when combined with careful positioning of hard and soft landscaping, such as trees, planters or stone walls, or dwellings and other appropriate structures, can be used to reduce sightlines and help slow vehicle speed. To be effective such horizontal running track deflection should be severe and the length of the displacement short. Best practice suggests such deflections should be positioned every 30 metres to achieve the target speed of 10 mph. These measures can be used in conjunction with complementary vertical carriageway deflections, such as raised tables and speed humps.



Example illustrates that bend and horizontal carriageway displacement is not combined with a vertical measure to obscure the long sightline. The driver still has long sightline, encouraging higher vehicle speed.

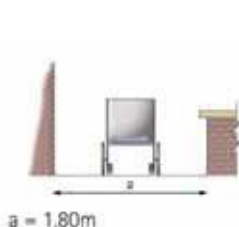
Example illustrates a long unrestrained shared surface with limited horizontal deflection and no complementary vertical traffic calming measures, such as planters or trees, to shorten driver sightline. Vehicle speeds increase and opportunity for social activity reduced

Defining areas of the shared surface for pedestrian movement.

3.9 For reasons of amenity and safety a minimum unobstructed width of 1.5 metres is required at the edge of the vehicle running track. Over short stretches this width must increase to 1.8 metres, between obstructions, to allow two wheel chairs to pass. This defined area will be in addition to defensible space in front of dwellings. It must also be able to be overrun, allowing vehicle access to house plots where necessary. Opportunities for indiscriminate parking on the defined area should be designed out (See para 3.18 below). Definition and protection of this area from the vehicle track should also be provided. This could take the form of different surface materials, textures and colours, together with provision of low hedges / trees and / or some other appropriately distributed vertical hard or soft landscaping features.



Use of attractive materials, bollards and planters define the pedestrian area (left and below)



3.10 Shared surface design must respond to the orientation needs of those who are blind or visually impaired. This will require replacing the kerb, which is a useful reference tool, with another orientation clue detectable by a guide dog or cane. Examples may include low drainage channels, a small kerb up-stand, a line of slightly raised setts, and changes in surface material texture, which define the boundary of the safeguarded pedestrianised area.

Vehicle tracking paths and the swept path analysis.

3.11 A tracking (or swept) path is the required carriageway width for a vehicle movement within the overall width of a space. Computer programs can calculate vehicle swept path requirements. While the layout of buildings will create public space, the demands of vehicular movement within it should be checked against the minimum road engineering requirements. Building layout may be altered slightly to accommodate such requirements, although it must be demonstrated to the satisfaction of the Council that adjustment to the layout of parking and other features have been investigated first. Developers must provide a vehicle swept path analysis to demonstrate there is sufficient room to allow necessary vehicles to pass through the Home Zone.

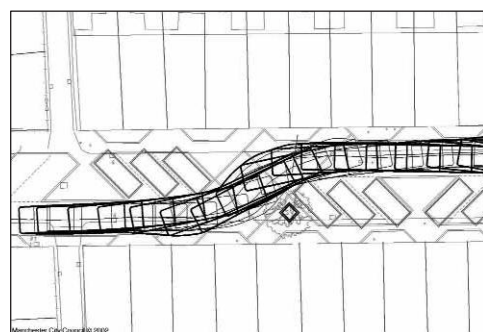
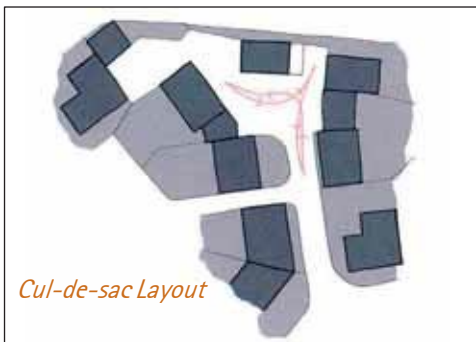


Illustration of vehicle swept path analysis

3.12 The swept path analysis should take account of the slow vehicle design speed (10 mph) expected in Home Zones. This will allow vehicles to take tight radius turns over short distances. Road designs must keep vehicle tracking paths as tight as possible. The ease with which vehicles should be allowed to pass through a Home Zone will be dependant on the expected frequency of its visit. It will be appropriate to allow larger vehicles to use the whole of the carriageway width when turning or passing through pinch points. Vehicle tracking paths must also be provided to demonstrate sufficient room exists within a building layout to allow larger vehicles to

turn where required, as shown in the following illustration of a cul-de-sac layout. Minimising the use of culs-de-sac reduces the land take required to accommodate vehicular movements as well as the need for vehicles to reverse.

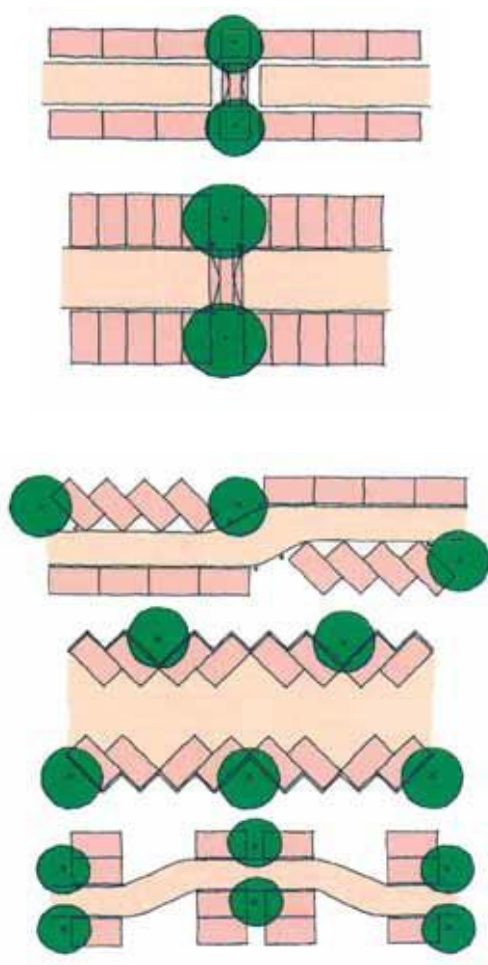


- 3.13 Refuse vehicles will visit weekly and access for them must be provided. Accessibility and response times for emergency vehicles are also important considerations and, although likely less frequent visitors, adequate access for them must be allowed. Pantechicon vehicles are less frequent visitors, and it is reasonable to expect care to be taken when they negotiate a Home Zone. Overrun strips, mountable shoulders and vehicle deterrent paving are surfaces that cars find difficult to cross but larger vehicles find easier to negotiate. These can be used to keep car tracking paths tight yet allow larger vehicles access. If used, the materials and design of such features should be well integrated into

the overall streetscape. The Design vehicle to be used for Sewpt Path/Vehicle Track analysis shall be a Large Design Rigid in accordance with the Freight transport Associations "Designing for Deliveries" document. This will ensure safe and efficient access for emergency vehicles.

Parking.

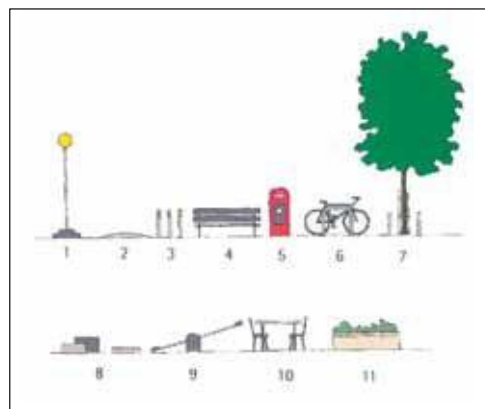
- 3.14 Direct access to properties can be obtained from Distributor Roads provided turning space is available within the plot or this is provided via an adapted Home Zone access (for example to rear parking courts perhaps under a pend or through a gap in the building frontage). This will allow direct frontage to such streets in keeping with traditional urban streetscape patterns.
- 3.15 Onstreet parking bays should be laid out to minimise their use of public space, complement traffic calming objectives and to integrate creatively to the Home Zone so they do not dominate the streetscene. In conjunction with landscaping and sharp horizontal deflections in the carriageway, parking bays should be used to divert the route of vehicles to slow them down. They can be orientated perpendicular, in parallel or in echelon (angled) to the carriageway alignment. Long blocks of bays parallel to the carriageway alignment do not make best use of space and can appear monotonous, create long sightlines and encourage faster vehicle speed. Such bays must not be arranged consecutively in groupings of more than six. A small widening of the carriageway opposite perpendicular bays may be required to allow vehicle manoeuvres, particularly in narrow carriageway sections. The function of such a widening should be combined to provide a necessary passing place from which access to a private parking area should also be taken. Some angled bays may cause situations where vehicles can leave bays facing in only one direction. To ensure narrow carriageway width and satisfactory access, there must be two ways of reaching such bays or, in the case of culs-de-sac, turning facilities are required.



3.16 An adequate number of parking bays of the appropriate dimensions must be provided for those with mobility problems. It should be noted that adopted onstreet parking cannot be reserved solely for the use by those with mobility impairment.

3.17 Hedges combined with trees, planters, and other appropriate non-transparent hard and soft landscaping features and / or street furniture / art, must be used to define parking areas to ensure that forward visibility is restricted and the vehicle deflection and traffic calming effect is retained when spaces are vacant (See illustrations). These should be of a low height to ensure satisfactory screening.

3.18 Home Zone design must eliminate opportunities for indiscriminate parking. This can be achieved by ensuring that such parking is impossible unless it would prevent free traffic flow and / or vehicular access to house plots and private parking bays / areas. The positioning of walls or thorny bushes or trees, etc. can help achieve this by preventing the opening of car doors in chosen locations. The swept path analysis must demonstrate that opportunities for indiscriminate parking have been designed out.

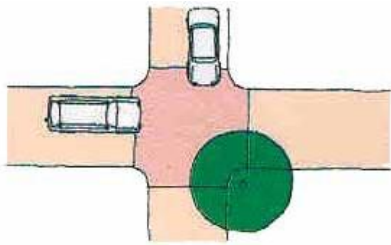


Junctions and signage within a Home Zone.

3.19 Junction priority and signage should not normally be indicated and used within Home Zones. Where routes cross within a Home Zone it must be clearly indicated in the materials and texture of the shared surface and the surrounding soft landscaping treatment. For example, raised tables can be used to emphasise such crossings and indicate pedestrian priority routes. Short corner radii should be used in such locations to help reduce vehicle speed.



- 3.20 At junctions within Home Zones drivers must be able to see the appropriate stopping sight distance (20 metres for 10 mph) along the adjoining street from a set back of 2 metres.



Driveway splays / radii to accommodate vehicle turning in narrower carriageways.

- 3.21 Where dwellings or rear parking areas take access from a narrow section of carriageway a wider vehicle tracking path is required to give access. In these circumstances a 3.5m corner radii may be required on both sides of the access (or an equivalent 45° splay). A small widening of the carriageway opposite the access can also be used, if its function is combined to provide a passing place.

Summary of technical and geometric standards for Home Zone development.

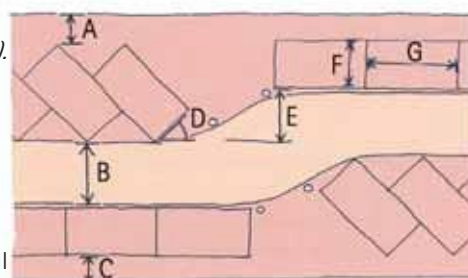
Table 3
Summary of Geometric Standards for Home Zones.

Item	Criterion	Comment
Maximum no. of dwellings.	25 dwellings <i>(Although no set upper limit).</i>	For a single access Home Zone <i>(Depends on traffic flow and access criterion see Table 1 on page 8).</i>
Design speed.	10 mph	
Maximum distance between traffic calming events.	30 metres	From best practice to date.
Forward visibility.	No greater than 30 metres.	Forward visibility should not significantly exceed this value.
Minimum width of Home Zone Gateway.	3.5 metres <i>(minimum permitting emergency vehicle access through a gateway)</i>	Drivers entering must see through gateway and beyond any narrow section of road when waiting in set back area.
Minimum width of vehicle track.	3.7 metres <i>(minimum road width permitting emergency vehicle access and operation)</i>	Drivers must see the end of narrow section. Lengths no less than 4.8 metres wide every 30 metres.
Minimum corner radius at junctions.	No minimum within Home Zone.	
Junction visibility splays within a Home Zone.	12 x 2 metres.	
Minimum centre line radius.	No minimum.	Limited by swept path analysis.
Maximum driving distance within a Home Zone.	400 metres.	Driving distance from the furthest point in a Home Zone to an entry point.

Source: Adapted from Home Zone Design Guidelines, Institute of Highway Engineers, June 2002.

Indicative Home Zone Street Plan

- A Safeguard 1.5m for pedestrian movement *(this can be the 1.5m width safeguarded in front of dwellings) (see (C) below).*
- B Provide minimum 3.7m road width.
- C Safeguard 1.5m in front of houses.
- D Parking angle can vary: road width may need to vary to complement.
- E Road realignments can vary.
- F & G Parking spaces may vary in dimension but generally they will be 2.5m by 5m or 2.5m by 6m for layby parking.



FINISHING, SERVICING AND MAINTENANCE CONSIDERATIONS

Designing and siting the components

- 4.1 Items of street furniture, such as tables and chairs, cycle storage facilities, and visible infrastructure housings, such as electricity meter boxes and sub-stations, must be well positioned and designed to be integrated into the overall design and character of public space. The siting and design of such features should be given early consideration so they are designed into the development in an integrated way. A common and attractive design theme is required for such items so they contribute to the housing area's sense of identity and distinctiveness and to reduce visual clutter.

Lighting

- 4.2 Lighting levels within the housing area must be appropriate for a residential area. Pools of light and dark should be avoided. An even light level will assist in illuminating obstacles and street furniture to drivers and pedestrians at night. Light fittings should be mounted on buildings where possible to reduce street clutter and allow greater flexibility when designing for the use of the shared surface space. This will require that an access for maintenance agreement (easement) be secured for the service and maintenance authorities through the title deeds of the property.



Paving materials

- 4.3 Paving materials in a housing area provide opportunities to distinguish the preferred use of a particular part of a shared surface and to reinforce the distinctiveness and identity of certain public spaces. A selected range of hard landscaping materials in an appropriate and complementary palette should be used across the entire housing area. The aim is to reduce visual clutter and produce homogeneity in the character of public space.

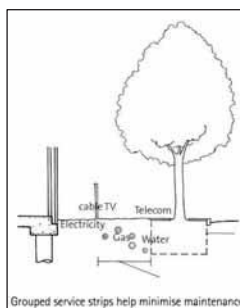


- 4.4 Flexible construction will be acceptable for use in the housing area. It may be treated with a resin based surface of an appropriate colour. Block paving will also be acceptable. A superior quality of paving material must be used in areas of special design treatment, such as stone setts or paving. This will ensure that the treatment of the 'floor' in areas of special design treatment helps define and complement the distinctiveness and identity of the space.
- 4.5 When deciding on the type of paving materials, relevant considerations include any technical requirements, the provision of Sustainable Urban Drainages systems, and the ease of removal and replacement for infrastructure and maintenance needs. Where possible maintenance covers, such as those for buried services, should match the appearance and materials of the shared surface.

Services and drainage

- 4.6 The National Joint Utilities Group recommends a 2 metre wide footway be provided to accommodate buried services. Such service strips may not always be appropriate for Home Zones due to the shared surface design and the need to accommodate changing carriageway alignments. With a well-connected layout it may be possible to accommodate services under the vehicle track. This will only be acceptable if two or more routes for vehicles are available for reaching the same destination, and the siting of utilities and manhole covers does not prevent access to properties, driveways or any rear parking areas. If a cul-de-sac is proposed, service strips should be accommodated within the defined pedestrian area of the shared surface, and must be accommodated off the vehicle running track. In relevant cases services should be fitted into the landscaping structure by, for example, grouping them to avoid features such as trees and potential root disturbance. This will allow the necessary street side and plot frontage landscaping treatment to be provided. For retrofit Home Zone schemes the route of existing services will likely be a significant factor influencing the design solution.
- 4.7 Services could be routed away from main streets through back streets or rear courtyards provided access is secured for and agreement is obtained from service / maintenance authorities. The route of all services should avoid disruption to the use of on street parking bays.

Grouped services



Reverse camber

- 4.8 Drainage in shared surface streets will require careful consideration and creating a low point in the centre of the street may be an appropriate solution (a reverse camber), or shedding towards landscaped areas. In consultation with Scottish Environmental Protection Agency and Scottish Water, the developer should maximise opportunities to incorporate Sustainable Urban Drainage Systems into their proposals, consistent with the management train approach. This will require reducing the rate and volume of run off, using porous surfaces, swales, storage systems, wet lands and attenuation ponds where appropriate.

Areas of planting

- 4.9 All planting should be semi-mature when provided to ensure traffic calming and aesthetic objectives are secured from the outset. Selecting the appropriate species of planting will be essential, in particular matters such as future growth potential, particularly in relation to any impact on the amenity enjoyed in properties, and leaf and fruit fall must be considered. Root disturbance to pavements and utilities infrastructure must be prevented and it may be necessary to install root barriers to secure this objective. A suitably sized permeable area around the base of planting when set in hard surfacing should be provided. The developer must provide and maintain suitable protection for planting in the early growth years.



Early growth years protection for semi-mature street trees



Adoption and maintenance

- 4.10 Developers must consult with relevant maintenance and service authorities at an early stage of the design process to ensure an acceptable design solution. In all cases the operational requirements of the maintenance and service authorities and the adoption specifications set by them must be met. The duty for maintaining certain elements of the housing area will be the responsibility of the Roads Authority, although responsibility for maintaining other elements, such as play equipment and landscaping features, will be maintained by other bodies. Legal agreement between the developer and the Council on bodies responsible for maintenance in perpetuity of all elements / features of the housing area must be secured before planning permission is approved.
- 4.11 When the developer has reached such agreement, prior to or with the application for Road Construction Consent, the developer must submit for approval by the Council a Streetscape Maintenance Manual for future use by the service and maintenance authorities. This will include the agreed responsibilities for maintenance of all elements / features of the housing area, including planting, street furniture and other design features, and details on roads construction and materials. The manual will indicate how replacements or alternative features / materials can be obtained for future maintenance needs. It will set out the obligations of the service and maintenance bodies, with particular regard to the required standard of reinstatement after works.
- 4.12 Developers should provide a House Handbook for future residents. This will set out the obligations of residents, for example any requirement to allow access for maintenance and for the retention and / or reinstatement of boundary treatment, as well as the philosophy of Home Zones. It should also set out the joint maintenance responsibilities of residents, such as for any identified community space and semi-private rear parking courtyards.

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