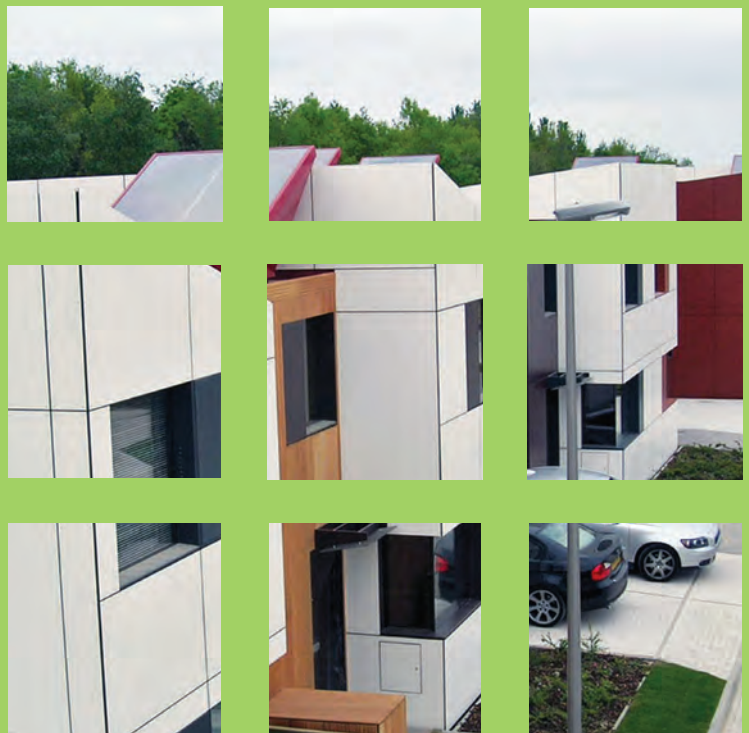


New Residential Development Design Guide

Supplementary Planning Document

Adopted April 2012





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Executive Summary

This Design Guide for New Residential Development in Milton Keynes is intended to ensure a high quality of development for the future growth and regeneration of Milton Keynes. This is especially pertinent for Milton Keynes with its large growth forecast and commitment to regenerating its deprived estates.

The Guide will have relevance for the entire borough, both for large greenfield sites as well as small infill sites. It is intended to both serve as a Development Management tool for assessing planning applications and reserved matters, as well as provide clarity to developers about what the Council expects in terms of the quality of new residential development.

The Design Guide is intended to be specific to the Milton Keynes context and will build on those elements of a neighbourhood that are popular with residents. It is not another generic design guide, although it acknowledges best practice in urban design as a given that must be respected. In this respect its guidance has been informed by two elements which form the content of the Guide:

1. The character of Milton Keynes and what have been its positive defining features since its growth commenced over 40 years ago. The design guide builds on this.
2. The regular occurring issues/problems that come up at pre-application discussion that affect the quality of new residential development in Milton Keynes. This document will provide guidance on these issues.

Appreciating the Context: Character of Milton Keynes

Milton Keynes is defined by the following positive design characteristics which should act as a design cue for the future:

- A strategic grid road network with associated landscaped grid road reserves
- A flood attenuation system which doubles as a strategic linear open space network
- Extensive planting within streets and public spaces
- Innovative and architectural interest and variety of early estates built and managed by the Development Corporation
- Innovative low energy housing and other projects designed to raise energy efficiency.

Section 2 establishes how these can be interpreted in the 21st century Milton Keynes and in the context of the sustainability agenda.

The Design Guide includes tabled criteria which require a developer to assess the local context which will result in the positive features of the site and the surrounding area being reflected in the new development.

Building a Place

Section 3 of the Design Guide focuses on guidance around the structuring elements that make up a large development in particular. This includes the movement network, block structure and how to accommodate the car.

Detailing the Place

Section 4 is focussed on the provision of design guidance at the scale of the individual dwelling and the relationship it has to the street and adjacent dwellings. It includes amongst other guidance setbacks, boundary treatment, frontage conditions and design appearance of buildings. Together these all have an important impact on the overall character of a development and the streetscape in particular.

Regarding detailed design appearance of buildings, the Design Guide does not advocate a particular style of architecture but as a new town with a history of innovation it does not support poor quality pastiche types that do not add to the character or identity of a development.

Design Quality Assurance

Section 5 focusses on Design Quality Assurance and includes a Design Checklist, as well as other methods of ensuring high quality residential developments in Milton Keynes..

Section 1 : Introduction

The way places and buildings are planned and designed matters to us in many ways. The built environment can be a source of everyday joy or misery. Its quality is an important influence on crime, health, community cohesion and prosperity. It also has a major impact on climate change.

1.1 Purpose of the Design Guide

1.1.1 This Design Guide has been prepared by Milton Keynes Council (MKC) to help ensure high quality residential developments are achieved in Milton Keynes. The Guide will:

- Be used by the Council in the determination of planning applications and reserved matters;
- Help developers understand what the local planning authority will expect from them particularly in terms of the design, layout and landscaping of new residential developments in growth areas as well as areas of regeneration and hence assist with the preparation of planning applications.

1.1.2 The Design Guide promotes best practice in urban design while at the same time reflecting and building on those elements of a neighbourhood that have proved successful in Milton Keynes. In this respect, Appendix A outlines case studies of various places in Milton Keynes that people like to live in and reflect many best practice urban design objectives.

1.1.3 The Design Guide will also serve as an important informant for the production of strategic masterplans, site specific development briefs and design codes in terms of general layout and design principles.

1.2 Scope of the Design Guide

1.2.1 The Design Guide will apply to the whole of the borough for all sizes of residential development. While urban design principles are still applicable, it is likely to be of less relevance to Central Milton Keynes (CMK) where requirements for key elements such as parking and density for example, are different to suburban residential development. There is in addition already detailed site specific design guidance covering CMK.

1.2.2 The Local Plan and Revised Proposed Submission Version of the Core Strategy contain a number of design policies for new development. The purpose of this Design Guide is to interpret the policies as they relate to residential development and to provide the level of detail required to assist both developers and the local planning authority.

1.2.3 The Design Guide provides requirements, practical advice and solutions, based on best practice, for many of the common design issues in Milton Keynes that Development Control officers are facing on a regular basis through pre-application discussions. These include:

- The character/identity of new developments (large ones in particular);
- The requirement to accommodate the car in the most appropriate way;
- The movement network;
- Development blocks;
- The detailed design appearance of buildings.

- 1.2.4 Investing in good urban design has been shown to add value to residential developments. However, design requirements should not be so onerous as to impact on the viability and/or deliverability of schemes.
- 1.2.5 Often designers of housing schemes will have to balance a number of design requirements. It will not always be possible to satisfy every requirement. If developers feel they are unable to comply with any aspects of the Design Guide, they should raise it with the Council as part of pre-application discussions.

What the Design Guide does not cover

- 1.2.6 The Design Guide is not providing guidance regarding urban design related issues that aren't typically discussed at pre-application meetings or in the preparation of masterplans and design codes. This therefore includes:

- An assessment of success and failures of the urban and landscape structure of Milton Keynes;
- New forms of structures for the city as it grows;
- Guidance relating to sustainable construction as this is covered by an existing SPD entitled "Sustainable Construction SPD".

1.3 Status of the Design Guide

- 1.3.1 The Design Guide has been prepared as a Supplementary Planning Document (SPD) under the Local Development Framework (LDF) system. It will be used by Development Control officers in the determination of planning applications.
- 1.3.2 The guide accords with and reinforces government guidance, as well as Local Plan policy and the submission version of the Core Strategy. The key local policies which are relevant to the Design Guide are included at Appendix B.'
- 1.3.3 The National Planning Policy Framework (NPPF), published in March 2012, sets out the Government's planning policies for England. These policies articulate the Government's vision of sustainable development, which should be interpreted and applied locally to meet local aspirations.
- 1.3.4 The NPPF states that:

The Government attaches great importance to the design of the built environment. Good design is a key aspect of sustainable development, is indivisible from good planning, and should contribute positively to making places better for people.

Neighbourhood Plans

- 1.3.5 The Localism Act 2011 introduces a new right for communities to draw up a neighbourhood plan. Neighbourhood plans will, once adopted, form part of the Development Plan.'

1.4 Lifespan Of Design Guide

- 1.4.1 The performance of the Design Guide will be monitored to establish whether it needs to be reviewed. A full review of the document will take place within at least five years after its adoption. However, it may be reviewed earlier if there are changes to policy or best practice guidance, which have a significant impact on the contents of the Design Guide.

1.5 Relationship of SPD to Existing Planning Consents, Briefs and Design Codes

- 1.5.1 Extant planning permissions and reserved matters approved prior to the adoption of this SPD, can be implemented as approved. The council would however always entertain re-submitted applications that accord more closely with the principles and guidance contained within this new SPD.
- 1.5.2 For some sites, planning permission has been granted subject to legal agreements and planning conditions which require developers to submit future reserved matters applications in accordance with approved pre-existing design codes. Where applications for reserved matters come forward in these areas, the Council will expect developers to follow the requirement of those pre-existing design codes but acknowledge that in submitting reserved matters applications, they may wish to incorporate the principles and guidance contained in this new SPD where they conflict with the content of the approved pre-existing design codes. Where the reserved matters

application is supportive of the content of the SPD, the Council will not refuse the application solely on the basis that it varies from any of the pre-existing approved design codes, especially when the application is seeking to incorporate the principles contained in this SPD.

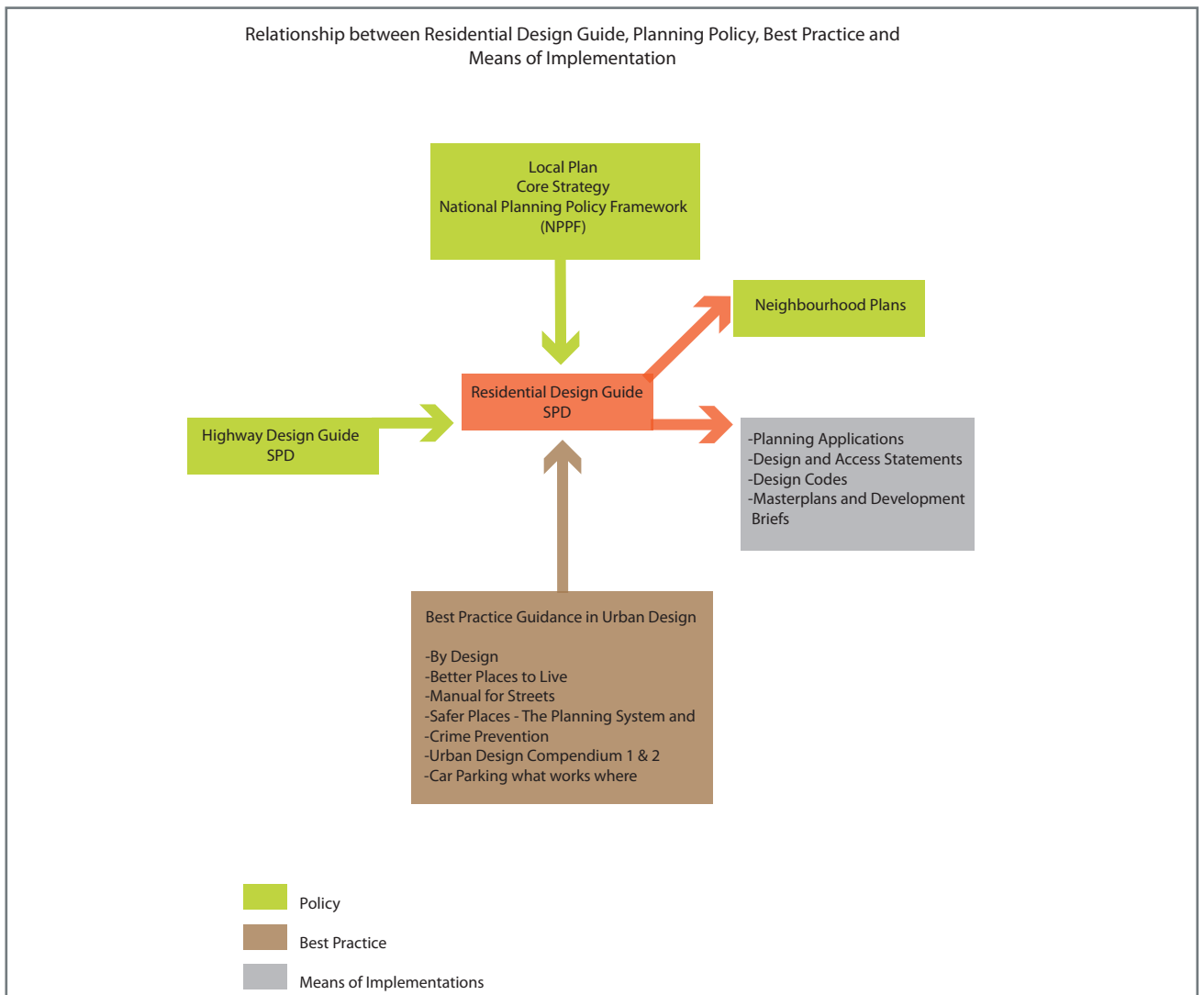
- 1.5.3 Planning Applications, Reserved Matters Applications (not linked to a legal agreement or conditional upon adherence to a design code) and other forms of design guidance (e.g. design codes) submitted after the adoption of this SPD will need to have been prepared, wherever possible and/or appropriate, in accordance with the content of this SPD. All planning applications and other forms of design guidance submitted after the adoption of this SPD will be considered against the content of this SPD.
- 1.5.4 The above does not negate the need for formal consents or variations to existing legal agreements.

1.6 Planning Policy and Best Practice Design Guidance Context

1.6.1 The diagram below reflects firstly the key policy and design guidance that all new developments must reflect and secondly, it identifies the (same) policy and guidance that has informed the production of the Design Guide. The best practice design guidance is not repeated in this Design Guide, but must, wherever possible, be taken into account by developers.

1.6.2 The diagram also identifies how the Design Guide influences various means of implementation.

1.6.3 The Design Guide includes highway design guidance where the latter has urban design implications. Detailed technical highway engineering requirements and standards will be covered by a separate document – the Highway Design Guide SPD.



1.7 Structure of the Design Guide

The content of the Design Guide has been structured such that it follows the sequence of steps that should be taken in the development process in so far as the 'urban design process' is concerned.

Section 1 sets out the purpose, scope and content of the Design Guide together with the relevant planning policy context.

Section 2 sets out guidance for appraising the context and then establishes at a city-wide scale what the key existing character of Milton Keynes is and how this can be used at a strategic level to inform the character and identity for new development in the city.

Section 3 is entitled 'Building the Place' and outlines the strategic elements that are involved in preparing a masterplan and site layout and lists requirements and practical advice and solutions on how to implement them.

Section 4 is entitled 'Detailing the Place' and provides practical advice, solutions and, where applicable, requirements on how to deliver high quality proposals for elements pertaining to the more local scale of the individual street and the environment around the home.

Section 5 focuses on Design Quality Assurance and includes a Design Checklist as well as other methods of ensuring high quality residential developments in Milton Keynes.

1.8 How the Design Guide relates to Design Principles

- 1.8.1 A workshop was held in July 2011 on the subject of the layout of residential estates. The workshop included members from the Development Control Committee, developers and their agents (architects), as well as officers from the urban design, planning and highway teams, and the Council's Crime prevention Design Advisor. The object of the workshop was to help understand what the important principles are that underpin the layout of residential neighbourhoods. A number of key design principles were agreed for incorporation into the Design Guide.
- 1.8.2 The table below shows how the contents of the Design Guide relate to:

- the design principles agreed at the Residential Estates layout workshop;
- the seven Urban Design Objectives outlined in the DTLR Publication 'By Design'. (2000)

Chapter	Neighbourhood Layout Workshop Design Principle	'By Design' Urban Design Principle
1. Introduction	n/a	n/a
2. Appreciating the Context	<ul style="list-style-type: none"> - Sense of community/identity - Variety of experience - Part of MK identity (landscaping) - Develop a mixed community <ul style="list-style-type: none"> Mix of people (age, gender, culture) Mix of buildings (styles and sizes) Mix of shops (shops, leisure, health) 	Character Diversity

<p>3. Building the Place</p>	<ul style="list-style-type: none"> - Sense of community/identity - Easy to access other places. - Maximise the use of non-vehicular routes. - Access to facilities - Feel safe - Know where you are - Develop a mixed community <ul style="list-style-type: none"> Mix of people (age, gender, culture) Mix of buildings (styles and sizes) Mix of shops (shops, leisure, health) - An attractive well-maintained environment - Management of parking levels. - Appropriate permeability - Vibrant and safe local centre 	<p>Character Ease of Movement Continuity of Frontage Legibility Diversity Quality of Public Realm Adaptability</p>
<p>4. Detailing the Place</p>	<ul style="list-style-type: none"> - Sense of community/identity - Easy to access other places. - Maximise the use of non-vehicular routes. - Access to facilities - Feel safe - Know where you are - Develop a mixed community <ul style="list-style-type: none"> Mix of people (age, gender, culture) Mix of buildings (styles and sizes) Mix of shops (shops, leisure, health) - An attractive well-maintained environment - Management of parking levels. - Appropriate permeability - Vibrant and safe local centre 	<p>Continuity of frontage Character Diversity Quality of Public Realm Adaptability</p>
<p>5. Design Quality Assurance</p>	<p>n/a</p>	<p>n/a</p>

Table 1: Contents of design guide - relationship to design principles

Section 2 : Appreciating the Context

2.1 Introduction

2.1.1 Understanding the context of the site is the first step in the design process. This analysis will inform a wide range of subsequent design decisions, including the layout, scale and massing of development, detailed design appearance and mix of uses.

2.1.2 In addition to the contextual appraisal for the site itself and surrounding area, it is important to determine what are, for Milton Keynes as a whole, the dominant character and defining features. This will add another layer of contextual information to inform the design of the site itself. Section 2.3 will address this.

2.2 Context Appraisal

2.2.1 Developers should consider the context at a number of different levels, from the site itself, through its immediate surroundings, to the wider local area. At the site level, (see Appendix C, Table C1) developers should identify the key existing features, including its landscape and ecology, buildings, routes and land uses.

2.2.2 The site's relationship to its immediate surroundings should be analysed, including important views into and out of the site, existing routes and access points, and the character of adjoining development. At the local area level, developers should identify the availability and location of facilities and employment opportunities.

2.2.3 The character of the new development should also be developed from an understanding of the context of the surrounding built and natural forms. A mix of high quality materials

and a contemporary approach to architectural design and detailing which draws upon a history of innovation within Milton Keynes should be utilised. The positive features of the surrounding local area that help create an identity or character for the development should be used as design cues to be interpreted in the new development.

2.2.4 The Design Guide includes an appraisal template for the surrounding area (see Appendix C, Table C2). It will be used to establish the context of the surrounding area to identify the positive features to be used as layout and design cues. The Council will encourage applicants to complete the appraisal tables to help establish a suitable character for the new development. It will be used to establish the local context and to identify the positive features to be used as design cues.

2.2.5 A neighbourhood or village design statement is an informal mechanism by which local communities can identify the distinctive character of their village or neighbourhood. Where these have been prepared, developers can utilise them as part of their contextual appraisal of the site.

2.2.6 Once the contextual character appraisal has been undertaken, the developer will need to determine which of the predominant features of the area are positive and have reinforced the character of the area. These elements should then be used to help determine the character of the new development alongside other factors, such as policy requirements (e.g. relating to sustainability, density, open space) and those derived from an appraisal of the site context (e.g. existing landscape and other features, views into and out of the site, routes to key destinations).

2.3 The MK Context and Character– What is it?

- 2.3.1 While the previous contextual analysis will inform the character based on the immediate site and surrounds area, it is important for the Design Guide to briefly analyse what some of the dominant character/identity and defining features/elements for Milton Keynes as a whole are as this will add another layer of contextual information to inform the design of the site itself.
- 2.3.2 The network of grid roads and associated roundabouts and reserves as well as the city's linear parks are undeniably the features that most strongly define the character of Milton Keynes. The Council has resolved to not only maintain the grid road structure but also to extend grid roads and reserves, if required, into any major urban extensions of Milton Keynes. The extension of linear parks is also a well established and accepted principle.

Variety and Sense of Place

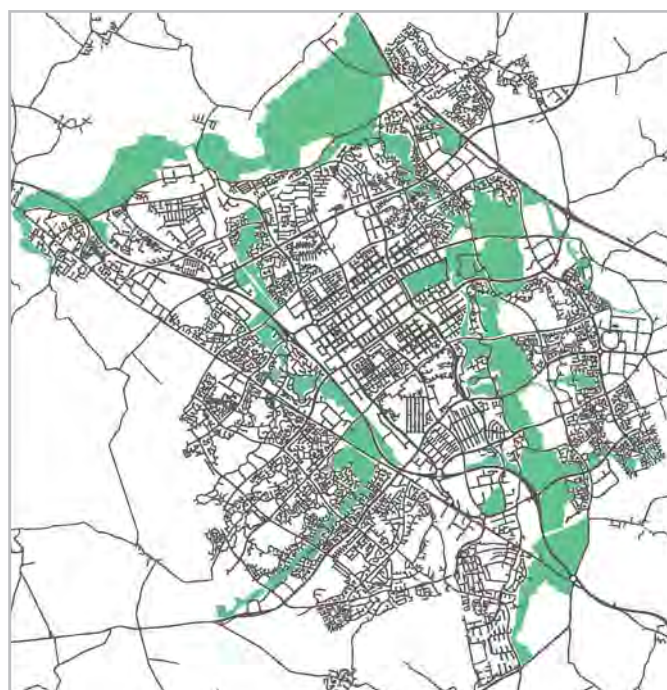
- 2.3.3 A study of the Milton Keynes Planning Manual, produced by the Milton Keynes Development Corporation (MKDC) in 1992, identified Variety as a key defining feature of the city. The MK Planning Manual states *"The overriding aims for residential areas are environmental quality, variety and a sense of place."* This is evidenced by what is visible on the ground today. This variety can be examined in five primary ways:

1. Layout

- 2.3.4 The masterplan for Milton Keynes as produced by the MKDC deliberately did not provide firm guidelines on street layout or patterns of development in residential areas and, as a result, the city has a great variety of residential layout (MK Planning Manual p23). The early parts of the city became a pepper pot of different structuring ideas which in turn had an impact on the sense of place or identity created.



Grid road



Linear Park System

2.3.5 Many early estates had an overall structure based around various forms of a rectilinear grid comprising both a connected grid as well as culs-de-sac, while later estates started taking on a more curvilinear approach which over time has included two forms, initially a circuitous structure of spine and culs-de-sac and more recently, in accordance with best practice guidance from publications such as *Manual for Streets*, a more fine grained curvilinear pattern of perimeter blocks. The curvilinear approach to estate structure was to firstly, reduce vehicle speeds, and secondly, to discourage rat-run movements.

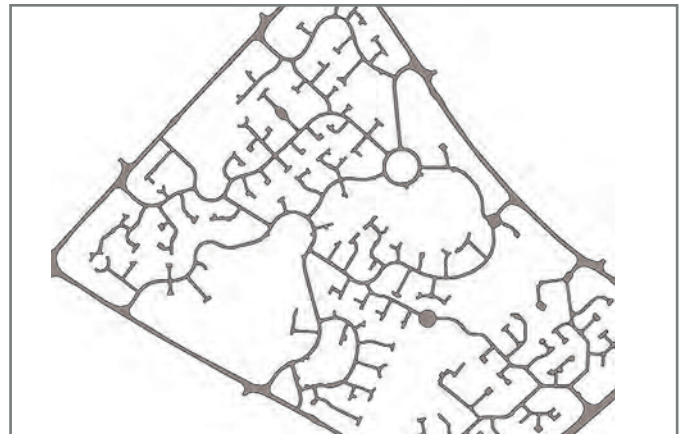


Plan of Coffee Hall, Beanhill and Netherfield showing grid and straight streets

2. Densities

2.3.6 While the masterplan established the principle for a low density city, there was to be wide local variation to provide a choice of living environments with some places expected to be hard and urban in character.

2.3.7 In reality however, the choice of living environments envisaged in the original masterplan has been lost to a rather uniform density across the city with very little density variation within grid squares, as development intensity has rarely responded to local features such as local centres (City Structure, MKDC, 1980).



Plan of Emerson Valley showing spine and cul-de-sac

2.3.8 With the adoption of PPG3 (Housing) in the 1990s, net densities of new development have increased, particularly around local centres and along public transport routes.

2.3.9 Gross densities across Milton Keynes are however generally still low, largely because of the extension of linear parks and other strategic open space incorporated as part of new developments across the city. This is however a defining feature of MK and what makes Milton Keynes so desirable for its residents.



Plan of a part of Ashland showing curvilinear perimeter block

3. Buildings: Massing

2.3.10 The original masterplan identified that no buildings (other than CMK) were to be taller than three storeys. While some taller buildings have recently been used to highlight gateways and key corners in Milton Keynes, a key feature of Milton Keynes is the fairly uniform building height of three storeys and below.

4. Detailed Building Design Appearance

2.3.11 While the designated new town boundary of Milton Keynes did include eleven existing villages and four small towns, which needed to be respected and preserved as the city grew, the new development of the city occurred entirely on greenfields with very little context.



Pattinson Lane, Woolstone



Bradwell Common



Downhead Park

2.3.12 As with residential layout, there was very little guidance given on architecture. Variety in design was sought. Architects were given in effect a 'blank sheet of paper', with little need to be concerned by the surrounding context as each estate was separated from the next by grid roads and associated swathes of landscaping. The result was substantial innovation - Milton Keynes was seen as a test bed for architecture - and a great variety of architecture with no predominant style and appearance resulted.



Oxley Woods

2.3.13 Some estates, such as Great Linford, were subdivided into parcels for a number of different architects to work on, with the result that there is great architectural variety within the estate. The variety in building appearance between estates however does not visually clash as each estate is separated by extensive and mature landscaping, comprising the grid road reserves.

2.3.14 In terms of building appearance there was hence no one identifiable character across the early estates. It could be argued therefore that Milton Keynes in its early years in terms of architectural appearance had a "patchwork" character. The patchwork was generally created per grid square rather than within grid squares – clash of building appearance across streets did not generally therefore happen.

2.3.15 Some more recent interesting and contemporary buildings have also been as varied as in early estates. The detailed design appearance of these developments has helped create identity for the development (see adjacent photos).



Broughton Gate



Ashland

2.3.16 There have however been instances in Milton Keynes in the past 10-15 years, particularly on the greenfield flanks, where the detailed design appearance of new housing has been such that it has not helped create a sense of identity for a development and has not added to the creativity, ambition and innovation which was evident in many early estates. In these cases, the building appearance for each estate is very similar resulting in an unidentifiable character for each estate. This contradicts the patchwork character and variety that was prevalent in earlier estates.

2.3.17 Identity in many early estates was established through the use of a common building material. For example, in the 'doughnut estates' ringing Central Milton Keynes the use of large amounts of buff brick gave an identity to these estates.



Grange Farm - detailed elevation design has not added to the character of the development



Conniburrow - the use of one dominant material helps to provide an identity for the estate

5. Landscaping

Existing landscape structure and features

- 2.3.18 The retention and inclusion of existing landscape features (woodland, trees, hedges, ponds etc.) has been widely used to structure new development and create opportunities for open space.
- 2.3.19 The landscape structure furthermore provided a framework for development to occur, differentiating one area from another, accentuating point of interest, framing views, screening incompatible uses and providing open space for activities.

Landscaped Boulevards and 'Main Local Routes'

- 2.3.20 Planting along "main local routes" was a key aspect of developments as it not only provided a significant character element within the development, and differentiated main and minor local routes, but also helped to link open spaces together and provide wildlife corridors.



Existing structural planting in Oakhill



Main local route in Shenley Brook End



Existing structural planting in Shenley Church End



Conniburrow Boulevard

Streetscape Design

2.3.21 Much attention was focussed on streetscape design, with planting, hard and soft treatments, special features and building frontages combined to create a sense of place, particularly along main local routes. Significant hedge planting in some estates along front boundaries served to help provide a unifying character to the development.

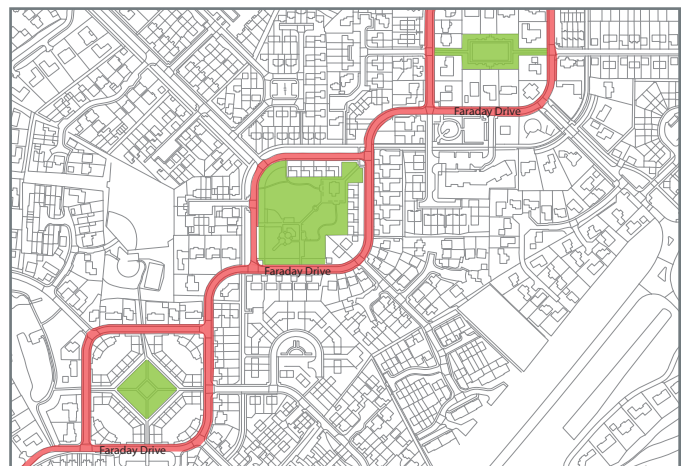
Other Key Features of Milton Keynes

Innovation

- 2.3.22 The layout of residential development and design of buildings was particularly in the days of the Development Corporation driven by innovation.
- 2.3.23 The layout of a part of Shenley Lodge for example, contained a linked system of squares while a part of Pennyland was designed with east-west aligned streets and houses all with south-facing gardens to capture solar gain.
- 2.3.24 Milton Keynes has led the way in low energy housing and other projects designed to raise energy efficiency. Architects were attracted to Milton Keynes as a city where it was possible to test innovative ideas for low energy and sustainable homes.
- 2.3.25 Early experiments focused on gaining free energy from the sun. These homes also included much higher levels of insulation than were normal in Britain at the time. Although many were in small developments, some tested ideas and set standards that were later adopted across the new city and the UK as a whole.



Hedges help create a unifying character to Colesbourne Drive in Downhead Park



The squares along Faraday Drive, Shenley Lodge



Florin Close, Leopard Drive, Noble Close in Pennyland - buildings positioned to capture solar gain

2.3.26 The work on low energy housing since the early 1970s, and most notably in Shenley Lodge during the late 1980s, has given rise to a wealth of experience upon which central government has based its ongoing work on Part L building regulations. The work also led to the adoption of national standards 'beyond the regs' by HCA. It's important that Milton Keynes maintains this momentum and continues to provide exemplar housing during the run-up to zero carbon homes nationally in 2016.



Shenley Lodge (Energy World)

2.3.27 Other examples of innovative energy efficient housing schemes include Future World at Kents Hill, 'Homeworld' in Bradwell Common, and more recently Oxley Woods in Oxley Park.



Bradwell Common (Homeworld)

2.3.28 Recent development in Stantonbury Park has shown how accommodation can be innovatively arranged. In this instance, accommodation that would normally be arranged within an apartment block has been built as a townhouse at affordable prices.



What would normally be a 2 bed room apartment represents a 3 storey 'townhouse' with terrace garden

2.4 Development within Rural Villages, Conservation Areas and Listed Buildings

Rural villages

- 2.4.1 In addition to the main built-up area of Milton Keynes, the administrative area of Milton Keynes Council includes a significant area of countryside within which are set a number of villages. These rural villages have their own locally distinctive vernacular character. Any new development within these villages should respect the existing character of the settlement.

Conservation Areas

- 2.4.2 The Planning (Listed Buildings and Conservation Areas) Act 1990 gives Local Planning Authorities the power to designate Conservation Areas. These are areas that are 'of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance'. There are 27 conservation areas in the Borough, ranging from towns such as Wolverton, Stony Stratford and Olney to small rural villages like Clifton Reynes and Newton Blossomville. The location and boundaries of these conservation areas can be obtained from the Council's website or from the Council's Conservation and Archaeology Team.
- 2.4.3 Any development which takes place within a conservation area is required to preserve or enhance the character and appearance of the area. This requirement will also apply to any development outside of the conservation area which would affect its setting, including views within, into or out of the area. Discussion should be held with the Conservation and Archaeology Team prior to the submission of any application.

- 2.4.4 For sites in or near a conservation area, a more detailed appraisal would be required.

Listed Buildings

- 2.4.5 Listed Buildings are buildings of national significance that are entered on the statutory list of Buildings of Special Architectural or Historic Interest. These buildings are afforded statutory protection making it a criminal offence to alter them in a way that affects their character without first obtaining listed building consent.
- 2.4.6 Where sites include listed buildings there will be a strong presumption for their retention. Only very rarely and in exceptional circumstances is a listed building allowed to be demolished. Where a building is in need of repair to ensure its long term preservation, development on the remainder of the site will be expected to secure such works, completing them at an appropriate stage to be agreed with the local planning authority. Where a new use is required, the local planning authority will expect the applicant to follow national guidance on securing uses that are compatible with the character and special interest of the building.

2.4.7 Some sites may not actually include listed buildings but may be within their setting. If this is the case, the setting of the listed building(s) must be preserved. The extent of setting will vary from building to building and will ultimately depend up on the type of building and the nature of its surroundings. Where setting is likely to be affected, in drawing up initial proposals the applicant should demonstrate how the following has been considered:

- The current setting of the building(s);
- Whether it is desirable to preserve this setting (e.g. whether there are harmful features that may be removed)
- Principles as how best to preserve (or improve) this setting;
- How the proposal achieves the preservation of the setting.

2.5 Small-scale Infill Development

2.5.1 Much of the guidance within this Design Guidance relates to larger scale development involving the creation of new street networks and block structures. However, the principles of good urban design are just as relevant to small-scale infill development.

2.5.2 The immediate context of the site is critical in the design of small-scale residential schemes, particularly where development infills within an existing streetscene. The 'area character appraisal template' (see Appendix C, Table C2) should be used to assess the

character of development adjoining the site. In particular, account should be taken of the existing:

- Building line and setbacks;
- Building heights, scale and massing;
- Building types;
- Continuity of frontage;
- Materials;
- Roof form
- Materials;
- Fenestration;
- Front boundary treatments.

2.5.3 The analysis of the immediate area should identify what aspects of the context are important to reflect in the new development. It may be that there is a uniform use of materials, a consistent building line, or predominant building type.

2.6 Character and Identity for the Future of MK – Lessons from the MK Context

Design Aspirations / Vision

- The character of new development must be developed from an understanding of the positive attributes of the site itself and surrounding natural and built forms;
- Where this is absent, as may be common in Milton Keynes, the challenge will be to create new distinctive places with their own identity;
- The elements of a development that a developer can use to create and affect character or identity of a place are primary street layout, densities, massing, detailed design appearance and landscaping and public realm;
- Across the city as a whole, a **variety** in terms of density, street layout, landscaping and design appearance is encouraged. The ability of a specific site to reinforce this variety will depend on the nature of the site and surrounding context (for example a site adjacent to a grid road and its reserve could reflect for example a different character to the adjacent estate) as well as the size of the development. Small infill sites might need to respond very closely to the existing development within which it sits, while larger greenfield developments in particular may need to generate a larger variety in terms of layout and design appearance;



The use of render and light tones helps establish an identity for Ashland



Dominant use of buff brick and red roofs has helped establish an identity for this part of Downhead Park

TABLE 2: FEATURES THAT INFLUENCE THE CHARACTER OF A STREETSCAPE

STREET ELEMENTS
Street surfacing materials
Shared surface or pavement/carriageway
Street trees and other planting
Car parking, e.g. on street, off street, on plot etc.
Street geometry, e.g. straight, curved
Street furniture and lighting
EDGE CONDITIONS
Enclosure (height to width ratios)
Continuity of built frontage
Building forms, e.g. detached, semi-detached, terraced etc.
Building heights
Setback/ defensible private spaces
Boundary treatments
Appearance of buildings

- For a large development the 'unit' of character should be the street. So by definition the character of a street should be uniform in terms of visual distinctiveness. Other streets, and buildings that line them, within a large development or new neighbourhood can have varying features but there should be some common elements throughout the scheme (e.g. a landscaping feature, street structure or building material) so that the development or neighbourhood as a whole has a feeling of a common identity;

- With respect to the potential for design appearance (or architecture) to influence the character of, in particular large greenfield developments, a careful balance needs to be struck between too much variety in terms of building appearance, which may give the impression of an architectural "zoo" and hence undermine a coherent identity for the development from being created and not enough variety which could lead to an overly monotonous character. As a general rule, a limited palette of materials is believed to lead to the creation of a stronger character for a development. Development briefs and/or design codes should specify what the requirements are regarding the design appearance of the development with a view to creating a strong character for the development;

- Character and identity is principally established and perceived in the most public areas of a development, most notably the streets as well as the buildings that enclose them. These areas require the most careful attention with respect to design;

- This makes the features that comprise the streetscape fundamental in influencing the character of the development. Table 2 outlines those features that will vary according to street type and how the designer chooses to use /design them.

- The landscape framework must provide a structuring element and framework for the entire development;
- For larger developments the presence of local facilities such as shops, schools, open spaces and play areas must be located and designed to contribute to the character of the development;
- The requirement for improved sustainability standards should be exploited and seen as a positive way of influencing the character of a development with respect to layout, landscaping and detailed design appearance;
- While Milton Keynes should continue to be characterised by low rise buildings of 3 storeys and lower, taller buildings should be used to highlight key gateways and corners and assist with wayfinding as well as vary character across a site.

Section 3: Building a Place

3.1 Introduction

- 3.1.1 This section provides guidance, advice and solutions regarding the “structure” of a place, which refers to the pattern or arrangement of development blocks, streets, buildings, open space and landscaping. It’s the interrelationship between all these elements, rather than their particular characteristics that bond together to make a place.
- 3.1.2 The overall urban and landscape structure of a place or development is informed by the context appraisal outlined in the previous chapter as well as the requirement to accommodate the intended development components. Together they should inform a vision and concept which when underpinned by best practice urban design principles influences the masterplan and detailed layout.
- 3.1.3 The following principles reflect a summary of what is required when approaching the overall urban/landscape structure or masterplanning stage of a large development in particular.

Design Principles

- Existing positive site features should be used to structure the entire development (established as part of the context appraisal);
- Development should be based on a permeable movement framework, which builds on pedestrian desire lines and is connected, where possible and appropriate, with adjacent street networks;
- At the masterplanning stage, the movement network must be designed and laid out such that pedestrians are considered first, followed by cyclists, public transport users, service delivery vehicles and finally cars;
- The movement network should be arranged so as to maximise passive solar gain capture;
- Non-residential uses such as schools, local centres and open spaces should be overlain onto the movement network in the most accessible places;
- A hierarchy of street types should be established with different characters based on their importance with regard to their role as a place and as part of the movement network;
- Schools, shops, and other community uses, should be co-located to, amongst other benefits, reduce the amount of parking required. The surrounding street network should be masterplanned to minimise walk distances to these community facilities;
- A range of densities should be included that are contextually appropriate and take into account the site's size and its level of accessibility to public transport, facilities, shops, employment opportunities, open space and the rural edge. A range of densities will encourage a range of housetypes to be provided that suit a range of needs;
- Buildings in general to be arranged in perimeter block format with private backs and public fronts;
- Wherever possible allow for direct access to plots and / on street parking - this implies locating a street to the front;
- Clearly demarcate public and private space, as well as required service access;
- Layouts should be such so as to allow as much parking as possible to be on plot and on street - so long as all other best practice urban design principles can be achieved;;
- Where appropriate (e.g. to mark gateways and key corners, help with wayfinding, reinforce street hierarchy and vary character) taller buildings should be used.

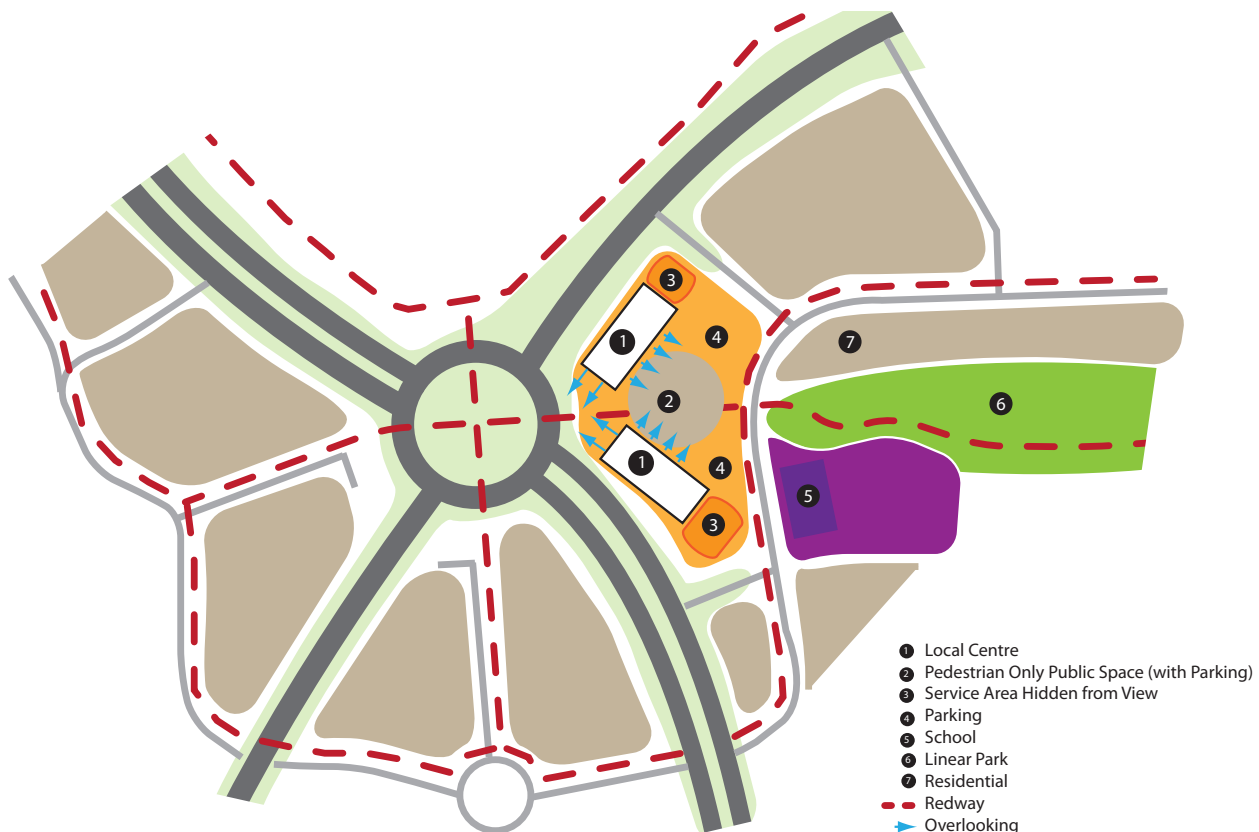
3.2 Local Centres

3.2.1 If a development is of such a size and/or is in a location that it requires a local centre, the following principles should be adhered to with respect to the location and design of the local centre:

- The local centre should be located in the most accessible location for pedestrians and cyclists, as well as cars. It should therefore be located at a junction of the highest order streets within the development;
- Local centres will be major local attractors over one or more

neighbourhoods, so the movement network should provide the shortest possible pedestrian and cycle routes from housing;

- Local centres must be designed as areas of social gathering and hence must have a high quality public realm. In this respect careful consideration needs to be given the location of servicing so that it does not undermine the quality of the public realm and the pedestrian experience;
- In this respect there should be a clear distinction/definition between that part of the local centre where users arrive (both by car and foot) and that part which requires servicing.



Concept plan for local centre showing relationship between various elements

3.3 Community Safety – Strategic Issues

- 3.3.1 A key requirement of “sustainable communities” is “neighbourhoods which are designed to minimise crime and anti-social behaviour”. The layout of a residential area can have a significant impact on crime against property, cars and pedestrians as well as anti-social behaviour. Developers should therefore discuss their proposals with the Crime Prevention Design Advisor at the earliest opportunity, as they will generally be expected to achieve the Secured by Design accreditation given by Thames Valley Police. “Secured by Design” is the Police initiative supporting the principles of “designing out crime”.
- 3.3.2 National guidance on community safety is provided by “Safer Places: The Planning System and Crime Prevention” (ODPM, 2004). The guidance identifies seven attributes of safe, sustainable places. Achievement of the first five attributes are very much concerned with the strategic layout of a development.

3.4 A Place that is Accessible for All

- 3.4.1 The CABI publication “The Principles of Inclusive Design” contains guidance that will make a place more accessible for all, and in particular, for the elderly, people with a disability and families with small children.

Access and movement -

places with well-defined routes, spaces and entrances that provide for convenient movement without compromising security;

Structure -

places that are structured so that different uses do not cause conflict;

Surveillance -

places where all publicly accessible spaces are overlooked;

Ownership -

places that promote a sense of ownership, respect, territorial responsibility and community;

Activity -

places where the level of human activity is appropriate to the location and creates a reduced risk of crime and a sense of safety at all times;

Physical protection -

places that include necessary, well-designed security features;

Management and maintenance -

places that are designed with management and maintenance in mind, to discourage crime in the present and the future.

Seven attributes of safe, sustainable places

3.4.2 The following principles, based on the CABE guidance, represent good practice and will help in the development of an accessible neighbourhood:

- Involving people in design of neighbourhoods - community organisations like the Centre for Integrated Living in Milton Keynes can help ensure the participation of people from the disability community and the older residents (contact details: www.mkweb.co.uk/mk_disability/);
- Places without barriers - making Milton Keynes barrier free for the elderly, people with a disability and families with small children reduces the barriers for everyone;
- Make reasonable adjustments - in particular considering the multi-users of environments; including motorised-wheelchair users, the needs of those with a sensory disability in signage, the need for dropped kerbs and lighting.

3.5 Landscape, Public Space and Biodiversity

General Principles

- 3.5.1 Public space (also often referred to as “public realm”) is made up of the green spaces, parks, streets, squares and other outdoor places that we use or pass through in our everyday lives.
- 3.5.2 Good quality public realm, which is attractive, inviting, safe and well-maintained, must be

the aim of any new development since it is a key element of the character and perception of a place. Open space in all its forms has a major influence on the well being of the whole community and that value should be fully recognised as integral to the quality of the development as a whole.

- 3.5.3 Landscape quality and management of public space is a central theme of overall design and should be considered and designed in early in at masterplan stage. It should be used to structure and articulate the entire development. The inherent landscape assets should be used and integrated within the open space infrastructure and help form and guide the development.
- 3.5.4 Public green space associated directly with residential areas should be easily accessible for all the community. Opportunities to co-locate open space with other public amenities, community buildings, schools and shops should be sought.
- 3.5.5 Residential open space should normally be fronted by development to exploit the mutual benefits of that design relationship. Some categories of green space, for example: District Parks, Linear Parks, Country Parks and some Local Parks would not be expected to conform



Public open space integrated into and fronted by development

universally to the “front on” concept. It is however essential to ensure the principles of good access, passive surveillance, quality design and management and local “ownership” are built into the delivery and management of all categories of open space.

3.5.6 New play areas are to be included according to current requirements (see Appendix B) and the following locational/design principles should be applied:

- Need to be designed into the overall layout of the new development from the outset;
- Must be located in an accessible location, so along a redway or other pedestrian desire line;
- They should feel safe and hence should be overlooked by development;
- A street should occur to the front of the houses that overlook the play area to provide a defensible buffer between the two, as well as improve surveillance through increased passers-by;
- Larger play areas for older children and related sports facilities (such as skate parks) that may generate greater levels of noise may be better located within larger open spaces, such as linear parks where overlooking development might be less of a contributing factor towards achieving safety. Surveillance could still be achieved by locating it adjacent to a key pedestrian

desire line such as a redway, where regular passers will help to make the play area feel safer.

3.5.7 Residential layouts must avoid “**left over space**” which typically provides little benefit or relevance to the residential area. The test of relevance should focus on the positive contribution a space makes to the neighbourhood. A space which does not make a positive contribution, such as behind rear gardens, inaccessible corners, over-enclosed corridors must be avoided. The costs of maintenance are not balanced by the benefits, they are frequently under-used and may become prone to anti-social behaviour and fly tipping. Appropriately designed and integrated open space would eliminate “left over space” and optimise resources for the provision of good quality open spaces.



Left over space behind rear gardens can become prone to fly-tipping



These sort of 'left over' spaces with no function should be avoided

The Milton Keynes Context

3.5.8 A key aspect of Milton Keynes, much appreciated by residents is the green environment. Consultation on the Community Strategy identified this as the most important influence on the quality of life. Consequently, any new development should reinforce the existing 'green' character of the city and seek opportunities to support the established principles. The Milton Keynes Open Space Strategy supports and guides the Authority's approach to open space.

3.5.9 The importance of green space in the city's growth does not mean however that future development will be provided in the same way as in the past. The provision and management of open space in the future needs to balance differing needs not least of which are issues of crime, fear of crime and ongoing maintenance costs. A key point to recognise however, is that open space is delivered largely through development and the character of the city is reflected through both existing and new residential developments. It should be further recognised that higher housing density and increased pressure on land generally requires that open space "performs" a multifunctional role. Open space can deliver the optimum multifunctional benefits through the following:

- The masterplanning of new developments particularly on the periphery of the city must ensure that where appropriate and achievable, existing linear open space corridors are extended into new developments. Where these do not occur, large new

- developments in particular should be structured around open space corridors that serve to integrate development rather than divide them and that accommodate the multifunctional uses required of modern development;
- The retention and use of existing landscape assets as part of new developments should be a guiding principle. This not only enhances the biodiversity where the long established features are often the richest assets, but provides a sense of maturity to developments. Using elements of former landscape character and land use helps to integrate new development within their locality;
- Good landscape design can help legibility, create focal and reference points, enhance biodiversity and enhance the overall quality of the external environment. The form, texture and colour of plant material can compliment and enhance new and existing building materials. To help establish identity for a new neighbourhood, a palette of tree species which are predominantly native or of local provenance should be established at the design code stage of the process. Non-native species, where used, should be selected for known wildlife value;

- Developers should integrate landscape within the built development, rather than viewing it as a separate entity confined solely to areas of public open space. The green character of the city can be reinforced in a variety of other ways, including street trees, verges, green front gardens, green roofs and green walls;
 - Green roofs can provide a number of environmental benefits including insulation and cooling of buildings, significantly reducing rainwater runoff from roofs, improving air quality and promoting biodiversity. They can also provide outdoor private amenity space, particularly within apartment developments where the demands on available space are at premium. Consideration should be given to including domestic fruit trees or other appropriately sized trees within rear gardens;
 - Consideration should be given to incorporating community food growing opportunities as part of public open space, e.g. allotments, community gardens/orchards, planting fruit trees.
- 3.5.10 The Milton Keynes Green Infrastructure Plan (Feb 2008) is an important document to draw upon. It should be used to help inform connectivity of green space and biodiversity with surrounding natural green space and target areas. This plan identifies the natural assets and how these can be linked with the urban environment within and surrounding developments.
- 3.5.11 The Open Space Strategy provides guidance on the landscape infrastructure with a primary focus on the City area.
- 3.5.12 Policy L3 of the Local Plan requires that new development meets minimum standards for the provision of public open space which are set out in Appendix L3 of the Local Plan.
- 3.5.13 The Parks Trust plays an important role in the management and maintenance of open space in the city, including the strategic open space network of the linear parks and landscaping along Transportation Corridors. When developing adjacent to these existing areas, developers should liaise with the Parks Trust to ensure that their proposals do not unacceptably impact on existing landscaped areas, by causing damage to the existing landscape or creating future maintenance difficulties for the Trust.'

Biodiversity

- 3.5.14 The design and layout of new residential development should protect and enhance biodiversity on the site, and enhance connections between ecological features within and across the site. Existing areas and features of biodiversity value should be incorporated into the design and layout and wherever possible enhanced.
- 3.5.15 Biodiversity features which might be incorporated in the design and layout of new developments could include:
- (1) Sustainable Urban Drainage Systems (SUDS);
 - (2) Green roofs and green walls;
 - (3) new pond and other water features;
 - (4) a varied structure of wildlife friendly trees, shrubs and flower rich meadows;
 - (5) bat or bird boxes and crevices."
- 3.5.16 A biodiversity report will be required for all applications to create 5 or more dwellings, or where there is evidence of a protected species or a strong likelihood of a protected species being present. The report should include: (1) a desk study of the site and surrounding area to identify designated wildlife sites, statutory or non-statutory (Local Plan policy NE1); (2) on-site surveys to record habitats and identify protected or priority species (Policy NE2); (3) impact assessment and mitigation (Policies NE1, NE2); (4) proposals for overall biodiversity enhancement (Policy NE3).

Soft Landscaping

- 3.5.17 "Soft" landscaping refers to natural features, which provide screening, shade, habitat, texture, form and colour as well as privacy, security and a recreational environment. The

Open Space Strategy outlines the hierarchy of open spaces in Milton Keynes and the range of use each is expected to provide.

- 3.5.18 Careful consideration should be given to the types and species of new planting used within spaces to accord with their functions. A further important consideration is the need to design in and specify for "low maintenance".
- 3.5.19 Tree planting has substantial benefits in a residential area, providing shade, visual interest, cooling, habitat, carbon and pollution capture. Consideration should be given to the choice and location of species to ensure the trees are able to deliver the benefits without the problems of obstructing movement, light/solar gain losses, water loss and damage to pipes, highways, or buildings. The emphasis should be to design holistically, where landscape and particularly trees and built elements exist in a positive and complementary relationship.



The use of particular tree forms or species can aid legibility

3.5.20 The appropriate choice of trees, bearing in mind not only their intrinsic qualities but likely size and root systems is paramount. Tree planting along a street can add definition and enclosure to a street, provide shade, increase biodiversity and help frame important views and vistas. Attention should be given to the local environment and its capacity to accommodate trees as they mature (see Highway Design Guide which includes details of street trees and species).

Hard Landscaping

3.5.21 “Hard” landscaping refers to the man-made elements of a landscape scheme including paving, walls and fencing, tree grilles, street furniture (seating, litter bins, bollards, railings and lighting) and public art.

3.5.22 Street furniture, road markings and signs should not over-dominate spaces or result in visual clutter and be integrated into the overall appearance of the street.

3.5.23 Materials and street furniture need to be aesthetically pleasing structurally robust, resistant to vandalism, have good weathering characteristics and only require simple maintenance. When choosing materials and street furniture, consideration should be given to the availability of replacement products, particularly when more bespoke designs are used.

3.5.24 Where a development is phased, street furniture should be compatible with other phases of the development.

3.5.25 A varying palette of surface materials can be used to emphasise a hierarchy of streets and to add interest and variety to the street. The surface materials chosen should complement the building.

Maintenance

3.5.26 Developers are required to identify the public and private external spaces within their development. They must identify the size of each of these spaces, highlight them clearly on a plan as well as identify the specification for the spaces. Proposed ownership and management responsibility for different areas should be clearly set out at the start of the planning process.

Public Art

3.5.27 Public Art can add to local identity and sense of place, and aid wayfinding. Opportunities for art to be incorporated into the streetscape through bespoke design of street furniture (such as seats, railings or other elements) should be taken. It should be specifically designed as part of the development. Developers should discuss their proposals with the Council’s Public Arts Projects Officer at an early stage in the design process.

Landscape Adoption Process/Requirements

- 3.5.28 The process is supported by the recommendations of the Audit Review on Open Space and Highway Adoption (2009).
- 3.5.29 Milton Keynes Council has an established process for the adoption of open spaces which is based on the following key stages:-

Pre-Submission

- 1] Developer contacts the Council's Open Space Adoptions Officer at pre-application stage to discuss design principles and open space requirements for the proposed development. [This is in liaison with the Development Control case officer who is responsible for coordination of activities to Application stage];
- 2] Open Space Adoptions Officer provides guidance on open space for the proposed development in accordance with Local Plan requirements and SPD, and in consultation with colleagues in landscape architecture, arboriculture, ecology, etc;

Post-Submission

- 3] Developer submits draft open space design with Application. Open Space Adoptions Officer advises Planning and provides stage 1 approval;
- 4] Developer submits design details/ specs and layout for approval. Open Space Adoptions Officer advises Planning and provides stage 2 approval;

Post-Determination

- 5] Developer implements open space in accordance with stage 2 agreement;
- 6] Open Space Adoptions Officer and Developer liaise during implementation to Practical Completion Certification;
- 7] Open Space Adoptions Officer provides Final Completion Certification after 12 months or agreed establishment/defects liability period;
- 8] Open Space Adoptions Officer instructs legal adoption and freehold transfer to MKC;
- 9] Open Space Adoptions Officer accepts adoption/transfer from Developer and instructs Landscape Maintenance to undertake ongoing maintenance responsibilities on behalf of MKC.

A full step by step version of the Open Space Adoption Procedure is available from the Open Space Adoptions Officer.

For further guidance : The Open Space/ Highways Adoption website provides further detail, guidance and site adoption status.

<http://www.milton-keynes.gov.uk/landscape-roads/>

Landscape Quality Assurance – the required process

- 3.5.30 Milton Keynes Council expects suitably qualified ecologists and landscape architects to be employed to advise on all biodiversity and landscape matters.
- 3.5.31 The following provides guidance on how the Council expect developers to appraise the existing landscape and open space character of their sites and surroundings:

- Typically, developers/applicants should employ Landscape Architects to address these issues with the Council relying heavily on the Landscape Architect's competence to assess the landscape character and context. With large scale developments, typically within the expansion areas, the overall landscape infrastructure will have been established within a Development Framework document and supported by Design Codes. This provides the "master plan" from which individual site related designs can be prepared to suit the character and scale of the development. Notwithstanding this, each respective planning application must be supported by a Design & Access Statement (DAS), to demonstrate how the proposed landscape approach addresses the wider landscape character, framework, codes and local needs. Infrastructure, drainage strategies

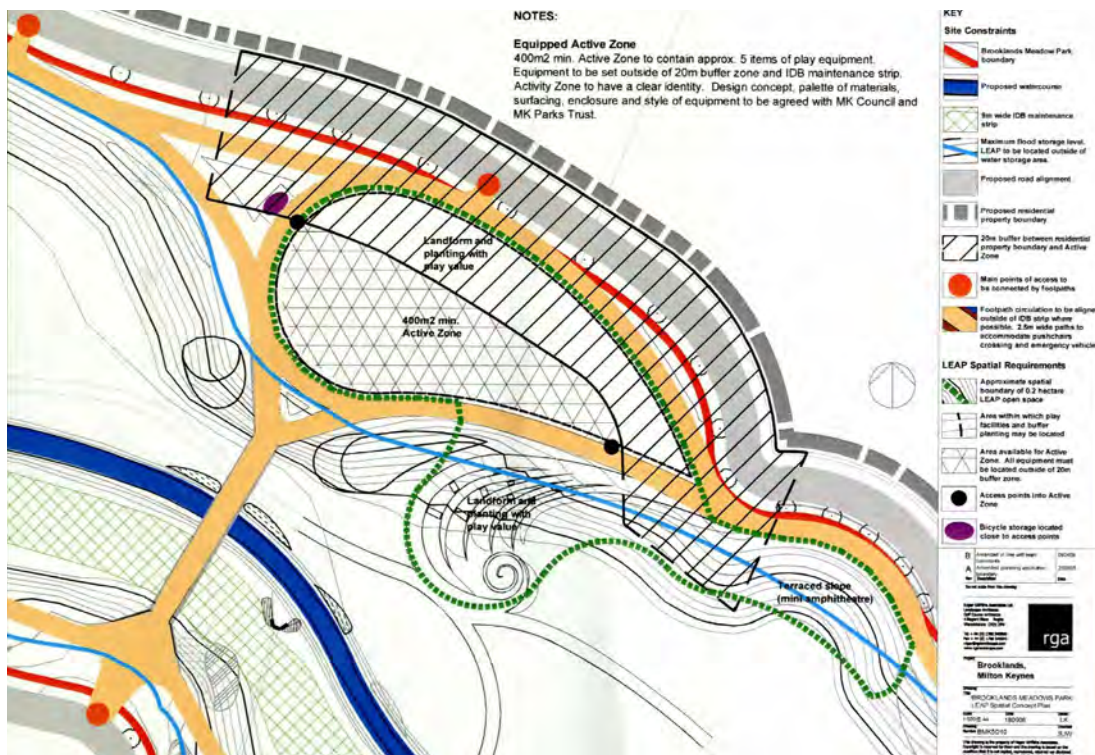
etc, must be included as part of the design process and may offer further design opportunities, such as working with sustainable drainage systems [SUDS];

- The principle also applies for smaller applications/proposals with the requirement for landscape principles to be covered within the planning DAS, a landscape master plan and then finally details. If required, MKC can request landscape character and visual impact assessments to help inform of the suitability of proposals, particularly within a sensitive context;
- If applications fall within the category that requires an Environmental Impact Assessment, there may be a requirement to provide a much more detailed and analytical landscape approach that would almost certainly include a comprehensive landscape/ environmental evaluation including visual, ecological and character assessment;

- The use of concepts/narratives/catalysts to drive a design, are welcomed. An example of the approach to be taken is shown adjacent with respect to the play area designs in Brooklands in which a number of agencies have evolved the designs and a clear design methodology was created. More frequently however, a request from MKC to the applicant (or Landscape Architect) would be the route through which a design would be brought forward and developed in liaison with the applicant, using the Open Space Adoption process as the driver;
- MKC expect landscape design, on all levels to adhere to good practice,

including national guidance, local guidance, [Open Space Strategy, Local Plans, Supplementary Guidance / Planning Documents, CMK Handbook and all other recognised good design guides, such as British Standards, Building Regulations etc;

- Pre-application discussions are essential to highlight open space expectations and ensure an appropriate landscape approach is adopted. It is the responsibility of the DC case officer to set up pre-application discussion among MKC interested officers and the applicant or agent, in accordance with the Open Space & Highways Audit Review recommendations.



Landscape design for play area in Brooklands

Flood Risk Management

- 3.5.32 Strategic and integrated flood risk management infrastructure has an important role to play in the amelioration of flood risk of a development as well as the potential to contribute to the overall quality of a development.
- 3.5.33 The Milton Keynes open space hierarchy includes a number of linear parklands with lakes within floodplains which have accommodated the flood run-off. This innovative, strategic and integrated flood management infrastructure that has become an important part of the City green infrastructure as linear parklands that are a known characteristic of Milton Keynes.
- 3.5.34 The use of SUDS is intended to ameliorate flood risk within a development rather than transfer the problem “downstream”. The design of SUDS should not only consider flood risk but enable a substantial contribution to the open space infrastructure of an area and a range of related benefits, including biodiversity. Applicants should take note of the Council’s SUDS brochure that sets out emerging legal requirements, as well as guidance on SUDS principles and standards.
- 3.5.35 Strategic and integrated drainage infrastructure requirements (rather than piecemeal proposals) must be included at the onset of design consideration of large new developments to ensure that it can be constructed and maintained effectively, alongside the other elements of the development, such as residential areas and movement networks. It is also vital that all strategic and integrated drainage infrastructure is designed to allow access for maintenance, often this means access for machinery. Without this, drainage assets will

deteriorate and fail to deliver their design standard of service. This will cause flooding.

- 3.5.36 It is the role of tender brief documentation and site specific masterplans to identify specific contextually appropriate design criteria for the on-site flood risk management facilities.
- 3.5.37 Applicants should take note of the following design-related flood risk management guidance:

- Flood & Water Management Act 2010;
- National Planning Policy Framework (2012);
- Milton Keynes Drainage Strategy – Development and Flood Risk Supplementary Planning Guidance (2004);
- BS8533: Code of Practice for Assessing Flood Risk in Development (2011);
- Best practice examples from DEFRA, EA, CIRIA, Bedford Group of IDBs

3.6 Layout for Passive Solar Gain Capture

- 3.6.1 Typical energy savings of 8-10% can be made from passive solar houses within a passive solar layout.
- 3.6.2 The two key factors in passive solar residential layout are the orientation of houses (which is closely aligned to the road layout) and the degree to which south-facing glazing is free from overshadowing (implications for internal layout will be covered in section 4).

Street Layout

- 3.6.3 Because a good principle of urban design is for houses to front onto streets the street layout is a major factor in determining the orientation of housing within a scheme. For optimum orientation of house plots, roads should preferably be aligned east-west. East-west streets can cause issues at sunrise/sunset with the sun being low in the sky causing glare or directly affecting the driver's ability to view the road ahead. They need careful design to ensure that these issues are addressed.
- 3.6.4 Orientating as many houses as possible so that the elevation with the most glazing faces within 30 degrees of south will maximise solar gain, as well as the opportunity to fit photovoltaic panels to roofs.
- 3.6.5 For north-south aligned streets there are a number of ways in which houses can be given southerly orientation:

- Placing larger detached houses one plot deep along the street
- Arranging houses around front parking courts or short culs-de-sac that at right angles to north-south streets

- 3.6.6 For diagonally aligned roads, living room elevations can be made to face within 30 degrees of south by skewing the plots in relation to the street or by skewing the houses within the plots.

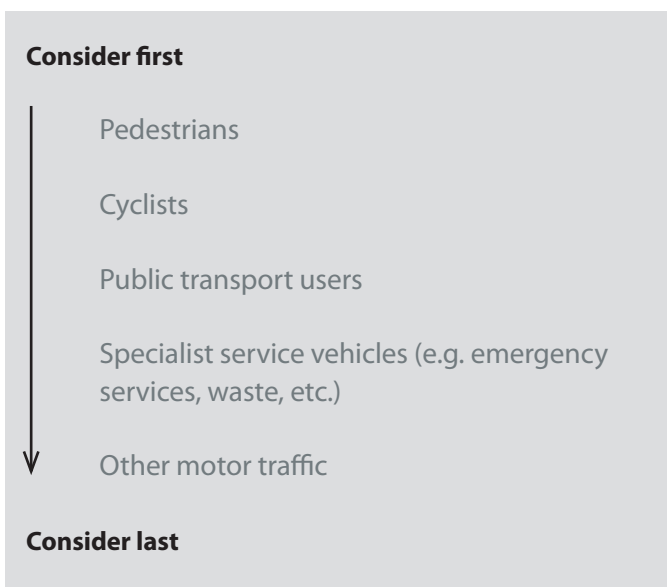
Overshadowing

- 3.6.7 If full advantage is to be taken of a southerly orientation, the site layout should ensure that the south facing elevations are not obstructed by other buildings or planting. Complete freedom from overshadowing is rarely possible, but it can be minimised by:

- Locating taller buildings to the north of the site or to the south of the road intersections or open space such as car parking which need less or no sun;
- Locating low rise buildings such as bungalows on the south side of the site;
- Locating semi-detached and detached housing to the south of the site to allow some penetration of sunlight between houses;
- Using low pitched and hipped roofs or constructing the first floor as part of the roof space;
- Designing planting with appropriate species and heights in mind. If trees and tall evergreen shrubs are positioned so that they overshadow the south facing elevations of houses, many of the benefits of a passive solar layout will be negated. Trees that will eventually grow above the 'shadow line' such as larger specimen trees should preferably be deciduous.

3.7 Movement Framework

3.7.1 In designing the movement network in a new residential development, the following user hierarchy should be followed:



3.7.2 The hierarchy does not mean that it is always more important to provide for pedestrians. However, they should be considered first.

Overall Network

3.7.3 All developments within the city of Milton Keynes will be placed within and (depending on their size) have either direct or indirect access to the Milton Keynes grid road network or rural main roads. Indeed very large developments might even require new grid roads as part of their development.

3.7.4 The masterplanning of growth areas, as well as infill sites should be based on a connected and permeable movement network, because it:

- promotes pedestrian and cycle movement;
- makes it easier to find one's way around;
- spreads traffic more evenly, so avoiding the need for distributor roads with no frontage development; and
- eases access for refuse and emergency vehicles.

3.7.5 New streets required for development, within the existing urban area in particular, should be connected into the established movement network, to ensure that new housing has good access to existing facilities.

3.7.6 Streets that are likely to be used by public transport should be identified at an early stage in the design process, so that they can be designed to be as direct as possible. Careful consideration must be given to the location of on-street parking on streets which are to be bus routes to ensure parked cars don't obstruct the free flow of buses. Parking along bus routes must be carefully designed into designated parking bays.

3.7.7 The street network must be designed so that, wherever possible, direct access onto plots and on-street parking is allowed. This not only promotes a more active frontage but also reduces reliance on rear parking courts.

Design Layout for Pedestrians/Cyclists

- 3.7.8 The layout of new developments should be such that it encourages people to walk or cycle to local facilities. Walk distances to schools, shops and open space should therefore be minimised, through these routes being as direct as possible, legible and matching desire lines. The routes in order to be used, must feel safe and hence be overlooked.
- 3.7.9 Particularly with regard to the design of the environment around schools, early discussion should take place with the Council's Road Safety team regarding drop-off parking, sight lines, crossing points and planting all of which affect the safety and hence prospects of children walking to school.
- 3.7.10 In Milton Keynes cycling/walking trips usually involve a mixture of residential streets, and redways. These provide the essential routes between residential areas and play areas, parks playing fields, and allotments as well as to schools, colleges, shops and work. This movement is encouraged by the linear parks, which provide continuous cross-city routes for cyclists and walkers. It is important, therefore, that new residential development continues to follow this principle and not block off long established links to the surrounding countryside.



Redways and/or footpaths should generally follow streets



Segregated pedestrian and cycle routes provide no natural surveillance and should be omitted from schemes

3.7.11 Pedestrian routes should generally follow streets and are overlooked by housing rather than on routes segregated from vehicular traffic and not overlooked by housing unless they are wide, short and overlooked (exceptions of course apply to those routes located within linear and district parks). This is a requirement in “Safer Places” and is required because:

- Pedestrians and cyclists are afforded a greater sense of security from being seen by drivers;
- Accommodating pedestrians within the street network reinforces the perimeter block form and ensures that the rear and sides of properties are more secure.

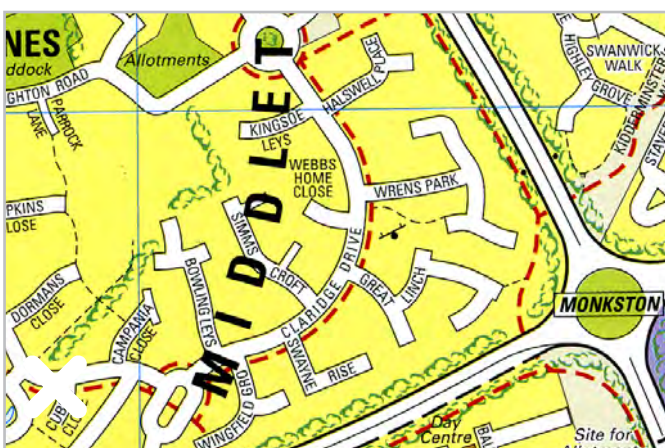
Redways

3.7.12 The Council will be seeking a network of redways within new developments.

3.7.13 There are three locations within which redways will be provided, all of which may be required depending on the size of the development. All three enable surveillance from either passers-by in cars or from adjacent properties and hence should feel safe for all users:

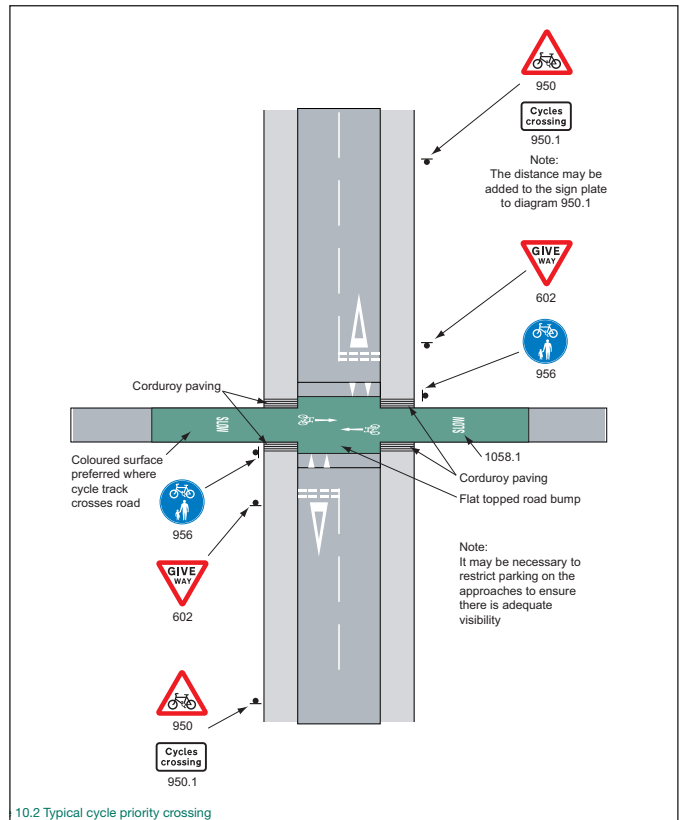
1. Adjacent to Avenues and Boulevards

- In new developments, main local routes are to be viewed as the equivalent of boulevards and avenues (see paras 3.7.36 – 3.7.42) and are the most important and connected routes within a development – ones that are public transport routes and link up with shops and facilities. It is along these routes that redways are to be included;
- Where new redways included as part of future residential developments cross streets, and hence the appropriate safety/visibility requirements at this junction can be designed into the development, priority should be given to redway users i.e. cyclists and pedestrians (see diagram from Local Transport Note on Cycle Infrastructure overleaf);

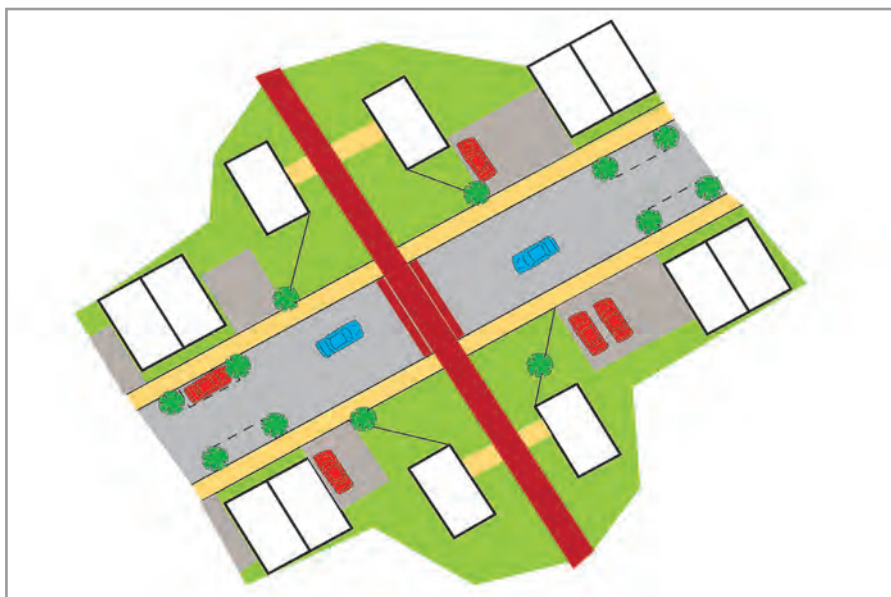


Claridge Drive, Middleton showing local redway following carriageway in order to provide a lively street scene.

- This priority can be emphasised through the inclusion of a raised table over which the redway runs or a change in surface material where the redway crosses the street;
- Typical of many existing estates where redways follow streets internal to them, it is permissible for driveways to cross the redway. Care needs to be taken however that cars, cyclists and pedestrians leaving houses located adjacent to redways have good visibility over redways to the front to avoid accidents with cyclists in particular. To ensure appropriate visibility there must be a 2m strip of adoptable highway between the redway and the property boundary. Front boundary treatment in these cases should be no more than 1m in height.



10.2 Typical cycle priority crossing
 Redway crossing a street: Diagram from Local Transport Note on Cycle Infrastructure



Redway crossing a street: conceptual layout showing priority for redway users with sufficient visibility splays

3.7.14 The second and third locations of redways to be included in new developments are for cyclists who want to travel greater distances at increased speeds with less interruptions from crossing streets (and no crossings by private driveways):

2. Redways that follow grid roads – they are afforded safety from passing cars on grid roads. Redways should be included alongside all grid roads.
3. Redways through linear parks – they are afforded surveillance from users of the linear park and adjacent properties. A key requirement is that they are kept relatively direct.

3.7.15 Redways should normally be 3 metres wide. Where they are located adjacent to parallel car parking spaces, there should be a 1 metre 'wobble strip' to avoid car doors opening over the redway. No building or wall should be within 500mm of the edge of a redway. No shrubbery with a mature height of 300mm should be located within 1.5m of the edge of a redway.



Furzton - a good example of a redway through a linear park



Redway alongside grid road



Redway within linear park overlooked by adjacent development

Bridleways

3.7.16 Bridleways currently criss-cross Milton Keynes. They should be included in large new developments so as to extend their network. As currently exists they should generally relate to the redway network, where they pass through linear parks in particular.

3.7.17 Where bridleways cross streets, crossing areas should be designed in line with recommendations from the British Horse Association and within the Design Manual for Roads and Bridges such as TA 90/05.



Bridleway next to redway

Underpasses

3.7.18 Underpasses will be required where pedestrian and cycle routes need to cross grid roads. They should be provided on important desire lines to ensure frequent use and natural surveillance. The design of underpasses should consider the following:

- Routes should be straight and as short as possible;
- There should be enough distance allowed for so that the entire underpass can remain as a straight/direct alignment;

- Underpasses should be of sufficient width to allow good visibility into and from the underpass;
- Housing should be located facing the underpass to provide natural surveillance into the underpass;
- Where they cross dual carriageways, provision should be made to allow daylight from the central reservation area;
- High quality robust lighting should be provided;
- Landscaping around the approach to the underpass to be low level to ensure good visibility;
- The needs of people with mobility problems should be taken into account with regard to path gradients;
- Walls to be graffiti-proofed. Consideration to be given to public art on underpass walls.



Good surveillance of underpass from neighbouring housing

Bus Stops

- 3.7.19 All houses within a new development should be located no more than 400m from a bus stop. Bus stops should be easily accessed on foot. Pedestrian routes to bus stops should be direct and well-surveilled.
- 3.7.20 Where bus stops are located on grid roads, development should be designed to ensure that pedestrian routes and bus stops are well surveilled. Layouts should be designed with housing overlooking the pedestrian route and the bus stop, and grid road reserve planting reduced to maximise visibility.



Two possible layouts to achieve safe pedestrian access to a bus stop

Geometry

- 3.7.21 Straight streets are efficient in the use of land. They maximise connections between places and they can better serve the needs of pedestrians who prefer direct routes. However, overly long straight streets can be monotonous and lead to higher traffic speeds. More irregular street patterns (deformed or irregular grid) add variety and can act as a traffic-calming measure without excessively increasing walk distances for pedestrians. However, layouts that use gratuitous curves, for no contextual reason, should be avoided as they increase walking distances which can serve to encourage car travel. They also can make on street parking difficult and reduce visibility. Building form should dictate the street layout, not the other way around.
- 3.7.22 Staggered junctions reduce vehicle conflict compared with crossroads, and therefore are generally preferred. However, in low speed and low volume environments, where cross-traffic is minimal, crossroads can be considered. In these circumstances, crossroads may be appropriate where it is important to maintain the directness of a pedestrian route.
- 3.7.23 It is important that streets are designed to reflect the needs of waste and emergency vehicles. Detailed guidance on street geometry matters such as carriageway widths, junctions, and visibility will be provided in the Highway Design Guide. It is crucial however that these matters are designed in from the outset and incorporated within the overall street design and character for that particular street.

Streets with frontage access

- 3.7.24 Wherever possible, direct access to properties by vehicles should be allowed from the street. In the past this has often been restricted where traffic flow is high or more recently where dedicated bus lanes have been included. The consequence has been a requirement for rear parking courts and associated less pedestrian activity along the street (less active frontages).
- 3.7.25 The Highway Design Guide will provide details of where frontage access is to be allowed. In these cases, on-street parking must be an integral part of the design of the street to ensure the free-flowing movement of traffic. Where direct access is not allowed, parking will be provided either through the use of service lanes or rear courts.

Streets to the front of buildings

3.7.26 Buildings should generally have streets to the front of them rather than just segregated footpaths and/or open space. The benefit of having a street to the front is that it:

- Allows for on plot and on-street parking;
- Removes need for rear parking courts;
- Provides ease of access for waste, emergency and delivery vehicles;
- Can reduce the need for large turning heads;
- Makes for more secure backs;
- Improves pedestrian activity to the front of houses;
- Improves access to public open space;
- Improves the public ownership of the green space to the front;
- Provides additional defensible space to the front of properties.



These houses have no street to the front and therefore rely on rear parking court



Buildings front street

Landscaping within streets

- 3.7.27 Greenery within streetscapes is considered one of the most important aspects contributing to the neighbourhoods that residents like to live in. Greenery generally comprises verges, street trees and setbacks/private defensible space (the latter covered in section 4.6). These need to be carefully considered in all new developments.
- 3.7.28 Grass verges are important on certain streets to help create a character for the street and emphasise the street hierarchy. Grass verges or low maintenance planting are expected in Avenue/Boulevard and some Residential Streets (covering street types 5,6,7,8,9). Level surface streets won't have grass verges but will still have street trees and/or planters. Highway requirements normally for clear visibility splays restrict the height of this planting to 300 - 400mm. Appropriate species include:

- Cotoneaster 'Coral Beauty';
- Euonymus fortunei (normally the variegated species);
- Lavendula 'Hidcote';
- Lonicera pileata;
- Symphoricarpos chenaultii 'Hancock'.

- 3.7.29 Where housing fronts onto verges and on-street parking is included, in order to allow residents to access the footpath or redway via a hard surface, the verge must either be only 2.5m wide or if it is wider then a section (the length of the on street parking spaces) of hardstanding should be incorporated



Verges, street trees and hedges contribute to a pleasant street scene

between the edge of the parking spaces and the footway/redway. In all instances, where housing faces the verge, the verge should be narrower than 3m or wider than 5m. This is to avoid cars blocking the footway by parking indiscriminately across the 'link' between the driveway and street.

- 3.7.30 Street trees can help create character for a street and a development. They are easiest to include in verges but many streets particularly those lower down the hierarchy do not have verges. Where numerous driveways join the street, it is more challenging to accommodate trees. For streets at the bottom end of the hierarchy, such as level surface streets, trees can be located within the carriageway. For streets with higher volumes of traffic, they can occur within a footway of 2m wide so long as there is close co-ordination between the design of utilities and landscaping proposals and in particular street trees. Consideration needs to be given to the use of root protection barriers, to avoid problems of damage to highways, buildings or pipes.

- 3.7.31 Selection of trees species should be based upon trees being reliable, requiring minimum maintenance and being capable of withstanding the abuses of highway activity. While appropriate species will vary according to the type of street, proximity of buildings and soil conditions a selection of appropriate species include:

Avenue/boulevard

- *Acer platanoides* 'Emerald Queen'. Norway Maple species.
- *Tilia cordata* 'Green Spire'. Lime species.
- *Carpinus betulus* 'Frans Fontaine'. Hornbeam species.
- *Pyrus calleryana* 'Chanticleer'. Ornamental Pear species

Residential Street

- *Fraxinus angustifolia* 'Raywood'. Claret Ash.
- *Tilia tomentosa* 'Brabant'. Lime species.
- *Prunus avium* 'Plena'. Cherry species.
- *Betula pendula*. Silver Birch.

Lanes/Mews

- *Acer campestre* 'Streetwise'. Field Maple species.
- *Prunus x schmittii*. Cherry species.
- *Sorbus aucuparia* 'Sheerwater Seedling'. Mountain Ash species
- *Crataegus x laveallei*. Hawthorn species.

Specimens/Special Places.

- *Betula utalis* 'Jacquemontii'. Himalayan Birch.
- *Liquidambar straciflua*. Sweet Gum.



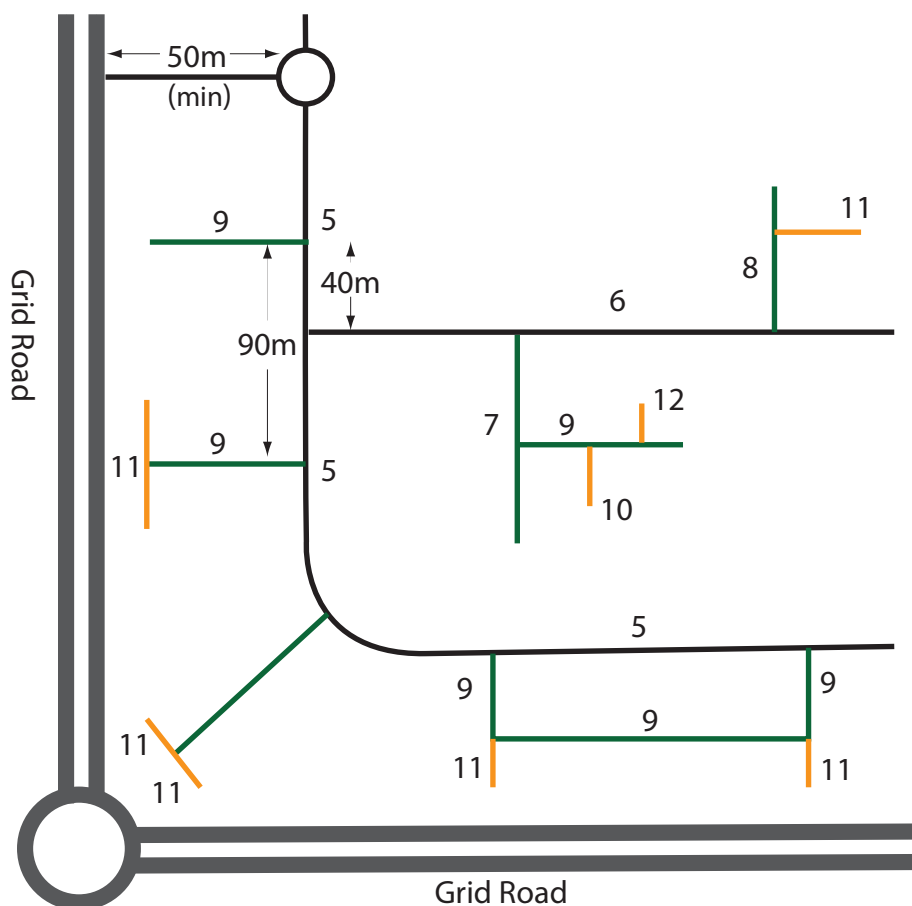
Root protection barrier detail

Street Hierarchy

3.7.32 The Guide cannot and does not provide detail on each street type within a development's hierarchy as this will vary according to the context. However, it does provide guidance on some of the key residential street types that would be in a development depending on its size. In particular, detailed guidance is provided on level surface streets, as these are a frequent point of discussion at pre-application meetings with much confusion about their design.

3.7.33 The street hierarchy (see street hierarchy diagram below and Design Table overleaf) should be designed to ensure that a network is created that:

- is easy to understand and navigate;
- is connected;
- includes a variety of street types; &
- encourages through traffic to use the higher level streets.



Conceptual plan showing street hierarchy -see table below

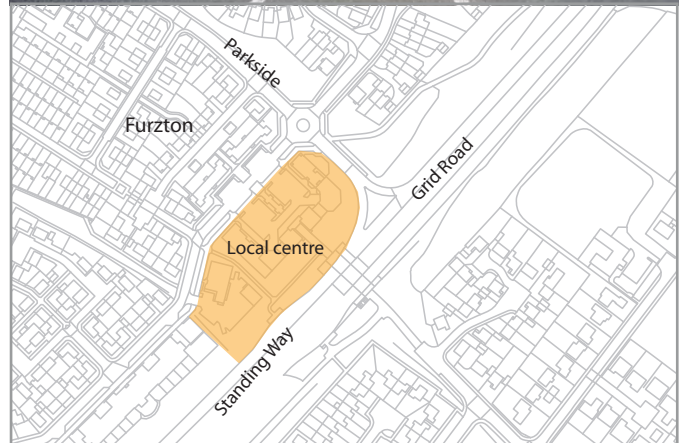
Street Design Table

TYPE	NAME	SERVES	WIDTH (m)	FOOTWAY	VERGE ³	DESIGN SPEED mph (kph)	JUNCTION SPACING ¹ (m)		ACCESS	
							ADJ	OPP	FROM	TO
ROADS										
1	Primary Distributor	N/A	Refer to the Design Manual for Roads and Bridges							
2	District Distributor	N/A	Refer to the Design Manual for Roads and Bridges							
5	Local Distributor	300+ Dwellings	6.75	2 x 2m	2 x 1m	30 (50)	90	40	1, 2	6-9
RESIDENTIAL STREETS										
6	Principal Street	100-300 Dwellings	5.5 ⁴	2 x 2m	None	25 (40)	50	25	2, 5	7-11
7	Major Street	50 to 100 Dwellings	5.5	2 x 2m	None	25 (40)	30	15	5, 6	8-12
8	Street	25 to 50 Dwellings	4.8	1 x 2m	1 x 1.2m	20 (32)	30	15	5-7	9-12
9	Minor Street	Up to 25 Dwellings	4.8	1 x 2m	1 x 1.2m	20 (32)	20	5	5-8	10-12
LEVEL SURFACE STREETS										
10	Level Surface Street	Up to 25 Dwellings	Min 3.2	Integrated	Min 0.5m ²	<15 (24)	N/A	N/A	6-9	11-12
11 ⁶	Shared Drive	3 to 5 Dwellings	3.2 to 4.1	Integrated	2 x 1.2m ⁵	<10 (16)	N/A	N/A	6-10	N/A
12 ⁶	Shared Crossover	2 or 3 Dwellings	3.2	Integrated	None	N/A	N/A	N/A	7-10	N/A

1. Measured Centreline to Centreline. The minimum distance to the first junction on a road/street is 50m for types 1-6 or as per the relevant adjacent "ADJ" distance for types 7-9.
2. To be determined in conjunction with statutory undertakers and the Council's Highway Adoptions team.
3. This is a minimum requirement for highway purposes. Wider verges will be acceptable where they meet urban design objectives.
4. Where the road is part of a bus route the width should be increased to 6.2m.
5. Verges are required for adoptable Shared Drives. On private Shared Drives verges are not required.
6. These street types are not adoptable.

3.7.34 In order to create a suitable and safe environment for all users in that part of a neighbourhood or new development where the boulevard/avenue joins the grid road the following principles should be adhered to:

- There should be a minimum distance of 50m between the grid road and the first side access street. Furthermore no private driveways will be allowed access to the spine roads within this 50m distance ;
- A roundabout should be used to slow traffic down as it exits the grid road and enters the residential neighbourhood. The roundabout should be located at the end of the 50m 'zone' ;
- The sort of uses that would be encouraged within this 50m 'zone' would include allotments and local centres (or other uses) which don't require access onto the boulevard/avenue within this 50m zone.



Furzton - roundabout used to slow down traffic as it exits grid road. Local centre located within 50m zone between grid road and first side access street.

- 3.7.35 In addition to grid roads and their reserves, the following street types need to be included, the range and inclusion of which will depend on the size of the development.

Avenue and Boulevard

(Street type 5,6)

- 3.7.36 These street character types will be at the top of the street hierarchy, and will tend to carry the highest volumes of traffic within a neighbourhood including through-traffic. In addition to footways, they require a 2.5 metre (minimum) wide reservation on each side to accommodate a combination of verge and on-street parking (except where they pass through a local centre or other non-residential fronting development where the requirements will be specific to the context). This will help give an “avenue” effect which was a key feature of many earlier estates in Milton Keynes (e.g. Emerson Valley, Great Linford, Shenley Church End, Two Mile Ash, Middleton) and will help maintain a legible street hierarchy.

- 3.7.37 One problem with some of the verges in the above mentioned estates is that the verges were frequently too wide – and when they are in excess of 2.5 metres the extension of the private driveway between carriageway and footpath typically becomes used as a parking space. This results not only in cars overrunning the footpaths but also in an untidy and cluttered street scene which is to be avoided.



Low maintenance groundcover planting is an alternative to grass and is less likely to be parked on



Verges between 3 and 5 metres wide should be avoided to discourage indiscriminate parking

3.7.38 These streets should avoid being excessively curved because firstly they will have redways running adjacent to them and secondly they will accommodate buses. The Highway Design Guide will provide further information on necessary street widths to accommodate buses. The design of these streets should be such that on-street parking is accommodated without narrowing the street below the width required to allow two buses to pass easily. In specific points they can be narrowed down further to accommodate redway or other dedicated pedestrian crossing points. They can also include raised tables where redways cross over them.

3.7.39 The highest densities of the development will tend to be along this street type, especially if it is a bus route and/or contains local facilities.

3.7.40 In order to signify their importance in terms of movement and place and reinforce the avenue effect of these streets setbacks should be more generous than some other street types and should be a minimum of 3 metres from the back of the redway or footpath (other than where it passes through or non-residential frontage where it will vary according to the specific context).

3.7.41 The increased setbacks will allow buildings to be taller along these streets helping signify the place in the street hierarchy that it occupies.



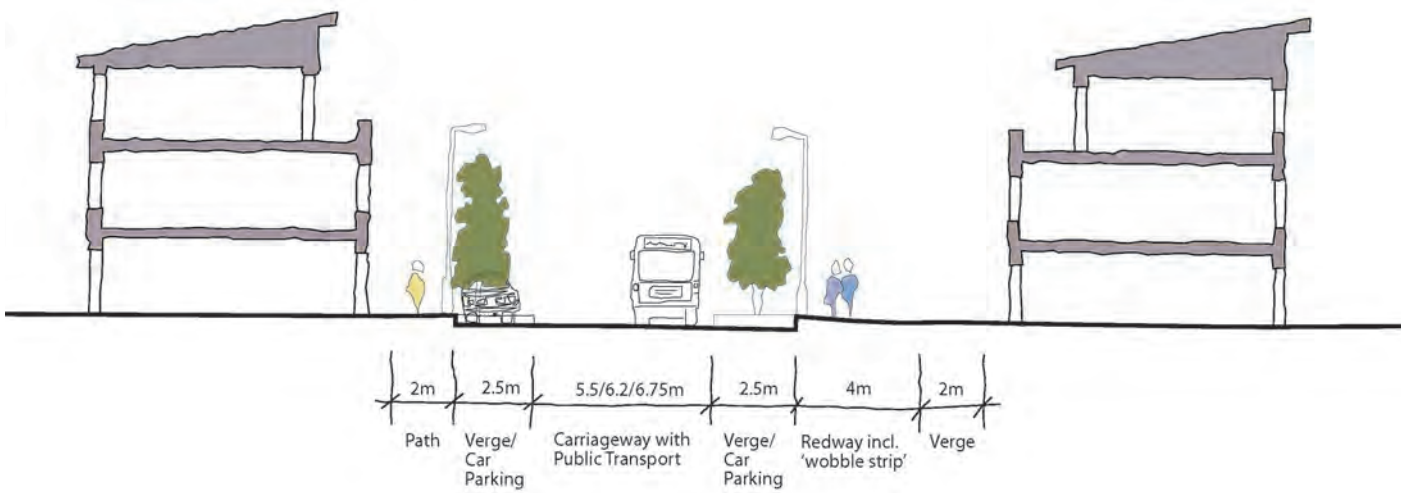
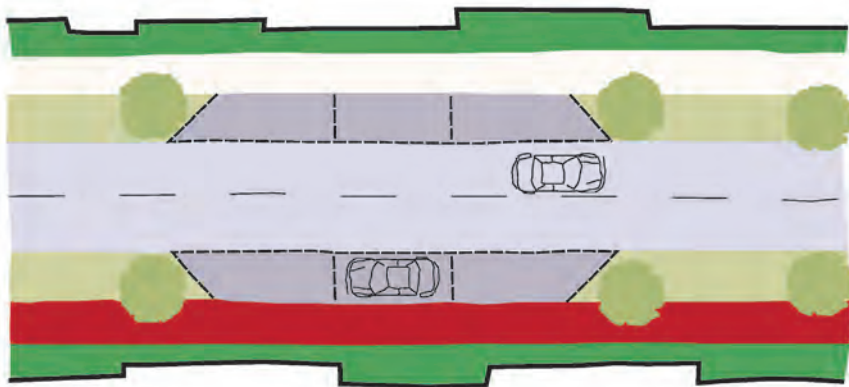
Primary streets that are bus routes should generally be straight and feel like more significant streets



Tree lined primary street.

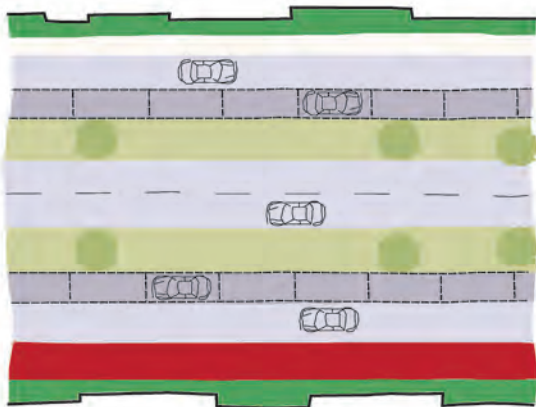


This primary street bends too much, is not green enough and does not give the impression of being at the top of the development's street hierarchy

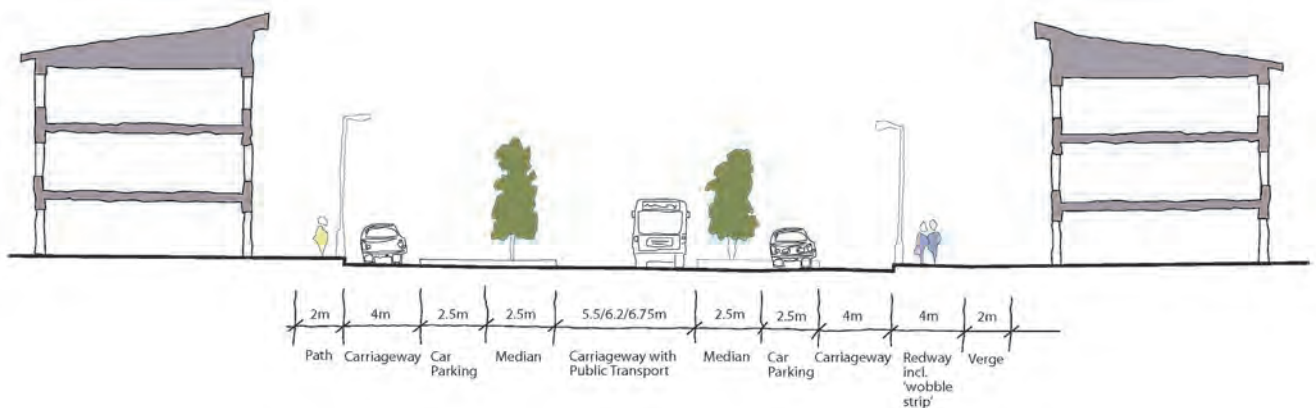


Illustrative plan and section of an avenue

3.7.42 An alternative form of street to the avenue is the boulevard. This street type has a central roadway for through traffic, together with access roads serving frontage properties. The central roadway is separated from the access roads by a planted median. On-street parking is provided along the access road. This street type is particularly appropriate where the volume of traffic would normally preclude frontage access to buildings.



Conniburrow Boulevard



Illustrative plan and section of a boulevard

Residential Street

(Street types 6,7,8,9)

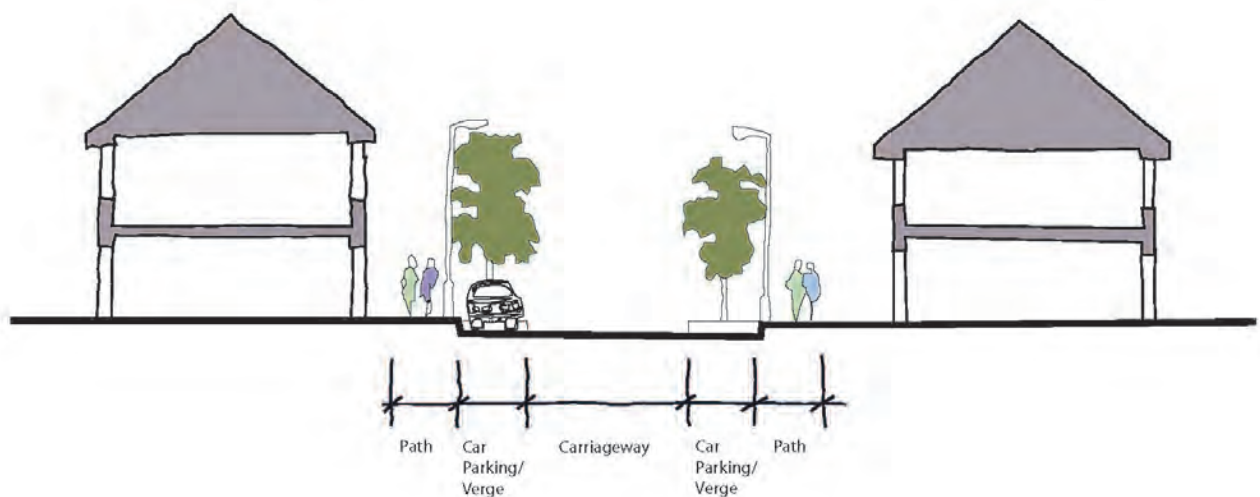
- 3.7.43 A 'residential street' is designed to serve residential properties and is not intended to carry through traffic, including buses. It will be characterised by a carriageway and footways (on either side of the street for streets with homes on both sides).



Grange Farm - example of a residential street



Example of a residential street



Level Surface Streets

(Street type 10)

- 3.7.44 Level surface streets are defined as “A street surface with no level difference to segregate pedestrians from vehicular traffic”(DfT Local Transport Note 1/11, October 2011).
- 3.7.45 In an appropriate setting, the benefit of level surface streets is that firstly, they provide for a better quality pedestrian environment by giving over a greater part of the street for the use of pedestrians, and secondly, it allows for a variety of character to occur across a development.
- 3.7.46 Level surface streets have not however always been seen as successful environments to live on in Milton Keynes for the following reasons:

- No areas of the level surface street have been set aside for pedestrians who do not feel safe using the carriageway (e.g. young children, the elderly, disabled and partially sighted);
- Streets without a combination of footways and required design features have been labelled shared streets without achieving an appropriate shared space environment;
- Too much through traffic because inappropriate street selected as level surface street (too connected, too long and serving too many houses);
- Lack of adequate defensible space to the front of properties;

- No clear delineation for cars to park and hence parking in inappropriate places has occurred;
- Too narrow which has been exacerbated by lack of ‘designed-in’ on street parking that together have not allowed easy access through for emergency and waste vehicles;
- Lack of speed restraint measures.



Level surface street too narrow, with poorly defined and overly sinuous edges resulting in vehicles overrunning the carriageway and being unable to pass through when cars are parked in the street.

Key Design Principles

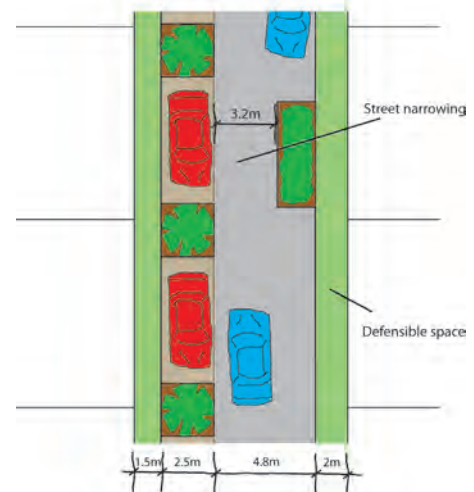
- 3.7.47 Level surface streets as part of new residential developments will therefore only be acceptable in Milton Keynes if the following criteria and design guidance are adhered to. These have been informed by national policy, lessons learnt as well as surveys of residents who live on level surface streets:

Location and Design Speed

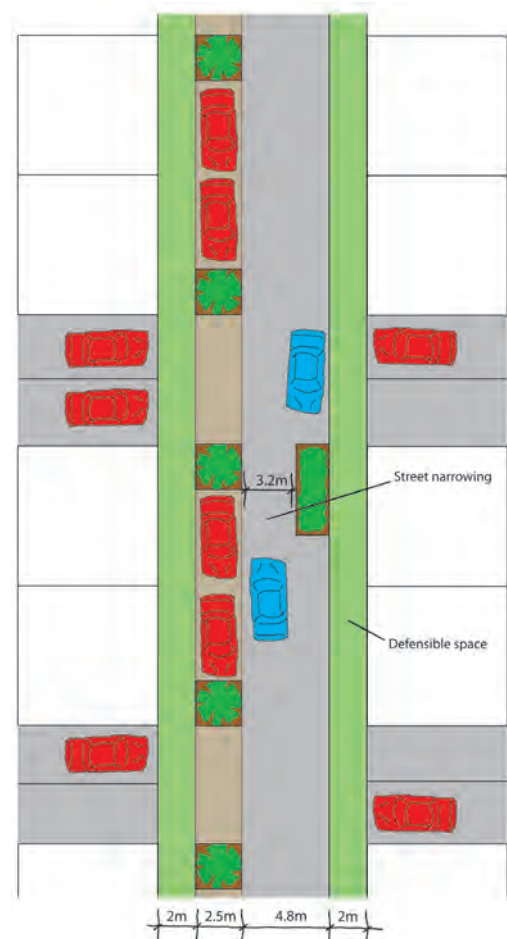
- They are most appropriate for streets at the lowest end of the hierarchy and should not be subject to vehicle flows greater than 20 vehicular movements per hour (which equates to a street serving a maximum of 25 houses);
- They must not occur off higher level streets such as primary streets (street types 1,2,5). They should rather occur off secondary (residential) streets (street types 6-9);
- They are designed to a maximum 15mph speed and hence the layout must be such to ensure that this speed limit is adhered to.

Defensible Space

- Where parking occurs to the side of the property, there should be a minimum private defensible space of 2m to the front of the property;
- Where terrace housing occurs and hence where there is no parking to the side, there should be at least 1.5m defensible space to the front of the property;
- Anything located within the defensible space should be a maximum of 0.6m high to provide sufficient visibility for small children..



Illustrative layout of level surface street showing designated parking areas



On-street Parking

- Parking spaces must be designed into the street to minimise the opportunity for inappropriate parking and be clearly delineated through contrasting colour paving material;
- On-street parking (as in all cases) will be unallocated if placed within the adoptable highway.



Level surface street with planting and places to park

Width

- The level surface street must be sufficiently wide that it can at the very minimum accommodate on street parking (where appropriate) and a clear route for large vehicles areas to pass through unimpeded. A swept path analysis must be undertaken to ensure that this can occur. Appropriate visibility splays must also be achieved;

- As a general minimum, all level surface streets should allow for 2 way traffic with a minimum carriageway width of 4.8m;
- The location and design of utilities must be discussed at an early stage with the Council.

Variations in carriageway width occur primarily because of 2 factors:

- The additional inclusion of right angled parking which requires 6.0m for reversing;
- Narrowings. In order to improve the overall environment of the street for the pedestrian as well as slowing traffic down, the 4.8m carriageway can be narrowed for short stretches to a single lane that still allows for the largest required vehicles to pass through. This should not occur for stretches longer than 5m. Pinch points can typically occur through planters, trees, kerbed islands or bollards.



Good quality level surface street - New Hall, Harlow

Drainage Channels

- Drainage channels should be located so as to avoid unintentionally demarcating either footways or parking, neither intended for that purpose.



Drainage channels leading to confusion as to whether parts of the level surface are for parked cars or footpaths

Speed Restraint Measures

- In order to improve the overall environment of the street for the pedestrian, various speed restraint measures should be included in the design to slow traffic down to maximum speeds of 15mph. There are various ways of achieving this:
 1. Designing the layout of development to ensure streets including building lines have significant variation in horizontal alignment (i.e. creating bends in the street)



Wide level surface street that accommodates on street parking, street trees and space for through traffic

2. Where the building line remains predominantly straight, horizontal deflection of the carriageway can be caused by (in preferential order):
 - Enclosure of the street
 - Trees and Planting
 - Planters
 - Other street furniture such as bollards and lighting
 - Narrowings
 - 'Designed-in' car parking spaces at different angles with different surface material (to create chicane effects)

Given the required design speeds vertical traffic calming measures would not normally be acceptable.

Materials

- In order to emphasise their difference from conventional streets and thus help to vary the character across a development, level surface streets must be surfaced in block paving rather than blacktop asphalt. Research undertaken for Manual for Streets has furthermore shown that block paving rather than asphalt surfaces helps reduce traffic speeds.



Level surface streets frequently include highway verges. In this example it would have been better for the soft verge to have been a continuation of the block paving to make a wider carriageway.

Speed Restraint

- 3.7.48 In new residential developments speed restraint should be achieved by the horizontal alignment of the carriageway and by incorporating changes in direction and/or priority. In addition to this, the location of buildings or other vertical features close to the carriageway, as well as the careful use of materials and landscaping can further reduce the ability or temptation to drive at inappropriate speeds.
- 3.7.49 Features such as build-outs, islands, false roundabouts, pedestrian refuges, road narrows (pinch points), chicanes, gateways, table junctions, traffic islands, overrun areas, mini roundabouts and small radius bends can all be used as part of speed restraint proposals. Some of these features can also be used for traffic calming schemes on existing roads.
- 3.7.50 On-street parking in a variety of forms can also usefully traffic calm streets.



Right-angled parking can serve as a traffic-calming feature

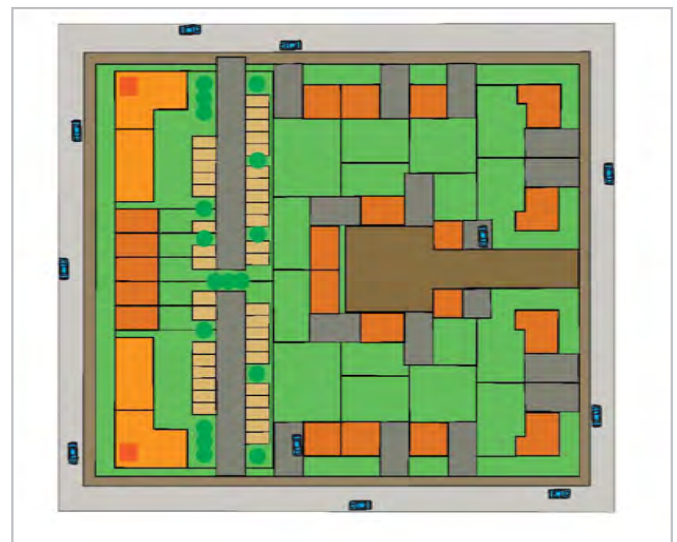
Culs-de-sac

- 3.7.51 Many older estates and developments built up until the late 1990s in particular in Milton Keynes are characterised by numerous culs-de-sac and they represent environments many people choose to live in.
- 3.7.52 They are useful where through routes aren't allowed, where larger blocks are desirable or where there are any topographical, physical features or boundaries that prevent streets connecting up. They may also be used in low density areas where they can help accentuate the quiet nature of the area.
- 3.7.53 For culs-de-sac to complement the overall movement network and neighbourhood / development they should adhere to the following principles:

- They should be located within a wider connected movement network for ease and choice of access across the wider development;
- They should be arranged and designed such that they don't overly concentrate traffic impact on a small number of dwellings (those at the end of the cul-de-sac that joins the wider connected network);
- They should not be arranged and designed such that they reduce legibility and wayfinding across a development;



Culs-de-sac have been used to break up a larger block of approx 110m x 110m in Bradville



Single, short and direct culs-de-sacs are permissible to break up large blocks. They are also useful where through routes are not possible

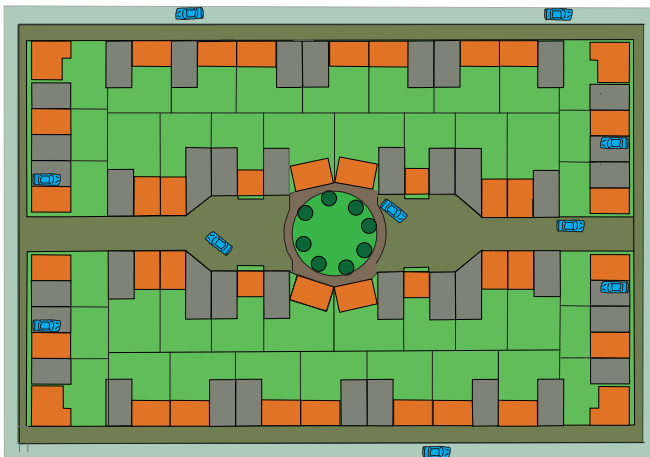
- Pedestrian routes off culs-de-sac will be acceptable where the public space that the route passes through is designed into the overall layout of the development such that it feels safe and comprises an unambiguous public route that is short, straight/direct and overlooked by housing (including where the cul-de-sac or the short, direct overlooked pedestrian route opens into parkland or play areas etc);
- Cul-de-sacs, with pedestrian routes off them as described above (whether comprising a non-car link between one cul-de-sac and another, or a non-car link between one cul-de-sac and a through street) will be encouraged where they create a shorter route to a destination by foot/cycle than by car;
- Other forms of pedestrian route out of cul-de-sacs that do not meet the above criteria will not be acceptable, in the interest of crime prevention;
- Where the footpath link off the cul-de-sac provides access to a local centre, school or other community facility, the cul-de-sac should have a footway on at least one side of the street;
- Careful consideration needs to be given to how large vehicles will turn at the end of culs-de-sac. Turning areas could for example be designed around an attractive open space or a parking court.



Not a good example of a footpath connecting two culs-de-sac - it passes right in front of someone's front door, not feeling very public



Upminster Close - short linked cul-de-sac with good natural surveillance of pedestrian link



Cul-de-sac with turning area designed around a parking court - Greenleys

Open space designed into layout to provide safe pedestrian link between two culs-de-sac



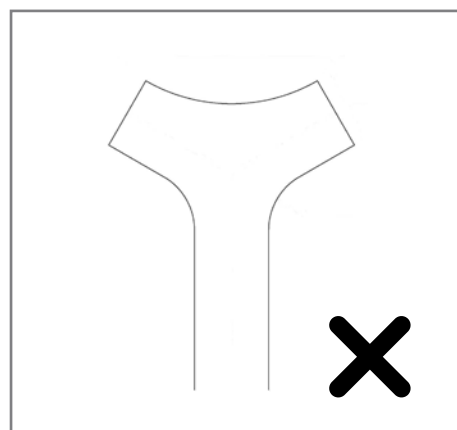
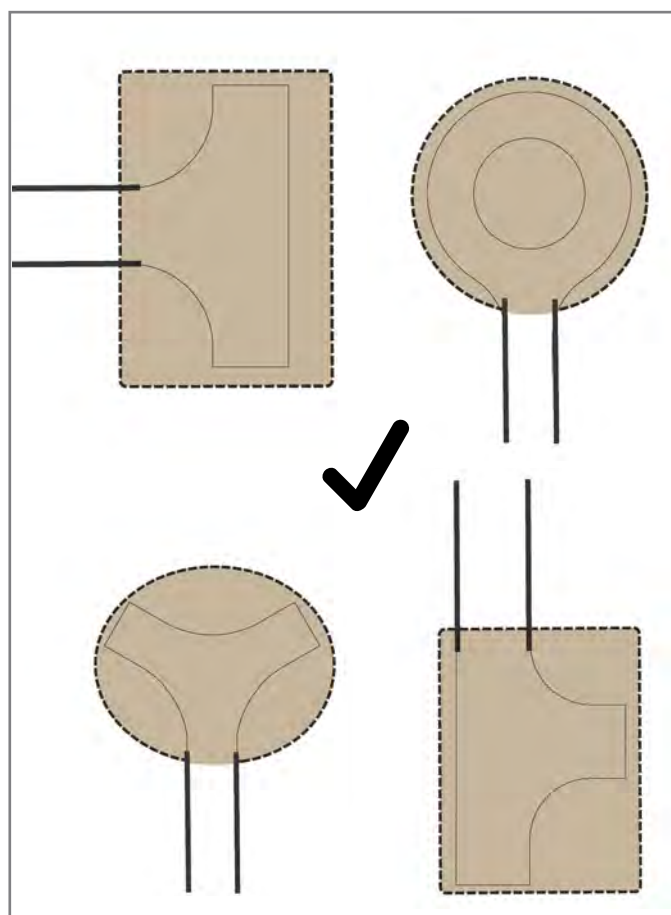
Courtyard designed as a cul-de-sac



Greenway - short linked cul-de-sac with good natural surveillance of pedestrian link

Servicing & Manoeuvring

- 3.7.54 Residential developments sometimes require servicing by large vehicles for things such as refuse collections, deliveries of mail, milk, parcels and larger items including removal lorries. The design of road layouts should take into account these servicing needs; however provided that the road layout has been carefully designed they can all be accommodated.
- 3.7.55 Residential roads and streets should provide adequate access for emergency vehicles and in particular should permit access for fire appliances to within 45m of all points (the ‘footprint’) of all dwellings. An increase in this distance to no more that 90m may be acceptable, provided there is suitable provision of compensating features such as automatic fire suppression sprinkler systems and in consultation with the local Protection Officer at Buckinghamshire Fire & Rescue Service.
- 3.7.56 Access for refuse collection vehicles should be provided to within 25m of collection points for houses and within 9m of grouped stores for flats or apartments.
- 3.7.57 To assist the movement of larger vehicles, all new culs-de-sac should terminate with either loops or turning areas, which allow these vehicles to perform a 3-point turn.
- 3.7.58 The location, layout and availability of turning areas will determine how well used they are. For this reason the layout of residential developments should discourage inappropriate parking within, or close to, the turning area. The most effective way of preventing parking within turning areas is to locate accesses or separate visitor parking spaces adjacent to them and to provide adequate parking to nearby dwellings.



- 3.7.59 The turning space provided should relate to its environment, not specifically to vehicle movement (see diagrams above).

3.8 Block Principles

- 3.8.1 Buildings must be arranged whereby they face outwards with a public front and private back. This typically takes the form of a perimeter block with buildings fronting a public street and their backs secured by other private space.
- 3.8.2 This arrangement also meets the needs of 'Safer Places' which states that *"access to the rear of dwellings from public spaces, including alleys should be avoided - A block layout with gardens in the middle is a good way of delivering this."*
- 3.8.3 A perimeter block can take on a variety of forms; the key point is that whatever layout is proposed it must provide for a clear public front and secure private back. Sites must be masterplanned so that their block and movement network accommodates these two principles.
- 3.8.4 As a rule, if a block is divided by a through-route (i.e. has two entrances), it must be designed as a clear public route with active frontages on both sides – there must be no ambiguity as to whether it is a public or private space. If active frontages can't be achieved on both sides it would be better to turn this route into two culs-de-sac which by definition are more private.



A poor example of a public street in Broughton (see photo of same street below)



Poor example of a public street - with no ground floor active frontages

Blocks with one side that have no permitted front access for vehicles

3.8.5 In Milton Keynes there have been streets within new developments that have not permitted any access for vehicles from the front. This has been for reasons of the strategic importance of the route, the volume of traffic and/or the inclusion of bus lanes. In this case, parking must be accessed from the rear. In order to create active frontages to all sides of the block and attractive streets, the following solutions can be explored:

- Dual aspect housing types;
- Parking for frontage dwellings provided within cul-de-sac;
- Parking for frontage dwellings accessed off street fronted by “flats over garages (FOGs)” or “flats over parking (FOPs)”.



Parking for frontage dwellings provided within cul-de-sac

3.8.6 If it is anticipated that cars will park on the street to the front, parking should be designed into the streetscape so as to avoid parked cars impacting negatively on the strategic nature of the vehicular route.



Accordia dual aspect type unit

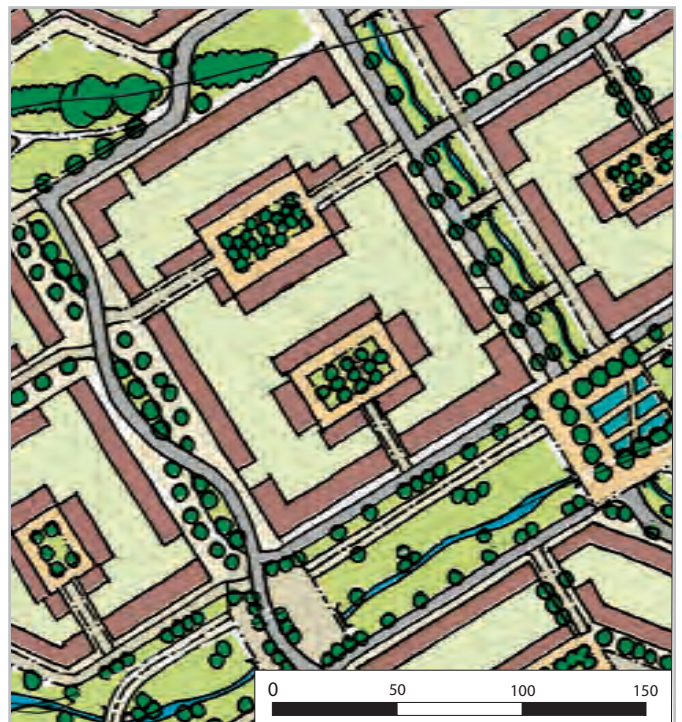


Block with FOG/FOPs fronting street at back

- 3.8.7 Block dimensions can and should vary in size as this is a good means of creating variety, interest and character across large sites in particular and should therefore be thought about at the overall masterplan level. Block width is the important dimension and should generally be in the range of 35-110m (while length should be between 60-110m).
- 3.8.8 Small blocks provide good pedestrian permeability and provide more locations for on street parking and are thus more appropriate in higher density areas close to shops, facilities and public transport which also coincides with a predominance of terraced units. Larger blocks (at the upper end of the above ranges) are more appropriate in lower density areas.
- 3.8.9 Thin blocks (approximately 35-40m in width) are largely achievable in traditional layouts where private rear gardens back directly onto each other. Care should however be taken to avoid numerous thin blocks in a row as this can result in little active frontage along the side street especially if corner buildings do not sufficiently turn the corner.
- 3.8.10 Larger, square blocks can be achieved through the incorporation of short, direct culs-de-sac or a variation of this being housing proposed around a front parking square.



Numerous thin blocks can create inactive frontages along side streets and should be avoided



Conceptual drawing showing large blocks with culs-de-sac designed around front parking courts or open spaces

3.9 Housing Typologies

3.9.1 Most housing in new residential developments can utilise 5 different forms:

- Narrow frontage types;
- Wide frontage types;
- L – shaped types;
- Dual aspect types;
- Bungalows;
- Flats.

The narrow and wide frontage housetypes can be arranged in detached, semi-detached and terraced forms.

3.9.2 Depending on which type is used it will have an important impact on the following elements which contribute to the layout, quality and identity for a development:

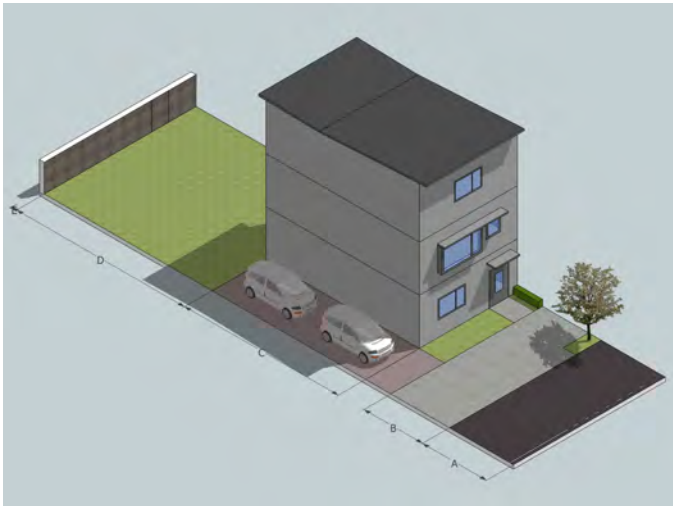
- On street parking and quality streetscape;
- Allocated parking and ease of use;
- Quality of housing frontage (in terms of the extent to which firstly the front garden/ defensible space is dominated by hardstanding and or cars and secondly, the extent to which the house is setback from the street and the relationship it therefore can have with the street);
- Continuity of built form along the street and hence enclosure.

3.9.3 The 5 housetypes and impacts on these above elements are illustrated and explained below. It is not intended as a set of rules to enable 'rubber stamping' of compliance, but rather as guidance to enable balanced and valued judgements.

	Narrow frontage	Wide frontage	L-shaped corner units	Dual aspect types	Bungalows
On street parking	No on street parking if part of terrace. Individual bays can be accommodated if allocated parking occurs to side of house (semi-detached units).	Yes	Yes, if sufficient spacing between units.	Yes	Yes, if allocated parking to the side of house.
Allocated parking	Either to the front or to the side.. Front parking courts.	Either to the front or to the side.	To the front of the house.	In car port to the rear underneath accommodation	Either to the front or to the side.
Quality/greenery of housing frontage	Very limited unless parking located to the side of house (very difficult as part of terraces)	Can still be achieved	Can still be achieved	Can still be achieved	Can still be achieved
Setback	At least 5-6m if part of terrace so fairly poor street enclosure. Better enclosure if parking occurs to the side.	At least 5-6m if part of terrace so fairly poor street enclosure. Better enclosure if parking occurs to the side.	Part of building can protrude forward of parking, so reduced setback and better enclosure.	Choice of setbacks and hence enclosure can be delivered.	By definition bungalows create reduced enclosure.
Continuity of frontage (and hence enclosure) along the street	Poor if parking only occurs to the side	Poor if parking only occurs to the side	More continuous built form created. Has potential to provide active frontage to two streets, when located on corner plot.	More continuous built form can be delivered	Poor if parking only occurs to the side

Table: Housing Typologies

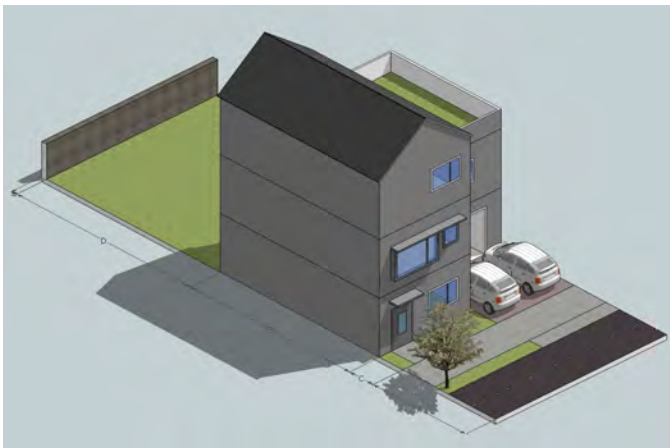
Note: Flats is another housing typology. However, there are too many variables relating to the design of flats to include them within the table.



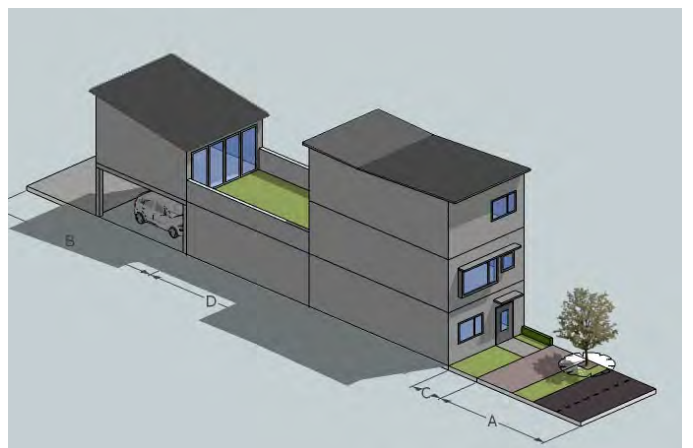
Narrow frontage



Wide frontage



L-shaped corner unit



Dual aspect type



Bungalow

3.10 Parking

Parking Standards

3.10.1 The Council's requirements for parking for residential development are provided by the Addendum to Parking Standards adopted in 2009. An extract from the Addendum is included at Appendix F. The parking standards for Houses in Multiple Occupation (HiMO) are contained within the HiMO SPD. Please note the following points in addition to the information set out in Appendix F:

- These standards show the minimum requirement for parking provision;
- Garages do not count as parking spaces;
- Garages are an important design feature of residential developments, which if well designed can provide useful additional space for dwellings. Garages with minimum internal dimensions of 3 x 7 metres are considered large enough for the average sized family car and cycles, as well as some storage space;
- Detached homes with 5+ bedrooms will generally be expected to have at least 2 on-plot, independently accessible parking spaces.

For smaller homes (i.e. 4 bedrooms or fewer), independently accessible on-plot parking spaces are preferred but tandem parking (including any similar layout where

the spaces are not independently accessible) will be acceptable, provided that:

- The unallocated (on-street) provision is visible from and in close proximity (within 15m from the front of the property) to those homes that have tandem parking (or any similar layout where the spaces are not accessed independently).
- The on-street provision does not encroach into the carriageways on bus routes and other primary residential streets (types 5-7) so as to allow for the movement of free flowing traffic, including service delivery vehicles.
- There is no maximum requirement;
- Parking for flats should be clearly and suitably signed from all approaches.

Car Parking Locations

3.10.2 The location of car parking has an important influence on block structure and is therefore included in this section on "Building a Place". It has a fundamental influence on the quality of a development, the streetscape in particular, and is a significant factor in the desirability of a place to live. Location of parking is one of the most prominent issues in pre-application discussions.

3.10.3 The National Planning Policy Framework has given local authorities increased autonomy to establish their own parking standards according to its own context and particular circumstances.

3.10.4 In Milton Keynes, an increasingly common problem associated with new developments (and in particular terraces) is cars parked on verges, on pavements and on streets that are not designed to accommodate parked cars. This is partly because car ownership is higher than average in Milton Keynes. More importantly, however, rear courts, which have to date generally been the chosen form of allocated parking (particularly for terraces), have not been well used by residents. This is due to a number of factors:

1. Parking spaces are too remote from the front door;
2. Rear parking court feels unsafe/insecure;
3. Rear gate of garden is not lockable from both sides (hence is often not practical possible to use);
4. No footpath through rear garden further discourages use;
5. Surveillance of the rear parking area blocked by garden fences.

3.10.5 The result of parking on verges, on pavements and on streets that are not designed for on-street parking is:

1. Bin lorries and emergency vehicles cannot get through;
2. Unsafe streets are created because, for example, sightlines are blocked;
3. Cluttered and “untidy” street scenes;
4. Verges becoming unsightly which further undermines the streetscape;
5. Footpaths become impassable.

3.10.6 Opportunities for inappropriate parking should be designed out of schemes, as far as possible. Providing sufficient designated on-street parking spaces in the right locations will assist in reducing the instances where residents feel the need to park on pavements or verges. However, inappropriate parking should also be prevented through the design of the street. A range of street elements, such as carriageway widths, street furniture and planting, (including trees and groundcover planting), can be manipulated to constrain or direct parking.

Hierarchy of Preference

3.10.7 For these above reasons, the following hierarchy of preference should be adhered to when providing car parking for new residential developments:

1. On plot, located at the front or side of the dwelling;
2. On street to the front of dwellings;
3. If 1 and 2 above can't be achieved alternate methods of providing parking should be discussed at an early stage with the Council.

3.10.8 The following sections provide guidance and solutions on how to accommodate parking.

On Plot Parking

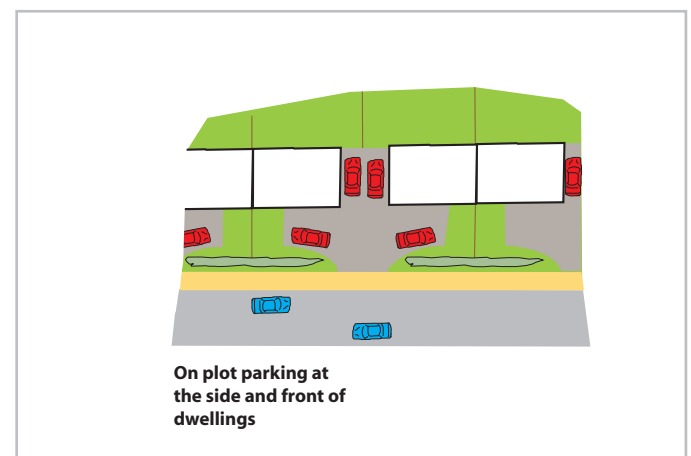
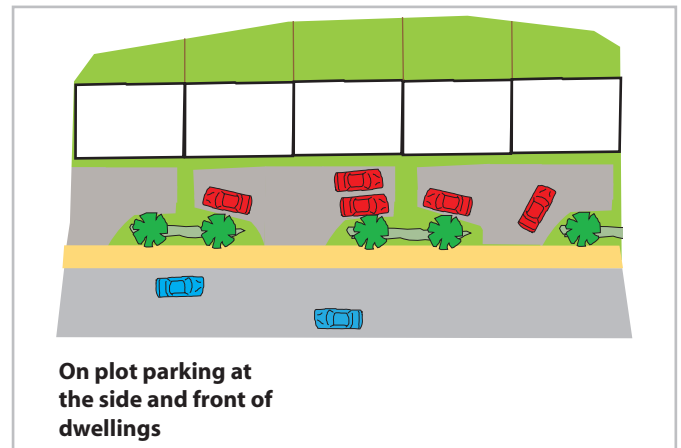
3.10.9 On-plot parking can be provided:

- to the side of dwellings (in front of garage or on hardstanding);
- as a "drive through" to hardstanding within the rear garden; or
- to the front as right-angled, or parallel parking.

3.10.10 This is a very common and acceptable way of accommodating parking for detached and semi-detached housing.

"Drive Throughs"

3.10.11 These are in effect car ports but are open at the back to allow parking either within the building and/or within the rear garden. The advantage of "drive throughs" to hardstanding



Independently accessible on plot parking spaces

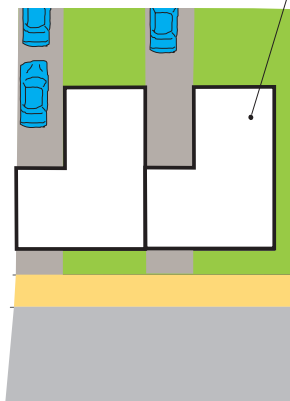
or garages in the rear garden is that continuity of frontage can be maintained whilst retaining on-plot parking. 1.8 metre high fencing or walling is required around the parking to provide security to the rear garden. Minimum width should be 3.5m.

3.10.12 “Drive throughs” to hard standing within the rear garden can create blank frontages and make ground floor internal layouts less



Drive-through parking within rear garden

Reduce visual impact of parked cars



Drive-through on plot parking accessed from the front

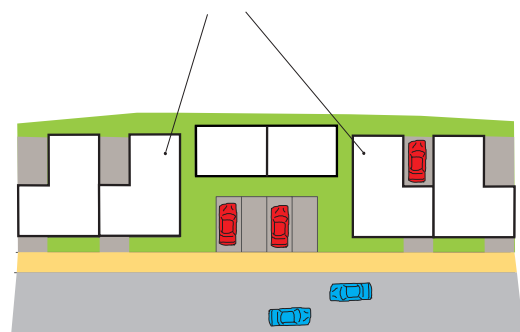
practical, and therefore need to be designed with care. They are best incorporated within wide frontage dwellings, which enables “active rooms”, such as living rooms and kitchens, to still be provided fronting the street at ground floor level.

3.10.13 Where “drive throughs” are incorporated in narrow frontage dwellings, balconies or bays at first floor level are one useful means of creating interest and activating the frontage. They must have active ground floor frontages on the other side of the street to provide overlooking of the drive through.

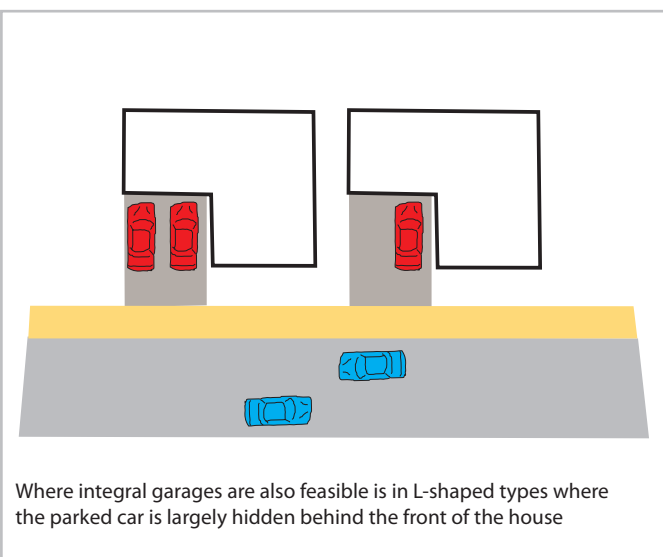
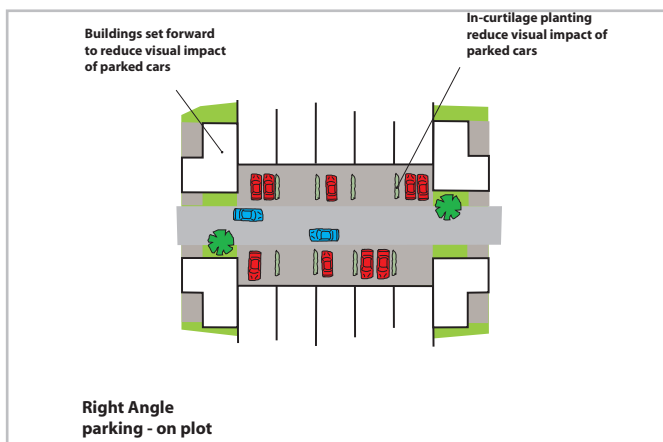
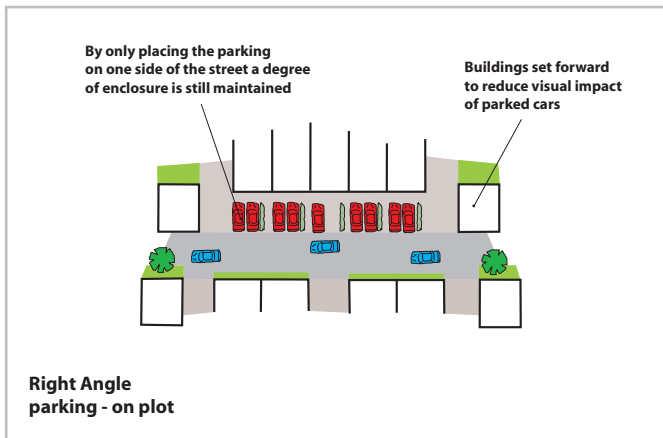


On-plot parking to the front

Adjoining buildings reduce visual impact of parked cars



Front parking - on plot



Right-angled Parking to the Front

3.10.14 A variation of the on-plot parking solution is the provision of right-angled parking to the front of the dwelling. In the examples opposite, the cars are parked within the curtilage of the properties and therefore constitute allocated spaces. It is important to note the annotations on each of the sketches as they hold important design information. Right-angled parking could include an integral garage but then wider frontage types (9-11 metres) are encouraged.

On Street Parking

3.10.15 On-street parking has a number of benefits, including:

- assisting with speed restraint as part of an overall package of elements that together affect driver behaviour;
- adding vitality to the street;
- acting as a buffer to pedestrians on the pavement from passing traffic;
- making efficient use of land, as the street provides the means of access and parking spaces are shared.

3.10.16 On-street parking should be built into the layout design and should be clearly defined, through use of different surfacing materials, kerbs, street furniture and/or planting.

3.10.17 Where possible, parking should be provided in groups of 3-5 bays. If there are more than 5 bays in a row they should be broken up by landscaping.

- 3.10.18 Visitor parking must always be provided on-street.
- 3.10.19 On-street parking can be provided in two different configurations: **echelon or parallel.**
- 3.10.20 Where echelon or right angled parking is used on higher level streets, buildings need to be taller to compensate for the wider street. Landscaping should also be used to break up the possible visual dominance of the cars.
- 3.10.21 Parallel parking can either occur adjacent to the carriageway or within the carriageway. When they are located within the carriageway, they can assist with speed restraint. Some form of planting is required at each end of the parking to ensure that the speed restraint effect remains when the car is absent.
- 3.10.22 Wide frontage housing (9-11m) allows a greater percentage of on-street parking to be provided and is an important consideration when designing layout and housetypes (see section 3.8 on housing typologies).
- 3.10.23 Streets with single-sided development, facing open space, provide opportunities to accommodate on-street parking. Spaces can be provided on the other side of the street, where there are no driveway crossovers. This is particularly useful where on-plot parking for housing is provided in the form of tandem parking.
- 3.10.24 In order to try and encourage more on-street parking and reflect where Milton Keynes residents like to park, the Design Guide outlines three more innovative, less conventional, ways of providing parking on street which it is hoped developers will build into their layouts.



Parallel parking within the carriageway -Woburn Sands

“Parking Streets”

- 3.10.25 Developments should include carriageways wide enough to allow parallel parking on both sides with space between for two cars to pass. Street trees within the pavement will reduce the visual impact of parked cars.
- 3.10.26 It has often been a challenge to fit in on street parking spaces when numerous detached and semi-detached houses are included in a layout because of the requirement to accommodate and keep open private drives onto the carriageway. Individual parking bays are generally not supported where the footpath diverts its alignment continually to get around them. The sketch opposite however shows that where wider ‘Parking Streets’ are incorporated into a development, individual parking bays can be incorporated between driveways with the footpath remaining on its existing alignment. Two designs can result, either a tree can be included at the front and back of each parking space or the parking spaces can be delineated with a different material. In both cases, but particularly the former, the features still result in traffic calming if the cars are absent.



Public Squares

3.10.27 Public squares have the benefit of incorporating parking within a space which can also provide townscape and recreational benefits. The square can be used to provide parking for residents within an adjacent busier street. In more formal layouts, parallel parking can be arranged around a landscaped central space, which could be in the form of a square or circus. In more informal layouts, parking can be provided within a predominantly hard-surfaced space.



Example of formal public square layout accommodating parking around its edge



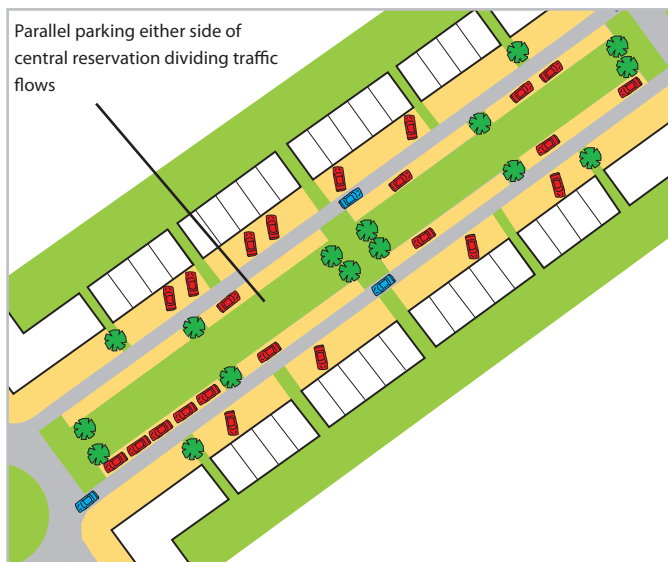
3.10.28 Public squares must be designed into the layout at the masterplanning stage – it is not advisable to try and retrofit them into a layout at a later stage.

Central Reservations

3.10.29 Parking can be provided within a central reservation with cars arranged both sides of a strip dividing traffic flows. Landscaping should be provided to reduce visual impact.

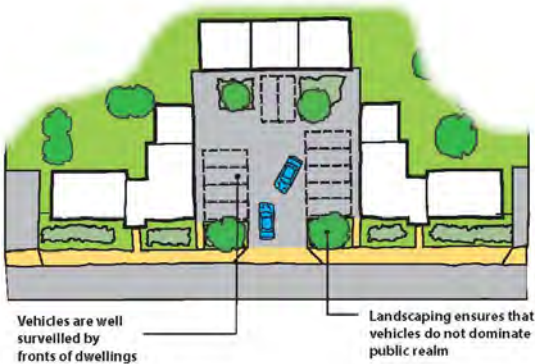


Parking in the central reservation - Oxley Park



Front Parking Courts

3.10.30 These are in effect rear parking courts located at the front where people like to park and where parking can be overlooked and be close to front doors.



Rear Parking Courts

3.10.31 Rear parking courts have proved unpopular as parking choices for residents and are therefore not supported as a parking option in Milton Keynes. It is however accepted that for certain streets, frontage access for vehicles from the street can't be achieved or is not permitted. In these cases small private and secure rear parking courts may therefore be required. The Design Guide does therefore in Appendix D outline guidance on what makes for a good quality rear parking court.

Car Ports

3.10.32 Unlike garages, carports can be counted as on-plot car parking because they are unlikely to be used for storage. However, there are concerns where they are accessed from the public realm as they provide gathering spaces for youths, and are often poorly surveilled. Car ports are required to be open on two faces and to have minimum internal dimensions of

3.0m x 5.0m per space. Where the car port is located to the side of the house, any fence or wall provided to secure the rear garden should be at least 1 metre from the end of the car port.

Parking for Leisure Uses

3.10.33 Where no dedicated parking is provided for a leisure attractor (e.g. a skatepark) located in a linear park or other open space, it is suggested that the streets closest to the facility (normally those lining the linear park) include additional on-street parking to cater for those users arriving by car.

Size of Parking Space

3.10.34 Parking spaces should normally be a minimum of 5 metres by 2.5 metres (diagram 1). Where the parking space adjoins a wall/fence (diagram 2) or dwelling (diagrams 3 & 4) additional space should be provided. Dwellings designed to meet Lifetime Homes standards will have to provide larger car parking spaces (see section 4.2 of the Design Guide). Details of the requirements can be found on the following website: www.lifetimehomes.org.uk.

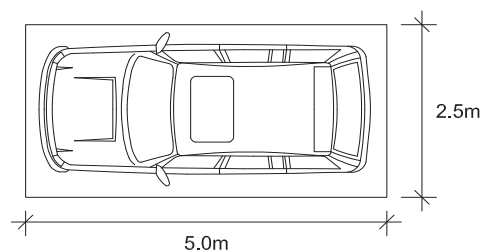


Diagram 1: Parking space

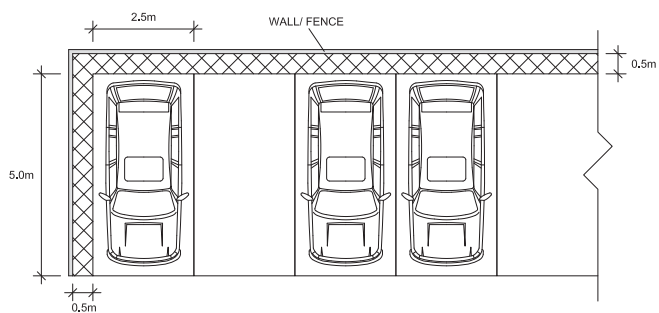
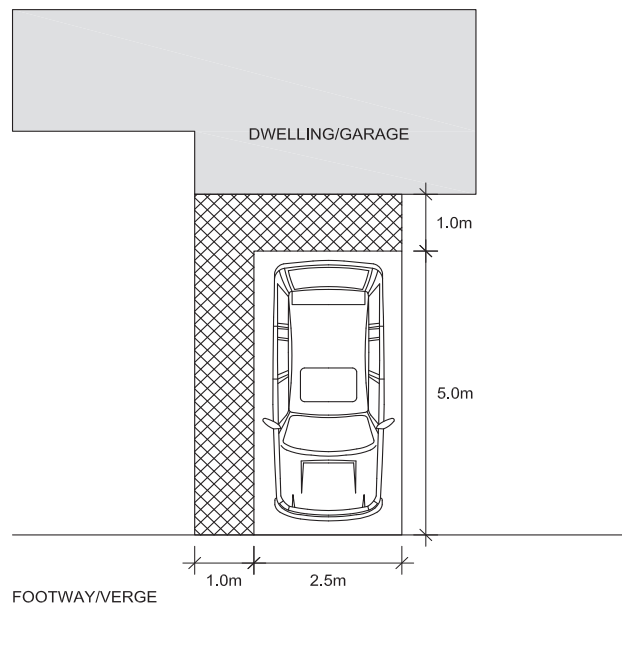
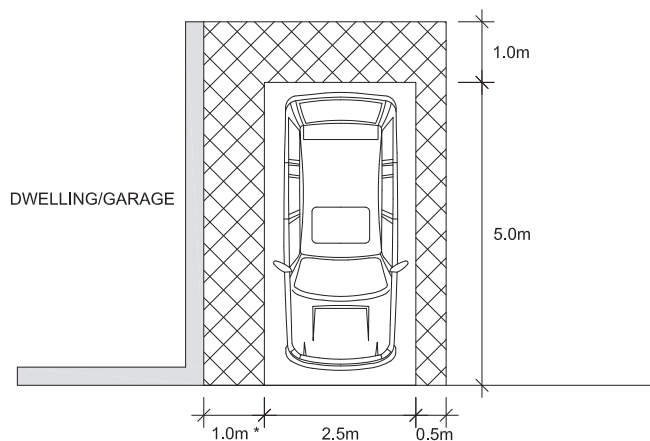


Diagram 2: Parking spaces adjoining a wall or fence



Diagrams 4: Parking space adjoining a dwelling/garage



* 1.0m if required for access to rear of dwelling. Can be reduced to 0.5m if no access is required.

Diagrams 3 :Parking space adjoining a dwelling/garage

Cycle Parking

3.10.35 Providing enough convenient and secure cycle parking at people’s homes for both residents and visitors is critical to increasing the use of cycles. Cycle parking needs to be considered at the outset and should be within a covered, lockable enclosure. For individual houses, this could be in the form of a shed or garage. For flats, either individual lockers or cycle stands within a lockable, covered enclosure are required. The cycle parking should be secure, easily accessible and convenient to use.

3.11 Landmarks, Vistas and Focal Points

3.11.1 Key focal points and gateways can be marked by buildings, public art or distinctive landscaping. Landmarks help to emphasise the hierarchy of a place, with the most important buildings being located at the main centres of activity. They also make it easier for people to navigate their way through an area by acting as markers.

3.11.2 Corners and public squares are particularly appropriate locations for landmarks.

3.11.3 Landmark buildings should be designed to stand out from neighbouring buildings. Their landmark status may be articulated through:

- the building's use;
- its form and appearance (varying roofstyle and bold coloured render, for example); and/or
- an increase in scale or height in relation to adjacent buildings.

3.11.4 The layout of a development can be arranged in two ways in so far as vistas are concerned:

- Streets can be orientated to focus on landmark buildings, in order to close vistas and to aid legibility. Offsetting the landmark building at the end of the vista helps to lead people through the space and increase their sense of surprise;

- In higher density areas in particular, streets can be arranged so that vistas are kept open –this is especially useful if there is an attractive landscape feature within the vista. The inclusion of this openness and greenery in the vista has the effect of making high density 'feel' like low density.



Landmark buildings help people to navigate their way through an area