Northamptonshire Place and Movement Guide

December 2008

Northamptonshire County Council

Contents

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Preface

The *Northamptonshire Place and Movement (PaM) Guide* replaces the *Design Guide for Residential Roads*, which was based on *Design Bulletin 32*, first published in 1977, and its companion guide *Places, Streets and Movement*, these were replaced by *Manual for Streets* (MfS) in 2007, which this guide is based on.

The aim of the guide is to follow MfS lead by putting well-designed residential streets at the heart of sustainable communities. The environmental impact of transport is often overlooked in the planning of new developments, truly sustainable development will consider carbon emissions from transport in the design. The guide works to recognise the importance of assigning higher priority to pedestrians and cyclists, while allowing for vehicle movements, thus creating places that work for all members of the community. The focus is on how streets can create a positive place and influence the design of new developments to serve these new communities in a positive way.

The PaM Guide places emphasis on the importance of collaborative working and coordinated decision-making, as well as on the value of strong leadership and a clear vision of design quality at the local level. The guide also supports the MfS policy of using the environment to influence driver behaviour rather then just standard set criteria. The guide encourages applicants to use a Quality Audit process to show how a design led layout would work rather than sticking to set criteria, which may then lead to a poor sense of place, MfS provides an outline on how this can be done effectively.

MfS encourages the use of tools to assist in the process of a planning application, particularly for large applications. The PaM Guide provides outlines of tools that can be used and where they have been used locally. These include Masterplanning and Design Coding systems that have previously been used successfully by encouraging stakeholders to work together. Parking is also included, although standards are set by planning guidance PPG 13 and essentially are under planning authorities' control, it is included as it has an obvious impact on transport.

This guide shows that applying a rigid parking standard across a development is not always the best option and encourages developers and planning authorities to review parking inline with the location of the development and the housing typology that is being proposed. i.e. a development in a rural area which has low levels of accessibility to local facilities may need more parking facilities than a development in an town centre location. The parking section looks at current trends in Northamptonshire and shows that more accessible locations (e.g. town centres) generally have lower car ownership than less accessible areas (e.g. rural areas) thus parking standards could be applied in new developments to reflect this. It also shows how different forms of parking are suitable depending on the type of household, for example for a terrace of houses, shared parking areas, either in courtyards or on street bay parking can be more suitable then driveways, however for larger family homes parking on a driveway may be suitable.

The guide also highlights design standards for different road users and encourages the use of shared surfaces where appropriate and more innovative measures for speed control, for example, the use of psychological traffic calming on busier development roads, examples of this have already been successfully implemented on the county road network in Whittlebury.

The guide includes local case studies to show how, under different circumstances, the principles of MfS and the PaM Guide can be applied. The aim is to create neighbourhoods where buildings, streets and spaces combine to create locally distinct places and which make a positive contribution to the life of local communities.

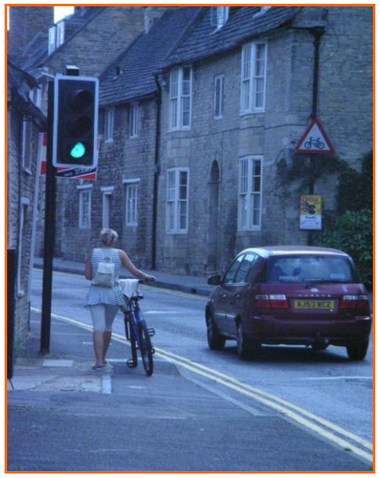
Acknowledgments

This document was produced with the help and support of a number of parties. The CABE Space enabling programme provided direct support for the development of this document by working with officers to set the scope and by contributing to stakeholder workshops.

A series of consultation and workshop events have been attended by representatives of the District Council's in Northamptonshire and comments received have been incorporated in to this document.

Introduction

Movement, whether it is residents walking to the local shops, or employees boarding buses at conveniently located stops to take them to work, is fundamental for community life to function successfully and help create a sense of place.



To encourage successful communities, movement – walking & cycling routes, bus routes and vehicular access etc., must be considered at the earliest stage of the design process.

Once a strategy for movement has been developed the fundamental elements of layout design can be formulated. The design of developments should not however, be dominated by highway design. The building layout should be developed first with the carriageway alignments to follow.

These principles underpin the latest guidance from the Department for Transport (DfT) outlined in the Manual for Streets.

The Manual for Streets was produced on behalf of The DfT and Communities and Local Government and released in March 2007 as a replacement for Design Bulletin 32 (DB32) – considered as the key guidance for development layouts since 1977.

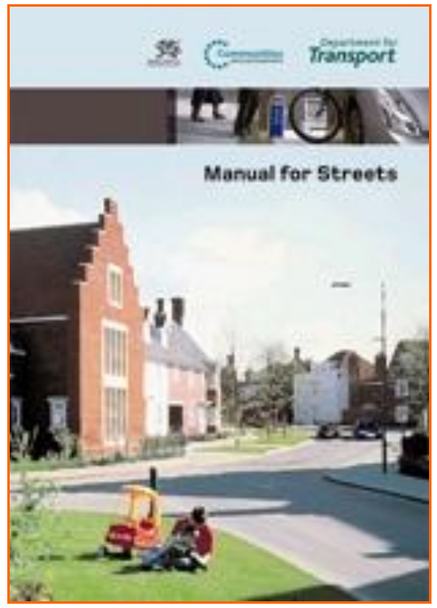
The Manual for Streets was produced in order to help bridge the gap between Highway Engineering, Transport Planning, Town Planning and Urban Design, and provides a framework for a more co-ordinated approach to high quality development planning.

This document is intended to provide the local context within which the principles of the Manual for Streets can be applied. As such this document should be read in conjunction with the Manual for Streets – in which the majority of the more detailed technical standards required when designing a development layout can be found.

As a general rule we expect Manual for Streets to be applied to streets with no more than a maximum speed limit of 30mph, although it can be applied to streets with higher design speeds where safety can be demonstrated to the satisfaction of the transport authority.

Copies of the Manual for Streets can be down-loaded from the

Manual for Streets[1] website.



It is the intention of this document to promote and enhance the principles of Manual for Streets and to encourage more thought and consideration of the principles of place and movement in the design of new developments.

This guide is a direct replacement for the Northamptonshire County Council Document, ‘Design Guide for Residential Roads (November 2003)’. The principles of this report should not however be restricted to the design of residential developments

[1] www.manualforstreets.org.uk

Policy Basis

There are three main tiers of guidance when planning the Transport and Movement implications of a new development. These are summarised below:

National Level
Manual for Streets
DMRB (Design Manual for Roads and Bridges)
PPG13

Regional / County Level
Northamptonshire Place and Movement Guide
North Northamptonshire Core Spatial Strategy
Emerging West Northamptonshire Core Spatial Strategy
NCC Transport Strategy for Growth
Designing out Crime SPG
North Northants. Sustainable Design Guide SPD

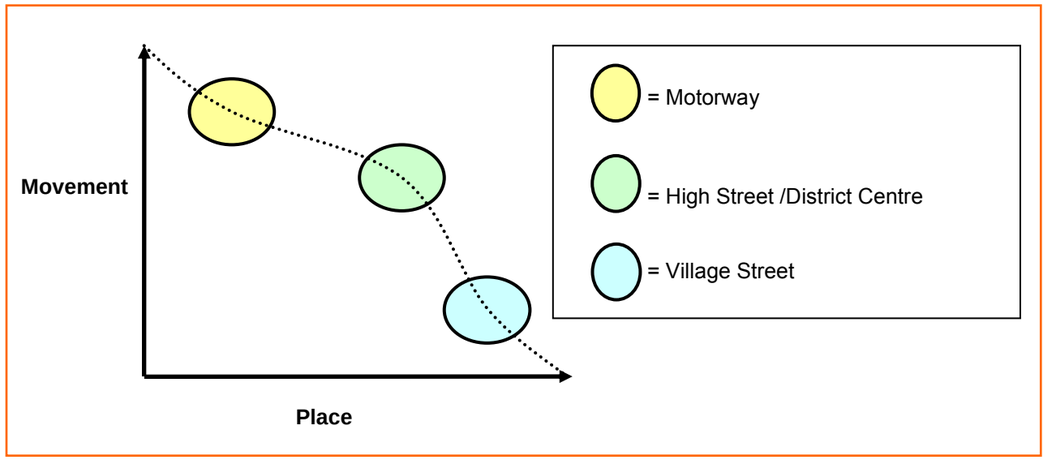
Local Level
Local Design Guides
Design Codes

This guidance provides the middle tier of guidance, i.e. County level, and is intended to provide the linkage between national. guidance, such as the Manual for Streets, and Local Design Code and Master planning work.

Places and Movement

When planning a new development, whether infill or urban extension, a primary consideration is the relationship between place and movement.

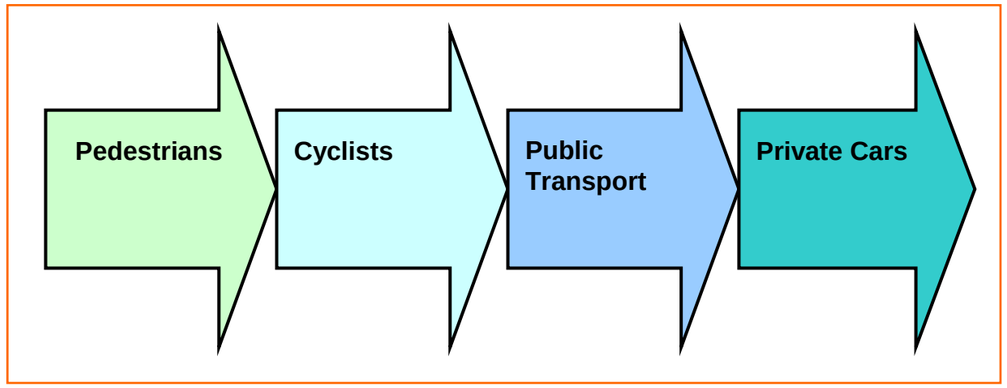
For example, in differing circumstances, different emphasis or importance is placed on the provision of schemes which prioritise the ***movements*** that take place within a development and its surroundings – and the quality, design and aesthetic of the ***place***. This is detailed in simple form in the diagram below.



It is commonly perceived that a motorway does not prioritise the sense of place, but there is a greater emphasis on providing fast, un-impeded traffic movement. This obviously differs considerably to a small village, for example, which may be said to have a lesser emphasis placed on movement but a high value given to the sense of place and character. Many developments fall somewhere between the two, such as a new district centre, with a need potentially for both high levels of movement and a high quality of place.

Another area requiring thought from the earliest stages of design is the consideration of users within a place or street. Whilst a formal and prescriptive hierarchy of street typologies no longer forms part of the design guide process, practical consideration of the likely users (and levels of use) of each street and place should be taken into account.

Government guidance suggests that users are considered in the following order, (when looking at mainly residential areas).



This is not representative of the importance or numbers of each of the user groups – but rather a logical order in which they should be considered when planning a development. It is also not the entire range of users to consider. For example; taxis, refuse vehicles, and emergency vehicles all need to be considered where appropriate, and their movement within a development accounted for and designed in.

The level of use by each of these groups should also be considered. Some areas will have far higher traffic flows than others for example, whilst other areas will largely be unsuitable for high levels of motorised traffic. Other street types, such as bus only or bus priority corridors will also obviously influence the types and levels of travel activity.

When considering the uses of streets issues of legibility should also be addressed. A logical framework of street types or junction forms can help in guiding users through a development and in giving some broad spatial information, i.e. whether you are close to the District Centre, on a through route or in a quiet residential area, which in turn will affect traveller behaviour.

Consideration of these Place and Movement principles should be used to inform Pre-application Planning and discussion, this will then assist in the preparation of Design and Access statements and in master-planning the site.

Pre-application discussion

The Manual for Streets approach to development planning is one of joint/team working, with involvement from the Planning and Transport Authorities and the Developers and their agents. This raises the importance of pre-application meeting, discussion and design. As such the earliest possible consultation with the relevant authorities is encouraged in all instances. The advantages of this approach are, joint working to progress a planning application, and better quality design.

Design and Access Statements

Government legislation requires the submission of Design and Access statements in support of planning applications. CABE has produced a summary guide for the production of design and access statements; Design and access statements: how to write, read and use them.

In summary the CABE guidance (which can be downloaded from the CABE website)[2] details the two main access issues as:

1. **Vehicular and transport links**
Why the access points and routes have been chosen, and how the site responds to road layout and public transport provision.

2. **Inclusive access**
How everyone can get to and move through the place on equal terms regardless of age, disability, ethnicity or social grouping. Other useful resources are detailed at the end of this document and on the design guide web-page.

Transport Assessments

Applications expected to have a significant transport impact should be accompanied by either a Transport Statement or Assessment (dependant upon the scale of the impact of the proposals). Transport Assessments should be scoped and agreed with the Highway Authority as part of the pre-application process and should be prepared in accordance with the DFT document "Guidance on Transport Assessments (March 2007)".

In light of Northamptonshire's status as part of the Milton Keynes South Midlands Growth area, comprehensive assessment of major development proposals and related impacts is required. Transport Assessments may be expected to be tested against either of the 2 NCC area-wide strategic transport models covering the County. The North Northamptonshire Saturn Model can be used to test developments in the North of the County, and the Northampton Multi-Modal Study which covers the West of Northamptonshire. This area-wide modelling has been used to develop Town Strategies for each Growth Town and support the evidence base for the Core Spatial Strategy documents produced in the County.

Developer contributions

The modelling work undertaken has been used to fairly apportion an infrastructure contribution from development proposals in the County; this is likely to be collected as a share of a pooled contribution, through Section 106 planning agreements, this process is informed by the Transport Strategy for Growth and its supporting documents along with emerging town centre Local Development Framework Documents. Contributions will also be sought to support future maintenance of public realm within the highway boundary, where appropriate, to ensure the standards of new developments are maintained for the long term future of residents. It is a requirement that Northamptonshire County Council are direct signatories to all Section 106 agreements, where transport measures are included.

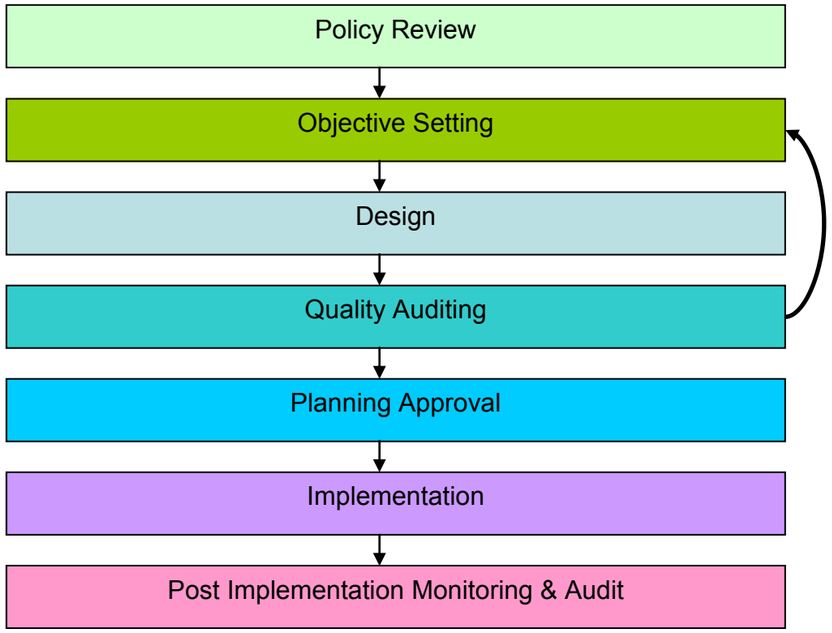
[2] www.cabe.org.uk

Master-planning and Design Coding

All major developments tend to be associated with significant transport issues, both internal to the site and with regards to effects in the wider area. As such it is important for these issues to be considered from the earliest stages in the development process.

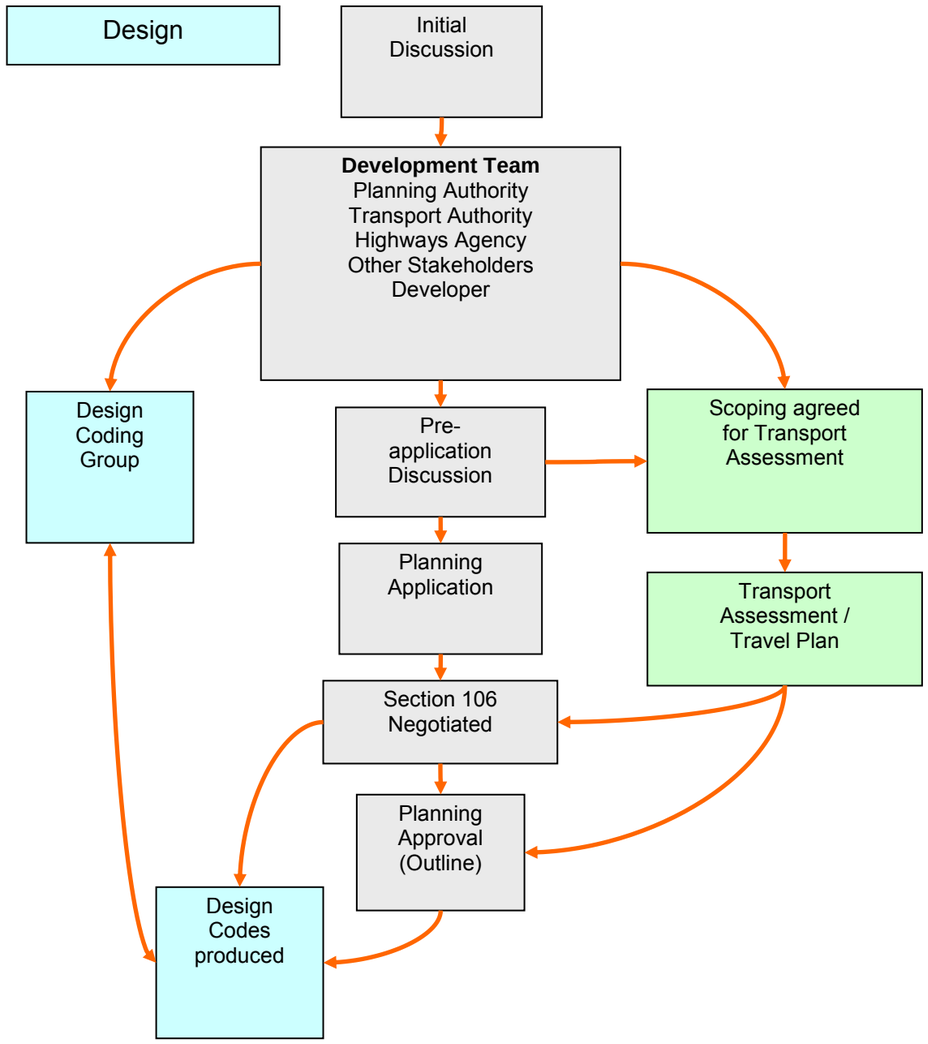
Prospective developers are encouraged to approach the local planning authority and highway authority to arrange for discussion over master-planning and design coding from the pre-application stage.

Below is a summary of the development process as detailed in the Manual for Streets.



The Master-planning and Design Coding elements of the process fall into the third stage, i.e. the Design stage.

Looking at this element in more detail, the Stanton Cross Development in Wellingborough is a local example of effective inclusive planning and early engagement. Early and continued involvement of the Highway Authority and other stakeholders with the Planning Authority led to agreement on a high quality, sustainable development, with significant transport infrastructure implications and detailed design coding. The general process, and one which the Transport Authority advocates for major developments, is detailed below:



CABE has released a guidance document on the master-planning process, recommended within the “Manual for Streets”, titled “Creating Successful Masterplans: A Guide for Clients”. The document lists the ten keys to successful master-planning, which are summarised below:

- Provide strong client leadership and a commitment to quality
- Be clear about your aims and the outputs you need
- Learn from your own and other successful projects
- Give enough time at the right time
- Find the right teams and development partners
- Respond to the context, physical, economic, cultural and social
- Work with stakeholders
- Understand that master-planning is a fluid process
- Work in a collaborative spirit
- Put in place a strategy

In order to successfully master-plan for movement a number of key issues need to be addressed:

- **Land use planning** – the location of proposed developments should be considered in terms of sustainability. For example Census data has shown that for journey to work modal share, sites located next to the trunk road network will in general generate very high levels of single car occupancy trips. There maybe therefore, more suitable locations for development.

- **Walkable developments**: “Cells” of development with 800m walk distances to local facilities and public transport.

- **Sustainably planned developments**, with walking, cycling and public transport routes (including priority or exclusive routes), planned in from the master-planning stage of development. Major development and urban extensions should provide dedicated and/or segregated mass transit systems in order to offer a viable alternative to the car. All residents of a new development should be within 400m walking distance of a relevant public transport service.

- **Mixed use developments** to generate a greater degree of internalised trips.

- The production of a **collaborative movement framework** for the development, taking into account local context and providing for the above detailed sustainable transport needs.

- **Connections to the surrounding area**.

- **Connections through the site**

- **Street layout and dimensions**

- **Building lines**

- **Parking provision, design and control**

- **Landscape design and structural planting**

- **Materials, management and maintenance regimes**

- **Servicing and emergency access arrangements**

- **Speed control**

- **SUDS** (Sustainable Urban Drainage Systems) and Sewer routes

- **Utility routes**

Land use planning has a significant impact on the planning and delivery of developments that are sustainable in transport terms and support the concept of walkable communities. New developments should aim to provide, or be located within 800m of, a range of facilities. The aim is to encourage a reduction in the need to travel by car through the promotion of genuine mixed use development. The daily needs of most residents should be provided for within a reasonable walking distance.

Land use planning in creating a walkable community

The example below is a Victorian Area of Kettering, the streets are laid out in a grid format, maximising permeability and minimizing walking distances. A mix of employment, retail and housing provides the opportunity for pedestrian trips.

The second example is the North West of Rushden. The southern part of the plan details a mix of housing, with some employment. The Northern part of the plans details the location of out of town food retail and employment. Foot/Cycle access to this area is limited to one (currently severed) cycle route.
This results in a poorly connected development that disadvantages non-car users

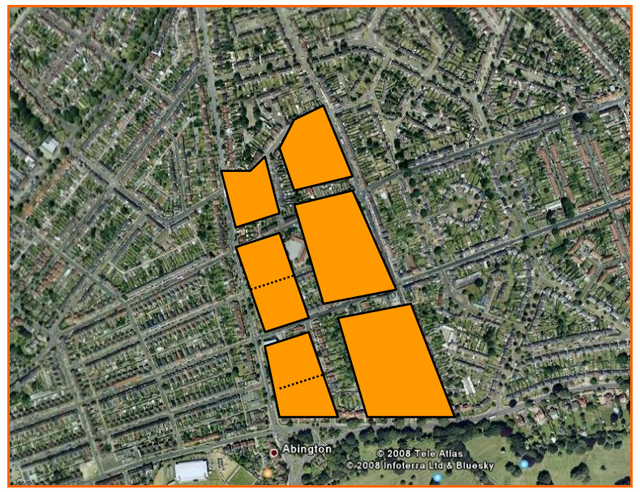
Connecting communities to their surroundings

In the below hypothetical scenario a parcel of land is planned for brown-field infill development. Using a cul-de-sac based development (as detailed below) results in an introverted development, which fails to integrate well with the surroundings. Little pedestrian permeability can be achieved and due to the cul-de-sac layout, a large proportion of walking trips have to cover a greater distance in order to reach the surrounding road network. Any bus services accessing the site may be required to double back in order to cover the site and amenity vehicle coverage of the site will also be less efficient.

= Bus Stop = Principal Roads = Development Roads

= Bus Stop = Principal Roads = Development Roads

The above layout represents a closer replication of the existing local streets and helps the development to integrate better with the surroundings. Increased usage can be made of the existing bus stops and services and walking distances within the site are reduced.



This street pattern then forms the basis for perimeter blocks which ensure that buildings contribute positively to the public realm.

Parking

Getting the levels right

Applying a rigid parking standard across a development has not always worked successfully, resulting in developments that have often got the provision of parking across a development wrong. This has led to problems such as congestion through parking on roads where parking has not been designed in, or verge parking, essentially this leads to parked cars diminishing the ability for a new development to create a lasting sense of place and allow for all forms of movement.

The advice below replaces elements of NCC's previous Car Parking standards – those relating to residential developments in the NCC document 'Parking – SPG, March 2003'.

NCC has considered the most appropriate parking levels and layouts for new development in detail, and has consulted a wide range of stakeholders in developing the guidance contained on the following pages. The intention, from a Highway Authority perspective is to generate parking levels that are high enough to meet needs and maintain the commerciality of developments, whilst low enough to make most efficient use of development land and avoid the creation of car-dominated environments.

In order to create a reasonable evidence base for any proposed changes to the published parking SPG a number of different evidence sources were used, including the parking SPGs of neighbouring authorities, the results of the County Councils own Accessibility work and the best practice guidance within the English Partnerships (EP) document, "Parking – What works where".

"Parking - What works where" contains a significant amount of research carried out by Alan Young of the WSP group and Phil Jones of Phil Jones Associates, into the effects of residence type, size and tenure upon parking levels. This is summarised within the document.

The same document details **two different approaches** to determining parking levels for a new development in light of the criteria above.

The first of these approaches is to provide mainly unallocated parking. In this instance total parking levels are generated by the average need of the residences within the development, with the research supporting the document suggesting that due to patterns of travel, visitor parking could be accommodated within the same parking stock (as some residents would be out at the time when others receive visitors).

The second approach is on the basis of providing 1 allocated parking space per unit, plus a degree of additional parking for those units with 2 or 3 cars.

I.e. 1 space per unit
Plus
1 x (percentage of 2 car households)
Plus
2 x (percentage of 3 car households)

Utilising this approach the summary census data within the document was assessed to determine patterns of car ownership and calculate the parking levels for the various housing types, tenures and sizes on the basis of the two approaches detailed above.

The results can be seen in Table 1 on the following page.

Table 1: Summary census data from Parking – What works where (English Partnerships).

Parking, What Works Where

Parking levels subset

Houses by Tenure	Number of Cars or Vans						Parking provision per unit based upon 1 allocated space	Parking provision based upon average	pr
	Total	None	One	Two	Three	Four			
Owner Occupied	12743372	1680294	5885010	4115485	814097	248486			
1 Room	10526	2678	5117	2103	454	174			
	100.00%	25.44%	**48.61%**	19.98%	4.31%	1.65%	1.29	1.08	
2 Room	48839	13588	27106	6999	892	253			
	100.00%	27.82%	**55.50%**	14.33%	1.83%	0.52%	1.18	0.92	
3 Room	217234	56592	120334	34999	4301	1008			
	100.00%	26.05%	**55.39%**	16.11%	1.98%	0.46%	1.20	0.95	
4 Room	1710922	402101	964162	304202	32705	7752			
	100.00%	23.50%	**56.35%**	17.78%	1.91%	0.45%	1.22	0.99	
5 Room	**3773371**	602943	1997450	987355	153435	35488			
	100.00%	15.98%	**52.94%**	26.17%	4.07%	0.94%	1.34	1.21	
6 Room	3352073	441547	1611008	1061951	189438	48129			
	100.00%	13.17%	**48.06%**	31.68%	5.65%	1.44%	1.43	1.34	
7 Room	1651516	102099	643287	711826	149780	44524			
	100.00%	6.18%	38.95%	**43.10%**	9.07%	2.70%	1.61	1.63	
8+ Rooms	1975592	58746	516546	1006050	283092	111158			
	100.00%	2.97%	26.15%	**50.92%**	14.33%	5.63%	1.80	1.93	
Shared Ownership	96609	20775	5275	20267	2676	816			
1 Room	198	86	92	14	3	3			
	100.00%	43.43%	**46.46%**	7.07%	1.52%	1.52%	1.10	0.71	
2 Room	1482	585	717	159	21	0			
	100.00%	39.47%	**48.38%**	10.73%	1.42%	0.00%	1.14	0.74	
3 Room	5154	1991	2512	559	72	20			
	100.00%	38.63%	**48.74%**	10.85%	1.40%	0.39%	1.14	0.76	
4 Room	32910	7500	19056	5746	471	137			
	100.00%	22.79%	**57.90%**	17.46%	1.43%	0.42%	1.20	0.99	
5 Room	**33806**	6463	18428	7756	923	236			
	100.00%	19.12%	**54.51%**	22.94%	2.73%	0.70%	1.28	1.11	
6 Room	15601	2940	8006	3834	638	183			
	100.00%	18.84%	**51.32%**	24.58%	4.09%	1.17%	1.33	1.17	
7 Room	4416	742	2104	1195	275	100			
	100.00%	16.80%	**47.64%**	27.06%	6.23%	2.26%	1.40	1.30	
8+ Rooms	3042	468	1160	1004	273	137			
	100.00%	15.38%	**38.13%**	33.00%	8.97%	4.50%	1.51	1.49	
Rented	3345622	1528857	1352248	376920	66648	20949			
1 Room	11462	7591	3209	490	115	57			
	100.00%	**66.23%**	28.00%	4.27%	1.00%	0.50%	1.06	0.42	
2 Room	54647	33329	18301	2548	338	131			
	100.00%	**60.99%**	33.49%	4.66%	0.62%	0.24%	1.06	0.46	
3 Room	264548	171582	81133	10097	1288	448			
	100.00%	**64.86%**	30.67%	3.82%	0.49%	0.17%	1.05	0.40	
4 Room	826916	420982	332470	64941	6538	1985			
	100.00%	**50.91%**	40.21%	7.85%	0.79%	0.24%	1.09	0.59	
5 Room	**1228616**	540475	522838	138353	21741	5209			
	100.00%	**43.99%**	42.56%	11.26%	1.77%	0.42%	1.15	0.72	
6 Room	660420	266616	278913	91824	18117	4950			
	100.00%	40.37%	**42.23%**	13.90%	2.74%	0.75%	1.19	0.81	
7 Room	175219	57674	72044	34149	8319	3033			
	100.00%	32.92%	**41.12%**	19.49%	4.75%	1.73%	1.29	1.01	
8+ Rooms	123794	30608	43340	34518	10192	5136			
	100.00%	24.72%	**35.01%**	27.88%	8.23%	4.15%	1.44	1.32	

A number of immediate patterns can be seen from this data:

- Owner occupied houses had the highest levels of car ownership, with between 1 and 2 cars per household giving the highest percentage results. Shared ownership houses had the next highest level of ownership, with an average of 1 vehicle per unit. Rented had the lowest level of ownership, with the highest percentage split (in all but the largest units) being for no car ownership. Therefore the first conclusion can be that tenure has a significant effect upon likely levels of car ownership.

- Allocating parking leads to a significant overprovision in all but the largest of units, particularly with regard to rented accommodation. I.e. the provision of 1 allocated space per unit for 3 habitable room rented accommodation leads to an overprovision of 0.64 spaces per unit.

- Whilst this is a fairly extreme example, the same applies to almost all sizes, types and tenures of residential development, with the only unit type actually requiring the full amount of parking provided via direct allocation being the very largest privately owned houses, i.e. 7+ habitable rooms (4/5 bed properties). As such the provision of parking should be given utmost consideration in all new developments to prevent such overprovision where possible.

- Unallocated parking therefore appears to offer the more flexible and economic solution to parking requirements for the smaller end of the housing market and appears to be particularly suited to rented or part ownership schemes, whereas dedicated on plot parking appears to be more suited to the larger end of the market, particularly large open market family homes.

What should the approach be in calculating and setting parking levels for new developments?

The application of either methodology above should be used to calculate all residential car parking spaces. It may be possible however, to alter car parking allocations related to the accessibility of the site, as set out below:

Site specific car parking calculations –

In order to accommodate the needs of various types, sizes, tenures and locations of development it is proposed that a more flexible, site specific approach is used when determining parking levels for a site.

The County Council has produced a spreadsheet based upon the English Partnerships research data, differentiating between the various types, sizes and tenures of units to provide a site specific parking allocation.

How does the English Partnership data correspond to Northamptonshire?

Table 2: Comparing national census data with Northamptonshire

Area	Total	Households (N. cars or vans): None	Households (N. cars or vans): One	Households (N. cars or vans): Two	Households (N. cars or vans): Three	Households (N. cars or vans): Four or more
Northamptonshire	100.00%	20.84%	42.50%	29.19%	5.71%	1.76%
Corby	100.00%	32.07%	45.65%	18.36%	3.20%	0.72%
Daventry	100.00%	13.57%	38.96%	36.68%	8.03%	2.76%
East Northamptonshire	100.00%	16.07%	42.06%	33.23%	6.42%	2.22%
Kettering	100.00%	20.33%	43.79%	28.93%	5.42%	1.53%
Northampton	100.00%	25.22%	44.30%	24.98%	4.30%	1.20%
South Northamptonshire	100.00%	11.74%	36.84%	39.20%	9.25%	2.98%
Wellingborough	100.00%	22.91%	43.69%	26.82%	4.98%	1.60%
What works where - 5 Room	100.00%	15.98%	52.94%	26.17%	4.07%	0.94%
What works where - 6 Room	100.00%	13.17%	48.06%	31.68%	5.65%	1.44%

Table 2 (above) compares the levels of car ownership detailed for the largest section of the “Parking - What works where”, data, i.e. that related to owner occupied 3/4 bed houses.
This was used to represent an average of the collated data and then compared with the levels of vehicle ownership recorded in Northamptonshire Census data in order to determine if it would be robust to use apply the data to determine levels in Northamptonshire.

In general terms the split of vehicle ownership in Northampton is close to that within the EP data, with the main differences being a higher percentage of homes with zero car ownership and a slightly higher percentage with two and three cars in Northamptonshire, balanced by a lower percentage of homes with one vehicle.

There is also a variation across the County in terms of the characteristics of the various districts. Corby and Northampton in particular have a considerably greater proportion of homes with no car ownership, with the rural districts detailing higher proportions of homes with 2 or more cars. (In all Districts the average number of cars per dwelling is below the Government maximum parking standard of 1.5 spaces per dwelling).

As such additional variation needs to be built into the calculation of site specific car parking standards. This is a modifying percentage generated by the accessibility of the site, allowing for reduced levels in the most accessible of locations – particularly town centres etc and higher levels in rural locations with poor alternative transport options.

This modification factor is based upon the modelling tool ‘Accession’ data generated by the County Council and can be applied to individual postcodes. This provides an optional site specific variation (within some prescribed limitations) to the parking levels for a site in order to allow for variations in accessibility and location.

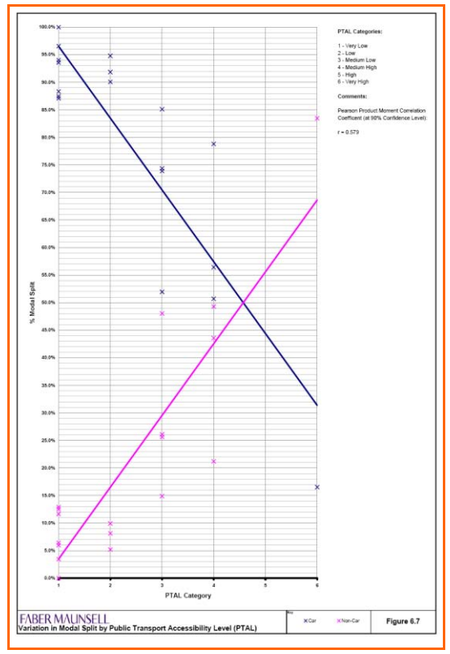
A link to the English Partnership based tool will be available through the NCC Transport Planning[3] section of the website, along with this guide.

The TRICS consortium report – Relationship between accessibility and parking for new developments – July 2002 quotes the findings of a 1998 report for the British property foundation in which it was stated:

“One of the key findings was that whilst car parking is initially perceived to be a key component in the transport equation, on closer scrutiny, it is actually good accessibility, by whatever mode, that is the key issue in terms of the site selection process. Accordingly in locations where a suitable level of accessibility is available by non-car modes, the presence of limited parking is easier to bear”

Relationship between accessibility and modal share

Research carried out by Faber Maunsell on behalf of the TRICS consortium goes on to detail a strong apparent relationship between Accessibility Levels (in this case utilising the London based ‘PTAL‘ accessibility scoring system to score accessibility) and modal choice. The following is an extract graph from their report detailing that relationship.

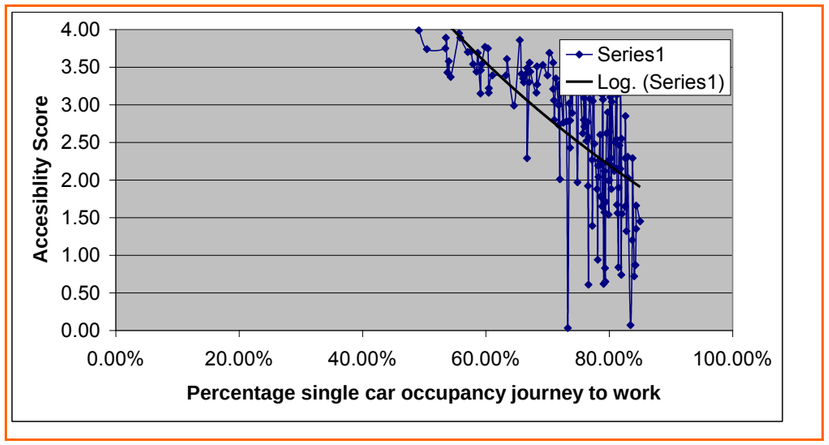


In this graph the pink line details the percentage use of non-car modes, (increasing in line with increased levels of accessibility), with the blue representative of car use (decreasing in line with increased levels of accessibility).

[3] www.northamptonshire.gov.uk/Transport/TP/tp_home.htm

In order to clarify if the use of accessibility was an appropriate factor to use in informing parking levels a similar study was done for Northamptonshire.

The following graph details the relationship between accessibility levels (calculated using Accession software) and percentage of single occupancy journey to work trips in the County. Again there is an obvious correlation between levels of accessibility and car usage.



As such it is considered that, whilst not the overriding factor, accessibility is a key supporting element to any successful, site specific approach to parking provision.

What form should parking take?

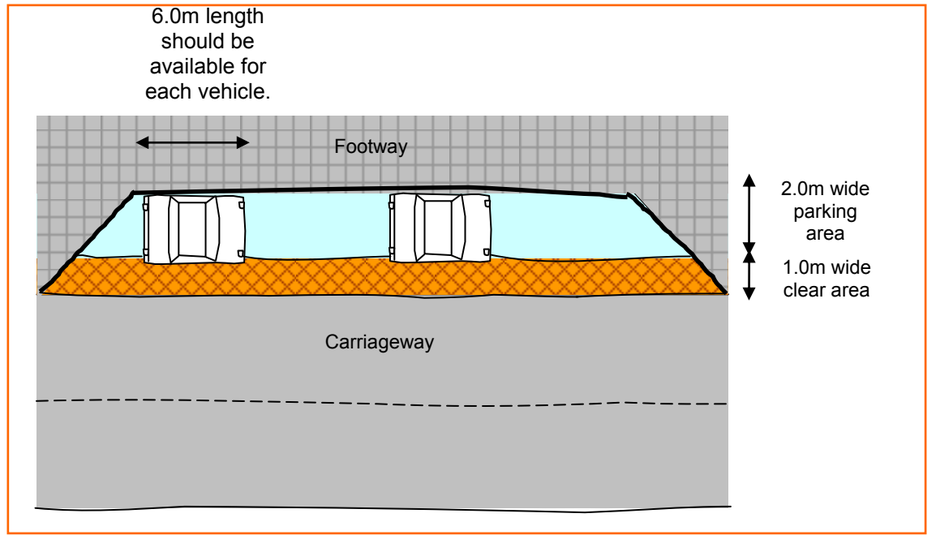
Whilst this addresses the issue of how many – the type, arrangement and variety of parking within a development also needs to be the subject of careful consideration in order to meet, not only highway needs, but also those of planning and urban design. As such a palette of parking typologies is proposed that will allow for the selection of parking layouts appropriate to the individual circumstances of a site.

On street

If sensitively designed and located the use of on street parking can be one of the most appropriate forms of parking as it allows for a reduction in parking spaces, as spaces are not allocated to residential units.

On busy streets

The following layout was proposed as part of the Northampton development at Upton, design coding process and provides a practical and safe way of providing on street parking, parallel to the carriageway.



The 1m clear area to the outside of the vehicle provides a safe margin for a driver or passenger to open the door and is suitable for streets in which greater levels of traffic than normal or higher speeds are expected.

On quieter streets

A number of varied on street parking options are available, including:

- Central reservation
- Parallel
- Angled
- Right angled

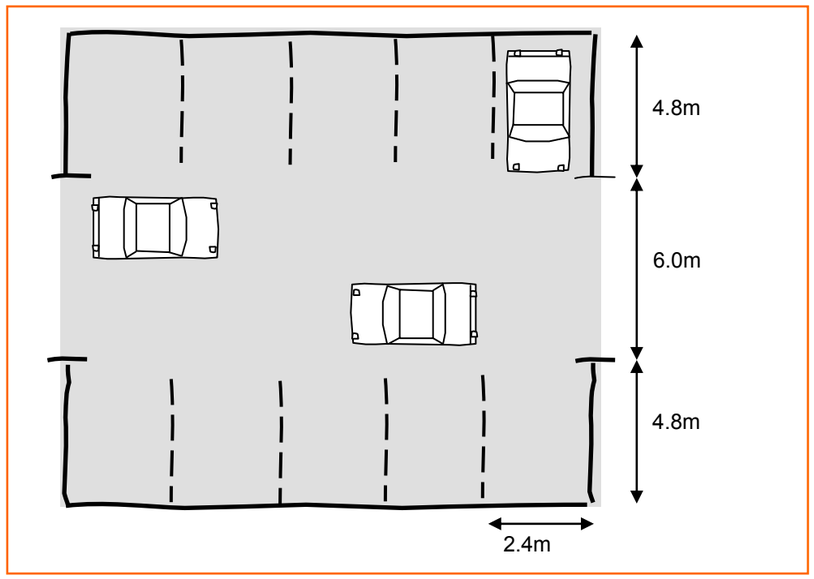
Examples of these can be found in the English Partnerships document “Parking - What works where”, and “Manual for Streets”.

On street parking can result in the need for wider streets and as such will have an impact both upon the street scene as a whole and on the future level of maintenance liability as a result of the development.

Location of on street parking is also important and should, for example, mainly be kept clear of traffic sensitive areas, such as junctions, accesses, crossing points and major desire lines.

Off plot

The diagram below details the core dimensions required in providing a typical car parking courtyard layout.



This example details a parking courtyard with typical dimensions, i.e. a 6m clearance between bays. Through the use of wider bays and via the use of track plots to determine vehicular swept paths, it may be possible, in some instances, to reduce the clearance distance (from the 6m in the example left).

Obviously the range of layout options for shared parking is very wide and the above is intended to give an indication only of the practical dimensional limits that a communal parking facility will have to adhere to in order to operate effectively and safely.

For other examples of off plot parking arrangements please see English Partnerships – “Parking - What works where”, or Chapter 8 of “Manual for Streets”.

On plot

The provision of allocated on plot spaces, usually in the form of driveways to the side or front of houses can be seen as the least flexible as only the occupier can use them and they remain an unused space if the occupier does not own a car.

For details of on-plot parking arrangements please see the Northamptonshire County Council Standing Advice notes on minor development.

Safe by design

The way parking is treated is one of the major considerations that should be taken into account when designing a development in accordance with safe by design principles.

UK Safe by design standards tend to encourage the provision of either secure on plot parking (i.e. garaging or curtilage parking) or small overlooked communal parking arrangements. However these standards are based upon the most commonly used layout types in the UK at present and do not reflect some of the thinking within new guidance, such as Manual for Streets (which prioritises on street parking, something that traditional safe by design principles would generally oppose).

As such a balance needs to be sought between the provision of good places to live and the design of developments which will discourage crime and disorder; indeed the design of high quality development can have a significant crime reduction effect in its own right.

The results of the British Crime Survey 2002/2003, when considering car crimes, detailed the difference the quality of the surroundings can have upon the incidence of crime, with homes in areas of high “physical disorder”, twice as likely to be the victim of car crime than those with a low level of “physical disorder.

In order to satisfy the needs of both good and safe design, new development parking layouts should be thought through from the outset of the development and be intrinsic to the design of the site as a whole. For example, the aspects of units should be designed to overlook parking arrangements from both ground and second floors. On street or open courtyard parking should be in areas of considerable activity and well overlooked.

A mix of on street, off street and on plot parking could be provided to create the most suitable provision for each element of the site in question, with on plot provided in those instances where safe off-plot or communal parking cannot be sensitively designed in.

New forms of parking, including the provision of car barns and other safer communal parking arrangements should be considered.

Where unallocated parking is provided (with an associated reduction in on plot, frontage parking), this can lead to a more attractive environment within a development, free from the visual intrusion of cars. This has many other advantages, such as encouraging “Streets for Play” and, evidence suggests, greater encouragement to walk and cycle for short trips, with associated health benefits.

Cycle provision at residential developments

When designing residential developments it is commonplace for developers to provide garages for residents to park their cars in. Indeed it can be perceived as a selling point of a property to have an integral garage within a property.

In reality a small percentage of people in the UK use their garage for car parking, and they tend to be used predominantly for storage of household items. In this instance the garage is taking space from within a property that could be better used to increase the habitable area. This is particularly pertinent with the need for higher density, and in most cases, smaller residential units. It has been argued that ‘good’ or ‘innovative’ housing design is being stifled by some major house builders reproducing standard designs for sites across the Country.

NCC therefore supports the provision of smaller ‘garages’ or externally accessed storage areas which can accommodate bicycles and other items, without taking too much space from within dwellings. This would provide residents with direct outside access to bicycles which can be difficult to store inside many existing property types. The principle can also be applied to flats and apartments, as a number of storage ‘garages’ can be provided together on the ground floor.

An example of the space required to accommodate 2 bicycles can be seen on the photograph below:

NCC requires that new residential developments provide residents with secure outside cycle storage. Guidance on cycle parking is available in Chapter 8 of MfS as well as LTN note 2/08 (October 2008) Cycle Infrastructure Design.

Design Standards

There will always be a number of core standards which are applicable when designing a development; for example, whilst visibility splays on some classification of roads have reduced under Manual for Streets, the requirement for a minimum level of visibility remains.

Practical guidance also helps to inform as to sensible road widths for different levels of expected use of a street. For example the design, layout and standards applied to a high quality bus link would be very different to those you would expect to see in a residential Mews area.

In addition, the design standards proposed within the Manual for Streets may not be suited to all situations. As such a judgement has to be made as to the most applicable standards to apply in each instance.

For example, for larger roads, those expected to carry considerable levels of traffic and mainly fall outside of a direct/immediate residential purpose, the use of 'Design Manual for Roads and Bridges', standards may be more appropriate.

There is also the consideration of the transition between different design standard street types. In the design of new developments there will clearly be an access, or a number of access points, on to the existing highway network. In some instances access could be proposed onto a heavily trafficked or higher design speed road. Where this transition occurs, careful consideration as to the design standards to apply is required.

It must be demonstrated to the Highway Authority that the design is suitable in terms of safety, usage and quality. It may be appropriate for example to design a junction treatment and to provide speed restraint measures, to reduce speeds to indicate to users that they are approaching a junction, and vehicles may be entering the main carriageway. NCC therefore, fully advocates the provision of Quality Audits (QA) in the design process. An example of a successful Quality Audit is the QA document produced for the Priors Hall development in Corby.

Pedestrians

In order to provide a high quality pedestrian environment some minimum criteria should be applied to pedestrian routes associated with new developments. Where segregated pedestrian routes are provided they must be a minimum, un-impeded, width of 1.8m; with wider pedestrian routes, in the region of 3.0m provided in busy thoroughfares and in other space sensitive locations, i.e. :

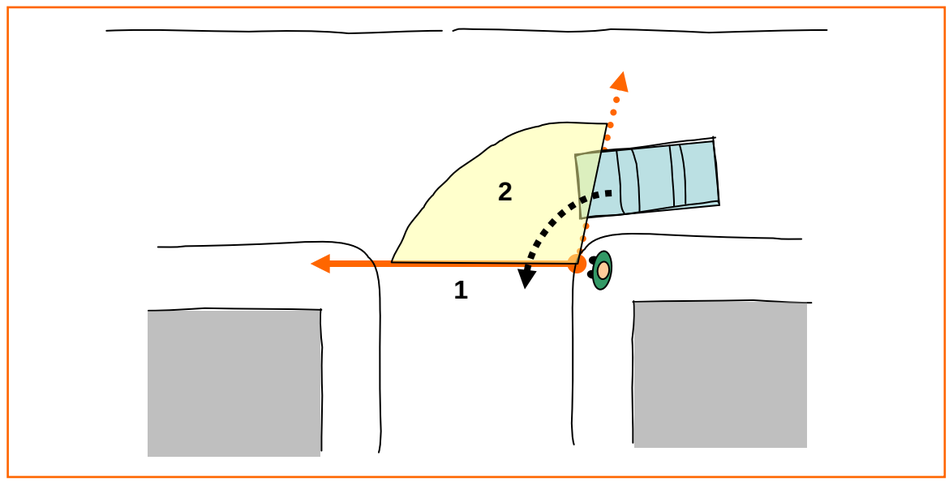
- Outside shops
- Schools
- Bus stops
- Next to a heavily trafficked carriageway

Additional width at these locations prevents pedestrians from having to step out into the carriageway and helps encourage active street frontages. These standards can be incorporated in to design of shared surface streets, where appropriate, i.e. provide these dimensions within a shared surface, having used swept path analysis to 'track' the space required for vehicular movements within the street.

In order to provide a pleasant walking environment and meet inclusive mobility requirements, the maximum recommended gradient for pedestrian routes is no more than 5% (1 in 20).

Seating should be provided on key pedestrian routes, to provide resting points and encourage street activity. These should be considered at reasonable intervals and should be located in an overlooked, safe environment.

Junction design also influences pedestrian routes, with tighter radius curves providing for a shorter crossing distance, greater pedestrian awareness of turning vehicles and lower turning vehicle speeds. The use of tighter radius junctions is most suitable for junctions with relatively low flows of traffic, where there is a desire to highlight and maintain pedestrian priority.



In the diagram above the use of a tighter radius on the junction maintains the ability of the pedestrian to cross at the desire line (1) and does not require the pedestrian to look back over their shoulder to be aware of turning vehicles (2). Pedestrian routes should aim to meet the standards of the IHT's Guidelines for providing for journeys by foot (IHT 2000).

Connectivity

Pedestrian routes should be accessible and legible for users, with key destination points clearly identified. These should be clearly defined and signed and provide access to the key destinations, encouraging the provision of walkable neighbourhoods.

Conspicuity

Pedestrian Routes should be safe and overlooked, meeting safe by design principles. Alleyways should not be encouraged and any planting adjacent to footways should be carefully selected to prevent growth above 0.6m in height. This will allow for visibility and awareness of pedestrians by other road users and increases the feeling of conspicuity and safety for the pedestrians themselves.

Convenience

Routes should be easy and practical to use. Footways should follow, where safe to do so, obvious desire lines and should be legible to all users. Street furniture should be located sensitively so as not to impede users. In key walking corridors and District Centres wider footways should be provided, including an allowance for a Street Furniture Zone between any running carriageway and the pedestrian route or located at the back edge of the footway.

This results in an unobstructed pedestrian route and allows for maintenance works to be carried out without obstructing pedestrian movements. This zone should not exceed 275mm from the back of the footway or in a dedicated zone at the front of the footway starting 450mm from the kerb face. An obstacle-free route of minimum 1800mm should be retained in all cases. Signage and street furniture should also be located sensitively so it does not obscure visibility at junctions or limit driver awareness of pedestrians at crossing points.

Pedestrian crossing points should also be given more detailed consideration. Whilst guidelines allow for crossing widths of up to 10m, regularly you will see crossings meeting only minimum width criteria. Whilst these may be a little more economic, they encourage the view that the pedestrian is secondary to the car and result in the feeling of the pedestrian being “penned-in”. In areas with considerable pedestrian footfall wider crossing points should be provided. The use of different surface treatments can highlight pedestrian priority.

Comfort

The provision of routes set at a reasonable gradient – in line with the DFT document “Mobility: A guide to Best Practice on Access to Pedestrian and Transport Infrastructure”, should be a minimum criteria for comfortable travel. It should also be ensured that suitable crossing provision is made for the elderly, infirm or disabled, with flush crossing points, tactile pavers and pram/wheelchair slots at any crossing points. Suitable seating provision should also be made available for resting points along a pedestrian route.

Conviviality

An attractive walking environment will encourage greater usage, reduce fear of crime and encourage greater respect for the area. The improvement of the pedestrian environment has also been demonstrated, in particular with regard to the Highbury Initiative in Birmingham, on the economy and vitality of an area. This encourages the view that a pedestrian area should be considered not only as a movement corridor but also a point to stop, converse and enjoy in its own right.

Cyclists

Provision should be made for both serious and casual/leisure cyclists, who have differing requirements to address. Regular/commuter cyclists tend to prefer on-road provision, where-as casual or leisure cyclists may be more comfortable with a segregated off-road route. New developments are expected to provide for the needs of both groups of users. The LTN 2/08 Cycle Infrastructure Design [4] provides clear guidance on measures to encourage and design in cycling, including measures to assist in maintaining low vehicle speeds on cycle routes, junction designs, the design of on and off road cycle lanes as well as safe interaction of cycling with public transport.

On road cycle routes should avoid roundabouts as a junction form where possible and encourage low relative speeds at conflict points. The use of tighter radii on minor junctions helps to reduce relative speeds at these locations. Material choices should consider the needs of cyclists; for example rumble strips provide a very poor cycling surface and should provide for cyclists to bypass the strip on a more suitable surface finish.

The headroom over routes used by cyclists should normally be 2.7 m (minimum 2.4 m). The maximum gradients should generally be no more than 3%; or 5% maximum over a distance of 100 m or less, and 7% maximum over a distance of 30 m or less. However, topography may dictate the gradients, particularly if the route is in the carriageway.

Shared segregated pedestrian/cycle routes should provide a minimum width of 3.3m, below this width the surface is likely to be shared by pedestrian and cycle users.

Where bus lanes are proposed, and are expected to carry cycle trips, minimum widths of 4.5m should be provided to allow safe use of the bus lane for cyclists alongside buses.

[4] Local Transport Note 2/08, October 2008, Cycle Infrastructure Design
www.dft.gov.uk/pgr/roads/tpm/ltnotes/ltn208.pdf

Public Transport

Providing for sustainable developments requires the planning and provision of high quality public transport infrastructure.

Major development sites should provide for public transport priority and public transport only routes at the master-planning stage. Bus routes associated with new developments should be considered at two levels of service (which are both required to fully serve the public transport needs of a new development).

1. Express services – running at high frequencies (i.e.10 minute headways) on limited stop, essentially linear routes. These services would serve primarily employment, town centre access and the first stage of interchange or multi-stage trips.

2. Regular services, providing lower frequency, lower speed local services that penetrate development sites more deeply and provide for primarily socially necessary and participative needs.

In both these instances the routes are expected to be:

- Supported by high quality bus stop infrastructure, including the provision for real-time information.

- Well connected from the stop to the origin/destination for the pedestrian phase of any journey.

- Free of most vertical traffic calming features.

On road bus lanes should be a consistent minimum width of 4.5m, to allow for shared use with cyclists.

Bus corridors should a minimum width of 6.0m (to allow for two way bus movements) and also allow for pedestrian/cycle routes to run adjacent to the route.

Shared Surfaces

Shared surfaces can be used to provide a sense of pedestrian priority, limit traffic speeds and create a higher quality environment.

Subject to suitable design measures to accommodate the needs of the partially sighted, shared surfaces tend to be suited to:

- Road sections of limited length
- Areas where parking is controlled or located in designated areas
- Areas where traffic flows are less than 100vph

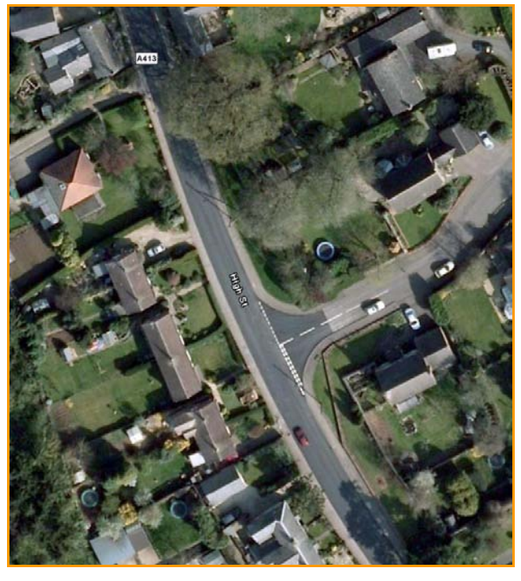
NCC are happy to discuss designs for shared surfaces which do not meet the above criteria, where there may be wider benefits, in terms of improved public realm for example, and where safety can be demonstrated. Where shared surfaces are to be promoted in more heavily trafficked areas, the quality and durability of the materials must be demonstrated to the satisfaction of NCC to limit any future maintenance liabilities. A commuted sum may be required for future maintenance.

Speed control

The aim in areas of new residential development should be to limit road design speeds to 20mph.

There are a number of possible natural design features to use to minimise traffic speeds in new developments. NCC actively discourages the use of vertical traffic calming measures. Designing roads with short straight sections to force drivers to slow down is also discouraged as winding roads are not suited to the promotion of pedestrian and cycle trips. Some appropriate speed control options are listed below:

- Discouraging car dominated development layouts
- Frequent junction spacing on straight sections street – drivers are then aware that vehicles may be pulling out from side streets
- Reduced visibility, at junctions for example
- Narrow carriageway widths
- Shared surfaces
- Encouraging pedestrians and cyclists to use streets
- On street parking - naturally slows vehicles down.



Psychological Traffic Calming: Whittlebury

The use of these measures have already been introduced successfully on County Highways Network in Whittlebury Village.

Measures were chosen to enhance the sense of place within the village while using the environment to influence speed;

- Removal of centre lines
- Narrowing of sections.
- Low level planting
- Surface treatment

Visibility

Forward visibility and junction "y" distances

Manual for Streets recommends the following visibility splays for low speed roads (if designed in line with the principles of the Manual), these are summarised for convenience below:

Speed	Km per hour	16	20	24	25	30	32	40	45	48	50	60
	Miles Per hour	10	12	15	16	19	20	25	28	30	31	37
SSD (metres)		9	12	15	16	20	22	31	36	40	43	56
SSD adjusted for bonnet length		11	14	17	18	23	25	33	39	43	45	59
		Additional Features required to achieve low speeds										

The visibility standards detailed are only considered to be suited to expected (85th percentile) traffic speeds of up to 60kph, (or 37mph). When planning roads, or designing junctions onto roads, carrying traffic at speeds higher than 37 kph, the visibility standards contained within the Design Manual for Roads and Bridges should be used.

Junction visibility "X" distances

In most urban residential areas a junction visibility "x" distance, (or set back from the channel of the major road), of 2.4m should be sufficient. However "x" distances of 4.5m can be considered when accessing a major road or where there are junction capacity issues to address.

Vertical visibility

Vertical visibility should be checked to ensure that views are not obstructed by crests or dips in the road, or other vertical obstructions. A cone of visibility ranging from an eye height of 1.05m to 2m to an object height of 0.6m to 2.0m.

Turning heads

Development roads should allow for turning facilities at the termination of roads. These should be of sufficient dimension to allow service vehicles to fully turn within the highway.

In general developments should be designed and laid out so as to minimise the need to reverse, (with the associated risks to other road users).

Developments should also be designed to maximise permeability and design out, if possible, the need for cul-de-sacs.

Manual for Streets – street geometry

This document supports the changes made to design standards outlined in Manual for Streets and it is not the intention to replicate them all here. For a more detailed discussion of the following elements of street design please refer to Section 7 (Street Geometry) of Manual for Streets:

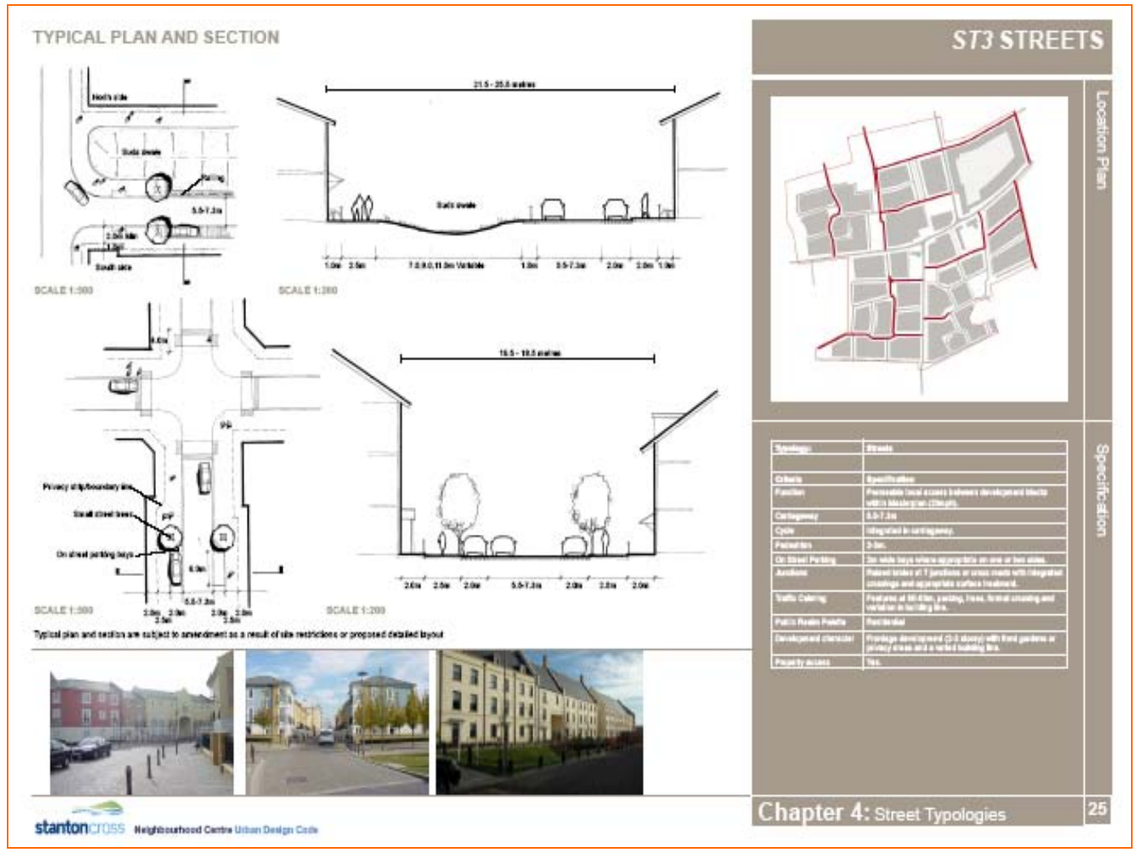
- Street dimensions and swept path analysis
- Shared surfaces and squares
- Home-zones
- Junctions and spacing of junctions
- Achieving appropriate traffic speeds
- Sight stopping distances and visibility requirements
- Frontage access

NCC would however, like to encourage developers to draw on the character of local Northamptonshire street design, where appropriate, when applying design standards.

Setting the Context

An important element of creating a successful development is to integrate with the surrounding area. Whilst this can be achieved through design and materials palette, consideration of the surrounding transport network can also provide a valuable resource when considering the layout of a future development. An example of this approach is given below (extract from the Stanton Cross (Wellingborough) Master-planning document, courtesy of Bovis Homes).

Below is an example of Street Design applying the principles of the Manual for Streets, adopted in the Design Code produced for the Stanton Cross Development.



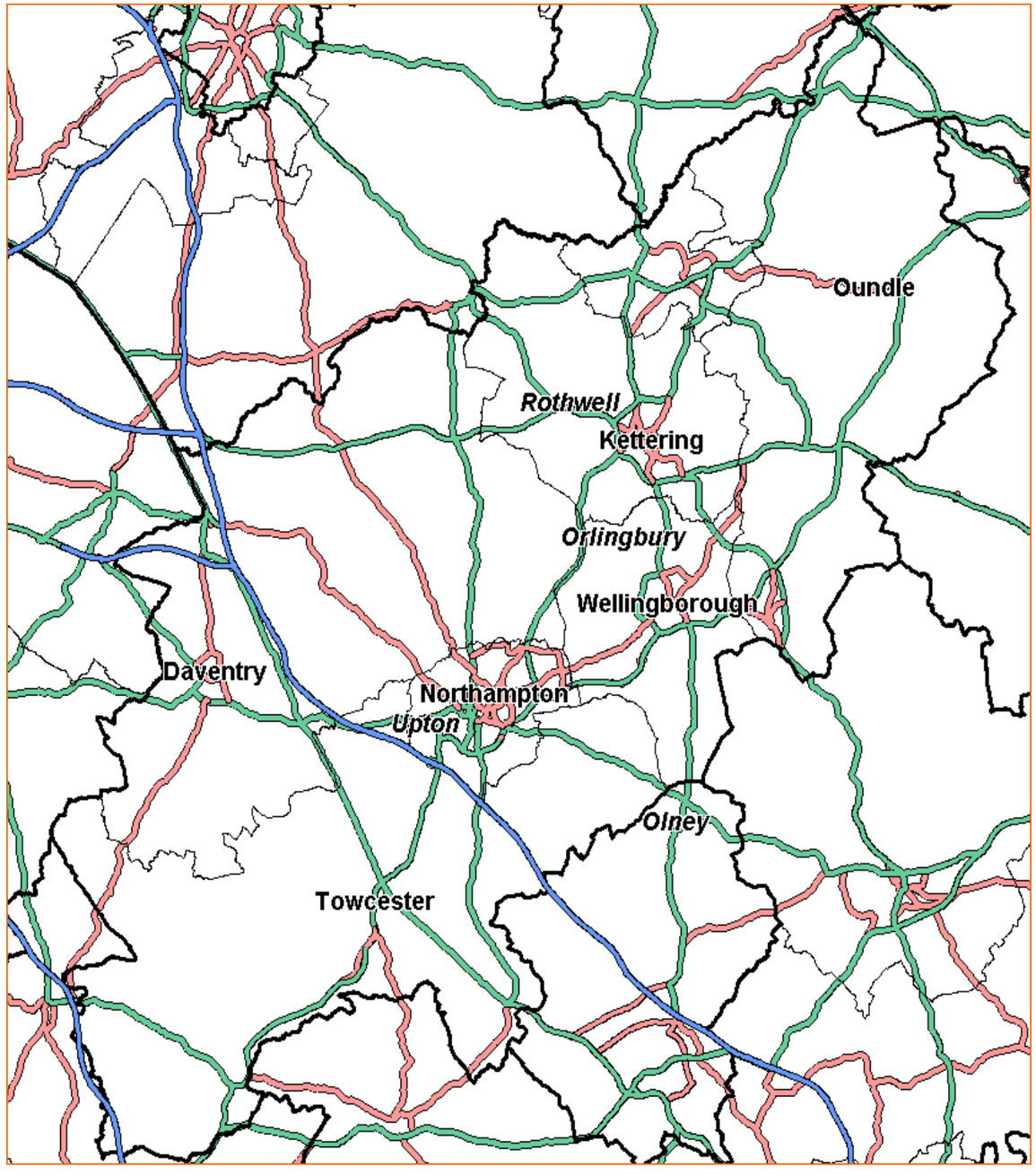
It is not suggested that new developments slavishly follow the patterns of existing or surrounding street types; however consideration of the surroundings will help to integrate new developments with the surrounding area, in terms of both movement and visual appearance.

Case Studies

The following section consists of a number of case studies selected both from within the County and neighbouring authorities. These are considered to be examples of both existing and new developments and areas which demonstrate the mix of high quality design and transport planning that we seek to encourage in new development proposals.

Over the following pages you will find examples of good practice with regards to:

1. High Streets - Olney
2. Streets – Upton, Northampton
3. Lanes and Mews – Upton, Northampton
4. Public Spaces (Urban) – Rothwell Market Square
5. Public Spaces (Rural/Village) – Orlingbury village green



High Streets

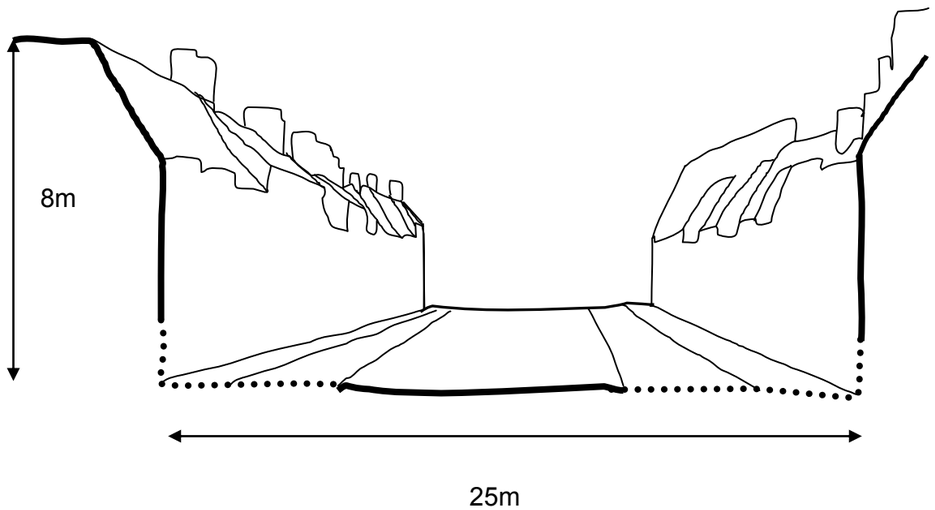
The planning of a High Street, or District Centre poses particular problems if it is to fulfil all its roles, in terms of carrying traffic, encouraging pedestrian activity, economic vibrancy and developing a strong sense of place.

An example of a High Street that is successful in achieving all of these disparate roles is the High Street, Olney (A509).

This is a classified road which serves a strategic regional as well as local purpose, (Traffic counts from 2005 detail a daily flow (AADT) on the A509 in the Olney area of 15,165). However the A509 also serves as the Retail High Street of Olney, a busy and popular local retail and service centre.

The use of echelon parking also helps to control speeds, as it creates driver uncertainty and the perception of risk (due to the likelihood of vehicles reversing into the running lane). The Chevron parking is placed with the flow of traffic, which precludes the need for large turning manoeuvres and provides a better range of visibility for the emerging driver.

In order to prevent the domination of the car the available width has been constrained through the use of wide paved footways and echelon style parking to either side of the road, the remaining carriageway running area width varies, averaging around 6.5m.



The frontage to frontage width on the High Street is in the region of 25metres, giving a Height to Width ratio in the order of 1:3. Numerous crossing points, both controlled and uncontrolled are provided down the road, both to discourage inappropriate crossing by pedestrians (for example emerging between parked vehicles) and to minimize the severance effect of the road. In addition the retail and service offer is relatively well balanced on both sides of the road, therefore encouraging vibrancy on both sides and further minimizing the likelihood of severance.

The photograph shows one of the uncontrolled crossing points on the High Street. The central island helps to further reduce the feeling of carriageway width and protects pedestrian crossing movements, however can be seen as a pinch point for cyclists, whilst the build-outs to each side of the High Street reduce the crossing distance and help to formalize the chevron parking.

Details, Materials and Street Furniture

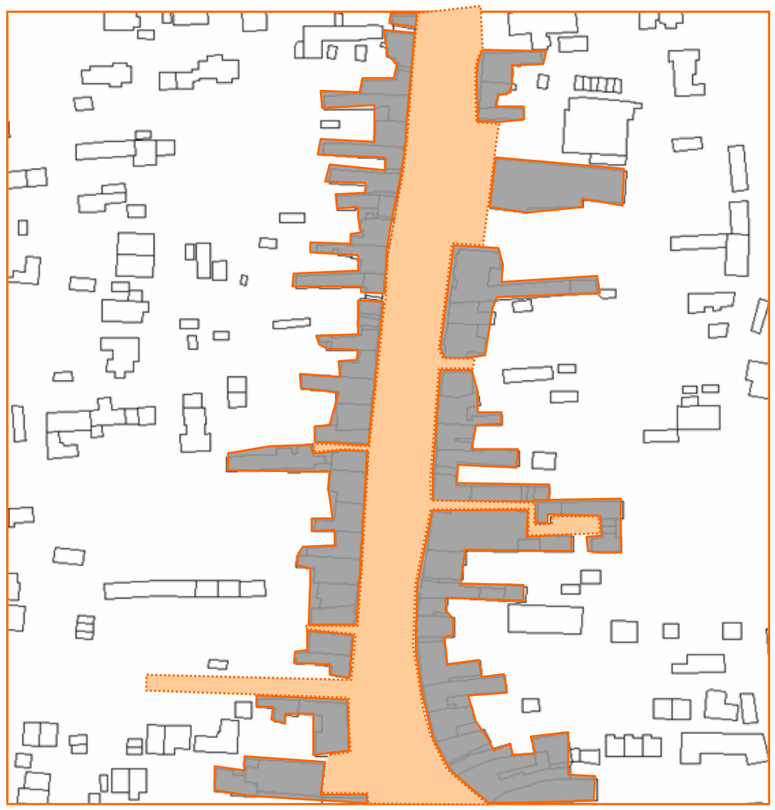
The High Street consists of a tarmac road and parking bays with paved footway area. As the photograph below details, high quality street lighting and furniture is used to add to the quality of the environment. Street trees located in build-outs are used to break up the parking areas and add to the environment.

Olney High Street provides a good example of a high quality overall finish whilst utilising a limited palette of materials.

Olney High Street / District Centre:

Carriageway Width	6.0 – 7.3m varying width
Footway Width	3.0m +
Ratio of Height to Width	1:3
Traffic Speed	20mph
Traffic Calming Features	Visual Narrowing, On Street Parking, Regular Pedestrian Crossing points, Street furniture zone
Expected Traffic	Pedestrian, Cycle, Car, Bus, Lorry
On Street Parking	Yes

Aerial Plan – Olney High Street



Street

The main form of circulation for all forms of travel within developments will tend to be provided for by Streets.

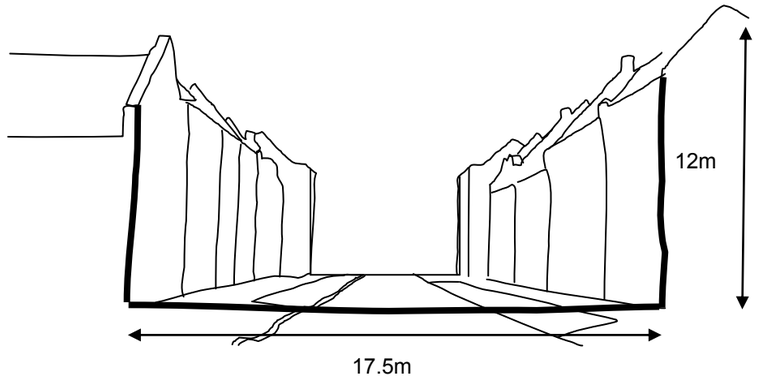
An example of a Street within a new development which aims at meeting the requirements of the Manual for Streets is Black Cat Way, Upton, Northampton.

This is an unclassified road which serves an access purpose and provides for relatively light flows of traffic.

The two photographs to the left hand side show a typical street within the Upton development incorporating SUDS (sustainable urban drainage system). This provides a greater feeling of openness and green space and results in a greater width to height ratio. (The frontage to frontage distance in this instance is 26m).

On street parking is formalised through the use of defined parking bays.

The Street detailed above has a more typical layout, without a SUDS system. The ratio of width height in this instance is in the region of 1:1.5. This is the minimum ratio recommended within the Manual for Streets. (See the section on standards for further information as to the range of suggested height to width ratios).



Details, Materials and Street Furniture

In this example a simple palette of materials is used to good effect, creating a high quality urban environment.

The material palette used in Upton's Streets is detailed to the left.

1. Block work, used for footways in the less formal areas of the development.

2. Granite sets, placed on end and used for rumble strips and to signify transitions in street typology and function; (I.e. at the entrance to home zone areas).

3. An example of a mix of the above materials for drainage detail.

4. Flagstones for the more formal urban pedestrian streets.

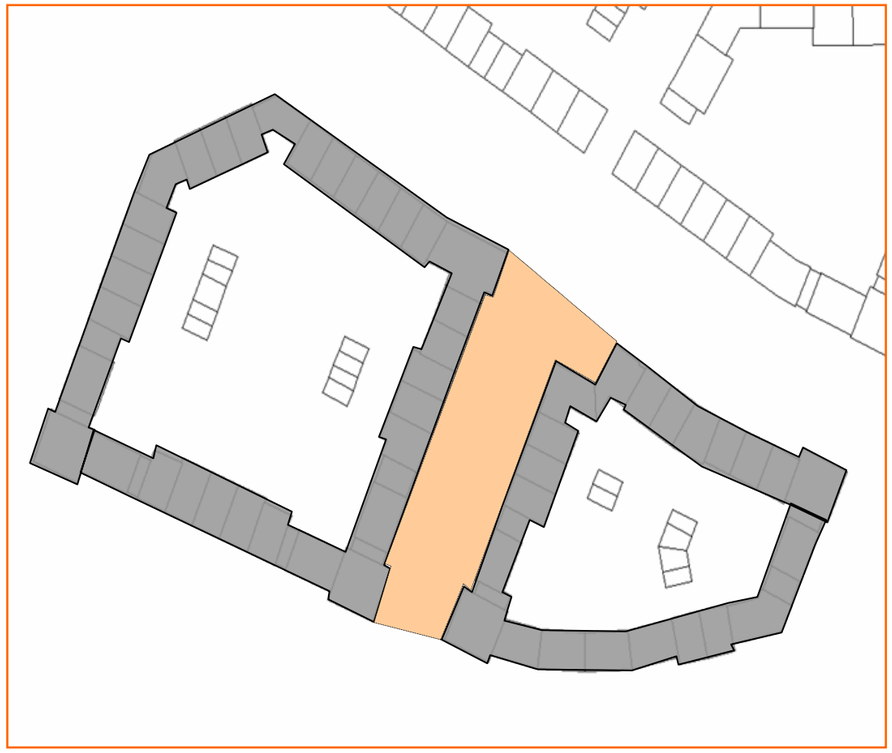
Tarmac is also widely used within the development for the more major streets, with changes of carriageway running material reserved for signifying changes of

priority (for example to pedestrian) as you enter the less trafficked streets and areas.

Upton Street:

Carriageway Width	5.5m
Footway Width	2.0-3.0m
Ratio of Height to Width	1:1.5
Design Speed	20mph
Traffic Calming Features	Visual Narrowing, On Street Parking, Rumble Strips
Expected Traffic	Pedestrian, Cycle, Car, Service Vehicles
On Street Parking	Yes

Aerial Plan



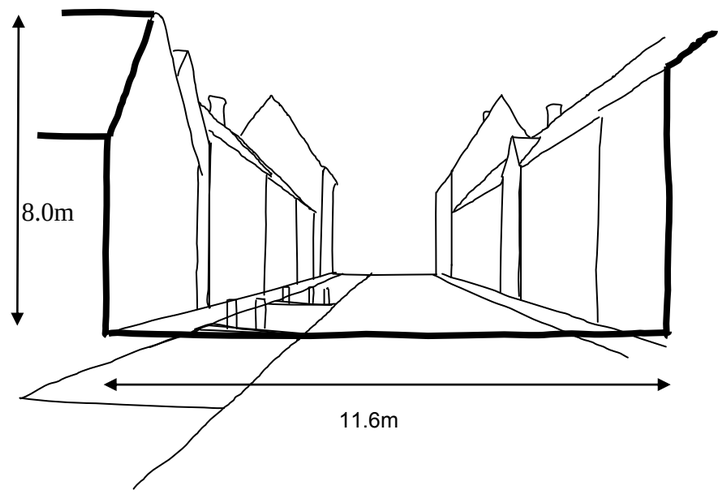
Mews, Lanes and Home-zones

Minor urban streets, serving a predominantly residential purpose, Mews are generally designed to discourage through traffic. Priority is provided for pedestrians with very low design speeds. Lanes Provide a similarly restricted environment for drivers with pedestrian priority reinforced through design and materials choices.

An example of a Lane within a new development which aims to meet the requirements of the Manual for Streets and also to create a “home-zone” type environment is Upton, Northampton.

The two photos to the left detail two sections of “Lane” street type within the development. The first of these being a through route, expected to carry a greater degree of access traffic and service vehicles; whilst the second being taken at the termination of a section of lane (essentially a cul-de-sac).

The photograph above is of a lane within the Upton development. Low traffic speeds are encouraged through the use of on street, mainly formalised, parking arrangements, surface treatments and relatively narrow running lanes for vehicles. The height to width ration is approximately 1:1.5.



Details, Materials and Street Furniture

In this instance a more rural palette of materials has been used, including the use of wooden posts to define parking areas and calm traffic speeds and rougher finish block-work for the shared surface.

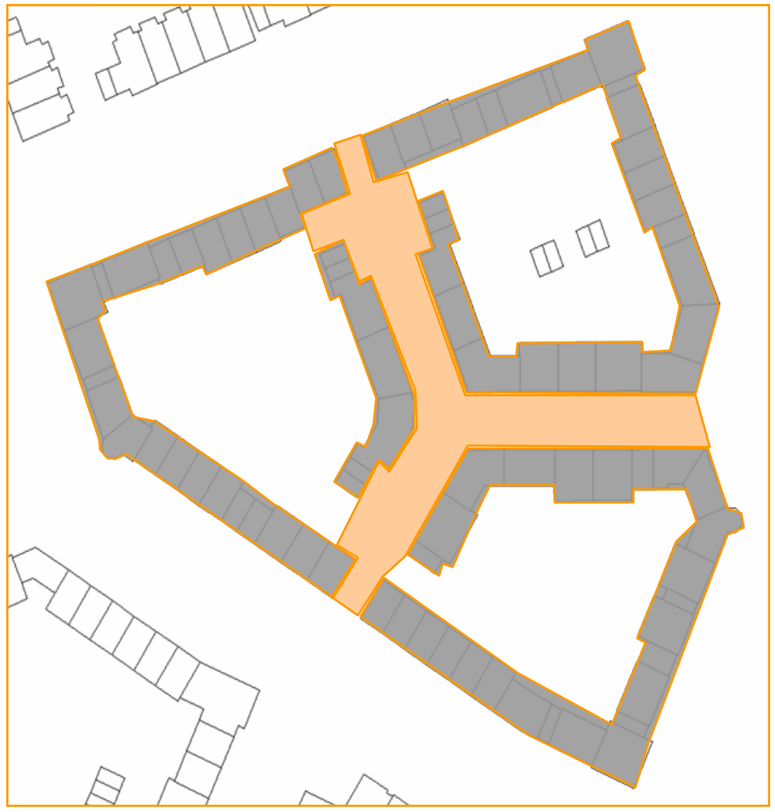
The Photograph to the left shows the detail of the formalised sections of the on-street parking. A combination of wooden posts and planting is used to define the parking areas.

Building mounted street lighting is used to minimise clutter and make the best use of the limited available frontage to frontage width.

Upton ‘Lane’:

Carriageway Width	4.8 minimum shared surface
Footway Width	Shared Surface
Ratio of Height to Width	1:1.5
Design Speed	10mph
Traffic Calming Features	Close frontages, Shared surface, On Street Parking
Expected Traffic	Pedestrian, Cycle, Car
On Street Parking	Yes

Aerial Plan



Public spaces - Urban

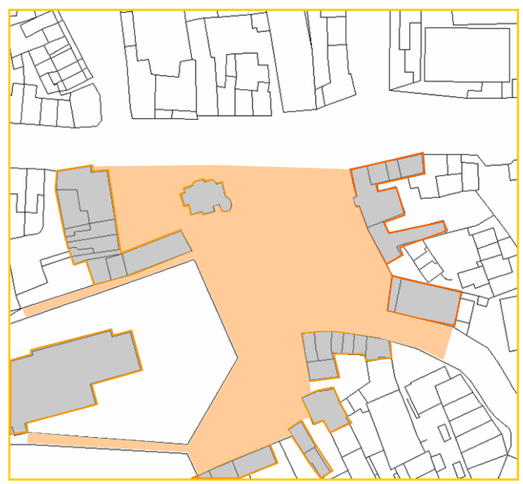
An important element of creating a ‘place’ is the provision of public spaces within developments. Public spaces predominantly cater for a variety of users and purposes. Priority is provided for pedestrians (where motorised vehicles are allowed) with very low design speeds. Where public spaces are designed primarily for pedestrian movements (for example public squares, shopping streets), it may still be possible to design for cars, servicing vehicles and buses.

An example of an existing urban public space is the market square in Rothwell, shown below.

It can be seen in the photo that a mixture of residential, commercial and retail units front directly on to the square. The area is therefore overlooked, and vibrancy is maintained throughout the day and in to the evening. The space is used for town centre and residential car parking as well as a market on various days of the week and events like the annual town fair, therefore pedestrians share the space and a sense of place is maintained. Marking for parking spaces is done through simple and subtle use of paving sets denoting the corner edges of spaces, rather than white lines, further helping to reduce the appearance of the car dominating the space over pedestrians.

Adjacent to the market square in Rothwell is a similar example of a visible, overlooked public space. This is demonstrated in the photograph below.

Aerial Plan



Public spaces - rural

Rural public spaces tend to provide a slightly different function to an urban public space. Urban public spaces can be a hub for commercial activity, whether it is for shopping or visiting pubs and restaurants in an evening. A rural space offers a focus point for residents to meet primarily for leisure purposes, and tends to either have properties directly fronting a green space, or roads surrounding the green, and properties off these roads.

An example of an existing local rural public space is The Green in Orlingbury, shown in the pictures below. It provides a central focus point for the village and is used for various events throughout the year.

It can be seen that there are no footways abutting the Green, and that the carriageway is effectively a ‘shared surface’ helping to naturally reduce speeds around the green.

Aerial Plan