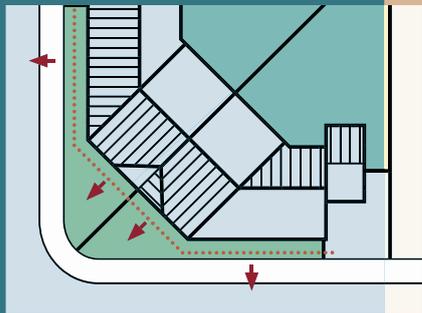


2004

SUPPLEMENTARY PLANNING GUIDANCE

@ sandwell metropolitan borough council



residential design

... raising the quality of residential development and living environments in Sandwell



foreword

Sandwell Council, through the Urban Form Vision, are making “a commitment to the creation of sustainable, high quality environments in which people are proud to live, work and play.” A number of goals have been identified which will help to deliver the vision. Two in particular...

Reverse the decline in the Borough’s population by providing an appropriate range of good quality housing that meets the needs of communities.

Promote excellence in the design of buildings and open spaces by ensuring that our buildings and spaces are provided to a high quality design and use of materials.

...reflect the approach taken by Planning Policy Guidance Note1 and the Sandwell Unitary Development Plan in making good design a priority, by rejecting poor design where this is supported by clear plan policies or supplementary design guidance (SPG).

This SPG is a detailed document, which will guide the design of new residential development so that better quality development is provided across the Borough. It seeks to ensure that residential areas are attractive, integrated, accessible, flexible, comfortable and identifiable for those people who live in the Borough. It is also anticipated that the document will improve the perception of housing in Sandwell and contribute to improving security and safety across the Borough.

The document looks at general design issues as well as density and local character. It is intended that this will be a working document to be used by planning officers, developers and anyone else involved with the built environment.

The document has been subject to a thorough public consultation programme, which included workshops carried out by the Joint Centre for Urban Design at Oxford Brookes University on behalf of the Council, in which West Midlands Police, West Midlands Fire Service and major house Developers took part.

Consultation has also taken place within the Council. The findings of the consultation process that were considered to be appropriate have now been included in the document, and the SPG has now been adopted by the Environment and Transport Cabinet Advisory Team as a planning policy directive.



Councillor R.S Badham
Cabinet Member for Environment and Transport



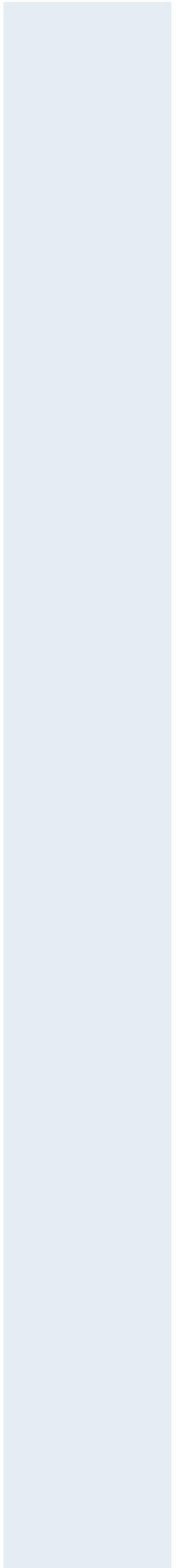


endorsements

West Midlands Police

West Midlands Fire Service

Oxford Brookes University - Dr Jon Cooper - Joint Centre for Urban Design





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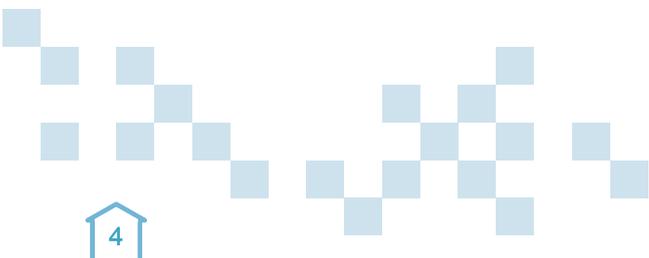
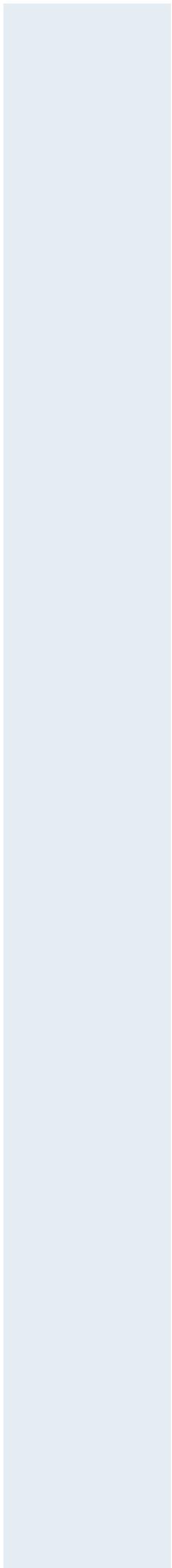
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Aims of the Document

The aim of this Supplementary Planning Guidance (SPG) is to provide a focus for residential development within the Borough and meet the aspirations of both the Council and local communities to provide an attractive, high-quality and sustainable environment. It concerns the connections between people, places, movement and urban form and the creation of lively places with a distinct character that are enjoyable, safe and accessible.

In order to encourage good quality and well-designed development the SPG aims to draw on basic principles that are interrelated and encompass different aspects of development. The principles aim to be qualitative and also as objective as possible.

Examples are given to offer general guidance in good design principles on how to approach residential development proposals within Sandwell. The examples are not exhaustive and do not claim to be the only correct approaches. Development proposals that meet the spirit of the guidance will be received positively.

good design principles



What is Good Design?

Good design is not just about what a building looks like. It is about achieving a feel-good factor in the space around them. According to current literature and public opinion the key objectives of good design are defined as;

- aesthetics
- personal choice – safety and security
- physical and mental health
- environmental sustainability
- community

Why do we need to achieve Good Design?

Simply because we need to make better places... The quality of life for people today and future generations of Sandwell depends upon how we live and work together and also how residential areas in the Borough are perceived.



Pennyhill Lane, West Bromwich



Waterfall Lane, Cradley Heath

Residential environments need to be attractive and integrate with their surroundings.



How do we achieve Good Design?

- Take into account general principles of urban design which ensure that new developments are well used and well-loved. To do this they must be safe, comfortable, offer a variety of experiences and be attractive to look at.
- Use land more efficiently for new homes. Build good quality housing that is set in attractive environments, which are well connected to local facilities, particularly public transport links. Ensure that housing designs are flexible to meet changing demands during their lifetime, and design buildings and public spaces so that they are energy and resource efficient by incorporating appropriate alternative forms of energy.
- New development needs to contribute positively to local character in terms of integrating both visually and physically with the landscape and surrounding built environment. It must also strive to respect historic linkages and urban structures that may already exist.

Wigmore Fields West Bromwich

Delivering good quality housing in places where people are proud to live.



spg





introduction

Sandwell is a diverse urban area with a long history tied into the industrial revolution. Historically this created large areas of high density housing close to places of employment. Much of the housing built at this time was terraced housing built in a traditional block design using a grid system.

In the post war years the trend was to develop at lower densities mainly due to an increase in wealth and car ownership, coupled with an expansion of public transport facilities, which meant that people no longer had to live close to their place of work. Residential areas became disconnected from town centres and industrial areas. This continued trend for developing lower density housing has not made efficient use of land. Little thought has been given as to how developments fit into the context of local areas so that local identity is strengthened, or to how connections to facilities and services are improved.

Now serious problems surrounding the pressure for new homes exist and the clear message from current Government guidance is to encourage the better use of land and buildings in urban areas.

There is a need to use land more efficiently if enough homes are to be provided to meet future demand, particularly in areas that are well connected to local facilities, but we need to avoid past mistakes that are linked to poor housing quality. Housing density is simply a measure of how efficiently land is used, how comfortable a place feels is a matter of the design and its social characteristics. This document seeks the delivery of good quality housing in places where people are proud to live.

urban design



The Sandwell Unitary Development Plan

Urban design is the key issue facing the implementation of planning policy within the Borough of Sandwell, particularly the issue of how to encourage good design in new housing and residential environments which will improve the quality of life experiences of those people who live in and visit the borough. These quality of life experiences can be broken down into many overlapping areas of consideration, but primary considerations that make places comfortable to live in are safety and security, access to green environments and facilities and the quality of built form.^a

Environmental factors such as noise and calm, and urban design considerations that relate to traffic management, variety and visual interest, maintenance and management and a sense of enclosure also make an important contribute to achieving the feel good factor.

The issue of achieving good design has to be addressed, not only as part of the Development Plan, but also in the subsequent decision-making process. Urban design policies are included within the development plan for the first time. It is the intention that these policies will establish the principles required for good design and provide the basis for supplementary planning guidance such as this one.

Policy UD1 - General Urban Design Principles, outlines the main issues surrounding future design within the Borough, and Policy UD2 - Design Statements, outlines the requirements for the submission of design statements. (Policy UD2 - Design Statements, outlines the criteria which determine the nature and content of design statements.)

Refer to the Sandwell Unitary Development Plan
See Appendix 1 - National Policy Context

Design Statements

A Design Statement must be submitted with planning applications for developments within the following areas:

- town and district centres;
- adjacent to major nodes and junctions;
- gateways;
- transport corridors;
- conservation areas and areas of townscape value;
- the Sandwell Valley.

planning policy



Design Statements submitted with planning applications must:

- explain the design principles and design concept behind the development;
- show how the principles are reflected within the developments layout, density, scale, visual appearance and landscape;
- explain how the development relates to the wider area, for example, through a site appraisal;
- explain how the development will meet the local authority's urban design and planning policy objectives.

The design statement should be illustrated where appropriate by plans and elevations, photographs and other illustrations such as perspective, axonometric etc. All drawings should be accurately drawn to a recognisable metric scale at eye-level. Coloured drawings are also more informative. (Sandwell UDP, March 2001, DETR, 1999).

Planning applications will not be accepted which are not supported by a design statement where one is considered necessary. If in doubt please check with Sandwell's Planning Division – see useful contact telephone numbers listed on the following page.

The type of information supplied will depend upon the scale of development. For example where one building is proposed, photographs showing the context of the site and the proposed buildings relationship to neighbouring properties may be sufficient. However, on large scale development where more than ten units are proposed, it is important to supply sufficient graphical information to enable an accurate assessment to be made of how the proposal fits in and connects to the surrounding street network, both visually and physically. Axonometric or 3D graphic presentations will also be extremely helpful when interpreting major schemes. Where there are topographical issues to understand, cross-section details must be supplied with the planning application.

With regard to housing, the aim of the UDP is to secure the provision of housing of the right quantity, quality, type, tenure and cost to meet the needs and aspirations of the Borough's existing and future population. Policy H7 - Design of New Housing Development - requires a high standard of design for new housing developments in the Borough and states that all applications will be considered on the basis of scale and density, access and parking, sustainability, the relationship with the character and quality of the local environment and security and safety issues. It is in the spirit of this policy that this SPG is produced.

Planning Applications

The Council has long supported the concept of discussions before any form of planning application is submitted, commonly called 'Pre-Application Discussions'.

Early pre-application discussion with Sandwell's Planning Division is recommended particularly on larger schemes and where it is considered necessary to provide a design statement. This assists the planning application process by clarifying before hand the suitability of the proposal and what the Council's expectations are in terms of design quality.

Useful Contact Numbers

Contact Telephone Numbers within the Planning Division:

Development Control

(Wednesbury, West Bromwich and Great Barr)	0121 569 4269
(Smethwick and Cradley Heath)	0121 569 4043
(Tipton and Oldbury)	0121 569 4039
Planning Policy	0121 569 4195
Urban Design	0121 569 4087

Planning Application and Fee Forms are available by telephoning, 0121 569 4054/4055 or by writing to, Planning and Development Services, Development House, Lombard Street, West Bromwich, B70 8RU.

Other useful telephone numbers within the Council:

Highway Engineers	0121 569 4143
Community Safety Development Officer	0121 569 3892

Contacts outside the Council who can offer detailed advice on safety and security aspects of design prior to the deposit of planning applications:

West Midlands Police - Architectural Liaison Officer	0845 113 5000
Smethwick Team	ex 6206
West Bromwich Team	ex 6574 or 6577
West Midlands Fire Service	0121 544 7209

contacts



GENERAL PRINCIPLES OF
GOOD DESIGN AND QUALITY



general principles of good design quality

This section of the Residential SPG sets out a range of policies that are based on established principles of good urban design. The policies seek to ensure that good quality residential development is provided in Sandwell.

1 Understanding Places

People should be able to understand places and find their way around through visual connections. New development proposals should relate to the spaces around them and allow the user to recognise and understand the activities that take place in an area. The way people understand and perceive places in terms of their appearance and safety is an essential ingredient of good design. The way in which buildings give definition to the shape and function of outdoor space determines the success of places socially and economically over time.

A good way of improving visual linkage is by adding interest and variety to the street by increasing building heights to define and identify places. On some sites landmark opportunities exist, where the design of buildings in terms of their height and massing should seek to make an architectural statement. More often opportunities exist in important corner locations to create a focal point.

The way in which buildings relate to spaces such as streets and open spaces is very important in terms of ownership and places that are cared for. This gives off a positive message to people who visit or pass through a place.



Greenside Way, Yew Tree

Improve visual linkage and add interest by creating focal points at important corner locations.



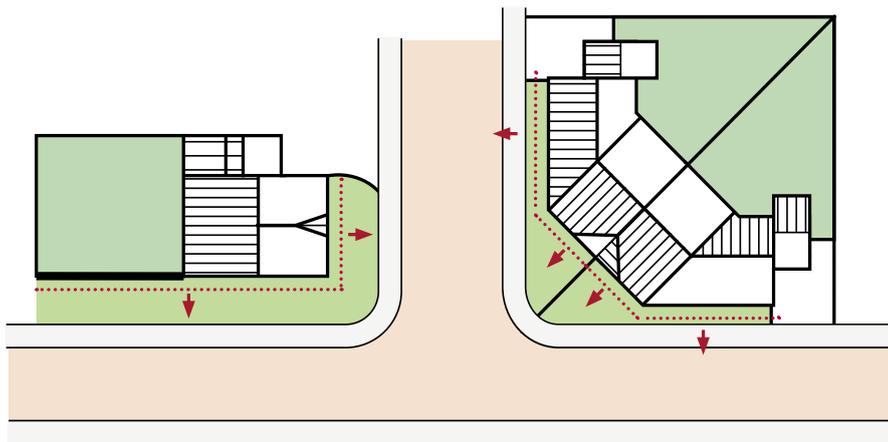
Plane Tree, Yew Tree

Housing must be designed to relate to places and their setting.

Unless the following points are incorporated into design proposals, streets become unreadable and often take on an uncared for appearance which is unacceptable. Buildings should be designed so that active frontages face out onto the street at ground floor level. This helps to enliven the public realm and improves safety and security.

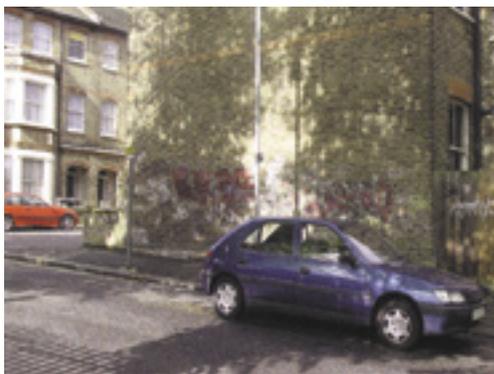
The following principles must be included in new designs:

- 1 Buildings should not turn their back on main connecting routes.
- 2 Main access points into dwellings should face out onto the street. Flatted designs must also seek to maximise access points onto the street.
- 3 In corner locations design solutions need to turn the corner. They should be designed to have a dual frontage in locations where natural surveillance can be improved. Where issues of overlooking exist, architectural detailing should be added to enliven gable designs.

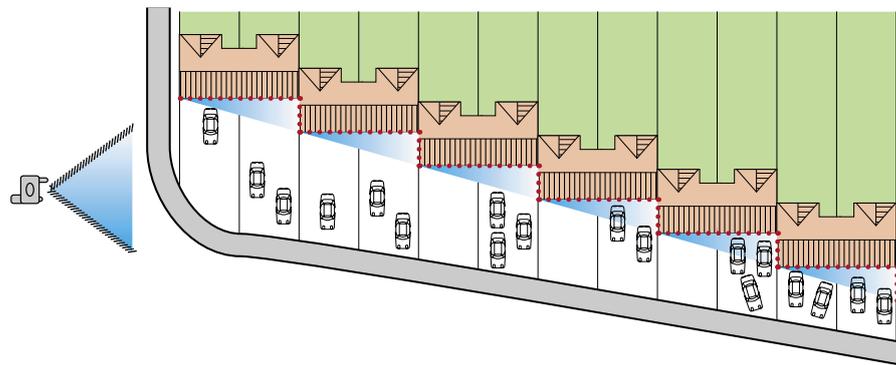


Turn the corner with house designs to add interest and natural surveillance to the public realm.

- 4 Blank gables and boundary walls must be avoided where they impact on the street scene.



- 5** Avoid staggered house designs as this has a deadening effect on the street when viewed from certain angles. Where the size and shape of sites dictate this type of design consideration, careful architectural detailing must be included, so that interest and natural surveillance is added to the street.



- 6** Public and private space should be clearly defined around residential designs. Open plan designs around housing frontages will be avoided where defensible space has the potential to be eroded unless the context of the area dictates otherwise.
- 7** Where rear garden boundaries are clearly visible from the street they must be constructed of a brick or combination brick and timber design in new developments.
- 8** Left over spaces where management is unclear will be avoided.

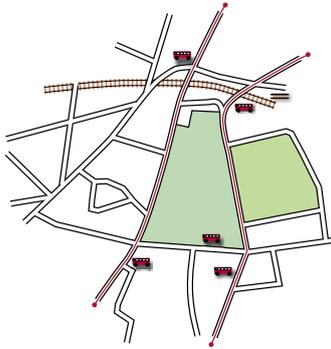


- 9** Infill development should be designed to reflect established design principles within an area. Respect plot widths, building heights and set backs, they need to be in keeping with the street*. For example frontage car parking designs in terraced streets are unacceptable.
- 10** Access and overlooking issues are also important considerations when designing infill development. New designs must not compromise the safety and security of surrounding dwellings.
- 11** Bin storage areas must not dominate frontage designs or be located where they are highly visible and will create poor visual linkage.

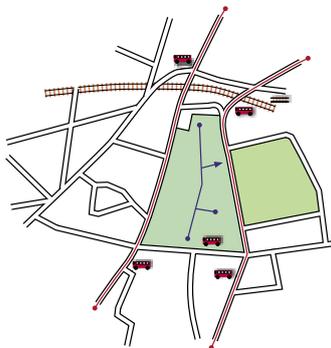
*Refer to Appendix 2 - Identifying Local Character Matrix.

2 Access to Facilities and Amenities

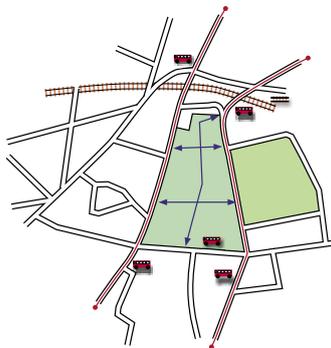
Well-connected places are usually the most successful and sustainable places. Good pedestrian access and links to local facilities and public transport routes are essential considerations in new development proposals, particularly where higher density design solutions are being considered.



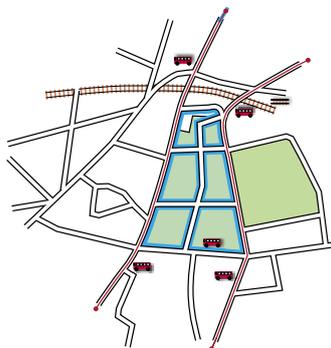
Connect the site to nearby facilities, main routes, public transport links etc.



Cul de sac designs create introverted layouts which fail to integrate with the surrounding area successfully.



Direct design approaches that integrate with the surrounding environment provide a much better environment for pedestrian access and improves natural surveillance.



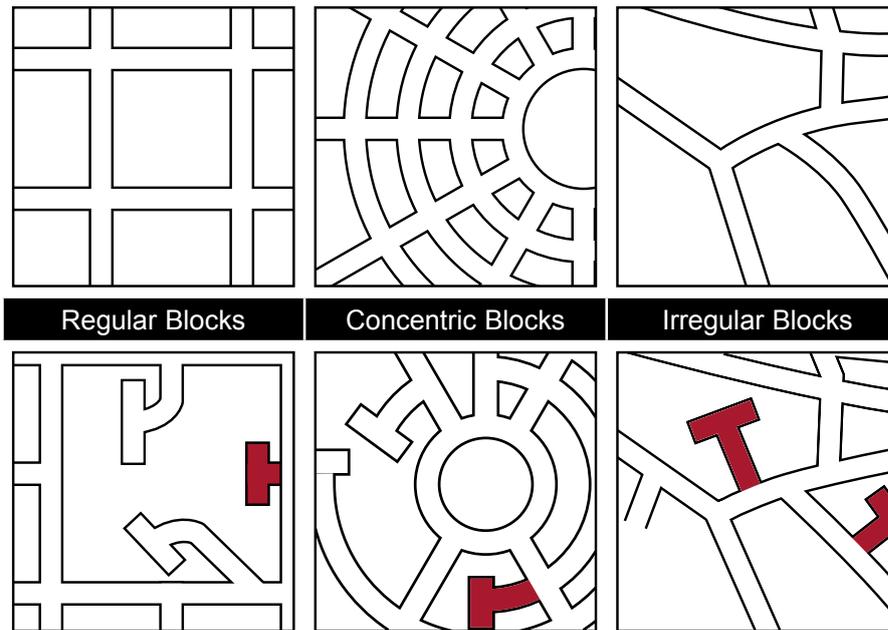
Where street patterns are designed to form the basis for perimeter blocks they ensure building designs contribute positively to the public realm.

connections

Providing a choice of connecting routes, which allows movement through an area and reinforces links with others, makes them more successful as places to use. The needs of the pedestrian must be of primary consideration when designing housing, public spaces, footpath and road layouts. Streets should do more than just accommodate vehicular traffic.

Quite clearly, grid pattern street layout designs offer the most choices and connect places more successfully. Concerns about 'rat-running' can be overcome by designing road layouts that restrict vehicle speeds and prioritise pedestrian and cycle movement. An over-reliance of cul de sac designs should be avoided as they limit choice and disconnect places for the users of public space. Overlong designs also have implications for emergency access. Cul-de sac designs only work if they are added to a permeable layout, but not a substitution for it.

connected street network



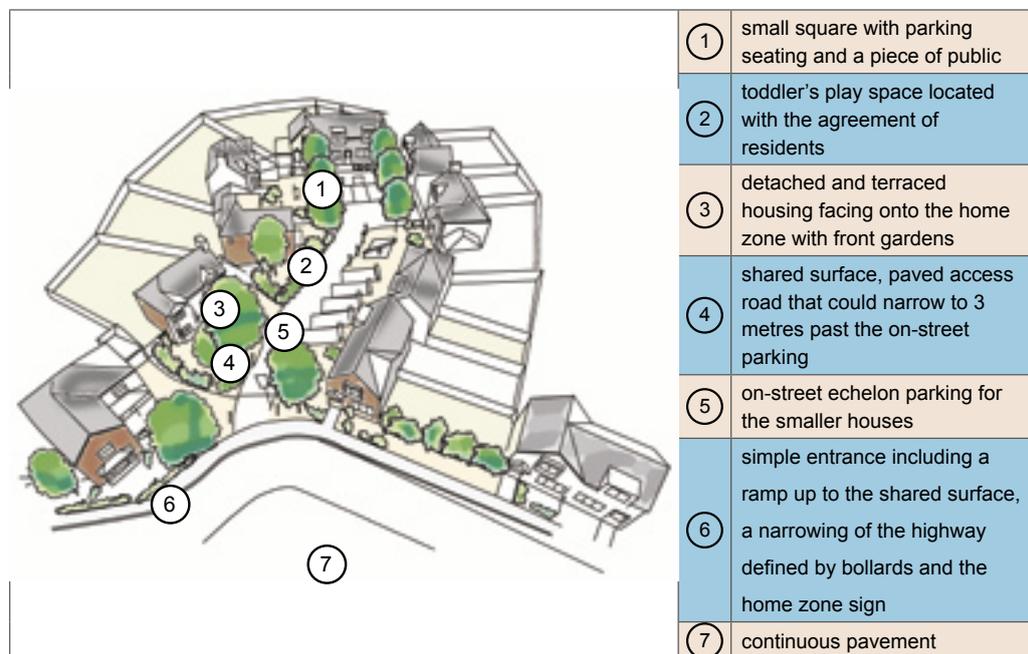
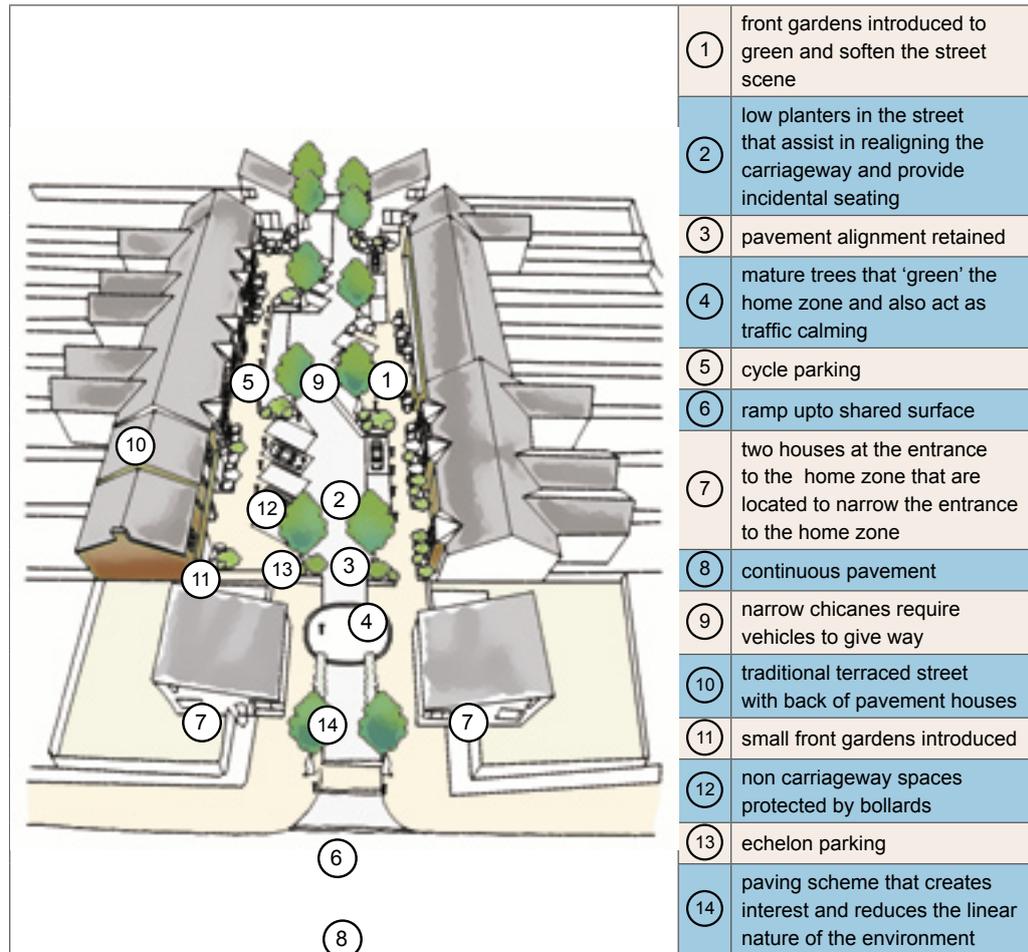
disconnected street network

The following principles must be included in new designs:

- 1 New housing developments will be integrated with surrounding areas and not be developed in isolation of local facilities. Careful consideration of how safe, easy and direct access is achieved to public transport links is essential. In areas that are not well served by public transport or where unacceptable walking distances are being imposed, early discussions should be held with Centro to assess the need to improve services. This is particularly important where major new development proposals are being considered.

- 
- 2 New roads and footways must be designed so that they connect to the surrounding street network safely conveniently and are easy to understand.
 - 3 Pedestrian and cycle links must not be isolated from the street network as a general rule. If it is necessary to provide such links to connect places more conveniently, then safety and security is a key consideration. Such designs must be overlooked by active frontages, have appropriate lighting and be maintained. Furthermore segregated routes must be designed to exclude access by motorbikes.
 - 4 Unadopted sections of highway and public footpaths within residential designs must have appropriate street lighting and have management plans in place to ensure their future maintenance.
 - 5 Where cul de sac designs are included road lengths need to be short and direct. They must be no more than 140 metres in length as this results in safety considerations for emergency access. Where there is no alternative but to consider cul de sac designs in excess of this length there will be implications for wider road widths to be designed to enable access for emergency vehicles. Early pre-application discussion is recommended. Within cul de sac designs dwellings should be orientated to visually connect with the primary street network to improve natural surveillance particularly at the entrance and head of such designs. Avoid designing enclaves of similar house types in cul de sac settings, as they will attract the same type of occupier who generates similar patterns of activity. For example occupiers out at work all day leave the area vulnerable to crime at certain times of the day as they become void of any natural surveillance.
 - 6 Gated cul de sac designs are unacceptable as they privatise place and reduce accessibility to public spaces. Alternative design solutions need to be considered.
 - 7 Internal road designs in new housing layouts must be designed to reduce vehicle speeds to less than 20 mph. Traffic calming measures must be an integral part of the design. Where home zones are considered in designs vehicle speeds must be restricted to less than 10 mph. Early pre-application discussions are recommended with the Council where home zone concepts are considered for inclusion. Home Zone principles work best in minor street or cul de sac locations where the demand for on-street car parking is reduced because of the proximity of good public transport links. In their truest sense home zone designs allow for pedestrian primacy, children's play and opportunities for landscaping. Car parking is managed and designed to be less imposing, and traffic speeds are reduced significantly.

Home Zone Design Principles



source: Home Zones - A Planning & Design Handbook Mike Biddulph

- 8 All new homes should be accessible for physically impaired people.
- 9 Private pedestrian access designs that connect buildings to external spaces should also be safe, easy and direct. This is particularly important in terraced, flatted and courtyard designs where vehicular access should not be located to conflict with safe pedestrian movement. Overlong rear access points to serve terraced designs must be avoided. Gated entrances should be included to provide a clear definition of private space.

Car Parking

A common sense approach needs to be taken towards the provision of car parking within new developments. A careful balance needs to be struck between the expectations of car owners and the desire to park near their property and the need to maintain the character of the overall setting of new development, particularly in higher density designs. The following points must be considered:

- 1 Car parking arrangements and garaging facilities must not dominate the frontage of housing or inconvenience pedestrian or cyclist movement unduly. For example an over reliance on integral garage designs should be avoided in streets, as this also results in poor natural surveillance and visual linkage with the street. Ideally garaging and driveway facilities should be set to the side of house designs so that parked vehicles are less obtrusive on the street scene and visual linkage is improved.



Docklands, London

Garage detail will not dominate the street and frontage designs.



Wigmore Fields, Pennyhill Lane

Integral garages designs must not dominate street scenes. There must be a careful balance achieved with other design considerations to improve visual connections and the opportunity for natural surveillance to occur.

- 2 Car parking needs should be contained within the curtilage of individual plots for family house designs where at all possible, particularly in family house designs (three or more bedrooms).



Arthur Harris Close, Smethwick



Waterfall Lane, Cradley Heath

Car Parking designs must be managed within the plot of family housing designs.

- 3 Private driveways must serve no more than four properties.
- 4 Large areas of exposed frontage and segregated car parking must be avoided in design solutions, whether for flatted, terraced, semi-detached or detached designs as this design consideration divorces buildings from the street and result in poor visual linkage.



West Bromwich

Standardised car-parking areas should not compromise the quality of the housing designs.

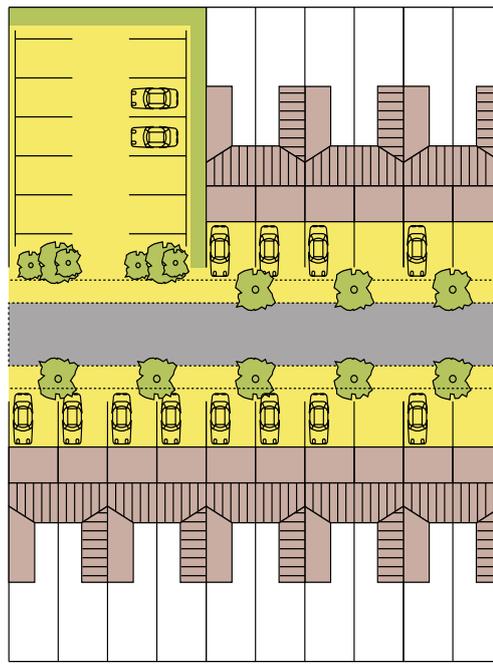


Smethwick

This new housing development is dominated by hard surfaces for car-parking. The opportunity for providing garden space has been lost, reducing the quality of the street scene.



Segregated car-parking, which is not overlooked will become problematic for residents, in terms of security and convenience.



Standardisation and car dominated streetscapes must be avoided.

- 5 Car parking areas designed to serve flatted or townhouse accommodation must be safe and not take on the appearance of a public car park. Lighting and issues of natural surveillance must be integral to the design. Designs must have a residential quality about their appearance that include safe pedestrian links and landscaping, both hard and soft to break up large areas. Spaces should be clearly allocated to properties and management plans in place.
- 6 In traditional terraced streets where frontage car parking is considered wholly inappropriate to serve infill development, the design solution must seek to accommodate safe, rear or possibly side, car parking provision so that it does not visually dominate the street and disrupt the streetscene. Where this cannot be achieved because space does not permit, then consideration will have to be given to a Section 106 Agreement to secure a residents' car-parking scheme in some areas where it is considered that there is a high demand for existing on-street car parking provision.
- 7 Where garage/driveway designs in new higher density housing layouts are counted as parking spaces, they will be conditioned to remain as such. Consideration regarding the conversion of garaging/parking spaces into living areas will only be acceptable where garaging/parking can be safely accommodated elsewhere within the plot.

- 8 Car parking areas must be overlooked. Remote car parking will be unacceptable as it becomes problematic for residents and results in a greater demand for on-street car parking provision.
- 9 The entrance to courtyard and undercroft designs must be monitored by natural surveillance from adjoining properties as well as being secure and properly managed. Where gated designs are included, maintenance and management plans will need to be in place. This ensures that gated designs continue to operate effectively and also avoids future disputes over responsibility.



Brindle Road Yew Tree

Privatise rear car parking provision with careful design consideration.



Lower Church Lane, Tipton

Car Parking needs to be managed and ownership translated in their design.



Dickens Heath, Solihull

Open court yard designs must give careful consideration to how they are overlooked and the use of materials, so that high quality streetscapes and residential environments are achieved.

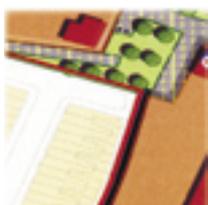


Bearwood

Within traditional terraced streets, on-street parking is accepted.

- 10 Where courtyard designs are considered to serve terraced properties they must be designed for no more than 12 spaces. These spaces must be designed for residents' use only. A view will be taken that visitor car parking should be accommodated on street. Management plans in terms of the allocation of spaces to specific properties and future maintenance needs to be clear.
- 11 Safe cycle storage areas must be catered for in flat/apartment designs where minimum car parking standards are being provided.
- 12 Where residential designs become mixed with other uses, car parking and access arrangements need to be clear to prevent confusion over public and private space, how it is maintained and by whom.

urban design



3 Vitality and Interest

The vitality of an area is essential to its success as a place where people want to live. The availability of uses and activities that give people a genuine choice, the presence of other people and the chance that this gives for social interaction throughout the day are important design considerations. These considerations secure a sense of well being that is derived from the activities of people going about their daily lives.

Access to facilities and the variety of development that is provided in terms of the type and size of accommodation and its tenure will assist in this process. Places should not be designed in isolation of their surroundings; they should be integrated both visually and physically.

Mixed Uses

- 1 Provide a mix of uses in terms of the variety of house types provided. This will ensure that places are used more effectively over longer periods of the day.
- 2 Where affordable housing is included within housing layouts it should not be isolated or obvious because of its design. Integrated and “pepper-potted” designs work best.



St Pauls Road, Smethwick



Marshall Street, Smethwick

source: photographs courtesy of Trident & Mercia Housing Associations.

- 3 Design a network of integrated streets that incorporates pedestrian and cycle links safely.

- 4 Reintroduce residential uses into town centres in appropriate locations, by providing living accommodation above premises or changing the use of vacant buildings. This assists natural surveillance and security and also promotes ownership over longer periods of the day.

Blackheath

Living above the shop promotes ownership of areas over longer periods of the day.



The Public Realm

The quality of the public realm created by new development proposals is a key consideration in Sandwell. The public realm consists of everything outside the private house and includes highways, footpaths, links, open spaces, play areas, street furniture and public art.

Consideration must be given to the greening of new development and its future maintenance. New housing developments will be expected to contribute to the amount and maintenance of open space within the borough. This will be either through new provision on larger sites or by means of a commuted sum, secured by S.106 agreement, to improve the quality of existing spaces that are within easy walking distance of the proposed development. Generally the latter is more acceptable depending on the scale of development being proposed. Good quality spaces enhance the quality of life for residents and reinforce a sense of place.

The design of the public realm must:

- 1 Be a comfortable, safe and stimulating place to use and where residents are proud to live.
- 2 Public space and private space should be clearly defined.
- 3 Left over spaces must be avoided where ownership is unclear or where management is problematic, because areas have been designed to be disconnected from ownership, visually and physically.
- 4 Enable people to have views of connecting places and spaces and where possible provide places for people to stop and enjoy their surroundings.
- 5 Design new development to provide focal points and sometimes landmarks on key connecting routes, as this helps people find their way around.
- 6 Existing landscape features need to be retained wherever possible. Justification needs to be given where the removal of established features is proposed. For example, topography, buildings or landscape features which lend a particular identity to places.
- 7 Careful consideration must be given to the retention of established tree and hedge planting. Discussions must be held with the Council when considering the removal of established trees and hedges. On larger sites the Council's Tree Officer must be asked to carry out a survey. Where it is accepted that landscaping can be removed it must be replaced within the new development proposal to a high quality standard. For example trees should be of a heavy standard design particularly along main access routes where they are vulnerable to vandalism.

- 8 Where open space or play space designs are included in new development proposals they must be integrated into the development. Open spaces and play areas must relate to the context of the area and have safe and easy access. Open spaces and play spaces must not be pushed to the edge of development proposals where natural surveillance is restricted and ownership becomes confused.



Queen's Road, Wednesbury



Montague Road, Smethwick

The public realm must be intergrated with and overlooked by new development.



Dickens Heath, Solihull



Tividale Keys, Tividale

New development must be designed to blend in with existing landscape features and provide overlooking of public spaces.

- 9 All routes must be designed so that they are overlooked by surrounding development. Where pedestrian connections are provided through open areas they must be well lit at night where they are considered not to be short and direct by the Council.
- 10 Variety in the type of open spaces provided will be encouraged to add visual and sensory interest to places that meet the various leisure and play requirements associated with new housing.

- 11 Where play facilities are provided, consideration must be given to meeting the demands of various age ranges. This will be dependent on the type of development and local need in the area.
- 12 Including the 'Home Zone' concept into street designs and providing provision for play can reduce the need to provide open/play space facilities elsewhere on or off site as part of the overall development scheme. Early pre-application discussions are advised where this concept is considered.

The Private Realm

The design of the private realm must:

- 1 As a general rule, housing layouts will be expected to provide private garden space for residents. Strong design reasons and solutions must be given in an accompanying design statement if no or limited conventional private amenity space is proposed. Other forms of useable space will need to be provided which may be in the form of roof terraces, balconies and well-designed streets and/or consideration given to the proximity of nearby parks.
- 2 Block structure layouts where private garden areas back on to private garden areas work best, as they provide secure and private amenity space.
- 3 Exposed rear garden boundaries must be avoided. They have a deadening effect on the surrounding area and have security and safety implications. The design will be unacceptable where such arrangements back onto the street network and open spaces.
- 4 Demonstrate by graphical representation that living accommodation is useable by illustrating that furniture can be accommodated within habitable rooms.
- 5 The public and private realm needs to be clearly differentiated by durable boundary treatments. Where designs are visible from the public realm they need to add visual interest to the street.



Smethwick



Waterfall Lane, Cradley Heath

Where rear boundary designs are visible from the public realm they must add visual interest.



6 House designs must consider the need for defensible space. Where designs are pulled forward to address the street more appropriately so that they are in keeping with the context of places, careful thought needs to be given to issues of privacy. For example, where terraced house designs are set close to the back edge of pavement, or have limited defensible space, thought needs to be given to the size and design of fenestration. Yes, designs need to promote two-way natural surveillance, but not at the expense of the occupier's privacy, whereby they feel that they need to have blinds/curtains permanently drawn.



Ill defined defensible space reduces the comfort of internal living spaces and the quality of external environments.



4 Design for Change and Adaptability

Grid block housing layouts offer the most flexibility in terms of connecting places and spaces and allowing opportunity for change over time. The interior space can also be used for a number of design solutions to rationalise private space such as garden land, play space or car parking. The design has proved to be robust over time as it makes efficient use of land. The design can easily connect to surrounding areas, clearly define public and private space, promotes natural surveillance of the street and people can easily find their way around. The design also accommodates integrated pedestrian and cycle links which are far safer than designing segregated routes.

- 1 Well-configured block designs can facilitate a range of uses within their interior that have the ability to change over time. Where interior spaces could be more widely accessible, access points should be clearly defined and buildings should be designed to overlook entrance points so that ownership and security is promoted. For example where access is provided for rear car parking facilities to serve frontage housing.
- 2 Clearly define public and private space through the orientation of buildings and provision of good quality attractive boundary detail particularly where it is visible from the public realm.



source: SMBC, The Lyng Community Association. Lovell Partnerships, PRP Architects, Housing Forum

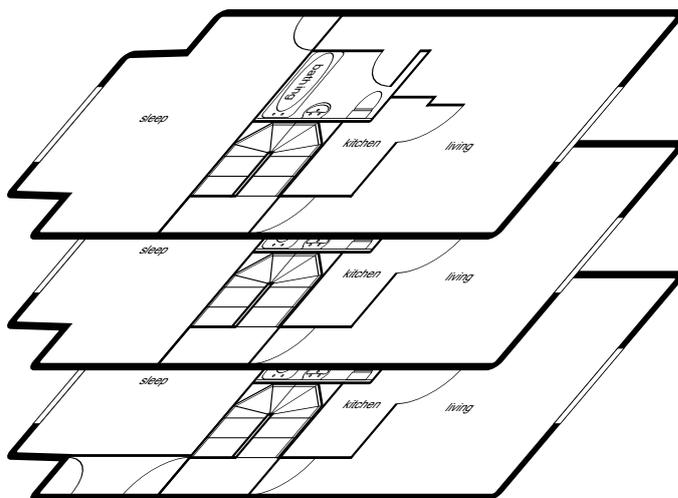
Flexibility

Flexible buildings offer their occupiers the opportunity to modify their homes. The Council has adopted a Lifetime Homes standard to be applied to all proposals for affordable housing development on Council owned land. The basic principle behind the standard is that the homes will provide for the needs of a person and their family for the whole of their life and adapt to their changing needs. They can also accommodate the varying needs of numerous changes of occupier in the same home. This could involve the use of party walls that can be added or removed for flexible internal layouts. Self-build housing schemes could also help to achieve this type of flexibility.

Designing buildings to adapt over time according to the needs of their occupants is also relevant for mixed-use developments. Many traditional urban building forms, particularly in town centres, are easily converted and this can be far more sustainable than considering new-build solutions. Vertical mixed-use buildings are effective for encouraging residential uses into town centres. As the demand for housing increases the conversion of buildings which have outgrown their usefulness is becoming popular. In addition, living above ground floor retail and service uses is a good way of promoting prolonged hours of activity in areas. This type of conversion is encouraged where issues of noise and pollution can be overcome.



Flexible Living Space. Older housing designs are adaptable to change and can be refurbished as apartments.



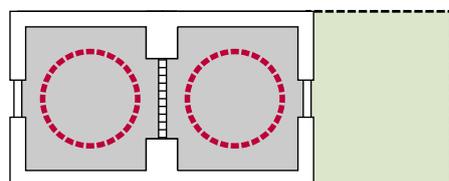
flexibility

When considering the re-use of buildings each proposal will be judged on its own merits. While it is likely that there will be conflicts between principles of achieving natural surveillance and defining public and private space the aim will be to achieve a balance between well designed high quality environments and sustainable development.

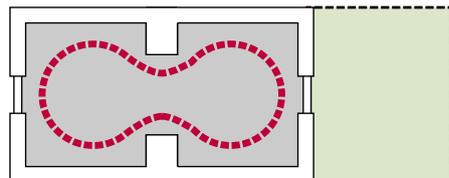
- 1 Where possible family housing should be designed to enable future expansion to take place to meet changing needs and the personalisation of space.
- 2 Design internal living space to be useable and flexible over time. Habitable rooms shown on plans must demonstrate that they can accommodate furniture and circulation space.
- 3 The re-use of existing buildings needs to be considered, particularly where the Council feels that their loss will affect the character of an area in terms of townscape value and local identity.
- 4 Upper floor conversions must consider the installation of separate entrances at ground floor level, as this is a safety and security consideration.
- 5 Include measures within the design to reduce the impact of noise and smells.
- 6 Sound insulation and internal planning of residential accommodation to reduce noise levels but maintain access to natural light.
- 7 Vents from pollution sources at lower levels need to be designed to have the least possible impact on residential accommodation.

Design for Flexibility and Change

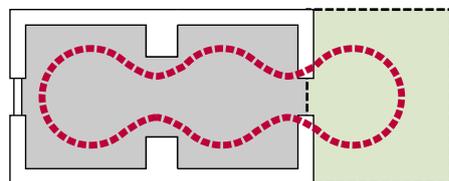
| living room | kitchen/diner | garden |



broken into small circles to separate uses



merged space joins uses together



garden space provides an extension to a habitable room

Guidance on Standards

The Council reserves the right to apply certain numerical standards for new housing development. Flexibility of these standards will be considered where innovative and well-designed development proposals are submitted and where design solutions have been considered and explained in a supporting design statement.

Standards provide a rule of thumb for developers and the Local Planning Authority. They will be applied, some more than others, depending on individual circumstances including design quality and context. Applying the standards will not dictate the success of new development proposals as the application of good design principles contained in this SPG and other Council Policy need to be applied. Less rigid formulas will be applied where high densities are achieved that preserve private amenity space in good quality living environments.

*Refer to Appendix 3 - Codes of Good Practice.

codes of good practice

Personalisation

It is important that family house designs offer scope for change to meet changing circumstances and the personalisation of property enables occupiers to identify with their home. Generally personalisation only takes place in spaces which people control. Problems can occur with personalisation where personal choice erodes the quality of the public realm and disrupts the visual quality of the street, for example the quality of domestic extensions and attempts to secure personal space.

- 1 Poor quality domestic extensions that are clearly out of keeping with their surroundings/context by virtue of their scale, architectural design or proposed materials will be unacceptable.

For example where;

domestic extension proposals result in the reduction of private amenity space to unreasonable levels;

flat roof designs, particularly at first floor level and above, where the design is clearly out of keeping with the architectural design of the existing dwelling;

dormer designs that are out of scale and character with the existing dwelling and street scene or result in poor connecting views from public space;



over-intensification of dwellings where it is proposed to extend them to a scale that is considered reasonable, when considering the plot size, footprint of the original dwelling and relationship to the context of the area;

where development proposals will result in an undue terracing affect that impacts on the setting of neighbouring properties and the street scene.

- 2 The privatisation of space where it is clearly out of keeping in terms of scale with the context of residential areas will be resisted. For example fencing and gate designs by virtue of their height and design.



Tipton

Avoid wall and gate designs that are out of keeping with their surroundings.



West Bromwich

Personal taste can have a negative impact on the quality of the public realm.

- 3 The conversion of garages into living accommodation will be resisted, where it is considered that the proposed transition distorts the architectural design of the property. Where opportunities for safe, alternative and convenient off-street car parking provision is considered insufficient, or would result in diminishing the quality of the public realm and impact on safe pedestrian movement.

5 Distinctiveness and Character

Sometimes particular qualities give an area a recognisable character, such as the use of particular materials or architectural detail on a specific building or a group of buildings. Other things also contribute such as the canal network or views to landmark features. Where the qualities are of merit new designs should reflect and be sympathetic towards them. Opportunities also exist where major new development proposals are being considered, to forge new identities and place creation. Standard products lead to the standardisation of places that lack interest and take on the appearance of “any-where-else”. The key aim of the residential SPG is to get everyone to recognise that quality and detail matters and that new development proposals will be measured on those merits.

- 1 New development must be designed to make a positive contribution to the Borough of Sandwell and address the needs of all communities.
- 2 Large new development proposals must provide a varied townscape that is interesting and identifiable.
- 3 New designs must provide a variety of dwelling types that will adapt to social and economic change over time and provide for the diverse cultural social and physical needs of residents in Sandwell.
- 4 A mixture of occupancies must be encouraged. Such design solutions assist the development of community spirit, which in turn makes places appear more cared for and secure.
- 5 New development must complement the context of the surrounding area. New development must aim to “fit in” and not “stand out” from its surroundings unless there is an opportunity to create a statement such as a landmark or focal point building because of the location of the development site. For example a corner location at a busy road junction. Where developments of purely infill and backland sites are proposed the design solution must respect the local context, particularly in areas where it is considered that special streetscape qualities exist.
- 6 Aim to build onto or reflect the existing identity and architectural detail of places, by using materials, colours and textures that match or which are complementary.
- 7 In suitable locations where levels or the location of the development site permits, introduce variety and identity through varying building heights.
- 8 Adhere to street dimensions, height-to-width ratios and plot sizes, also be considerate of the skyline, proportion and scale of windows, doors, setbacks and front boundary treatments in order to reinforce place identity and fit into existing streetscapes and context.
- 9 Aim to improve the visual experience of places by being considerate of the sense of enclosure or openness and visual connections achieved in design solutions.

Refer to Appendix 2 – Identifying Local Character Matrix

Development of the Borough's Canal Network

Canalside development can present an opportunity to provide an interest or focus to all types of development. They can also provide access to pedestrian and cycle links along canal towpaths. Waterside locations also have the potential to raise development values. In Sandwell canalside regeneration schemes have become popular. No longer is it considered acceptable for development proposals to ignore canal frontages.

- 1 New developments must be designed to interact with the canal, providing access and viewpoints.
- 2 Existing canalside buildings should be re-used where at all possible.
- 3 New canal side buildings must reflect the scale, form and composition of existing canalside development.
- 4 Materials used for canalside housing developments must reflect the traditional in terms of brick colours and stone, timber and worked metal. It is not necessary to reflect the past uses totally, as contemporary alternatives are acceptable where attention has been paid to the detail of patterns and textures.
- 5 Windows must be placed within the canalside elevation of buildings to allow surveillance of the canal environment.
- 6 Avoid continuous building lines that close off spaces or visual links along the canalside in order to assist natural surveillance.
- 7 Residential moorings must be designed in conjunction with UDP Policy DC11.



Chatwins Wharf, Tipton

Levels and the need for retaining walls can inhibit visual connections and raise safety concerns. The quality of pedestrian connections and lighting can help to overcome these issues.

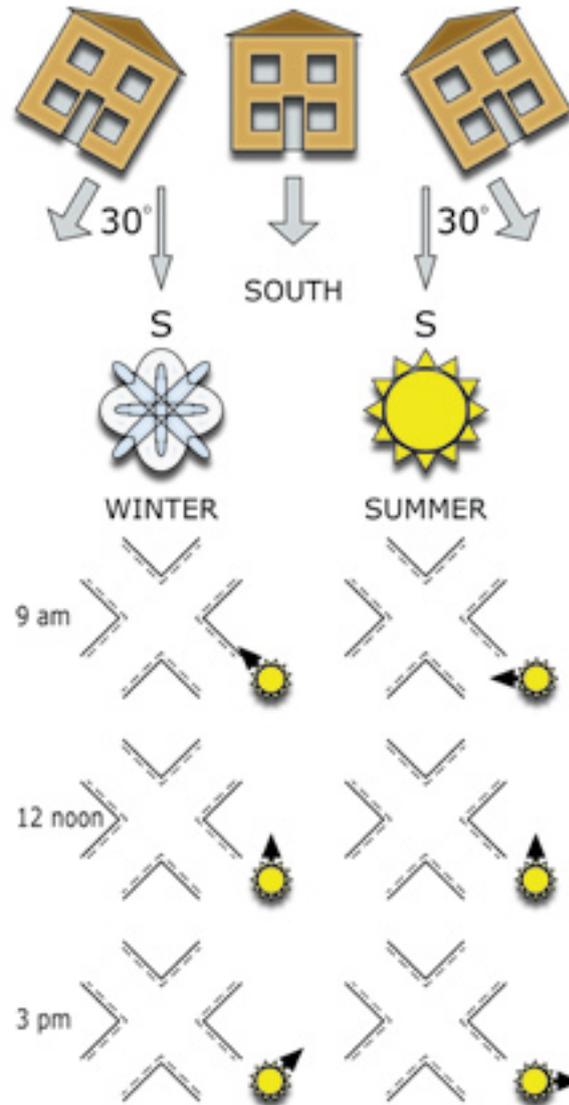


Tividale keys, Tividale

The canal basin provides a local focal point within the development.

6 Climatic, Ecological and Social Sustainability

Places need to be socially, environmentally and economically sustainable in order to become successful and popular places to live. Well thought out designs in terms of the built form and layout both internally and externally will increase the life span of the development and can reduce resource and energy consumption. It is important that design solutions respect, consider and interact with the natural environment and seasonal change. Design Statements will need to show how the use of natural daylight has been incorporated in new designs. Particular regard should be given to the orientation of buildings within 30 degrees of south, wherever possible to avoid overshadowing especially during winter months.



Orientate new development to maximise solar gain and reduce overshadowing

source: Urban Design Compendium

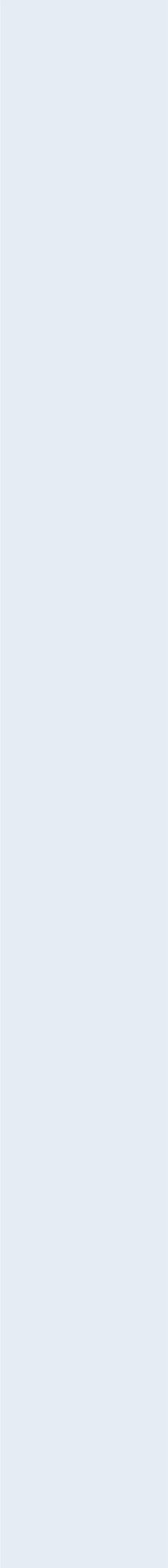
- 1 Designs must be orientated to maximise access to natural light and reduce overshadowing. Orientating buildings up to 30 degrees towards the south will create an east-west street pattern and still enable 90-95% of the maximum output for solar collectors to be produced. Window designs can help compensate for the loss of light where design solutions have to be considerate of plot orientation and issues of overlooking. For example include convex, balcony and deeper window designs in single aspect flat and apartment designs so that habitable rooms have access to increased levels of natural daylight.
- 2 Optimise building depths, particularly for flat and apartment designs. A 9 to 13 metre building depth optimises natural light access.
- 3 Incorporate construction techniques that minimise waste and that re-use or recycle materials where possible.
- 4 Incorporate design features that use energy, water and other natural resources efficiently.



The Lyng, West Bromwich

Sustainable construction models.

- 5 Re-using surface water will reduce the need for drainage infrastructure and their associated costs. Providing water butts and soakaways to collect grey water can assist with the irrigation of gardens and landscaping.
- 6 Include landscape features that provide habitats for wildlife, absorb carbon-dioxide from the atmosphere and reduce wind speeds. For example trees provide shelter from draughts that contribute to building heat loss. Trees and hedges also provide natural windbreaks to prevailing winds and can provide shelter-belts on north eastern slopes. Deciduous trees provide shade in the summer yet allow light in the winter. Consideration needs to be given to mature heights so as not to block out sunlight particularly in winter months.

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- 
- [7](#) Wind can be used as a means of natural ventilation and has the potential to become a valuable energy source in certain locations, which are in exposed areas.
 - [8](#) Encourage the use of public transport by providing safe, easy and direct linkage to local connections.
 - [9](#) Develop attractive and healthy places to live.
 - [10](#) Ensure that buildings and public spaces are accessible to all. Provide choices for everyone wishing to access places, including wheelchair users, other people with disabilities, elderly people, cyclists and those with young children.
 - [11](#) Explore cheaper heating solutions.
 - [12](#) Ensure that buildings are designed to reduce the fear and perception of crime.



7 Safety and Security

Safety and Security are vital elements of new housing design. Creating the perception of personal and community safety is a complicated issue, as negative impressions do not always relate directly to actual incidences of crime. Places should be designed to be comfortable and convenient to use.

Thoughtful design quality enhances everyone's sense of well-being, makes places more useable, easy to understand and secure. A clear aim of this document is to consider safety and security as component of good design.

Successful places combine good design, good management and community involvement. They increase the potential for social interaction within an area thereby reducing opportunities for crime and the fear of crime for communities, the places they use and the property they own. At the risk of being repetitive listed below are some of the key design policies contained in this document.

- 1 Create lively places which are well used and easily overlooked. This can be achieved by introducing a variety of house types which cater for different tenures, age groups and family composition. This ensures that places are used more effectively over longer periods of the day.
- 2 Design integrated street networks that do not divorce pedestrian and cycle linkages.
- 3 Design connected streets rather than an over reliance on vulnerable cul-de-sac designs.
- 4 Ensure that entrances and areas of main activity front onto the street such as living rooms and kitchens.
- 5 Design dwellings that overlook open spaces, play spaces and the canal network.
- 6 Car parking to serve courtyard and flat/apartment designs should be overlooked or monitored by natural surveillance from nearby dwellings.
- 7 Ensure good visibility by including effective lighting. This applies to unadopted and adopted sections of highway and pedestrian and cycle connections.



see appendix 4

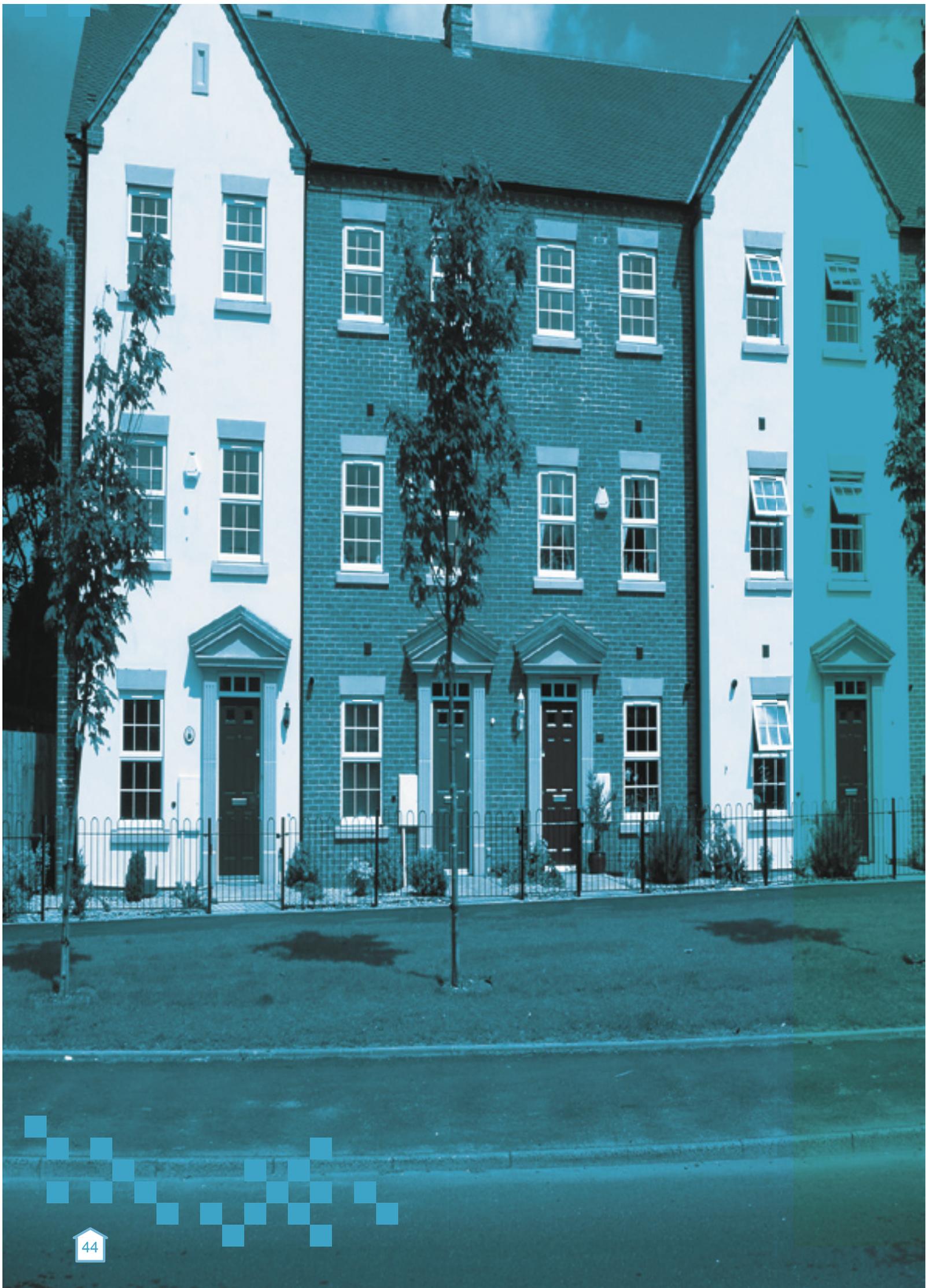
- 8 Defensible space must be provided around new housing with a clear definition between the public and private realm. Low front walls, railings or hedges provide effective frontage boundary treatments and are considered essential in vulnerable locations such as primary road frontage and corner locations. Where defensible space cannot be afforded to the front of properties due to the context of the area careful consideration needs to be given to the size of windows at ground floor level and frontage design. For example a balance needs to be made between promoting two-way natural surveillance.
- 9 Design housing layouts where rear garden space backs onto rear back garden space as this increases security and privacy.
- 10 Do not design dwellings where rear private space backs onto the public realm. This is visually disruptive on the street scene, creates inactive edges, left-over spaces that are not managed and reduces levels of security and privacy.
- 11 Overlong rear pedestrian access designs to serve terraced and courtyard designs must be avoided.
- 12 Avoid developing a fortress mentality in design solutions for housing, fencing and gate designs. Such designs send off the wrong message and increase the perception of crime in many cases.



Wigmore Fields, West Bromwich

New development must be designed so that private space is clearly delineated.

Providing a variety of house types helps to ensure that there is natural surveillance of the public realm over longer periods of the day.





DENSITY

density

One of the main issues currently influencing residential development is density. Housing density is simply a measure of how effectively we use land. How comfortable a place feels is a matter of the design and its social characteristics.

The move towards more sustainable lifestyles and the need to improve the quality of life within our towns and cities means that we need to use land efficiently. This does not mean that town cramming will be acceptable. It means that we need to seek good design solutions that deliver attractive places, which meet the needs of society.

“We want our towns and cities and suburbs to be places for people that are designed, built and maintained on the principle that people come first. They should contribute to the quality of life and encourage healthy and sustainable lifestyles. They should be places in which we want to live, work, bring up our children, and spend leisure time.”

(Our towns and Cities : The Future Delivery of Urban Renaissance)

Historically during the last century many urban areas were developed at higher densities. Many of these places are still well-loved and are still attractive places to live. Good examples are reflected in Georgian, Victorian and Edwardian street patterns and terraced house designs of that period. Unfortunately in the post war years higher density development has been equated with poor-quality lifestyles involving overcrowding and reduced space standards. As a result of this in more recent years we have seen development based on average densities and blanket standards, which have not used land efficiently. This has tended to produce very bland and uninteresting environments.

If we are to avoid repeating past mistakes we need to ensure that new residential development in the borough is of the highest quality by using an approach based on good design principles.

The design quality of higher density designs is critical to their success or failure as living environments. Designs work best where they are located close to local facilities and public transport connections. The better served and connected a development is, the stronger the case for achieving higher density design standards and providing lower car parking provision (see policy T3 – Public Transport Access and Location, in the Sandwell UDP).

The more people living in an area the more likely it is to be successful as a living environment as it ensures that an area remains lively and well used. This also helps support local services and builds community identity.

The Sandwell UDP recommends a minimum density of 40 dwellings per hectare. However, a minimum density of 50 dwellings per hectare is required for residential development within or adjoining main town centres and district centres, or within a 400 metre radius of a bus service (10 minute frequencies during peak periods), metro link or heavy rail station.

When developing at 50 dwellings per hectare on major development sites it is possible to provide a range of house types that cater for large families as well as single person households. Developing at 40 and 50 dwellings per hectare is only an average density that must be aimed for in order to create an interesting and varied environment. For example in some locations it may be appropriate to consider much higher density designs in the region of 85 dwellings per hectare (this is the average number of dwellings in a typical apartment design), while in other locations much lower density design solutions, in the region of 20 dwellings may be acceptable because of the context of the area.

density + quality

Examples of low, medium and high density residential developments



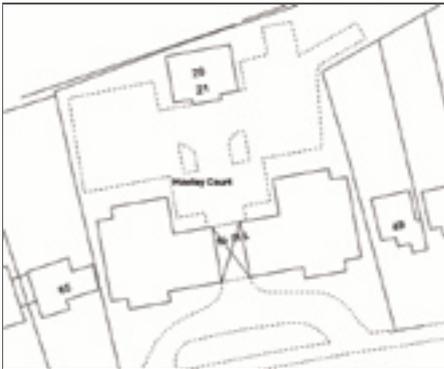
Low density street scene, Cradley Heath approx 20 d.p.h.

Low density street scene, Wednesbury approx 25 d.p.h.



Medium density street scene, West Bromwich approx 48 d.p.h.

Medium density street scene, Smethwick approx 35 d.p.h.



High density design,
Great Barr approx +70 d.p.h.

High density street scene,
Bearwood approx +68 d.p.h.

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dph = dwellings per hectare

The acceptable approach to achieving higher density design solutions is design-led, concentrating on sustainable urban quality. Market considerations will influence housing designs and this together with the design-led approach that this SPG promotes, makes density a measure of the product, not a determinant of it.

The benefits of developing at higher densities:

Social Benefits

- Encourages positive social interaction, familiarity and diversity.
- Improves viability of, and access to, community services.
- Offers increased opportunities for a range of housing types, particularly affordable housing.

Economic Benefits

- Enhances the economic viability of development, particularly on brownfield sites.
- Increases feasibility of local services, such as shops, schools, health care and public transport links.
- Improves economies of infrastructure.

Transport Benefits

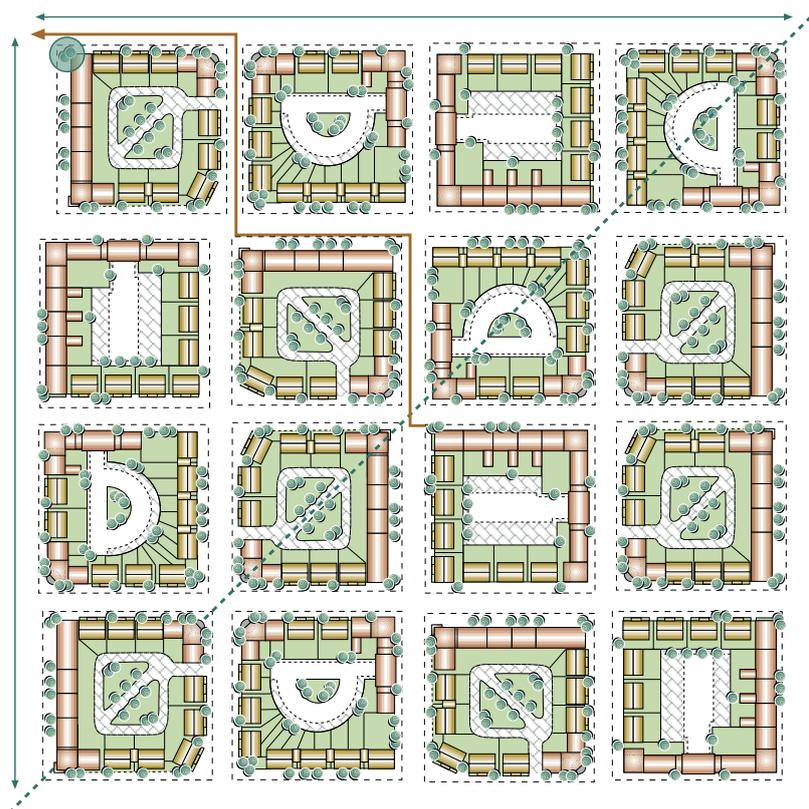
- Supports public transport.
- Reduces car travel and parking demand.
- Alternative car parking designs such as undercroft and basement become more viable.

Environmental Benefits

- Reduces the need to travel by car and car parking demand, thereby reducing pollution and improving air quality and improving pedestrian and cyclist safety.
- Increased energy efficiency.
- Preserves public open space.
- Reduces overall demand for development land thereby avoiding the loss of Greenfield sites.

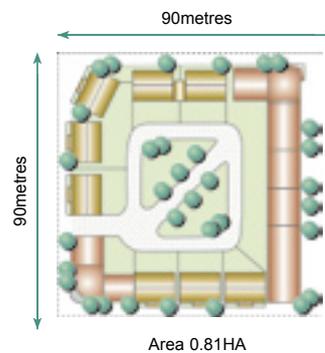


400m walking distance to local facilities and services



8 blocks within 400m = 288 dwellings = 40 DPH. 36 = No of dwellings per 90m x 90m block

The design quality of high density developments is crucial to their success or failure as living environments. Articulating different housing forms around a 'density pyramid' or 'hot spot' works best, i.e., town centres and good quality public transport links. This allows higher density forms to form in central locations and average and lower density formations to project out at the edges of centres. Smaller 'hot spots' of intensity can then be created such as the development of higher apartment block designs in corner or gateway locations.



At 40dph this block would need 32 dwellings. 2 sides with 10 x 9 metres plots + 2 sides with 8 x 9 metre plots = 366metres. You can of course vary the plot widths and built form structure to increase visual, tenure and market variety.

source: Dr Jon Cooper Joint Centre for Urban Design Oxford Brookes University

Achieving good quality designs:

- 1 Buildings, streets and places should be of a human scale.
- 2 Moderate the massing of buildings and groups of buildings by introducing a variety of house types, ridge heights and also set backs in major new development proposals.
- 3 Cater for a range of lifestyles.
- 4 Seek to provide a range of densities within large development proposals.
- 5 Blend in higher density solutions. Three and four storey buildings generally provide an optimum form that maximises density and minimises perceptions of overcrowding.
- 6 Housing density must relate to the context of places. In some areas that have a particular character, higher density solutions may not be considered appropriate especially where in fill or backland development is being considered. Whereas 'hot spots' such as town centre locations or those well connected to public transport links and facilities work best for higher density designs. Small hot spots such as corner, landmark or gateway locations also offer the potential for higher density design solutions.
- 7 Have a long term-term view when designing places, as the positioning of buildings will influence future built form and how the street network evolves over time.
- 8 Create places and spaces with the needs of people in mind. Public spaces must be designed to a high standard and be attractive and safe to use, have a distinct identity, but respect and enhance local character where appropriate.
- 9 Soften the perception of places with good quality landscape designs.

The successful integration of higher density designs depends on:

- 1 Scale and massing of development.
- 2 How developments connect visually and physically with the wider context of the area.
- 3 Mixture of dwelling types and size.
- 4 Orientation of dwellings.
- 5 Landscape, topography and ecology of spaces.
- 6 Road design and layout and the amount and arrangement of car parking.

The following detail design considerations improve the perception of places and make them attractive to live in:

- 1 Private entrances should be positioned at ground floor level, ideally facing onto the street in apartment and flat designs.
- 2 Window designs of main activity rooms should look out onto the street.
- 3 Where housing set backs provide minimal defensible space between the front elevation and back edge of pavement then window designs must be considerate of privacy and overlooking issues.
- 4 Designs for family housing should have adequate garden space.
- 5 Design solutions should ensure that adequate internal floor space standards are provided within accommodation to prevent cramped living conditions.
- 6 Car parking designs must not dominate the frontage detail of dwellings.

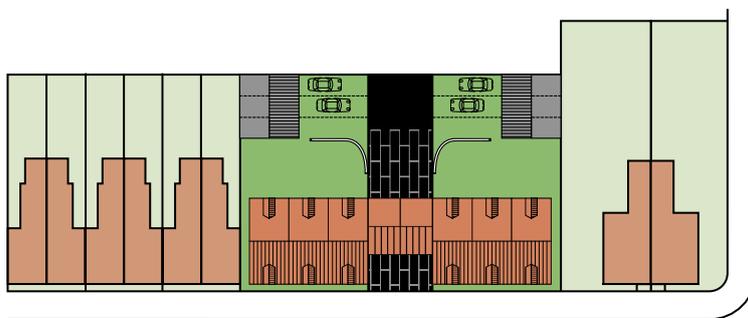
Ensure that garage designs and car parking areas are contained within plot as a general rule for family housing.

Where alternative design solutions are considered ensure that they are overlooked and ownership and management is clear.

- 7 Designs should differentiate public and private space Housing designs and the private space around them must be considerate of privacy and security issues.

Design good quality public spaces that are managed and maintained.

Do not leave left over spaces in layouts where management and ownership is unclear.

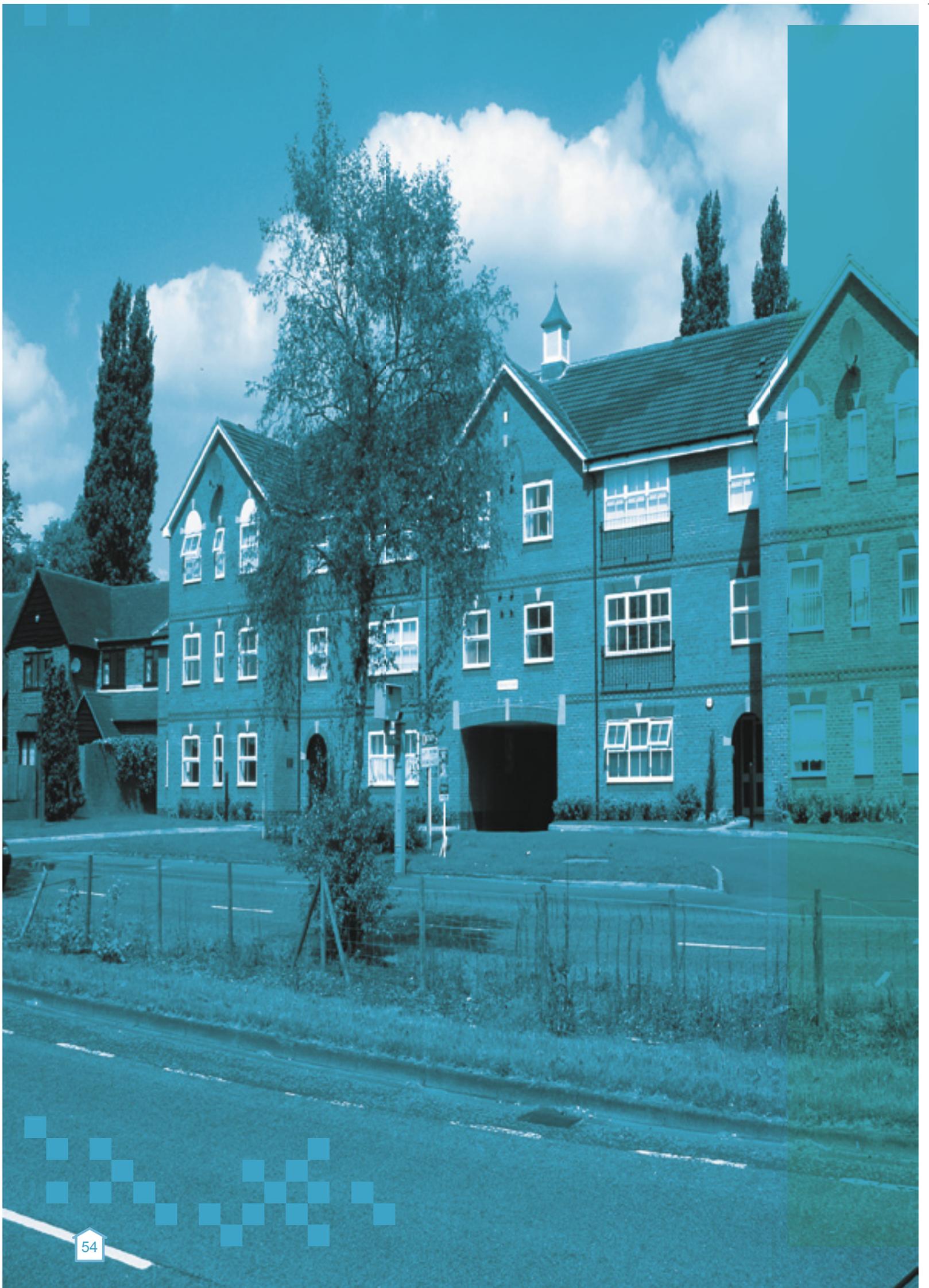


Infill developments must be designed to fit in with the context of places



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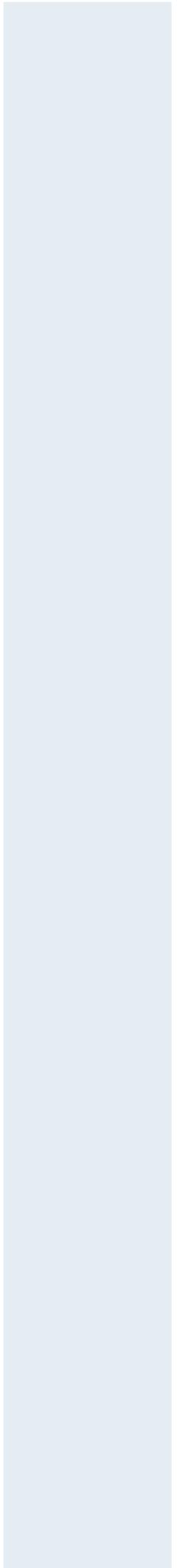


appendix 1

National Policy Context

Recent Government guidance has been very positive about the need for better design for new developments. Planning Policy Guidance Notes (PPG) 1, 3, and 13 all emphasise the need for attractive, high-quality, sustainable places in which people want to live work and invest.

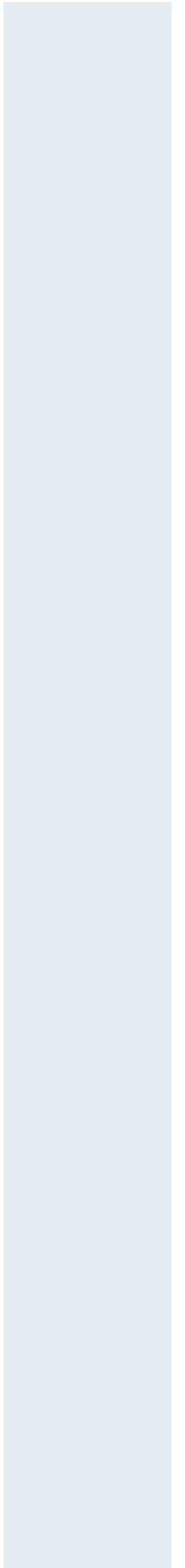
- PPG1 *General Policies and Principles* is the driving force behind the design-led approach and encourages local planning authorities to provide applicants with clear intentions as to the design expectations for new developments. This Supplementary Planning Guidance (SPG) will set out these expectations for those dealing with residential development. The guidance also promotes mixed-use development within town centres and elsewhere as it can help create vitality and diversity, reduce the need to travel and be more sustainable than development consisting of a single use.
- PPG3 *Housing* aims to ensure that everyone has a decent home in which to live, a greater choice of housing is provided to meet the needs of communities, social distinctions are reduced and that new housing is developed in urban areas. In addition, PPG3 is a material consideration when considering development proposals which aims to ensure that new housing is well designed and contributes to an improvement in the quality of urban living and a sustainable lifestyle.
- PPG13 *Transport* requires that new development helps to create places that connect with each other sustainably. The aim of the PPG is to provide the right conditions to encourage walking, cycling and the use of public transport and to put people before traffic.





appendix 2

Identifying Local Character Matrix		
	Existing Character	Proposed Development
THE LAYOUT OF THE BUILDINGS		
Block Sizes		
Density <i>(Number Of Dwellings Per Hectare)</i>		
THE LAYOUT OF THE STREETS		
The structure of the road system, i.e. grid system, cul-de-sac		
Road and pavement widths		
Connections, routes <i>How well connected is the local area? Are the connections to the proposed development better or worse?</i>		
Plot sizes		
THE POSITION OF THE BUILDINGS		
The depth of the set back <i>(from the back of the pavement)</i>		
The width of the building frontages		
THE VISUAL EXPERIENCES		
Levels of openness and enclosure		
Highly visible buildings		
Height of buildings and number of storeys		
Building structure, e.g. terraced/semi-detached etc.		
Detail of buildings, e.g. materials, architectural detail, window and door styles/sizes		





appendix 3

Codes of Good Practice

The following standards provide a rule of thumb for developers and will be applied to all new development proposals, some more than others, depending on individual circumstances including quality of design and context.

Applying the standards will not dictate the success of new development proposals as the application of good design principles contained in the Residential Guide need to be applied.

General Standards

- 1 21 metres between building faces for two storey dwellings and 27.5 metres for three storeys and above and/or where main living room/kitchen windows above ground floor level overlooking existing conventional dwellings. The separation distances should be increased by 2 metres for every 1 metre rise in ground level between new and existing dwellings. This standard will be strictly applied at the rear rather than the front.
- 2 14 metres minimum distances between windowed elevations and opposing one and two storey flank walls, 15.5 metres for three storey flank walls. Where a flank wall will be situated at a higher level than a windowed elevation, the separation distances should be increased by 1 metre for every 1 metre change in ground level.
- 3 The erection of screen walling or fencing of a least 1.8 metres in height on the appropriate boundary of private amenity space at the rear of properties, unless adequate mature screening or fencing already exists.
- 4 Family Housing should be designed with rear garden areas no less than 10.5 metres or 70 square metres in area. In certain circumstances where for example the topography is an issue, or where smaller accommodation is designed there may be flexibility if the design solution is of a high quality, but permitted development rights will be removed.
- 5 The 45-degree code will usually be used as a guide for ground floor extensions. Upper floors will be judged on their individual merits.
- 6 The size of internal space within dwellings should be practical and it must be demonstrated on plan that furniture can be accommodated. Refer to Sustainable Residential quality: new approach to urban living published by Llewelyn-Davies referred to in Annex D, PPG3. For Example:

no. bedrooms	no. rooms	living space
Studio Flat	1 habitable room	40 sq.m.
1 Bed Flat	2 habitable rooms	50 sq.m.
2 Bed Flat	3 habitable rooms	65 sq.m.
2 Bed House	2 Storey	65 sq.m.
3 Bed House	2 Storey	80 sq.m.
4 Bed House	2 Storey	100 sq.m





appendix 4



Secure By Design Standards - New Homes

Section 1: The Development

A safe and secure environment is the prime objective of SBD recommendations. To achieve this objective, equal weighting should be given to both the environmental and physical security.

Principles of designing out crime must be incorporated and shall be agreed with the ALO/CPDA. Local conditions will influence to some degree the measures to be adopted.

Dwellings should be positioned to allow unobstructed views of neighbouring properties without conflicting with the residents' need for privacy.

There should be a mix of dwellings, as the potential for homes to be occupied throughout the day gives increased opportunity for natural surveillance, community interaction and environmental control.

1 Roads and Footpaths

- 1.1 Routes through an area for all forms of movement, which are designed in a way that ensures they are clear, direct, and busy and will be well used, are desirable. They should not undermine the defensible space of neighbourhoods. Design features can help to identify the acceptable routes through a development, thereby encouraging their use and in doing so enhancing the feeling of safety. Where it is desirable to limit access/use to residents and their legitimate visitors features such as rumble strips, change of road surface (by colour or texture), pillars or narrowing of the carriageway may be used. This helps to define the defensible space, psychologically giving the impression that the area beyond is private.
- 1.2 It is desirable that footpaths should be wide enough to allow the passage of emergency vehicles.

2 Landscaping

- 2.1 The correct use of certain species of plants such as spiny or types, can help prevent graffiti and loitering and create or enhance perimeter security. Landscaping should not impede the opportunity for natural surveillance and must avoid the creation of potential hiding places. As a general recommendation shrubs should have a mature growth height no higher than 1 metre, and trees should have no foliage below 2 metres, thereby allowing a 1 metre clear field of vision. Building frontages should be open to view. Attention should be given to the location of walls and hedges so that they do not obscure doors or windows, and the position of trees that may become climbing aids into property or obscure lights/CCTV cameras.

- 3.1 All lighting must comply with BS 5489. Where conflict with other statutory provisions occurs (e.g. developments within conservation areas) requirements should be discussed with the ALO/CPDA and the Local Authority Lighting Engineer.

- 4.1 Communal areas, such as playgrounds, seating or drying areas have the potential to generate crime, the fear of crime and anti-social behaviour. They should be designed to allow supervision from nearby dwellings with a safe route for users to come and go. Boundaries between public and private space should be clearly defined and open spaces should have features, which prevent unauthorised vehicular access.
- 4.2 Toddler play areas should be designed so that they can be secured. Consideration should be given to the provision of informal association areas for members of the community, particularly youths. These must be subject to surveillance but sited so that local residents will not suffer from noise pollution. In addition they should be sighted in such a way that those using adjacent foot and cycle paths will not be subject to harassment or otherwise be put in fear.

- 5.1 Clear naming and numbering of properties is essential to assist both residents and the attendance of Emergency Services. Consideration should be given to the provision of vandal-resistant location maps at convenient points.

- 6.1 It is important that appropriate demarcation between public and private areas is clearly indicated. Dwelling frontages, which are open to view, may have low walls, fences or hedges. Vulnerable areas, such as side and rear gardens, need more defensive barriers with walls or fencing to a minimum height of 1.8m. There may be circumstances where open fencing is required to allow for greater surveillance. Where the risk is increased with gardens adjoining open land, footpaths or other areas, for example railway property and canal tow paths, additional deterrent features such as a trellis top or thorny shrubs must be considered. Following consultation with the ALO/CPDA these requirements may be changed with agreed alternative measures.
- 6.2 Sub-divisional fencing type should be agreed with the ALO/CPDA.
- 6.3 Boundary walls, bins and fuel stores, low flat roofs or balconies, should be designed so as not to provide climbing aids to gain access into the property.

- 6.4 Footpaths, which give access to the rear of properties, must have gates placed as near to the front building line as possible, to the same height as the adjacent boundary fencing. These gates must have a key operated robust lock and not be easy to climb or remove from hinges.

7 Utilities

- 7.1 In order to reduce the opportunities for theft by bogus officials the utility meters should, where possible, be brought to the outside and front of the dwelling where they can be overlooked. This will negate the need for an official to enter the building in order to read a meter. This is particularly helpful where elderly persons occupy dwellings. Where possible utility meters in multi-occupancy developments should be located on the ground floor between access controlled doors (air lock system) so that access can be restricted to the meters.

8 Car Parking

- 8.1 Dwellings with in-curtilage car parking arrangements are preferred. Where communal car parking areas are necessary they should be in small groups, close and adjacent to the owners premises, preferably within the owners' view.
- 8.2 Where garages are provided, the entrances should be orientated towards the front of dwellings where they can be easily observed.
- 8.3 Where parking is designed to be adjacent to or between units, a gable end window should be considered to allow residents view over their vehicles.
- 8.4 Lighting requirements to car parking areas should be agreed with the ALO/CPDA.

Section 2: Physical Security

It is important that a high level of physical security is incorporated in building construction and that developments conform to the minimum standard of security outlined within this document. It should be noted that the standards quoted within this document are relevant within the United Kingdom at the time of printing and suitable for most insurance risks. It is acknowledged that alternative products exist which do not possess the BSI Kitemark or other specifically mentioned approval, but may be suitable for specific use. Such use however may restrict the resident from obtaining insurance cover.

1 Front Door

- 1.1 All doorsets must comply with the following in order to be considered suitable for use within a SBD development:
- 1.2 The SBD Standard for doorsets is BSI PAS 24-1: 1999 'Doors of enhanced security'. All doorsets must also be fit for purpose and therefore must comply with BSI PAS 23-1: 1999 'General performance requirements for door assemblies'. All security and performance testing must be undertaken at a United Kingdom Accreditation Service (UKAS) suitably accredited test house, or if otherwise tested must be independently authenticated, in writing, by a serving member of a UKAS approved test house.
- 1.3 As an interim measure, until 30 July 2000, doorsets that cannot comply with PAS 24-1 due to the relevant material annex to PAS 23-1 being unavailable, may be accepted within SBD developments if they have achieved the requirements of the Glass & Glazing Federation (GGF) specification for 'Improved security for residential doorsets' (document 6.6.2). Doorsets falling into this category must also comply with the performance requirements of GGF 6.9. All security & performance testing must be undertaken at a UKAS suitably accredited test house or if otherwise tested must be independently authenticated, in writing, by a serving member of a UKAS approved test house.
- 1.4 All doorsets installed within SBD developments must be to exactly the same specification as that successfully tested. The ALO/CPDA must be supplied with a copy of the test certificate prior to the completion of the SBD development (the developer should be afforded the opportunity to see a copy of the full test report). ACPO will continue to support moves towards product certification by recognised ongoing third party inspection. Where products are not certificated in this way the manufacturers declaration that all products supplied are identical to those tested must accompany the copy of the test certificate supplied.

Additionally the following must also be included:

A multi-point deadlocking system with three or more deadbolts/hook bolts, or a combination thereof. External entry must be latch withdrawal by use of the key, not by lever. The standard for all lock cylinders is BS EN 1303 Grade 3, incorporating anti-drill and pick resistance. [or](#)

An automatic deadlocking rim lock should be fitted one third from the top of the door, with a mortise deadlock and boxed Keep Kitemarked to BS 3621:1998, one third from the bottom of the, avoiding any construction joints. The standard for all lock is BS EN 1303 Grade 3, incorporating anti-drill and pick resistance.

- 1.5 Door frames must be securely fixed to the structure of the building at maximum 600 mm centres and 300 mm from each corner. The rebate, if not integral, should be adequately glued and pinned.
- 1.6 Glazed panels, in and adjacent to external doors, must be laminated (outer pane) to a minimum of 6.4mm thickness and securely fixed in accordance with GGF guidelines.
- 1.7 On outward opening doors provision must be made to prevent access being gained from an attack on the hinge e.g. hinge bolts or similar.
- 1.8 Door chain or opening limiter must be fitted (special conditions may apply to warden controlled premises).
- 1.9 A door viewer must be fitted between 1200mm and 1500mm (not required with unobscured glazing).
- 1.10 The letter plate must be located at least 400mm away from any locks to stop access to the locking system through the aperture. Where this is not possible, the letterbox aperture must be to Post Office minimum recommendation i.e. 250mm x 38mm BS2911/1974 (1980)]. If this criterion cannot be achieved additional measures may be needed to prevent access to the door locks through the letter plate.
- 1.11 Doors in recesses more than 600mm deep should be avoided.

2 Sides and Back Door

- 2.1 Must meet same physical standard as front door (section 1.4 and 1.2 or 1.3).

Additionally the following must also be included;
- 2.2 A multi-point deadlocking system with three or more deadbolts/hook bolts or combination thereof The standard for all lock cylinders is BS EN 1303 Grade 3, incorporating anti-drill and pick resistance. [or](#)

Mortise sash lock and boxed keep kitemarked to BS 3621:1998 with key operation to both sides and two key operated mortise bolts top and bottom avoiding the construction joints. The standard for all lock cylinders is BS EN 1303 Grade 3, incorporating anti-drill and pick resistance.
- 2.3 Door frames must be securely fixed to the structure of the building at maximum 600 mm centres and 300 mm from each corner. The rebate, if not shaped, should be adequately glued pinned.
- 2.4 On outward opening doors provision must be made to prevent access being gained from an attack on the hinge e.g. hinge bolts or similar.
- 2.5 Glazed panels, in and adjacent to external doors, must be laminated (outer pane) to a minimum thickness of 6.4mm and securely fixed in accordance with GGF guidelines.
- 2.6 Doors in recesses more than 600mm deep should be avoided.

3 Sliding Patio Doors

- 3.1 A multi-point deadlocking system with three or more hookbolts or similar should be fitted. Where shootbolts are included they should locate into the head of the frame. The standard for all lockcylinders is BS EN 1303 Grade 3, incorporating anti-drill and pick resistance.
- 3.2 An anti-lift device must be fitted and the frame must not be easily demountable by access to screws or similar connections.
- 3.3 Glazed panels, in and adjacent to external doors, must be laminated (outer pane) to a minimum thickness of 6.4mm and securely fixed in accordance with GGF guidelines.

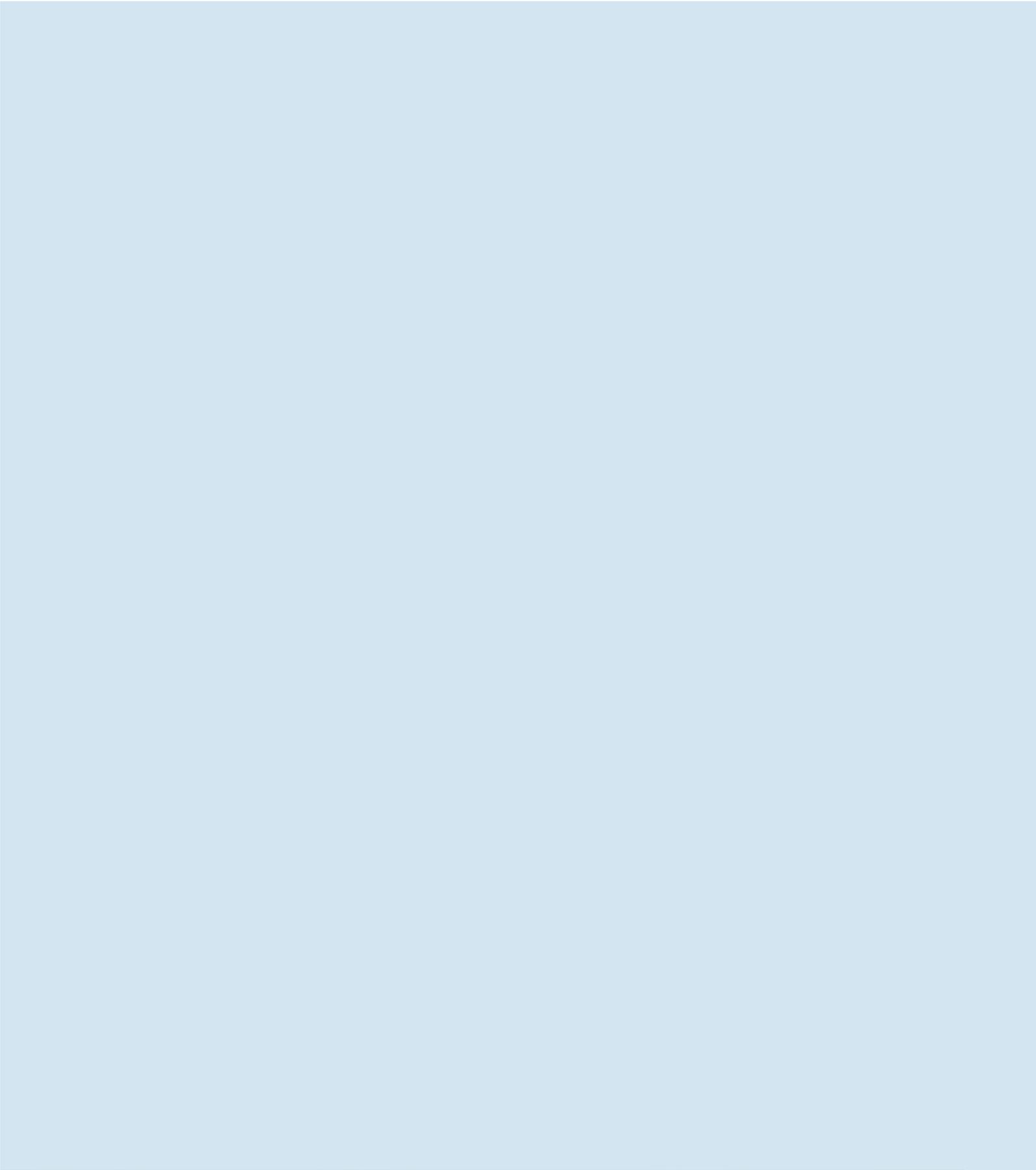
4 French Windows

- 4.1 Presently it is not possible to submit double door sets for testing to PAS 24 or GGF 6.6.2. They must however be capable of achieving similar enhanced security against intrusion.
- 4.2 A multi-point deadlocking system with three or more deadbolts/hook bolts or combination there of. Flush bolts may be fitted to the leading edge of the first closing door as an alternative to mortise security bolts. The standard for all lock cylinders is BS EN 1303 Grade 3, incorporating anti-drill and pick resistance. [or](#)

A mortise sash rebate lock with boxed keep Kitemarked to BS 3621:1998 with two key operated mortise security bolts fitted, top and bottom, to each door. Flush bolts may be fitted to the eading edge of the first closing door as an alternative to mortise security bolts.
- 4.3 Door frames must be securely fixed to the structure of the building at maximum 600mm centres and 300mm from each. The rebate, if not shaped, should be adequately glued and pinned.
- 4.4 Glazed panels, in and adjacent to the doors, must be laminated (outer pane) to a minimum thickness of 6.4mm and securely fixed in accordance with GGF guidelines.
- 4.5 On outward opening doors, provision should be made to prevent access being gained from an attack on the hinge e.g. hinge bolts or similar.
- 4.6 Recessed doors in excess of 600mm should be avoided.

- 5.1 Ground floor windows and those easily accessible above ground floor, must be successfully tested to BS 7950:1997 'Specification for enhanced security performance of casement and tilt/ turn windows for domestic applications', at an appropriately accredited UKAS test house, or if otherwise tested must be independently authenticated, in writing, by a test house suitably approved by UKAS. Windows installed within SBD developments must also meet the following performance standards:
- i BS 4873 (Aluminium)
 - ii BS 7412 (PVC-U)
 - iii BS 644 (Timber) or the BWF Timber Window Accreditation Scheme (TWAS).
 - iv BS 6510 (Steel)
- 5.2 All windows installed within SBD developments must be to exactly the same specification as that successfully tested. The ALO/CPDA must be supplied with a copy of the test certificate prior to completion of the SBD development (the developer should be afforded the opportunity to see a copy of the full test report).
- ACPO will continue to support moves towards product certification by recognised ongoing third party inspection. Where products are not certificated in this way, a manufacturers declaration that all products supplied are identical to those tested must accompany the copy of the test certificate supplied.
- BS 7950 does not presently cover 5.3 Sliding sash, pivot or reversible windows. If included within the development they must meet the relevant performance criteria i.e. be fit for purpose. The use of this style of window must be discussed with the ALO/CPDA.
- 5.4 Windows must be securely fixed to the surrounding structure at a maximum of 600mm centres, with at least two fixing points per side.
- 5.5 Ground floor windows and those that are easily accessible to entry must have key operated locks. Where necessary, opening restrictors or similar built-in mechanisms will be required. Where windows are required under the Building Regulations to act as a fire escape route (inner room situation), the opening window must not have key operated locks. These escape windows must not be restricted in any way to prevent emergency exit from building. In these circumstances any glazing must be laminated to 6.4mm minimum thickness.

- 6.1 External Pedestrian access doors must meet the same physical specification, locking and fixing, as Side and back doors'.
- 6.2 The type of vehicle access doors and locking system should be carefully considered and discussed with the ALO/CPDA.
- 6.3 Internal doors connecting the garage to dwelling must be to the same physical and locking specification as 'Side and back doors'. Building Regulations will require these doors to comply with BS 476 part 22 (Fire Resistance and automatic closing).



appendix 5

Developers Guide to the Design of New Streets

Private Developers Group - HIGHWAYS DIRECT

Introduction

As part of the review of PPG3, Housing, the ODPM and the DoT have commissioned consultants to establish whether there are substantive problems over the adoption of new highways when meeting the needs of PPG3 and to recommend how they should be addressed.

The report, "Better Streets, Better Places: Delivering Sustainable Residential Environments" (2003), has identified a number of problems common to local authorities across the country. Existing policy and the current legal and technical frameworks are not geared to the delivery of better quality streets.

Without changes to the way streets are designed and adopted, the sustainable residential environments sought by PPG3 will not be delivered.

It is proposed that the Government publish a new document to deal with the design and adoption of new residential streets. They suggest that the document should cover all aspects of street design and be a reference point for all those involved, not just engineers.

The document will need to address the adoptability of new streets through the inclusion of a Model Agreement for highway adoption. This should include guidance on the extent of the highway that will generally be adoptable, without incurring additional maintenance.

The report urges the Government to issue supplementary advice to clarify the policy and assist with its application. It is anticipated that the document will be reviewed regularly in line with current policy and legal frameworks.

There is as yet no timetable for the production of this document. However, this SPG will be updated to take account of any changes.

foreword

This guide is intended to assist Developers and their professional advisers, departments of the Council and other interested bodies in the design of new streets proposed for adoption as highways maintainable at public expense.

The document provides Developers with a flexible approach to the design of housing layouts whilst achieving a safe, reliable and attractive environment.

Part 2 of this guide sets out the basic approach to the design of roads and footways in a traditional housing layout situation. There should be no departure from its provisions except where formally confirmed by the Head of Highways Direct, such departures being technically justifiable or representing advances in knowledge.

The standards detailed, as described in Part 2, may be considered restrictive in relation to some of the more interesting and imaginative layouts of high environmental quality. Where it can be demonstrated that the overall design objectives given in Part 2 will be achieved, approval may be given to such layouts subject to the full approval of the Highway Authority.

The contents are divided as follows:

Part 1 – General Guidance

Part 2 – Highway Design

Part 3 - Construction Standards

Part 4 - Technical Specifications

Part 5 - General

Part 6 - Commercial Developments

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part 1 - general guidance

1.1 Adoption of Highways

- 1.1.1 The Highway Authority shall be the Borough Council of Sandwell.
- 1.1.2 The Proper Officer, with delegated powers from the Council, shall be the Head of Highways Direct whose offices are at Environment House, Lombard Street, West Bromwich, West Midlands B70 8RU. All verbal inquiries regarding these procedures may be made to Steve Rowe on 0121 569 4184.
- 1.1.3 The Water Authority is Severn Trent Water Limited whose address Waterworks Road, Edgbaston, Birmingham B16 9DD
- 1.1.4 All inquiries with respect to the adoption of public open space should be made to the Head of Environment Direct whose offices are at Shidas Lane, Oldbury, West Midlands.
- 1.1.5 The standard procedure for the adoption of highways in Sandwell is by virtue of an Agreement under Section 38 of the Highways Act, 1980 to be entered into prior to commencement of the works.
- 1.1.6 It is the policy of the Council that the Section 38 Agreement will not be completed in advance of written confirmation from the Water Authority that the sewers into which the works are proposed to drain will be adopted. Similarly the works that are the subject of the Section 38 Agreement will not be adopted until the sewers into which they drain are adopted.
- 1.1.7 In order to ensure that all areas not offered for adoption are responsibly maintained, the Developer must submit with his application a plan showing the person or persons responsible for maintaining all areas not so covered.
- 1.1.8 Where service strips are to be provided to frontages, a clause should be written into plot conveyances indicating that the service strip will form a part of the publicly maintainable highway.
- 1.1.9 Roads and footways serving only one end user will be considered to be private and therefore not suitable for adoption.
- 1.1.10 The boundary of all areas to be adopted shall be physically defined by the use of kerbs, setts or other approved materials.
- 1.1.11 Developers are required to notify the Head of Highways Direct of the commencement of any work on proposed public highways in order that inspection may be arranged. Failure to do so may prejudice adoption.
- 1.1.12 A valid planning approval does not imply in any sense that the works will be approved to be the subject of a Section 38 Agreement.

1.2 Advance Payments Code

- 1.2.1 In order to protect the interests of house purchasers in the construction of new streets the Advance Payments Code pursuant to Section 219 of the Highways Act, 1980 will normally apply throughout Sandwell.
- 1.2.2 On the granting of a building regulation approval or on receipt of a Building Notice, the appropriate cost of the street works shall be paid or secured by the Developer in accordance with Advance Payments Code. This will be returned on completion of a Section 38 Agreement relating to those works.
- 1.2.3 It should be noted that this requires the serving of a notice by the Council specifying the sum to be deposited or secured and that sum shall be determined by the Head of Highways Direct.
- 1.2.4 In order to enable an early start to be made to construction works, the Head of Highways Direct may, as an 'act of good faith', agree to inspect the works prior to completion of a Section 38 Agreement. This is subject to the payment of his Inspection Fees equal to the amount that would have been stated in that Agreement had it been in place. The Developer must, however, ensure that the Advance Payments Code has been complied with and that all facilities for inspection of the works have been provided.

1.3 Section 38 Agreements

- 1.3.1 In order to enter into a Section 38 Agreement the Developer must in the first instance make a formal written application, in person, to the Head of Highways Direct. This should be accompanied by a plan to 1:500 scale showing coloured the works referred to. The site area should be edged in green and evidence of legal title in the form of Office Copy Entries provided.
- 1.3.2 Street works carried out and secured by a Section 38 Agreement must be supported by a Bond sum equal to the total cost of the works. That sum to be determined by the Head of Highways Direct. The Bond must be secured by a United Kingdom bank or insurance company or the National House Building Council and approved by the Council. The Developer at his discretion may alternatively deposit a sum of money with the Council in lieu of a Bond.
- 1.3.3 Should the works take longer to complete than two years from the date of completion of the Section 38 Agreement then the Developer must make a written application to the Head of Highways Direct for an extension of time. At this point an increase in the Bond Sum and Inspection Fee may be required.
- 1.3.4 After completion of the works they will become subject to a Maintenance Period of twelve months after which, and subject to any remedial works being satisfactorily carried out, the works will be adopted. During this period the Developer will remain the Street Works Manager.

- 1.3.5 The works subject to a Section 38 Agreement must abut existing highway maintainable at public expense or works relating to another Section 38 Agreement.
- 1.3.6 Phasing of developments will be considered. However, no works will be adopted until those works connecting them to the existing public highway have been adopted.

1.4 Occupation of Buildings

- 1.4.1 No dwelling shall be occupied until such time as the Head of Highways Direct has issued the Part 1 Certificate pursuant to the Section 38 Agreement.
- 1.4.2 Primarily for the benefit of emergency and other services, in the event of dwellings being occupied before the street nameplates are available for erection then the Developer shall, in the meantime, erect and maintain temporary signs of a suitable legible nature.

1.5 Design Objectives

- 1.5.1 Residential roads and footways should be designed to take full account of pedestrian safety and giving it priority over solely vehicular needs. The layout as a whole should therefore:
 - (i) minimise the danger and nuisance that can be created by through traffic.
 - (ii) reduce vehicle flows and speeds in the vicinity of dwellings.
 - (iii) provide safe and convenient pedestrian routes between dwellings and local and community facilities and public transport with particular regard to the elderly and disabled.
 - (iv) minimise the danger to pedestrians and the inconvenience to emergency and other services caused by on-street parking
 - (v) create safe routes for vehicular and cycle movement.
 - (vi) enable satisfactory access to be made and maintained for statutory and emergency vehicles.
 - (vii) be designed to enhance and complement the existing character of the surroundings.
 - (viii) enable maintenance operations to be undertaken economically.
 - (ix) be designed to reduce or eliminate the possibility of crime.

1.6 Technical Approval

- 1.6.1 The submission for technical approval should comprise two copies of each of the following:
- (i) A location plan.
 - (ii) A plan to 1 to 500 scale showing the roads, footway and sewers, the positions of private drives, car parking areas, retaining walls, visibility splays and private drainage areas.
 - (iii) Road and drainage long sections to 1:500 horizontal scale and 1:100 vertical.
 - (iv) A typical carriageway and footway cross-section. This drawing should also show the California Bearing Ratio (CBR) assumed for the subgrade material.
 - (v) Construction details.
 - (vi) Details of proposed structures including plans, calculations and technical approval certificates.
 - (vii) Details of road markings and traffic signs.
 - (viii) A ground condition survey that shall be undertaken by a UKAS accredited laboratory.
- 1.6.2 The street lighting layout and specification will be provided by the Head of Highways Direct. The cost of this shall be included in the Inspection Fee.

1.7 Drainage

- 1.7.1 The works that are subject to the Section 38 Agreement must either drain directly into sewers to be vested in the Water Authority or a highway drain connected directly to an adopted surface water sewer or an approved outfall.
- 1.7.2 In the case of an approved outfall, arrangements must be made for all appropriate permissions to be obtained and copies of these to be sent to the Head of Highways Direct. These permissions should indicate that no further costs shall fall on the Highway Authority subsequent to adoption.
- 1.7.3 The highway drainage including gullies and their connections shall form a part of the Section 38 Agreement. No private areas must be allowed to discharge into the highway drainage.
- 1.7.4 No private areas shall be allowed to drain over proposed or existing highway maintainable at public expense.
- 1.7.5 Easements shall be required for all highway drainage that lies outside proposed or existing highway maintainable at public expense. This shall normally extend to 3 metres either side of the centreline of the pipe. The Deed of Grant of Easement will be in the Council's standard form and must be executed at the same time as the Section 38 Agreement.

1.8 Statutory Authorities

- 1.8.1 In the planning of any development, the needs of the statutory authorities must be taken into account and it is essential that they be consulted at an early stage.
- 1.8.2 To facilitate future maintenance, mains will normally be located in footways or verges. If no other route is available then they may be laid in the carriageway in exceptional circumstances. In these cases the installation arrangements i.e. position, ducting, joint pits and other facilities must be agreed in advance with the Head of Highways Direct.
- 1.8.3 Where service strips are provided, the choice of tree, shrub and hedge planting and its location should ensure that the root systems will not damage statutory authorities apparatus.

1.9 Landscaped Areas

- 1.9.1 The Council's policy is generally not to require commuted sums for any area to be adopted as highway maintainable at public expense including landscaped areas.
- 1.9.2 Landscaping, forming a part of the Section 38 Agreement, should normally be in the form of setts, block paving or, where appropriate, deterrent paving. Where landscaping forms a part of the proposals for adoption then the following principles should be observed:
- (i) Landscaped areas shall form an integral part of the proposed highway maintainable at public expense e.g. verges between the carriageways and footways and the central islands of small roundabouts.
 - (ii) Where soft landscaping is provided it shall normally be in the form of grassed areas only.
 - (iii) It is not the Council's policy to adopt visibility splays. However, in any conveyance, covenants should be provided for these areas clearly stating that no soft landscaping or indeed any structure with a final height of over 600mm should be placed in these areas.
 - (iv) The maintenance period of twelve months will not commence until the associated landscaping has been completed.
 - (v) Trees should not be placed within 4.5 metres of the centre of the road and a clear height of 5.1 metres must exist between the carriageway surface and the lowest branch.

1.10 Footways/Footpaths

- 1.10.1 The Council is only prepared to adopt those footways that perform a public highway function. This will normally be limited to those fronting habitable dwellings and those linking proposed and existing adoptable footways.
- 1.10.2 It is the Council's policy to insist on the provision of a footway wherever it is considered necessary in the interests of public safety.
- 1.10.3 Where footpaths cross areas of public open space they will not be considered for adoption as highway maintainable at public expense. All enquiries for their maintenance as part of the public open space should be directed to the Head of Leisure Direct.

1.11 Emergency Services

- 1.11.1 In order to provide access for emergency services, cul-de-sacs should not exceed 180 metres in length as measured from a junction providing two alternative routes into the development. In cases where the length does exceed then one of the following measures should be introduced:
- (i) increase the road width to 7.3 metres over the length that exceeds 180 metres
 - (ii) install a sprinkler system to those dwellings fronting that part of the cul-de-sac that exceeds 180 metres - care should be taken at an early stage that the water pressure will be sufficient
 - (iii) only in exceptional circumstances and only then with the prior approval of the Head of Highways Direct should an emergency access be provided 3.7 metres wide.
- 1.12.1 The Fire Service should be consulted at all stages and copies of any correspondence sent to the Head of Highways Direct.

part 2 - highway design

2.1 Road Hierarchy

2.1.1 Local Distributor Road

This is a through road connecting housing areas with the primary and district distributor road network leading in turn to other housing areas, commercial areas and neighbourhood and town centres etc. It will also form a bus route or potential bus route.

2.1.2 Access Road Collector

This is a road that collects residential access roads and feeds them into local distributors. It will either be a loop road serving a maximum of 300 dwellings or a cul-de-sac serving a maximum of 150 dwellings and frontage access will normally be permitted. However, where vehicle flows are likely to be between 200 and 300 vehicles per hour at peak times then the number of vehicular access points will need to be restricted.

2.1.3 Access Road

This is a short loop road or cul-de-sac that gives direct access to individual housing groups of up to 50 dwellings.

2.1.4 Access Way

An Access Way is a short cul-de-sac serving a maximum of 25 dwellings. In certain circumstances, usually depending on the type and density of dwellings, an informal layout may be permitted involving joint use by pedestrians and vehicles. This will only be considered where the Head of Highways Direct is content that all health and safety matters have been satisfied.

2.1.5 Home Zone

A Home Zone is a street where road space is shared between vehicles and other road users which includes pedestrians, cyclists and children. The layout of the street should encourage vehicle users to give informal priority to these other road users. For design guidance you may wish to consult 'Home Zone Design Guidelines' published by the Institute of Highway Incorporated Engineers and dated June 2002.

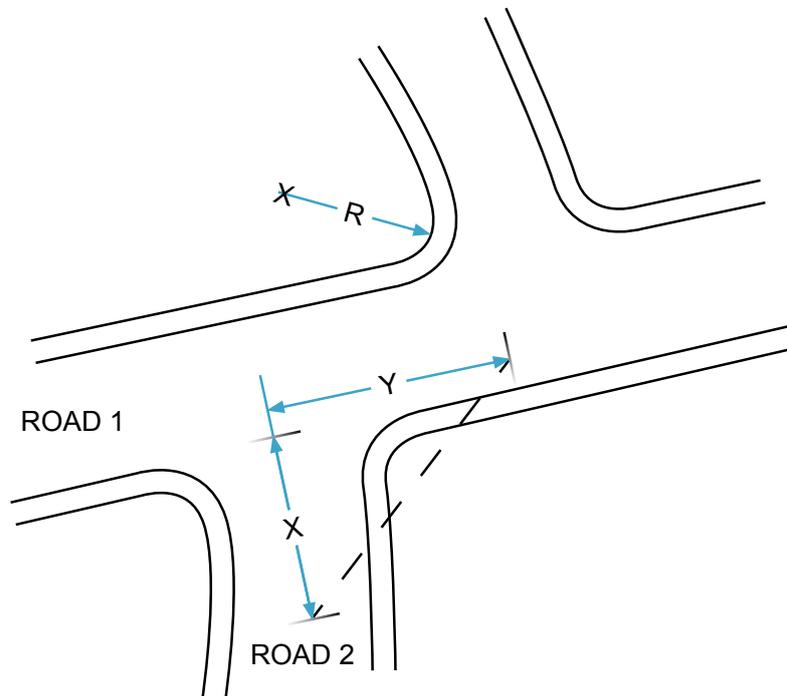
2.2 Visibility Splays

2.2.1 Visibility splays shall be provided in accordance with the table below:

Road 1	Road 2	Visibility	
		X(m)	Y(m)
*Local distributor, bus route or existing classified road.	All other roads	9	95@40mph 70@30mph
Access Collector Road	Access Road	4.5	60
Access Collector Road	Access Way	2.4	60
Access Road	Access Road	4.5	60
Access Road	Access Way	2.4	60

2.2.2 *Where 'infill' development is carried out in existing built up areas and where acquisition of land for full sight distances is impracticable then a reduced standard may be permitted i.e. X distance may be reduced to an absolute minimum.

2.2.3 The diagram below shows the definition of X and Y distances.



2.3 Junction Radii

2.3.1 Junction radii should be provided in accordance with the table below:

Road 1	Road 2	Junction RADII
*Local distributor, bus route or existing classified road.	All other roads	10
Access Collector Road	Access Road	6
Access Collector Road	Access Way	6
Access Road	Access Road	6
Access Road	Access Way	6

2.4 Forward Visibility

2.4.1 Unobstructed forward visibility distances will be required on bends and should be measured between points 600mm above road level on a line parallel to the inside kerb, 1.5 metres into the carriageway.

2.4.2 Typical visibility distances for different design speeds are shown in the table below:

speed (mph)	20	25	30	40
visibility distance (m)	33	45	60	95

2.4.3 It should be noted that areas that form part of the visibility splay but lie outside the carriageway or footway shall not be adopted. Convenants should be provided to the effect that no soft landscaping or structures over 600mm in height shall be placed in these areas.

2.4.4 In the areas to which the above applies, convenants should be provided for all areas that lie outside proposed public highway to the effect that no soft landscaping or structures over 600mm in height shall be provided in these areas.

2.5 Junction Spacing

Road 1	Road 2	Junction spacing (m)	
		opposite	adjacent
*Local distributor, bus route or existing classified road.	All other roads	80	80
Access Collector Road	Access Road	20	40
Access Collector Road	Access Way	20	40
Access Road	Access Road	20	40
Access Road	Access Way	15	25

2.6 Carriageway and Footway Widths

Road Type	Carriageway width	Footway width
Local distributor	7.3m for flows more than 300 vehicles per hour 6.75m for flows less than 300 vehicles per hour	2@1.8m wide
Access Road collector	6.75m for flows more than 200 vehicles per hour 5.5m for flows less than 200 vehicles per hour	2@1.8m wide
Access Road	Normally 5.5m	1.8m wherever direct access to dwellings is provided
Access way	Minimum width of 4.5m for a road serving less than 25 dwellings	1.8m wherever direct access to dwellings is provided

2.7 Horizontal Alignment

2.7.1 The horizontal alignment shall be in accordance with the table below:

Road Type	Minimum Centre Line Radius (m)
Local Distributor	80
Access Road Collector	40
Access Road	20
Access Way	10

2.8 Vertical Alignment

2.8.1 Vertical curves shall be provided at all changes of gradient. Consideration should be given to lowering the 'eye height' from 1.05m to 0.6m where young children are likely to be encountered. This will have the effect of increasing the length of the vertical curve.

2.9 Gradients

Road Type	Maximum Gradient	Minimum Gradient
Local Distributor or Bus Route	1 in 15 (6.7%)	1 in 150 (0.67%)
All Other Roads	1 in 12 (8.3%)	1 in 20 (0.83%)
Footways	1 in 12 (8.3%)	
Private Drives	1 in 10 (10%)	

2.10 Turning Areas

2.10.1 A turning area shall be provided at the end of each cul-de-sac as shown below and be designed to accommodate the largest type of vehicle likely to use the facility.

2.10.2 Developers may provide an amorphous outline to the turning area so long as the minimum turning area is contained within the shape. In these cases the minimum radius used should be suited to a road sweeper, typical value 4.2 metres.

2.11 Traffic Signs and Markings

2.11.1 The traffic signs and markings will be designed in accordance with The Traffic Signs Regulations and General Directions 2002.

2.11.2 The Head of Highways Direct reserves the right to provide the traffic signs and markings at the Developer's expense.

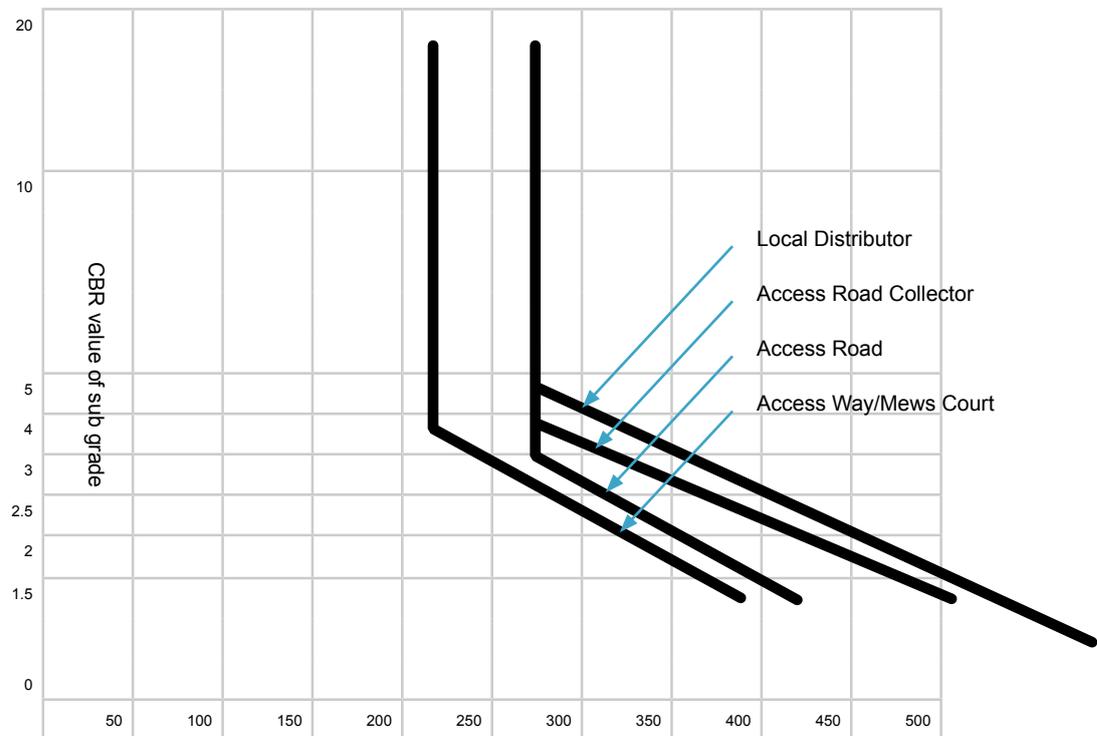
part 3 - construction standards

3.1 Introduction

3.1.1 These construction standards supersede any previous guidance issued by Sandwell Metropolitan Borough Council. It is not intended to be fully comprehensive and reference must be made to the Manual of Contract Documents for Highway Works, Specification for Highway Works and Standard Details (MCDHW).

3.2 Carriageways

3.2.1 In order to design the carriageway construction, the California Bearing Ratio (CBR) at natural formation or sub-grade level must be determined by using the CBR Test in accordance with BS 1377. These tests must be taken at 30 metre intervals both on and off the line of any sewer trenches. Assuming that the CBR is 2% or greater then the sub-base thickness appropriate to the category of road can be determined from the diagram below. If the CBR value is less than 2% then the advice of the Head of Highways Direct should be sought.



sub base (minimum CBR 30%) Thickness (mm) (To be taken to the nearest 25mm)

3.2.2 It should be noted that if the sub-grade material is frost susceptible the full carriageway construction thickness should be at least 450mm, achieved by increasing the sub-base thickness.

3.2.3 The thicknesses of road base, binder course and surface course can then be determined from the table below.

	Material	Compacted Thickness (mm)			
		Local Distributor or Bus Route	Access Road Collector	Access Road	Access Way
Base Road Base	Dense Bitumen Macadam or Hot Rolled Asphalt	150	100	75	75
Binder Course	Dense Bitumen Macadam	60	50	50	50
Surface Course	Close Graded Bitumen Macadam	-	30	30	30
	Hot Rolled Asphalt	40	-	-	-

3.2.4 Surface course materials to contain granite aggregate only.

3.3 Footway

3.3.1 Footways have been categorised for strength of construction as follows:

<p>Category 1 Normal footways</p>
<p>Category 2 Strengthened footways that include footways near shops or commercial premises etc. at which vehicles may travel or park for maintenance or servicing purposes. This category will also apply to footways on the inside of kerb radii at road junctions carrying some commercial traffic.</p>
<p>Category 3 Footway crossings to domestic premises constructed to withstand the passage of the occasional light vehicle.</p>

3.3.2 The construction thicknesses for different categories of footway are given below:

	Material	Compacted Thickness (Mm)		
		Category 1	Category 2	Category3
Foundation	Type 1 Sub Base	100	150	150
Base Road Base	Dense Bitumen Macadam	-	75	-
Binder Course	Dense Bitumen Macadam	50	50	100
Surface Course	Close Graded Bitumen Macadam	20	20	20

3.3.3 Surface course to contain granite aggregate only.

3.3.4 In order to assist disabled persons and mothers with prams to cross road junctions then dropped kerbs should be provided at the tangent points of the side road.

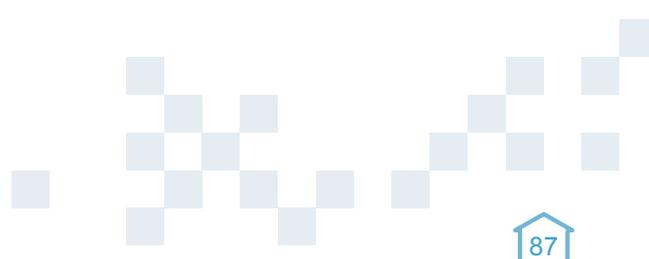
3.3.5 Blister surfaces are to be provided at all junctions to provide a warning to visually impaired people who would otherwise have difficulty in differentiating between where the footway ends and the carriageway begins. For further information consult 'Guidance on the Use of Tactile Pavings' published by the Department of the Environment, Transport and the Regions.

3.4 Block Paving

3.4.1 The use of block pavers will be considered in the design of carriageways and footways.

3.4.2 The design shall be in accordance with BS 6677 : Parts 1 and 2 :1986 and BS 7533 : 1992.

3.4.3 Only the use of clay pavers will be considered.



3.5 Drainage

- 3.5.1 Where surface water pipes are laid to drain proposed highways only they will become highway drains and will be adopted as part of the highway.
- 3.5.2 Highway drainage should generally be constructed to the same standards as if it were to be vested in the Water Authority i.e. based on the latest edition of 'Sewers for adoption - A design guide for developers' unless superseded by this guide or approved by the Head of Highways Direct.
- 3.5.3 Manholes shall be provided at:
- (i) every change of gradient or alignment
 - (ii) every change in size of pipe
 - (iii) a maximum spacing of 90 metres
- 3.5.4 Gullies should be positioned so that:
- (iv) to be sited to prevent the flow of water across bellmouths and pedestrian crossings, to intercept the flow of water across the carriageway at changes of camber or crossfall and to prevent ponding at low points.
 - (v) The maximum length of a gulley connection is 17.5 metres.
- 3.5.5 Adequate provision must be made to prevent surface water from private areas discharging onto the public highway and vice versa.
- 3.5.6 Pipes shall be laid starting from the point of outfall and immediately after the trench excavation. Pipe lines shall be laid to straight lines and gradients. They shall not be backfilled until they have been inspected and approved.

part 4 - technical specifications

4.1 Capping Layer

- 4.1.1 The capping layer shall comply with MCDHW Table 6/1, Type 6F2.
- 4.1.2 Chemical tests shall be undertaken by a UKAS accredited laboratory on any material offered for a capping layer. Samples shall be taken on delivery to site in the presence of the representative of the Head of Highways Direct.
- 4.1.3 Material within 450mm of the finished road surface shall be non frost susceptible.

4.2 Sub-Base

- 4.2.1 Sub-base shall be Type 1 and be in accordance with MCDHW Clause 803. Certification to this effect shall be sent to the Head of Highways Direct.
- 4.2.2 The material shall be non-frost susceptible.

4.3 Base (Road Base)

- 4.3.1 The base shall be in accordance with Clause 5.2 of BS 4987 1:2003 and be machine laid except where specific approval to hand laying has been given by the Head of Highways Direct in advance.

4.4 Binder Course

- 4.4.1 The binder course shall be in accordance with Clause 6.5 of BS 4987-1: 2003 and be machine laid except where specific approval to hand laying has been given by the Head of Highways Direct in advance.

4.5 Surface Course to Local Distributor Roads

- 4.5.1 The surface course shall be hot rolled asphalt, 14mm nominal size aggregate, 50 pen. Binder to Clause 910, Designation 30%0/14, Column 6/4, Table 6 of BS 594-1 2003. The material must be machine laid except where specific approval to hand laying has been given by the Head of Highways Direct in advance. All surface courses shall contain granite aggregate only.
- 4.5.2 Consideration may be given to SMA on prior application to the Head of Highways Direct. All surface courses to contain granite aggregate only.

4.6 Surface Course to Other Roads

- 4.6.1 The surface course shall be in accordance with Clause 7.4 of BS 4987 1:2003 and be machine laid except where specific approval to hand laying has been given by the Head of Highways Direct in advance. All surface courses shall contain granite aggregate only.

4.1 Surface Course to Footways

- 4.7.1 The surface course shall be in accordance with Clause 7.5 of BS 4987-1:2003. All surface courses shall contain granite aggregate only.

4.8 Highway Drainage

- 4.8.1 Vitrified clay pipes and fittings shall comply with the relevant provisions of BS 65 and be of “normal” type with flexible mechanical joints unless otherwise approved.
- 4.8.2 Unreinforced and reinforced concrete pipes and fittings with flexible or ogee joints shall comply with the relevant provisions of BS 5911 Parts 1 and 3. All pipes and fittings shall have rubber sealing ring type flexible joints of spigot and socket or rebated form unless otherwise approved.
- 4.8.3 The use of unplasticised pipes, joints and fittings will only be acceptable in certain circumstances and then only with the approval of the Head of Highways Direct.
- 4.8.4 All pipelines shall be tested either by the “Water Test” or the “Air Test” as described in the British Standard Code of Practice CP 2005 – Sewerage.
- 4.8.5 All pipelines larger than 150mm in diameter shall be inspected by closed circuit television, at the Developer’s expense, prior to the laying of the surface course. A copy of the video and report shall be sent to the Head of Highways Direct for his inspection and retention.
- 4.8.6 Gullies shall be either pre-cast concrete to BS 556 or clayware to BS 539. The gully chamber to BS 5911 to be 900mm internal depth and 450mm internal diameter surrounded with 150mm of concrete and fitted with a 150mm diameter trapped outlet. The gully grating and frame to be BS EN 124 Class D400 hinged, permanent non-rock grate with wedge seating ductile iron with black bitumen coating, 370mm x 430mm clear opening. The use of plastic gullies will not be permitted.
- 4.8.7 Gully connections shall be of vitrified clay with 150mm concrete surround.

4.9 Street Lighting

- 4.9.1 The street lighting layout and specification will be provided by the Head of Highways Direct at the Developer's expense and will be included in the Inspection Fee.

4.10 Large Base Sign Poles

4.10.1 Fabrication of Steel Sign Poles

The large base sign poles shall be manufactured from steel that meets the requirements of BS 5649 Paragraph 3 1983. If manufactured from tubular steel of circular section circumferential joints will be restricted to the base shaft/joint. The external transition of the sleeve joint shall be continuously welded and dressed so as to present a smooth profile and be square in profile with shaft face. Poles with more than one joint above the base section (excluding the spigot) will not be acceptable. Any section requiring a change shall be formed by hot spinning the larger section (base) to give a 2mm interface fit with the smaller section being pushed inside (shaft section) and continuously welded.

The shaft to base joint shall be completed by a swaging ring which shall be manufactured from strip steel of the same grade as the base section and be welded to the shaft within the base section by stitch welding. For poles where the shaft section is heated and forced onto the base section, no swaging ring is required and precautions are to be taken to eliminate water traps inside the pole shaft.

There shall be no sharp edges within the poles that could cause damage to the electrical cable either during installation or while in service and an anti-chafe ring shall be welded where the cables change direction from the horizontal to the vertical within the bracket.

A metal strip is to be welded below the door at ground level to determine planting depth.

4.10.2 Pole Caps and Base Plates

All poles shall be supplied with pole caps and base plates.

4.10.3 Doors

The doors shall be interchangeable between poles without any adaptations. They must prevent the ingress of rainwater and seal the door aperture effectively against any unauthorised access. The door bolts shall be of stainless steel and of an anti-vandal type. The bolt shall have a 10mm thread and a hexagonal bolt head with a 4mm solid central pin to suit a 8mm key (as supplied by Pudsey Diamond Engineering Ltd. or similar). An earth terminal must be provided on the door. Keys for the door locking fastener shall be provided at 10% of the column quantity. The door opening shall be free from all burrs and irregularities.

4.10.4 Base Board and Fixing

A hardwood non-hygroscopic, knot resistant baseboard not less than 550mm x 90mm and to be at least 15mm thick shall be fixed in the base compartment opposite each door opening with a 2no machined countersunk galvanised screw. The baseboard shall be capable of being removed and replaced. Spring clip devices are not acceptable.

4.10.5 Earth Terminal

A single earth terminal shall be provided in a readily acceptable position. This is preferable on the lower left hand side of the opening and shall comprise of a brass screw two-brass tab washers and a plain brass washer and nut in accordance with CP1013. All doors shall be provided with earth terminals. The earth terminal lead should not be used for the fixing of the identification label.

4.10.6 Testing of Sign Poles

A random selection of sign poles on each purchase order shall have the welded joints subjected to magnetic particle testing.

4.10.7 Protective Finishes

Steel poles and all exposed ferrous work shall, before leaving the factory be protected against corrosion by having a galvanised finish. All poles shall be hot dip galvanised to BS EN a461 1999 and the specification for Highways works Series 1900.

Paint Protective Finish (Vinyl)

Root and Upper Section Finish Paint System

- 1 T' wash the internal surface to 250mm above ground level and the whole length of the external surface. Use Dacrylate 'T' wash ref. 150-23 or similar to be approved by the Street Lighting Manager.
- 2 Apply one coat of Vinadac Iron Oxide to the internal and external surface of the root section to 250mm above ground level. Minimum dry film thickness of 75 microns. Dacrylate Line 45. Colour grey or similar to be approved by the Street Lighting Engineer.
- 3 Apply one coat of Vinadac sheen finish to the whole external length of the pole. Dry film thickness to be 75mm. The finish colour to be BS 18 B 25. Use Dacrylate Line 45 or similar to be approved by the Street Lighting Manager.
- 4 Apply one coat of Vinadac sheen finish to the whole external length of the column. Dry film thickness to be 75mm. Use Dacrylate Line 45 or similar to be approved by the Street Lighting Manager. All coating to be shop applied. The external surface to be hot airless sprayed.

4.10.8 Labelling

All sign poles must carry a permanent identification mark/label stating the manufacturer's name, year of manufacture, works order number and corrosion protection type. The label shall be located in the lower right hand side of the door in the base compartment and be clearly visible and remain in position for the life of the column. A manufacturing and historical record of the pole shall be held by the manufacturer for a minimum of 15 years.

4.10.9 Protection after Painting

All sign poles are to be individually wrapped for transportation and storage in a suitable polythene sleeve. Wooden packing supports shall be used in order to provide added protection at the strapping points when the columns are bundled together.

4.11 Traffic Signs

4.11.1 All reflectorised traffic signs to be microprismatic.

4.12 Road Markings

4.12.1 The specification shall be:

- (a) The Department of Transport Specification for Highway Works.
- (b) BS EN 1871 (BS EN 1436 and BS EN 1424) Hot Applied Thermoplastic Materials.
- (c) BS EN 1436 (or equivalent) Pavement Marking Paints
- (d) BS EN 1423 Solid Glass Beads for use with road marking compounds and for other industrial uses.

part 5 - general

5.1 Street Works

- 5.1.1 In advance of works to be carried out in the public highway a 'Notice of Intention to Open Highway' must be served on the Council of the Borough of Sandwell, in its capacity as highway authority, at the offices of the Head of Highway Authority. This must be served by the Developer in person and not by his agent or contractor.
- 5.1.2 When giving notice, the Developer should allow a minimum of three weeks before proposed commencement of works.
- 5.1.3 No works will be permitted to be carried out before a licence pursuant to section 50 of the New Roads and Street Works Act, 1991 and section 171 of the Highways Act, 1980 has been issued.
- 5.1.4 In the case of sewers proposed for vesting in the Water Authority, then verification in writing from the Water Authority must be given to the Head of Highways Direct that the works have been approved prior to commencement of works.
- 5.1.5 Permanent reinstatement must be carried out immediately on completion of all works subject to licence.
- 5.1.6 In carrying out works in the public highway, it is the Council's policy that all signing, lighting and guarding of street works shall be in accordance with the latest edition of 'Safety at Street Works'. Proposals for the traffic management shall be sent to the Head of Highways Direct for his inspection and approval before work commences.
- 5.1.7 Before any temporary diversions or restrictions of highways are carried out the written approval of the Head of Highways Direct must be obtained. A minimum of 6 weeks written notice of such proposals must be given.
- 5.1.8 Temporary road closures will require the approval of the Head of Highways Direct and 8 weeks notice of such proposals must be given. Temporary road closures will normally be limited to 6 weeks duration.
- 5.1.9 The Developer must install wheel washing facilities at all exits to the site. Depositing mud on the highway is an offence under the Highways Act, 1980 and prosecution will be pursued by the Council. Should it become necessary for the Council to clean the roads as a result of the Developer's site operations then the Developer shall pay to the Council all costs resulting from this.
- 5.1.10 The hours of work shall be limited to 9.30 a.m. to 3.30 p.m. Monday to Friday not including Bank Holidays on all public highways.

5.2 Health and Safety

5.2.1 The Developer must comply with all aspects of Health and Safety legislation.

5.2.2 Upon completion of the works and prior to adoption the Developer must submit two copies of the Health and Safety File in accordance with the Construction (Design and Management) Regulations 1994. Typical information that may be included in the health and safety file included:

- record or 'as built' drawings and plans used and produced throughout the construction process
- the design criteria
- details of the equipment and maintenance facilities
- maintenance procedures and requirements
- manuals produced by specialist contractors and suppliers which outline operating and maintenance procedures for plant and equipment
- details of the location and nature of all utilities and services including emergency and fire fighting systems

5.3 Traffic Calming

5.3.1 Traffic calming on residential developments shall take the form of speed tables.

5.3.2 The ramps shall be 1.0 metres long and the table 2.5 metres.

5.3.3 The maximum height above the carriageway shall be 75mm.

5.3.4 The speed table and ramps shall be treated with red coloured surfacing whose specification shall be as follows:

Preparation

The surface should be vigorously brushed to remove any dust or loose material. All oil or other surface contamination shall be removed by using a suitable detergent. All surfaces must be completely dry.

Resin Based Surfacing

The resin to be used shall be a three component flexible polyurethane resin. The resin shall have, as a minimum, the following properties:

Initial Set	60 minutes at 18°C
Open to traffic	2 Hours at 18°C
Colour	Red
Elongation	50%
Spread Rate	3 Kgs per sq metre minimum
Fuel Resistance	Documentary evidence shall be provided
Durability	A proven track record shall be provided

Aggregate Dressing

The aggregate shall be a 1 - 3mm Chinese bauxite coated granite with a minimum PSV of 67. The residual aggregate loading shall be no less than 8.5 Kgs per sq metre.

Thermoplastic Hot Applied systems will not be considered.

5.4 Implementing Traffic Calming and 20mph Zones

5.4.1 Basic Principles

Where traffic calming is deemed to be appropriate for a new development then the Council will not adopt the roads comprising that development until such time as the traffic calming measures are complete and the associated 20mph zone Traffic Regulation Order has been fully implemented.

5.4.2 Process

The Council shall undertake the necessary Traffic Regulation Order process on behalf of and at the expense of the Developer. The Developer should formally request that the Council commences the procedure for implementing the 20mph Order. This should normally be at the time when the roads become highways i.e. upon completion and at the start of the Maintenance Period. Developers should note that the process is unlikely to be completed in less than 4 months.

5.4.3 Potential Problems

Traffic calm highway following statutory advertisement of the proposals. Traffic calming features on new development roads can only be introduced by the Developer. To avoid problems in implementation of the Order, the Developer is strongly recommended, at the earliest opportunity, to make all future users of the new roads fully aware of the scope of the traffic calming measures. Such prior acceptance could reduce the potential for substantive objections being received when the Order is formally advertised in accordance with statutory requirements.

5.4.4 Signing

The Developer shall appropriately sign the traffic calming measures as soon as they have been introduced.

5.5 Parking

5.5.1 The council's guidelines for parking are as follows:

Housing

- 1 garage space or car space per dwelling plus 1 space per 2 dwellings for visitors.
- 2 spaces per dwelling (3 to 4 bedrooms) plus 1 space per 2 dwellings for visitors.
- 3 spaces per dwelling (5+ bedrooms) plus 1 space per 2 dwellings for visitors.

Flats

- 1 space per dwelling plus 1 space per 3 dwellings for visitors.

5.6 Section 278 Agreements

5.6.1 Where a development requires an improvement or realignment of part of an existing highway, the council may enter into an agreement under section 278 of the Highways Act, 1980 for the Developer to bear the cost of these works.

5.6.2 The council may allow the Developer to carry out these works. Should this be the case then the council, in its capacity as Highway Authority, shall appoint the Developer as its agent.

5.6.3 Contractors carrying out section 278 works shall be on the council's approved list. Failing this, the contractor must send to the Head of Highways Direct three references from other local authorities for similar types of work for his consideration.

part 6 - commercial developments

6.1 Introduction

- 6.1.1 Commercial developments will only be considered for adoption where there is more than one end user.
- 6.1.2 The standard procedure for adoption is the same as that for a residential development i.e. by virtue of an Agreement under Section 38 of the Highways Act, 1980.
- 6.1.3 The guidance for adoption, unless otherwise stated, will be the same as for residential developments.

6.2 Dimensions, Design Speeds, Gradients and Radii

- 6.2.1 The basic dimensions and gradients for a design speed of 30mph are shown below:

Minimum width of carriageway	7.3 metres
Minimum width of footway	2 x 1.8 metres
Maximum road gradient	1 in 15
Minimum road gradient	1 in 150
Minimum horizontal radii	80 metres
Kerb radii at junction	15 metres

6.3 Junction Spacing

- 6.3.1 The minimum distance between junctions shall be 70 metres.

6.4 Forward Visibility

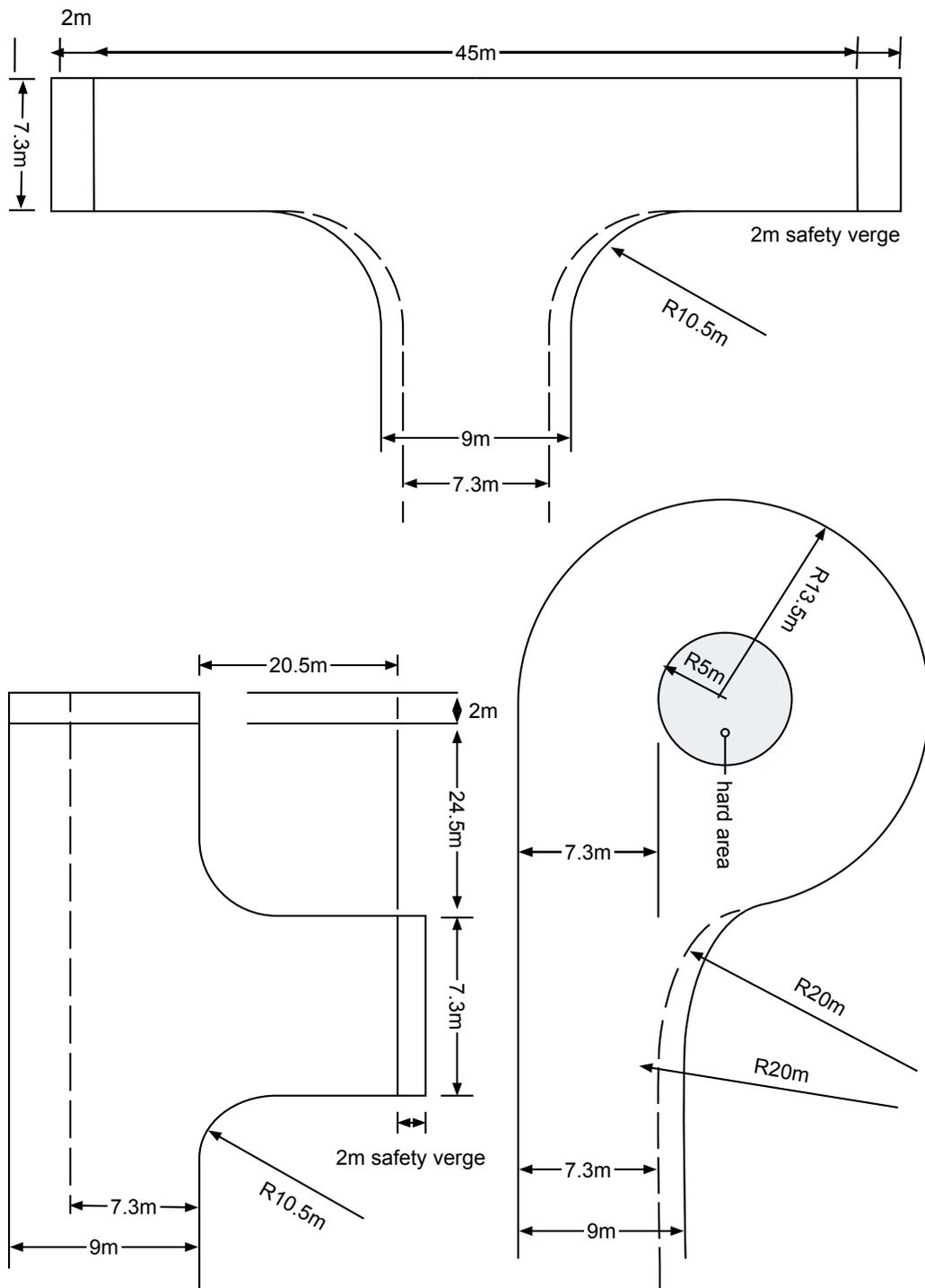
- 6.4.1 The dimensions of the visibility splay shall be as shown below. Where the major road is one way or a dual carriageway with no breaks in the central reservation then full visibility will only be required in the direction of approaching traffic.

6.5 Forward Visibility

- 6.5.1 The forward visibility for a 30mph design speed shall be 90 metres.

6.6 Turning Areas

6.6.1 The minimum turning areas shall be as shown below.



6.7 Junction Alignment

- 6.7.1 At any 'T' junction the minor road shall join the major road at right angles and there shall be a minimum length of straight on the minor road of 30 metres as measured from the channel line of the major road.
- 6.7.2 At junction approaches the carriageway gradient of the minor road should not exceed 1 in 25 (4%) for a distance of 10 metres from the nearside kerbline of the major road.

6.8 Vertical Alignment

- 6.8.1 Vertical curves shall be provided at all changes of gradient. The length of the vertical curve should be 6 x the algebraic difference in gradients or 30 metres whichever is the greater.

6.9 Design Procedure

- 6.9.1 The design procedure shall be based on the CBR value of the sub grade and the cumulative number of commercial vehicles and therefore the equivalent number of standard axles.
- 6.9.2 Full design calculations shall be sent to the Head of Highways Direct including copies of the CBR Test results.

6.10 Construction Standards

- 6.10.1 **Sub-base**
The minimum thickness of sub-base shall be 200mm. The material shall be Type 1 and comply with MCDHW Clause 803.
- 6.10.2 **Base (Road Base)**
The base shall be in accordance with Clause 5.2 of BS 4987-1:2003 and be machine laid except where specific approval to hand laying has been given by the Head of Highways Direct in advance. The minimum thickness shall be 175mm.
- 6.10.3 **Binder Course**
The binder course shall be in accordance with Clause 6.5 of BS 4987-1:2003 and be machine aid except where specific approval to hand laying has been given by the Head of Highways Direct in advance. The minimum thickness shall be 60mm.

6.10.4 Surface Course

The surface course shall be hot rolled asphalt, 14mm nominal size aggregate, 50 pen Binder to Clause 910, Designation 30%0/14, Column 6/4, Table 6 of BS 594-1:2003. The material shall be machine laid except where specific approval to hand laying has been given by the Head of Highways Direct in advance. All surface courses to contain granite aggregate only. The minimum thickness shall be 40mm.

6.10.5 Footways

The footway construction shall be as that for residential developments and as stated in Clause 3.3.2 of this document.

6.11 Cycleways

6.11.1 It is the Council's policy to have segregated cycleways only.

6.11.2 The minimum dimensions for a cycle track footway are 1.5 metres for the cycle track and 1.8 metres for the footway and only if there is a raised white line delineator.

6.11.3 The construction shall consist of:

- (i) 100mm thickness of Type 1 stone - for specification see Clause 4.2.1.
- (ii) 50mm thickness of binder course – for specification see Clause 4.4.1.
- (iii) 25mm thickness of surface course in accordance with Clause 7.5 of BS 4987-1: 2003 to contain granite aggregate only.

6.11.4 All courses to be machine laid except where specific approval to hand laying has been given by the Head of Highways Direct in advance.

6.11.5 The signing and marking shall be in accordance with 'The Traffic Signs Regulations and General Directions 2002'.

