Sustainable Design Supplementary Planning Document

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1 Executive Summary

Executive Summary

What is a Supplementary Planning Document

1.1 A Supplementary Planning Document (SPD) is one of the material considerations that can be taken into account when determining a planning application for development. The National Planning Policy Framework (NPPF) (March 2012) advises that SPDs should be used where they can help applicants make successful applications or aid infrastructure delivery. The National Planning Practice Guidance (February 2014) advises that SPDs should build upon and provide more detailed advice or guidance in the policies in the Local Plan and should not unnecessarily add to the financial burdens on development. Essentially SPDs are intended to provide helpful guidance for developers, applicants and other parties involved in the development process and to supplement the policies and proposals of the Development Plan.

1.2 This SPD seeks to give guidance on how sustainable development can be achieved through connectivity and integration, in terms of how places are sustainably connected by transport linkages and through patterns of development. It then considers how the layout and density can assist in creating sustainable development, through green infrastructure, standards for parking and spaces around dwellings, utilising sustainable drainage systems, creating walkable communities and energy efficient layouts. A final section considers how technology and construction of buildings can lead to more sustainable development and a local Sustainability Checklist for planning applications is also included in the appendices.

Structure of this SPD

- **Chapter One -** policy context, links to Local Plan policies, local characteristics & evidence
- **Chapter Two -** Connection & Integration
- **Chapter Three -** Layout & Density
- **Chapter Four -** Technology & Construction
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1 Introduction

Policy Context

1.1 The NPPF makes clear that the purpose of planning is to contribute to the achievement of sustainable development and sets out several planning principles to underpin both plan-making and decision-taking. Many of these principles, such as seeking to secure high quality design and good standards of amenity, supporting the transition to a low carbon future in a changing climate, encouraging the use of existing and renewable resources and actively managing patterns of growth to make the fullest possible use of public transport, are all relevant to designing places and buildings in a sustainable way.

1.2 The purpose of this document is to support the requirement to create development in a more sustainable manner and focuses on the connection and integration of places, on the layout and density of development and also on the technology and construction techniques employed in built development. Whilst there are many linkages with other issues that fall under the umbrella of sustainability, some of these are the subject of other complementary documents such as biodiversity and trees and landscaping, which are covered in idea within other SPD's. This SPD replaces the following SPd's A Planning Guide to residential Extensions and also the residential Design Guide.

Links to Local Plan Policy

1.3 This SPD supports the policies set out in the Lichfield District Local Plan Strategy, particularly policies:

- CP3 : Delivering Sustainable Development
- SC1 : Sustainability Standards for Development
- SC2 : Renewable Energy
- ST1 : Sustainable Travel
- ST2 : Parking Provision
- H1 : A Balanced Housing Market
- CP5 : Sustainable Transport
- CP10 : Healthy & Safe Lifestyles
- CP14 : Our Built & Historic Environment
- BE1 : High Quality Development

1.4 This document is one of a number of District Council SPDs and should be read in conjunction with the following documents:

- Trees, Landscaping and & Development SPD
- Biodiversity SPD
- Historic Environment SPD
- Rural Development SPD
- Residential Design Guide.

Local Characteristics and Evidence

1.5 Lichfield District is located in south-east Staffordshire, and abuts the West Midlands conurbation. The District has two main settlements, the cathedral City of Lichfield and the town of Burntwood, as well as many villages set within a varied and attractive rural area. Some of the rural settlements are physically connected to urban areas that lie within the administrative boundaries of other Local Authority areas, including Little Aston which adjoins Sutton

Coldfield and Streetly, and Fazeley which adjoins Tamworth. The town of Rugeley, which lies within Cannock Chase District, sits on the north-western boundary of Lichfield District. The Cannock Chase Area of Outstanding Natural Beauty cover a substantial part of the western side of Longdon Parish. The National Forest covers a small area in the north east of the District.

1.6 Lichfield District is an attractive location for people to live. It has been a significant destination for migrants from the West Midlands conurbation and other nearby towns. In the past this has led to pressure for housing growth over and above the needs arising purely from within the District. The availability of jobs, the history of in-migration in the District and the regional pattern of larger town centres all contribute to a high level of travel by residents of the District. High car usage is supported by generally good road connections, with the A38 and A5 being important routes to the north/ south and east/ west respectively. The construction of the M6 Toll has further increased accessibility and raised the profile of the District as an area for business investment, both in terms of distribution and office market potential.

1.7 Although the availability of a frequent rail service from Lichfield via the cross-city rail line allows a degree of rail commuting, journey to work movements from the District are largely made by car. This is one of the factors, combined with a high level of gas consumption in the regional context that results in a relatively high level of carbon emissions by District residents and a need for a spatial strategy and development policies that will make a local contribution to reducing these carbon emissions and combating the effects of climate change.

1.8 The Lichfield Strategic Partnership Carbon Reduction Plan sets out a vision to work towards a district which, whilst it is prosperous, also works to reduce its reliance on fossil fuels and to reduce its carbon emissions. The Plan identifies ways of achieving this vision are to ensure that all buildings and services are resilient to changing climate impacts over coming decades and by encouraging developers to design and build new developments to minimise carbon emissions and reliance on fossil fuels and take account of changing climate such as extreme weather and flooding.

1.9 In 2011 carbon emissions for Lichfield District stood at 744,600 tonnes CO2 & 7.4 tonnes CO2 per capita. The majority of this was made up from road transport emissions (320,600 tonnes), with domestic emissions at 224,600 tonnes CO2 and emissions from industry and commerce at 196,700 tonnes. Per capita emissions were above average in 2009, although overall emissions indicated a decrease from previous years in all aspects and the per capita figure has reduced from 7.8 in 2010 to 7.4 in 2011 http://www.gov.uk/government/publication/local-authority-emissions-estimates.

1.10 'Planning and Energy' is a theme of the Carbon Reduction Plan, identifying a number of actions in relation to the built environment. However, it should be noted that these actions reflect the emerging policies of the Local Plan at the time the Carbon Reduction Plan was drafted and many of the targets for these actions have been superseded by the adopted Local Plan Strategy.

1.11 Policy SC1 in the Local Plan Strategy sets out the District Council's sustainability standards for development and is a flexible policy designed to be consistent with nationally described standards, but also seeks to encourage developments which exceed these standards within the District.

2 Connections & Integration

Introduction

2.1 The national and local policy context for sustainable development establishes the principles that underpin sustainable place making in Lichfield District. The detailed standards relating to the delivery of layout & density, and technology & construction, can be found in Sections 2 and 3 of this document, respectively.

2.2 Lichfield District is a place where people desire to live. Sustainability is, in part, a product of desirability; if a place is desirable – to live in, and to visit – it will be self-sustaining. If people do not want to live, work or visit a place, then it will not survive and prosper. Maintaining desirability of the District, through the principles of sustainable development and the delivery of the Local Plans Strategic priorities, is key to achieving a vision for Lichfield.

2.3 Sustainable design is dependant upon creating places that are well connected and permeable. It is essential that development is not conceived in isolation, but is firmly integrated into the District's wider existing and proposed movement networks and, equally, connects across local administrative boundaries.

Sustainable Development - Nationally

2.4 The NPPF states that there is a presumption in favour of sustainable development. There are three, mutually dependent dimensions to sustainable development – these being economic, social and environmental. In Lichfield District, this will translate as development that embodies the principles of sustainability at the local level, creating a pattern of resource use that aims to meet the needs of the present without compromising the ability of future generations to meet their own needs.

2.5 Sustainable development involves seeking positive improvements to the quality of the built, natural and historic environment, as well as in people's quality of life. According to the NPPF, this includes replacing poor design with better design. Achieving sustainable development is the fundamental objective of the NPPF.

Sustainable Development - Locally

2.6 At a strategic level, there is a need to consider carefully the placement of new development, in order to minimise adverse environmental impacts; the Lichfield District Local Plan Strategy aims to direct development towards the most sustainable locations – making the most efficient use of existing infrastructure links – across the District, taking account of all development within and beyond its boundary.

2.7 The strategic priorities for growth in the District are established through the Local Plan Strategy. These priorities outline what is required in order to deliver the Council's desired Vision for Lichfield. They address the key issues identified within the District and, ultimately, ensure sustainable development and design quality is achieved. In particular, the spatial strategy seeks to achieve sustainable development that complements the sense of place, ownership and community pride that exists across the District, while also addressing those parts of the District where such values may need improving.

2.8 The Spatial Strategy seeks to concentrate major growth within the most sustainable settlements and accessible locations. This focus ensures that the Council can promote best use of existing services and infrastructure whilst also enabling improvements to create and

maintain sustainable local communities. A Settlement Hierarchy of sites is described in Strategic Priority 1 of the Local Plan, with the detail articulated through Core Policy 1: The Spatial Strategy.

2.9 Core Policy 1 specifies the action required by development proposals to ensure the promotion of sustainability. It states: “minimising and/ or mitigating pressure on natural, built and historic environments, natural resources, utilities and infrastructure whilst also mitigating and adapting to climate change and reducing the need to travel” (Local Plan Strategy, p.24).

2.10 There are many villages set within the varied and attractive rural areas of Lichfield District. New rural housing will be directed mainly towards key rural settlements, which are defined as providing essential services and facilities to their communities and the wider rural hinterland including the smaller outlying villages and hamlets. The five villages identified as key rural settlements are Alrewas, Armitage with Handsacre, Fazeley, Shenstone and Whittington.

Securing Sustainable Development

2.11 The notion of ‘connectivity’ is important. How we get to existing and new places, and move between them, are key to achieving sustainable development.

2.12 The terms permeability and connectivity describe the extent to which the built environment permits, or restricts, movement of people or vehicles in different directions. The terms are often used synonymously, although the concepts of "permeability" and "connectivity" can and should be differentiated – whereby "connectivity" refers solely to the number of connections to and from a particular place, whereas "permeability" refers to the capacity of those connections to carry people or vehicles.

2.13 Permeability is generally considered a positive attribute of sustainable, urban design, as it permits ease of movement and avoids the severing of neighbourhoods, both internally and from each other. Built environments that lack permeability, e.g. those severed by arterial roads, or by many long culs-de-sac, tend to discourage movement on foot and encourage longer journeys by car – thus, affecting their sustainability.

2.14 Central government guidance has been influenced by the principles of New Urbanism, and the Department of Transport’s guidance, in Manual for Streets, states, “Street networks should in general be connected. Connected or ‘permeable’ networks encourage walking and cycling and make places easier to navigate through.” (Manual for Streets, para. 4.2.3, p. 41).

2.15 The concept of permeability should include consideration of sustainable transport modes, which can be defined as any efficient, safe and accessible means of transport with overall low impact on the environment, including walking and cycling, low and ultra low emission vehicles, car sharing and public transport.

2.16 The lack of higher paid jobs within Lichfield District contributes towards a high level of out-commuting from the District, most notably towards Birmingham and the West Midlands conurbation. A large number of journeys to work are made by car and, when combined with high levels of fuel consumption, the District contributes to carbon emissions. This, along with the rural context of the District, means that mitigating climate change through the construction of sustainable transport options, which enable the creation of connected and permeable

places, should be regarded and emphasised as an important component of future development schemes.

Sustainable Transport Systems

2.17 Private car use is one of the main causes of CO2 emissions. Minimising the need to travel by car and reducing levels of congestion are important ways in which the effects of climate change are mitigated.

2.18 The Council will seek to promote the integration of alternative transport provision across the District. Improved transport facilities should benefit both new and existing communities. Opportunities for travel using sustainable forms of transport include improvements to public transport, promoting walking and providing cycling infrastructure.

2.19 Core Policy 5: Sustainable Transport lists those sustainable transport improvement initiatives within the District that will be supported. Development Management Policy ST1: Sustainable Travel outlines how the District will seek to secure sustainable travel patterns for all development.

2.20 At a local level, layout and design choices should ensure that the various modes of transport available are well integrated. Communities should be able to move around and between their neighbourhoods by choice and with ease. Walkable layouts, including multi-use connecting pathways, should provide for a way of living that enables connective movement, in to and within new developments. Development layouts should maximise accessibility to public transport, minimise the need for car ownership, through the encouragement of alternative means of travel, and provide the infrastructure to support sustainable living. Further detail as to how design choices relating to the layout of development can facilitate sustainable transport systems is provided in Section 2 of this SPD.

Integrated Infrastructure

2.21 The Local Plan Strategy advocates the formation of increasingly sustainable communities – both urban and rural. To achieve this, more of the District's needs and aspirations must be met locally, through the improvement of both the quantity and quality of facilities and services – and how local communities can avail themselves of these. Identifying and providing adequate infrastructure requirements will ensure a place functions efficiently and effectively in a way that creates communities that are integrated and sustainable.

2.22 There are three main categories of infrastructure, defined as:

Physical

- The broad collection of systems and facilities that house and transport people and goods, and provide services e.g. transportation networks, housing, energy supplies, water, drainage and waste provision, ICT networks, public realm and historic legacy.

Green

- The physical environment within and between our cities, towns and villages. network of multi-functional open spaces, including formal parks, gardens, woodland, green corridors, waterways, street trees and open countryside.

Social & Community

- The range of activities, organisations and facilities supporting the formation, development and maintenance of social relationships in a community. It can include the provision of community facilities (education, healthcare, community centres, places of worship, sports & leisure facilities), local networks, community groups, small scale funding to assist local projects, skills development and volunteering.

2.23 The necessary infrastructure needed within Lichfield District, to deal with existing deficiencies and to cater for a growing and changing population, as identified in the Infrastructure Delivery Plan. This 'living document' identifies strategic and local infrastructure needs and is regularly reviewed and monitored.

Renewable Energy

2.24 The District Council is committed to conserving natural resources, which can assist in reducing emissions, and will support and promote the efficient use of energy and resources, including renewable energy schemes, water management, waste minimisation and recycling.

2.25 Core Policy 3: Delivering Sustainable Development provides the policy framework to support sustainable energy choices as part of the development process.

2.26 Sustainable development is achieved by locating, designing, servicing and accessing development by focusing on the efficient use of energy and resources, as well as encouraging innovative construction and design techniques, and accommodating renewable energy and decentralised heat and power generation.

2.27 Policy SC1: Sustainability Standards for Development provides the minimum sustainability standards focusing on the 'energy hierarchy' as a framework to direct development. In strategic terms, primarily the action should be to maximise energy efficiency, then to utilise low carbon energy, before finally employing off-site offsetting alternatives.

2.28 Renewable energy flows involve natural phenomena such as sunlight, wind, water, plant growth and geothermal heat. They are derived from natural processes that are replenished constantly. In its various forms, renewable energy derives directly from the sun, or from heat generated deep within the earth. Included in the definition is electricity and heat generated from solar, wind, hydropower, biomass, geothermal resources, and biofuels and hydrogen derived from renewable resources.

2.29 Renewable energy has begun to replace conventional fuels in four distinct areas, namely electricty generation, hot water/ space heating, motor fuels and rural (off-grid) energy services. While many renewable energy projects can be large-scale, renewable technologies are also suited to rural and remote areas. Their instigation usually requires planning permission and, due to their nature and scale, often a balance needs to be struck between the sustainable benefits and the visual impact of renewable energy schemes – particularly in sensitive landscapes and townscape, as can be the case within Lichfield District.

Waste Minimisation

2.30 With regard to waste management the District Council also supports the Waste Hierarchy approach as advocated by the Waste Authority : Staffordshire County council. This approach is fundamental to the Staffordshire and Stoke -on -Trent Joint

Waste Local Plan Strategy 2010-2026. This is reinforced through Local Plan Strategy Core Policy 3: Delivering Sustainable Development and Policy BE1:High Quality Development.

Affordable Housing

2.31 Lichfield District will continue to be an area of housing growth for the foreseeable future. This needs to be addressed in ways that protect the living standards and the environment of those already resident, as well as those people moving into the area. Importantly, a balanced housing market, integrating a mix, type, size and tenure of dwellings, should be provided. The District Council will require development to incorporate and suitably integrate affordable and market housing with a consistent standard of design quality and public space, in order to create mixed and sustainable communities.

2.32 Strategic Priority 6: Meeting Housing Needs provides an overarching context for the council's housing policy, with Policy H1: A Balanced Housing Market, and Policy H2: Provision of Affordable Homes, supporting the delivery of these principles.

Neighbourhood Planning and Sustainable Development

2.33 It is important that residents are able to influence and help shape the future of their own communities. Neighbourhood Plans offer the opportunity to plan positively to address local need and aspirations.

2.34 Neighbourhood Planning is one of the provisions of the government's 2011 Localism Act, aimed at empowering local communities to prepare their own development plans at the local level. Neighbourhood Plans must be prepared in a positive manner, identifying and advocating the development potential of areas, in order to meet the Four Basic Conditions, before proceeding to referendum. One of the conditions is that a Neighbourhood Plan must contribute to the achievement of sustainable development.

2.35 Lichfield District has a large number of designated Neigbourhood Plan areas. Adopted and developing Neighbourhood Plans provide evidence and policy guidance for delivering sustainability at a local level.

Useful Supporting Information

2.36 The Local Plan Strategy contains further guidance on how sustainable development can be integrated within the District. In particular:

Concept Statements

2.37 A concept statement is a simple, clear description of a place the Council wishes to see created, through new development. The Local Plan has seven Concept Statements identifying all of Lichfield District's Strategic Development Areas, namely:

- South of Lichfield
- East of Lichfield
- Fradley
- East of Burntwood Bypass
- East of Rugeley
- Deans Slade South of Lichfield
- Cricket Lane South of Lichfield

2.38 The Concept Statements set out how the policies and objectives of the Local Plan Strategy should be applied, providing guidance on Strategic Objectives, Key Design Principles, Infrastructure Requirements, Densities, Community Engagement Principles and Assumed

Delivery. These statements provide a robust framework for place-making ensuring new places fit into their surroundings and have a sense of belonging. Subsequent sections of this SPD provide additional detail to support and provide practical responses to the principles advocated within the statements.

Local Plan Allocations Document

2.39 Although there is a temptation to think of sustainable development objectives, primarily, in terms of housing, the pursuit of sustainable development/design applies to all forms of development. The overall approach outlined will provide guidance for new homes, jobs, infrastructure and community assets.

2.40 The Local Plan Strategy sets out, in broad strategic terms, where development will be located until 2029. One of the supporting documents which is locally specific is the Land Allocations Document. This document will provide the framework for managing development, addressing key planning issues and guiding investment across the District.

3 Layout & Density

Introduction

3.1 Once the strategic land allocations have been established, how these individual parcels of land are laid out, in terms of design proposals, and how they interrelate with existing and future development, is a key stage in the development process. Developments must fit into an overall pattern by providing sustainable designs in themselves, but which also contribute towards a greater good. This should include green infrastructure, which should incorporate sustainable water management, as part of energy efficient layouts.

3.2 The District Council seeks to improve the green infrastructure network of the district by putting green assets at the heart of sustainable design, and this is encouraged through the council's Local Plan Strategy. Green assets have a major role to play in helping our built environments cope with some of the extreme effects of climate change, are valued by residents and help make and maintain the unique character of Lichfield District. The benefits of a green infrastructure network also include making places more attractive, healthier and economically competitive.

3.3 New development should contribute to the provision of trees and green infrastructure in the district. This is in order to help the district adapt to the changes in climate and to meet sustainable development obligations. How this is achieved will depend upon the size and nature of the development proposed.

3.4 Local Plan Strategy Policy NR4: Trees, Woodland & Hedgerows, inter alia, states,"Sufficient space within developments must be reserved for the planting and sustainable growth of large trees in order to retain the important tree canopy cover in conservation areas and the built environment, and to improve tree canopy cover in the District as a whole." (Local Plan Strategy p.82)

Green Infrastructure

3.5 Green infrastructure is the network of 'green' and 'blue' elements in and around urban and rural built environments. This includes public and private spaces such as:

- street trees, footpath links, cycle routes and public squares;
- Private gardens, public parks, nature reserves and open spaces;
- Cemeteries and churchyards;
- Allotments
- Green roofs and sustainable drainage systems; and
- Canals and reservoirs.
- Heritage Asset

3.6 And also natural landscape features such as:

- woodland and hedgerows;
- grassland and heathland; and
- wetlands and watercourses.

Purpose and Value of Green Infrastructure

3.7 The provision of trees and green infrastructure is the one of the most important methods of ensuring that the built environment remains healthy, robust and liveable. Well designed and linked green infrastructure can deliver a variety of benefits to help our communities adapt to climate change, such as:

- Cooling of built-up areas by trees;
- Shaded routes for walking and cycling;
- Water management and flood reduction;
- Places for play and recreation;
- Bringing wildlife into towns and linking habitats for species migration; and
- Reducing air pollution and UV exposure.

3.8 Large-canopy trees are one of the main components of green infrastructure; regulating urban temperatures, improving air quality and moderating floods. They are particularly important in urban areas and therefore matters relating specifically to the retention of existing trees, their integration on development sites and new planting are addressed in the council's Trees, Landscaping & Development SPD. (See also the Trees & Design Action Group publications entitled 'Trees in the Townscape A Guide for Decision Makers' and 'Trees in the Hard Landscape A guide for Delivery' www.tdag.org.uk). The National Forest is also an example of where many of the methods of incorporating tree planting and green infrastructure into the built form are being used.

Urban Heat Island Effect

3.9 The temperature in towns and cities is higher than the surrounding countryside because the buildings, roads and other hard surfaces trap more heat than vegetated areas. The heat that is trapped during the day is released at night and this can make towns and cities oppressive in hot weather. This is called the 'urban heat island' effect.

3.10 Incorporating more green spaces and large canopy trees into urban areas is one of the most effective ways to keep built up areas cool, through evaporative cooling and also by shading hard surfaces. The greatest contributors to urban cooling are large bodies of water and large long-lived trees. Whilst many developments will not be able to incorporate large water bodies, all should be able to incorporate trees and vegetation, and the cumulative effect of this should not be underestimated.

3.11 At the national level, Central government published a Heatwave Plan for England,www.gov.uk/government/publications/heatwave-plan-for-england. This document demonstrates cross-discipline support for sustainable development on health grounds, particularly the greening of towns and the benefits of shade provision around buildings.

Tree Provision and Sustainable Development

3.12 The increased provision of significant green infrastructure and tree canopy cover in town centres and developed areas could help to keep local temperatures at current levels. The council has therefore identified tree retention and new tree planting on development sites within its Local Plan Strategy, Policy NR4 as a component of the district's adaptation to climate change and part of sustainable development.

3.13 Whilst Lichfield and Burntwood are relatively small built up areas, when compared with other parts of the Midlands, local temperatures are still expected to be warmer within these settlements than in rural areas. The provision of green infrastructure and tree canopy cover must also take into account the long term growth of these and other settlements within the district, the projected increase in temperature and the fact that new trees need to be planted now in order to be of sufficient size to be effective

in the future. Research suggests that approximately 20% canopy cover by mid-century should help to ameliorate such effects (Gill et al, 2007: Built Environment, Vol.33, No.1, p.115-137) and, through Core Policy 3: Delivering Sustainable Development of the Local Plan Strategy, the council is supportive of achieving this aim for Burntwood, Lichfield, other large or urban population centres (Rugeley area, Fazeley and Fradley) and any development within all new Strategic Development Allocations identified in the Local Plan.

3.14 Within Lichfield, the tree canopy cover has been identified as an important part of the skyline of the city within the Local Plan Strategy, Core Policy 4. In accordance with the Local Plan Strategy, Core Policy 14: Our Built & Historic Environment and Policy NR5: Natural & Historic Landscapes, the loss of trees on development sites within Conservation Areas is considered to adversely affect their character and appearance, and the setting of heritage assets (see also the District Council's Historic Environment SPD).

Green Infrastructure and Sustainable Development

Providing for the needs of the community

3.15 Certain sectors of society, such as the elderly and young children, are particularly vulnerable to the negative impacts of increasing temperatures. Green infrastructure moderates local microclimates – built up areas with trees are cooler in summer and warmer in winter and can help alleviate fuel poverty. Good landscaping can encourage healthier lifestyles by improving air quality and encouraging walking, cycling and outdoor play.

3.16 Special attention to tree cover should be given to development that includes, but is not limited to, residential schemes for the elderly, within areas of outdoor recreation and play provision, schools and hospitals. Tree provision will be particularly important in areas of social deprivation or higher residential density, which hold less tree cover, including certain areas with Lichfield City and Burntwood.

Shade

3.17 Shade provision can help keep localities cool, provide relief for pedestrians and shoppers in built up areas, encourage walking and cycling and give shaded areas for children's play and outdoor activities. Shade tree planting also improves the environmental performance of buildings by acting as a buffer, reducing thermal gain in the summer and reducing the need for air conditioning.

3.18 Proposals should utilise trees to provide a choice of shade and shelter on a site. Developments that include a high proportion of hard surfacing, such as town centre developments, retail and commercial parks or areas of car parking, will require provision of large canopy trees in order to provide shade and comfort for users and the lowering of local temperatures. This will need to be established on a case-by-case basis, taking account of the specific characteristics of a site and coordination with the overall provision of planting, in line with the council's objectives.

Flood Reduction

3.19 It is evident that the changing climate means there will be an increase in periods of heavy rain that can lead to local flooding. This is because the hard, impermeable surfaces in towns force rainfall into drains, which quickly become overloaded. Green infrastructure can be used to reduce local flooding by intercepting rainfall. Permeable surfacing will also help in lessening areas of hardstanding. The captured rainwater

evaporates from the leaves of trees or is slowly released, reducing fluctuations in the drainage system.

3.20 Proposals should incorporate planting in areas of hard surfacing such as streets, car parking and pedestrian areas to help regulate water run-off. Multi-functional green spaces that incorporate sustainable drainage within landscaped areas and, where possible, provide pedestrian or cycle routes and informal play, are particularly encouraged.

Air Quality

3.21 Trees and vegetation are able to filter certain pollutants produced by vehicle exhausts from the air. This increases air quality and is beneficial for everyone's health, particularly children and older people. In addition to street tree provision, copses of trees are welcomed, as mature, mixed woodland can capture airborne particles at three times the rate of grassland.

3.22 Tree planting close to roads, whether in gardens, open spaces or streets, should therefore be included in any development proposals.

Green Infrastructure in Different Scales of Development

3.23 The provision of green infrastructure requires an integrated, collective response, and can be realised in many forms. The type of provision must be commensurate with wider objectives, in relation to the scale of development proposed.

Strategic Development Allocations (SDAs)

3.24 A master plan is integral to the planning process for the Strategic Development Allocations identified in the council's Local Plan Strategy. These developments should provide a network of multi-functional green infrastructure – including street trees – running through the development, and linking into the wider landscape beyond.

3.25 Cues for the placement of green infrastructure should be taken from the existing land form and vegetation, opportunities for sustainable drainage provision, habitat and species surveys and landscape character. Reference should be made to the relevant infrastructure requirements as set out in the Local Plan Strategy SDA Concept Statements (Appendices C-G) and the Infrastructure Delivery Plan.

3.26 The council recognises that the incorporation of large canopy trees may require innovative and creative design solutions in order to accommodate the trees and the space needed for their growth. In addition to formally planted open spaces and street trees, designs could, for example, incorporate tree planting within sustainable drainage systems, provide front gardens of sufficient size to accommodate trees, consolidate numbers of small front or rear gardens so that there is overall sufficient space for trees, utilise land around school and community buildings, utilise urban squares or plazas, courtyards, shopping areas and car parks to accommodate trees.

3.27 The Council particularly welcomes proposals that create small woodlands or copses as an alternative to grassed open space within a mix of open space provision. Larger wooded areas associated with development can provide opportunities for recreation and climate change adaptation and also contribute to wider targets for climate change mitigation through the use of new woodlands by 'locking up' carbon as the new woodland grows.

3.28 Where tree planting will be undertaken as part of a new development, sufficient space underground should be reserved at the initial site design stage to ensure that underground services and tree planting can both be accommodated. Dedicated service areas and dedicated tree root runs should be incorporated within the design.

3.29 In order to demonstrate how green infrastructure and canopy cover will be integrated into a strategic development site, a landscape strategy is recommended at the submission stage. An accompanying design code based upon the master plan is strongly recommended. This is particularly appropriate for large sites, those to be built in phases or by a number of agents. It is recommended that potential applicants/ agents engage with the council's Development Team approach at the pre-application stage.

Major Development Sites

3.30 All major commercial, industrial and residential (10+ houses) proposals should incorporate layout and orientation that favours the retention of existing trees and reserves sufficient space for new tree and landscaping provision within the site. The density of a development should be realistically set bearing in mind the need to provide green infrastructure.

3.31 It is expected that the provision of sufficient tree planting to contribute to maximise mid-century canopy cover will be provided within any major development site. Where it is agreed with the council that this is not feasible, developers may be required to facilitate strategic tree or woodland planting or management and other green infrastructure in the local area.

3.32 Further information on design and layout of housing proposals can be found in Lichfield District Council's Residential Design Guide.

Small Development Sites

3.33 On all small application sites (including proposals of 9 dwellings or less) tree cover should be maintained and enhanced. Pre-application discussions are encouraged, and planning applications should demonstrate how existing trees and new landscaping are to be integrated into the development to provide the following benefits

- Contributing to tree canopy cover;
- Shading large areas of hard surfacing such as car parking or paving;
- Adding to street tree provision by planting close to roads or footpaths, even if planted in gardens;
- Linking to other landscape features beyond the site boundary;
- Providing a choice of sunlight, shade and shelter to residents and other users;
- Providing a mix of long lived large trees and smaller ornamental trees within the site; and
- Demarcation of public and private spaces, boundaries and screening.

3.34 The council's Trees and Development SPD gives further details and guidance on how this may be achieved through the sustainable layout of a site, the protection of existing trees and the incorporation of new planting.

Development in a Rural Location

3.35 In villages and other rural locations, existing trees and hedgerows contribute to the distinctive character of each area, sometimes marking the older heart of a village, such as at Shenstone, or being the predominant characteristic of an area, such as in Little Aston. In other rural areas, they bring historic richness through marking former landscapes, such as formal parkland or old field boundaries.

3.36 In these areas, the 'urban heat island' effect is unlikely to exacerbate the increase in temperature. However, on each site, trees and landscape planting remain important to retain the local character of the area, provide shade and shelter, integrate the development into the locality and produce opportunities for habitat creation or enhancement (with reference to the council's Biodiversity SPD) and should follow the principles for small development sites (set out, above). In accordance with Local Plan Strategy ,Policy NR4, sufficient space within developments must be reserved for planting and sustainable growth, which will retain the character of the district's villages, and important tree canopy cover should be retained on sites within Conservation Areas.

3.37 Opportunities should be explored in rural locations for hedgerow creation and management and new woodland provision, as part of landscaping schemes, as these are characteristic features of the landscape.

Sustainable Development Standards

3.38 The protection and enhancement of trees and green spaces, and their associated ecological value, on a proposed development site can help developers meet the criteria of national sustainable development standards (some of which are referred to in Section 3 of this SPD). Some of these development standards are mandatory; others are used by the council in the assessment of planning applications. The council encourages developers to assess the trees and ecology of a site at an early stage, to help plan the use of these features to meet sustainability objectives.

Sustainable Water Management

3.39 The implementation of sustainable water management through sustainable drainage systems (SuDS) and rainwater harvesting have become commonplace in the use and management of water within the built environment. The philosophy of SuDS is to mimic as closely as possible the natural drainage from a site before development, and to treat runoff to remove pollutants. Lichfield District's topography and geology is generally well suited to supporting the installation of such systems.

3.40 SuDS provide a flexible approach to drainage, with a wide range of components, from soakaways to large-scale basins or ponds. The individual techniques should be coordinated, in a management train, to reinforce and, where possible, follow the natural pattern of drainage.

3.41 The management train incorporates a hierarchy of techniques. These are:

- **Prevention** – the use of good site design and housekeeping measures on individual sites to prevent runoff and pollution (examples include minimising paved areas and the use of sweeping to remove surface dust from car parks),
- **Source control** – control of runoff at or very near its source (such as the use of rainwater harvesting, permeable pavements, green roofs or soakaways for individual houses).

- **Site control** – management of water from several sub-catchments (including routing water from roofs and car parks to one large soakaway or infiltration basin for the whole site).

- **Regional control** – management of runoff from several sites, typically in a detention pond or wetland.

3.42 Some of these techniques are within the control of Lichfield District Council; others are dependent on encouragement of, and working with, development partners and future residents. Nevertheless, adopting a holistic approach towards surface water drainage provides the benefits of combined water quality and quantity control, as well as increased amenity value. This is accomplished by managing the increased flows and pollution from surface water runoff that can arise from development. Ideally, the system should utilise a management train and should achieve equal standing in all of these areas. However, specific site considerations may mean that a balance of benefits is not always achieved.

3.43 Benefits of SuDs

3.44 It is generally accepted that the implementation of the SuDS approach, as opposed to conventional drainage systems, provides several benefits. Appropriately designed, constructed and maintained SuDS may improve the sustainable management of water for a site by:

- Reducing peak flows to watercourses or sewers and potentially reducing the risk of flooding downstream

- Reducing volumes and the frequency of water flowing directly to watercourses or sewers from developed sites

- Improving water quality over conventional surface water sewers by removing pollutants from diffuse pollutant sources

- Reducing potable water demand through rainwater harvesting

- Improving amenity through the provision of public open space and wildlife habitat

- replicating natural drainage patterns, including the recharge of groundwater so that base flows are maintained.

3.45 The need for sustainable drainage is not disputed and, under the Floods & Water Management Act 2010, when fully enacted, SuDS will be mandatory for all new development. Problems may arise if SuDS are not properly designed and maintained, and the requirements for SuDS differ from those for conventional systems. Advantages in flood control, pollution control, water reuse and groundwater recharge may have benefits, both locally and more widely in the environment, which may offset changes in management practices.

3.46 A considerable amount of research on sustainable drainage is in hand in the UK, and knowledge of the design of SuDS and their longer-term effectiveness is continually improving. Consequently, all those involved in the design of the built environment – designers, planning authorities and regulators – should be aware of developments in SuDS design and should refer to construction industry research and information association (CIRIA)'s SuDS website www.ciria.org and other sources for the latest information. Further guidance has also been produced by Staffordshire County Council in the form of Local Standards in addition work is being undertaken to develop a Shropshire and Staffordshire SuDs Handbook.

3.47 Implementation of SuDs

3.48 Before SuDS can be implemented in a development, certain elements of the scheme should be considered, and these are listed below.

- **Early discussion between stakeholders**. SuDS can make an important contribution to the overall sustainability of a development. However, a successful SUDS scheme will require the design team to liaise and integrate with other stakeholders involved in the development process. The design team and stakeholders should consider SuDS at the feasibility stage of development so as to realise the optimum contribution from a sustainable approach. Pre - application discussion should be undertaken with Staffordshire County Council as the lead Local Flood Authority.

- **Ground and groundwater considerations**. Ground and groundwater conditions may limit the types of techniques that can be used. Groundwater protection zones are particularly important and the potential risk from infiltration techniques to groundwater should be carefully managed.

- **Drainage impact assessment**. An assessment will be required to ensure that the impacts of a proposed development on the catchment are understood and managed. Lead Local Flood Authorities are a statutory consultee on drainage matters for major developments, and have responsibilities covering local flood risk management.

- **Interaction with foul water sewers**. Unplanned surface water drainage connections may exacerbate the risk of flooding where original sewers have been designed to accept only foul flows (or where combined sewers are running at capacity). Surface water drainage systems should be dealt with sustainably through SuDS techniques or connected correctly to surface water sewers to avoid the risk of sewage-related flooding. Once agreed for a particular development the drainage arrangements should not be altered in the future.

- **Long-term maintenance requirements**. Maintenance of SuDS differs from that for conventional systems, so it is important to allocate responsibility for the maintenance of SuDS early in the development process. Pre -application discussions are encouraged with Staffordshire County Council as the Lead Local Flood Authority, the local planning authority and statutory consultees. The Developer Contributions SPD is currently being revised, future versions of this document will provide guidance in regard to the maintenance of SuDs.

SuDs Components

3.49 Ideally, a holistic approach should be used in designing SuDS so that they are operated collectively rather than as a series of isolated drainage devices. Within the philosophy of the surface water management train, each component adds to the performance of the whole drainage system. The full range of SuDS components is updated and available via the CIRIA website.

3.50 The most popular SuDS components are summarised below. This should not be regarded as comprehensive list, as techniques are evolving and developing as knowledge develops.

- **Preventative measures** – the first stage of the SuDS approach to prevent or reduce pollution and runoff quantities. This may include good housekeeping, to prevent spills and leaks, storage in water butts, rainwater harvesting systems, and alternative roofs (ie green and brown roofs).

- **Permeable surfaces** – paving systems that allow inflow of rainwater into the underlying construction or soil. These include materials such as interlocking concrete paving blocks, perforated brick pavers or sets, and gravel; the water does not pass through individual blocks, flags or aggregate, but through gaps between these elements. (Permeable surfaces do not include non-elemental surfaces such as macadam or even compacted gravel that, although porous, do not allow rainwater inflow at a sufficient rate.) Wherever possible, hardsurfacing within developments should be permeable.

- **Green roofs** – vegetated roofs that reduce the volume and rate of runoff and remove pollution.

- **Filter drains** – linear drains consisting of trenches filled with a permeable material, often with a perforated pipe in the base of the trench to assist drainage, to store and conduct water; they may also permit infiltration.

- **Filter strips** – vegetated areas of gently sloping ground designed to drain water evenly off impermeable areas and to filter out silt and other particulates.

- **Swales** – shallow vegetated channels that conduct and retain water, and may also permit infiltration; the vegetation filters particulate matter.

- **Basins, ponds and wetland** – areas that may be utilised for surface runoff storage.

- **Infiltration devices** – sub-surface structures to promote the infiltration of surface water to ground. They can be trenches, basins or soakaways.

- **Bioretention areas** – vegetated areas designed to collect and treat water before discharge via a piped system or infiltration to the ground.

- **Filters** – engineered sand filters designed to remove pollutants from runoff.

- **Pipes and accessories** – a series of conduits and their accessories normally laid underground that convey surface water to a suitable location for treatment and/or disposal. (Although sustainable, these techniques should be considered where other SuDS techniques are not practicable).

Energy Efficient Layouts

3.51 The way in which a development is laid out has a fundamental bearing on how energy efficient it will be, ultimately. Beyond its location which, it has been established, as far as is possible, should be integrated into the wider built environment (see Section 1), the layout of any proposed development should aim to reduce the need to travel by motor vehicle, and promote movement through efficient, direct, accessible pedestrian and cycle links. Consideration of the permeability within a development layout, and between different areas of development, is crucial to achieving energy efficiency.

3.52 A good layout will take account of the physical features present on site, using the topography and extant landscape

features in order to, for example, provide logical paths for all modes of movement and maximise solar efficiency. As part of this process, the designer must be aware of the effects layout can have on the microclimate of a development, which should include consideration of building orientation, overshadowing, sheltering of outdoor spaces, the reduction of heat loss, as well as gain, and the eddying effects of the wind due to built form.

3.53 The density of a proposed development, expressed through its layout, should be a product of the design process, rather than the driver of it. Energy efficiency is not necessarily a manifestation of increased density. Particularly in relation to residential development, but also more widely, for development to be sustainable it must also be desirable. As well as integrated movement patterns, new developments should relate positively to the context within which they will sit, and take cues from the local characteristics that are identified as worth emulating (see the Historic Environment SPD).

3.54 The council has recommended standards for space around dwellings (see Appendix 1), as well as a separate Residential Design Guide SPD, which advocates the need for good quality design. To aid applicants and developers in their consideration of matters relating to energy efficiency, the council has produced a Sustainability Checklist (see Appendix 2).

3.55 It is also necessary for layouts to respect the cultural and natural heritage of the area and landscape within which it sits in order to achieve development which is sustainable in environmental terms, further advice is available in the Historic Environment SPD.

Walkable Communities

3.56 An important factor in any energy efficient layout is its 'walkability'. A 'walkable community' can be defined as one where it is easy and safe to walk to goods and services. Walkable communities encourage pedestrian activity, expand transportation options, and have safe and inviting streets that serve people with different ranges of mobility.

3.57 The walkability of a place is a measure of how friendly it is to walk around. Increased walkability has many health, environmental and economic benefits, and is to be encouraged (see Healthy Communities chapter of the Local Plan Strategy). Factors that affect the walkability of a place include:

- Street and path connectivity.
- Mix of land use residential density.
- The presence of trees and vegetation.
- Variety of built form.
- Active street frontages.
- Purposeful places, rather than 'spaces'.

3.58 These relate closely to the objectives of good design in the built environment and the desirable aspects of development form (see Appendix 3; based the government's NPPG). The council supports and promotes these principles through the design of development layouts.

3.59 As members of the community grow older, the neighbourhood becomes increasingly important for the quality of our everyday life. In line with the government's document, entitled Lifetime Homes Lifetime Neighbours, A National Strategy for Housing in an Ageing Society published in 2008 www.cpa.org.uk/cpa/lifetimehomes.pdf, the

design of places is not only about homes but also the neighbourhood. When local shops and services are inaccessible, older people can become socially excluded. Public spaces should be comfortable, welcoming and enjoyable. Parks and shopping centres should be accessible and open to all.

3.60 It is often the simple things that stop people getting out and about, such as a lack of public facilities and benches. When there are barrier free neighbourhoods with attractive places to go, people get out more, stay active and participate in the community. The concept of a 'lifetime neighbourhood' is about removing unnecessary, and often thoughtless, environmental barriers, making access better for people of all ages, and improving transport, public services, public space and amenities, so that people have good reasons to get out of the house and actively participate in their community.

3.61 Over-dependency on motor vehicles is ecologically unsustainable. Car-orientated environments engender dangerous conditions to both motorists and pedestrians and are generally considered to be poorer, aesthetically. Car-focussed designs negate walking and the 'natural surveillance' of places. Reduced walking also diminishes social interaction, the development of communities, and pride in streets and other civic spaces.

3.62 The council recognises that, within a substantially rural district such as Lichfield, some degree of car dependency is inevitable. Nevertheless, it is important to promote alternative means of transport, for those who are able to access and use them, such as cycling and public transport. Where car use is necessary, the council has recommended parking standards that apply to new development within the district, and these are set out in Appendix 4.

3.63 Obstructions, such as sign posts and other forms of 'street clutter', can decrease the walkable width of pavements and pathways, and alternative locations for such potential obstructions should be sought. Consideration of proper maintenance and lighting of pedestrian routeways should be included in the design and layout of new places, and how this can be sustained, in order to reduce obstructions, improve safety and encourage walking.

3.64 Urban design and town planning theory suggest further justification for promoting walkable communities, based upon evolutionary and philosophical characteristics. Experiencing places at 'walking pace' has been vital to the cerebral development of humans. After millennia of human development firmly based upon walking, places created for the motor car have separated walking from thinking and, in this sense, car-based environments have become an agent of regression rather than human progress. The majority of the settlements with Lichfield District are 'walkable', and new development should promote and enhance this asset. The ability to walk around a place, therefore, is offered as a critical component in contemporary design of the built environment in the District, with implications far beyond the scope of development layouts.

4 Technology & Construction

Introduction

4.1 Technology and construction methods are changing and improving to meet the needs for lower carbon development. Local Plan Core Policies 2 & 3 make requirements relating to this and other areas of environmental sustainability. It is expected that developers will have access to professional advisors on these matters. This will ensure best practice is adopted and encourage appropriate innovation.

4.2 This section of the document deals with technology and construction in relation to Planning requirements. To assist those who are unfamiliar with the subject area, and to supplement this District-wide guidance, a Staffordshire County-wide document has been produced, entitled 'Householders' Guide to Sustainable Construction and Renewable Energy', which informs householders and new developers how to create an energy efficient development and where to find more detailed advice on the topic.

Link with Building Regulations

4.3 Building Regulations apply to most types of building work. The regulations set standards that help to ensure environmental sustainability, including accessibility, health and safety, energy and water conservation.

4.4 Many areas of sustainable design must be considered at the Planning stage in order to maximise opportunities to save energy and improve efficiency. The council expects standards for some development, where appropriate, to go beyond the minimum standards set out in the Building Regulations, where this is economically viable and achievable. On occasions, local opportunities may exist to improve energy efficiency that cannot be legislated for in national standards.

New Development, Conversion & Refurbishment of Existing Residential and Major Non-Residential Buildings

4.5 Policy SC1 of the Local Plan Strategy sets out the expected standards for development within Lichfield District. The Policy follows the 'Energy Hierarchy'. This means that the main aim should be to design buildings to require less energy and use renewable solutions, in order to satisfy their energy requirements, where possible.

4.6 It is important that a balance between economic viability and the demands of local requirements and standards is realised and appropriate to the type and extent of development proposed. Future Planning Applications will be determined in line with relevant policy and guidance at the time of submission.

4.7 Whilst there are national minimum standards for accessibility, there are other local factors that are relevant, such as the local age profile of the populations, and these should be taken into account Local Plan Strategy Policy H1.

4.8 The government has considered the various housing standards and how to simplify these requirements. It is also considering whether these standards should be set and applied locally, through planning authorities, or nationally, via Building Regulations. Therefore, the standards set through the Local Plan may be reviewed.

Extensions to Residential Buildings

4.9 Residential extensions are expected to improve the overall energy and water efficiency of the existing building, in addition to complying with Building Regulations. The Householders' Guide provides detailed information how this can be achieved.

4.10 The building work on the extension may create opportunities to improve the existing building. Some of the housing stock in the district is amongst the oldest in the country and special advice is available to owners of historic buildings (please see Historic Environment SPD). However, most buildings can be improved. In addition to any new extension, the main areas to consider are:

- Increasing insulation to the existing house roof, walls and floor
- Draft proofing the existing house
- Upgrading the boiler and/ or heating controls
- Installing renewable energy, as set out in the Householders' Guide.

Refurbishment of Small, Non-Residential Buildings

4.11 In this context, a 'small' building is one that is less than 1000m2. Some forms of refurbishment will require planning permission; for example where such works cause material change to the external appearance of a building, or fall within the definition of development. Further advice on what types of refurbishment may require planning permission is available at the Planning Portal www.planningportal.gov.uk.

4.12 No requirements over and above that of Building Regulations are made. However, the advice given in the Householders Guide is relevant.

4.13 When historic buildings, including heritage assets are refurbished, special requirements are made, which are described in more detail in the council's Historic Environment SPD. For example, renewable energy provisions may not always be appropriate and may have to be reversible, in order to maintain the heritage value of the asset.

High Quality Development

4.14 With reference to Local Plan Core Policy 14: Our Built & Historic Environment, in terms of this SPD, high quality design needs to support the pursuit of sustainable development. New development should establish a balance between the economic, social and environmental objectives of a place, and reinforce the creation of that place. In this way, even relatively small scale developments impact on the collective achievement of 'place'.

4.15 To be high quality, a design must be integrated into its context and surroundings but also, where possible and justified, make a new statement within that environment. This will need to occur at different scales; from the broad, infrastructural relationships through to the individual details of the design. This can be expressed through the technology and construction methods used in a building as much as through its aesthetic qualities. Wherever practicable, new developments should include sustainable construction methods, such as recycling building materials and sourcing materials locally.

Sustainability Checklist

4.16 To help applicants and developers consider all the factors that may affect their proposal, the council has produced a Sustainability Checklist (see Appendix 2). Applicants are advised to complete this checklist, as far as possible/ applicable, and to seek further advice from the council if needed.

Appendix A Space about Dwellings and Amenity Standards for all Development

Introduction

1 The purpose of these guidelines is to ensure a satisfactory standard of amenity for existing and proposed occupiers of residential properties within the District.

2 This is to be achieved by ensuring adequate spacing around dwellings, whilst taking account of outlook and privacy.

3 The provision of adequate space about dwellings is an important element in achieving a high standard of design and layout and provides:

- adequate daylight and sunlight to rooms and rear gardens;
- reasonable privacy for dwellings within their proposed layout and to protect the privacy of existing dwellings;
- a satisfactory level of outlook, within new development and in relation to existing development;
- a reasonable area of private amenity space to allow such uses as drying washing, gardening and children's play, together with space for garden sheds, greenhouses and future extension to the dwelling;
- reasonable communal areas of open space for apartments and some types of special housing.

4 Policy BE1 (High Quality Development) of the Local Plan Strategy notes that in terms of the built vernacular, "New development, including extensions and alterations to existing buildings, should carefully respect the character of the surrounding area and development in terms of layout, size, scale, architectural design and public views…" Local Plan Strategy. It also notes that development should have a positive impact on amenity.

5 NOTE:

- This Appendix is intended to provide developers and homeowners with useful guidance when looking to carry out new developments, and does not apply to permitted development works. All planning applications are assessed on their own merits.

Daylight and Sunlight

6 The design and layout of both new buildings and extensions should aim to maximise sunlight to internal accommodation and private amenity areas. Ideally primary main habitable room windows, especially for lounge/sitting rooms should not face north.

7 External obstructions can affect the quality and quantity of light entering an adjacent property. New development and extensions should not be of a size that results in an overbearing impact on neighbouring residential property. The Council applies 45° and 25° daylight guidelines.

8 The 45 degree guidelines will be utilised for front and rear extensions to a dwelling or for new built development to assess the impact on the dwelling next door. It shall only apply where the nearest side of the extension or building is perpendicular to the window (Figure A.1). The 25 degree guide line shall apply for windows which face the extension or buildings opposite. (Figure A.4).

45° guideline

9 To apply the 45 degree guideline there are 2 stages to this assessment. Should stage one be met then stage 2 is not required.

10 Stage 1 – Assesses the impact of the depth of the extension. Take the elevation of the window wall of existing neighbouring development and draw diagonally at ground level at an angle of 45 degree from the furthest corner of the extension / new building towards the affected neighbouring dwelling. (Figure A.1)

Figure A.1

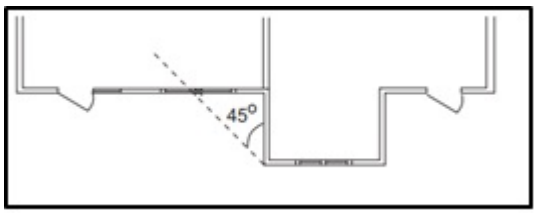

Figure A.1: Stage 1 Plan - 45° guideline assessment. Centre of affected window is within 45° angle on the plan so stage 2 needs to be utilised.

11 Should the 45 degree line lie closer to the extension / new building than the centre of the affected window then there will be no significant reduction in light. If the centre of the neighbouring window is within the 45 degree line then there is likely to be a loss of light, so stage 2 should then be carried out to confirm whether the light reduction is significant.

12 Stage 2– Assesses the impact of the height of the extension or new building. For an extension / new building with a flat roof, draw a 45 degree line from the highest point of the extension towards the affected window.

Figure A.2

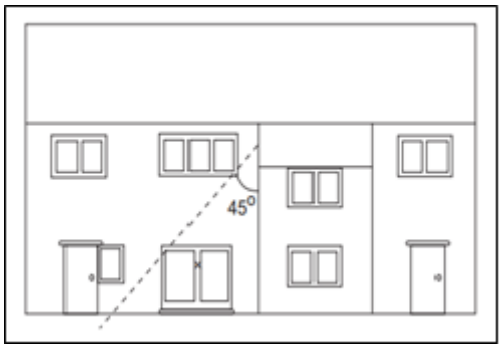

Figure A.2: Stage 2 Elevation - 45° guideline assessment. In this example the impacted patio door is within the 45° angle on both plan (Figure A.1) and elevation, so a significant reduction of light is likely.

13 For an extension / new building with a front to back mono pitched roof, draw a 45 degree line starting at a point halfway between the eaves and the ridge towards the affected window. For standard gable draw a line from the eaves. If the centre of the neighbouring window is within the 45 degree line then there is likely to be a loss of light received. In the case of a floor to ceiling window e.g. patio door, a point 1.6m above the ground on the centre line of the window may be used. Figure A.3 shows both 45° guidelines being applied.

Figure A.3

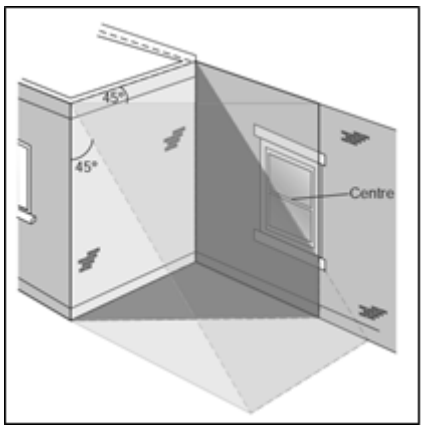

Figure A.3 - Application of both stages of the 45° approach to a domestic extension. A significant amount of light is likely to be blocked if the centre of the window lies within the 45° angle on both plan and elevation. In this example the centre of the window lies outside the 45° angle on elevation so the extension is only likely to have a small impact. Therefore the proposal is acceptable.

14 These guidelines should be applied flexibly, and any existing intervening structures should be taken into consideration (e.g. existing extensions, boundary treatments), as the existing structures are likely to already block light from that direction. The context of the proposal will also be considered e.g. extensions / new buildings which lie to the north of a neighbouring window, no overshadowing will be caused, however there may still be an overbearing impact (see outlook below) or whether the affected window is a secondary window i.e. this window is not the primary source of daylight to the room.

15 A further exemption is the construction of conservatories, which are predominantly glazed. Conservatories which do not meet the guideline may be considered acceptable provided that they are fully glazed above a height of 2m, so as not to allow any light blockage, mitigating the impact of its location.

25° guideline

16 To assess the impact of a new building / structure opposite an affected window (Figure A.4) a 25 degree guideline is applied. To utilise, draw a perpendicular line at a vertical angle of 25 degrees from the centre of the affected window towards the proposal (or 1.6m above ground for a full length window or door). If any part of the building (including roof) is within this line then there is likely to be a loss of light to the window. Should the eaves of the new building or structure be above this line then there is likely to be an impact on light received and therefore the impact is likely to be unacceptable.

Figure A.4

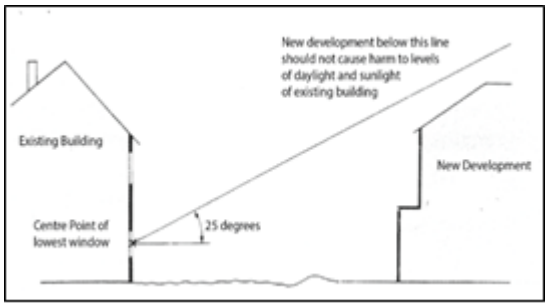

Figure A.4: Section in plane perpendicular to the affected window wall from existing to proposed development showing acceptable application.

Privacy and Outlook

17 To allow for the retention or provision of sufficient privacy to adjacent occupiers, new development should meet the following guidelines:

Adequate Separation

- Be at least 21 metres between dwellings where primary principal habitable windows face each other. If there is an intervening screen the distance between ground floor facing windows can be reduced to 15 metres; or 13 metres in the case of single storey dwellings. Principal habitable windows are defined as windows serving living rooms, play rooms, dining rooms, kitchens and bedrooms. A primary window is the main or only window to which light illuminates the identified room. Less weight is given to secondary windows due to the existence of the primary source of light (Figure A.5).

Figure A.5

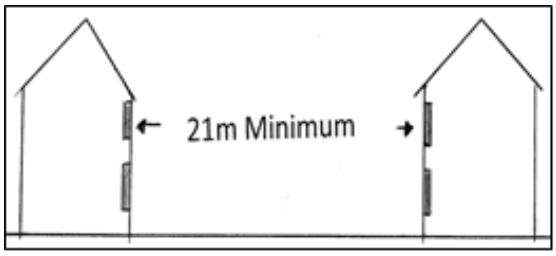

Figure A.5: An appropriate separation distance for facing principal habitable room windows.

Overlooking

- Windows in side elevations at first floor level to serve principal habitable rooms will not generally be supported, where neighbouring properties exist. However, if secondary windows are deemed necessary, that don't meet the separation standards, they should be obscure glazed (to level 3 or above) and either fixed shut or top hung. (Figure A.6)

Figure A.6

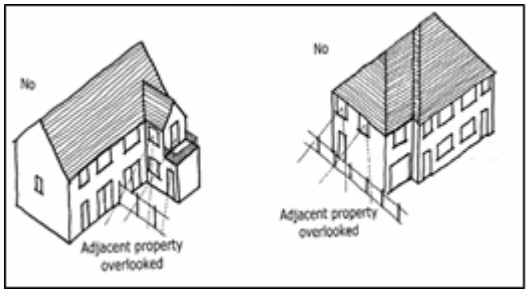

Figure A.6: examples of inappropriate overlooking from side facing windows / balconies.

- No windows serving principal habitable rooms shall be provided on side elevations at ground floor level, unless there is an intervening screen (i.e. wall or fence) blocking interaction; or the window is obscure glazed top hung / fixed shut.
- In addition, there should be at least 6 metres between a primary principal habitable room window and private neighbouring residential amenity space (e.g. a private garden or private patio), except where there is no overlooking demonstrated.

Outlook

- To avoid any undue overbearing impact on neighbouring properties in terms of outlook as a result of new development, both from and to, where one dwelling faces the two storey side of a neighbouring property, and which is a blank elevation (i.e. no facing windows), the minimum distance separation between the 2 storey parts of each dwelling should be 13 metres or 10 metres in the case of single storey development. (Figure A.7)

Figure A.7

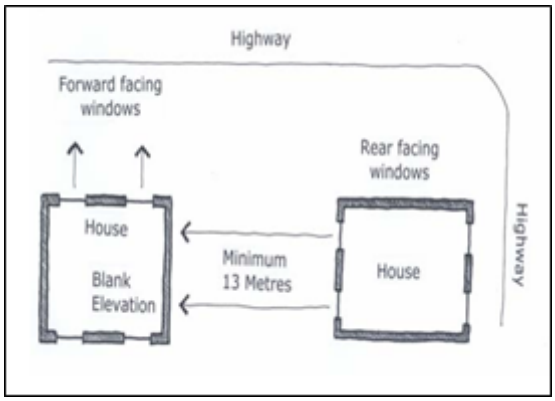

Figure A.7: Protection of outlook

- Balconies / roof terraces – These should be sited carefully and designed to prevent any overlooking of principal habitable rooms; or the gardens of neighbours at a distance of not less

than 10m. Such impacts could be mitigated through solid screens being erected to the sides of balconies / terraces to prevent any direct overlooking of adjacent habitable windows or immediate patio areas.

18 NOTE:

- A reduced separation distance between two front elevations which directly face each other may be appropriate, where the siting of the new development reflects the existing context.

- Increased separation distances will be required where there are significant variations in ground level between new development and existing development. As a general guide, the distance separation between proposed development and existing development should be increased by 2 metres for every 1 metre rise in ground level, where the proposed development would be on a higher ground level.(Figure A.8).

Figure A.8

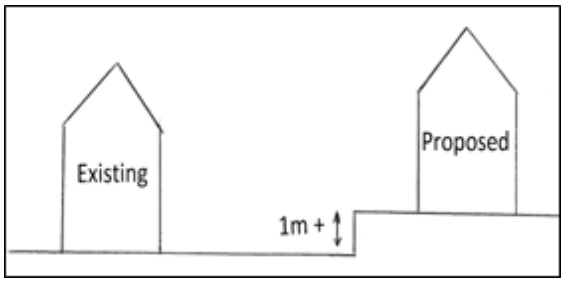

Figure A.8: In this example due to the proposal being on higher ground additional separation is required if the proposal is either face to face with existing development, or if existing development faces the side of the proposed development, due to an increased impact.

- Additional separation is not required where proposals are side by side with existing development; or where proposals are on lower ground when compared to existing development.

Private Amenity/Garden Space

19 The provision of garden space for dwellings is important in order to provide activities connected with outdoor residential use, such as gardening; drying / washing; children's play space, together with some space for garden stores/ sheds. Both new and extended dwellings should allow for an acceptable provision of these uses.

20 All private amenity space should be a minimum of 10 metres in length and the total area of the garden should be a minimum of:

- 45 square metres for dwellings with 2 or less bedrooms;

- 65 square metres for dwellings with 3 and 4 bedrooms;

- 100 square metres for dwellings with 5 or more bedrooms;

- 10 square metres per unit for flats/apartments provided in shared amenity areas.

21 NOTE:

- Flexibility may be applied in relation to the above garden length standard, depending upon the site orientation.

- Also, with regard to garden/private amenity areas for new dwellings or in relation to conversion schemes, flexibility will be applied depending upon the individual merits of the

development proposal, including the proximity to existing public open space.

- In terms of extending older properties the surrounding context should also be taken into consideration.

Other Considerations: Right to Light Legislation

22 The right to light is a legal right which one property may acquire over the land of another. If a structure is erected which reduces the light to an unobstructed property to below sufficient levels, this right is infringed. A right to light can come into existence if it has been enjoyed uninterrupted for 20 years or more, granted by deed, or registered under the Rights of Light Act 1959.

23 Planning permission does not override a legal right to light. There also may be instances where development built under permitted development rights compromises light levels to an existing window.

24 In both instances, where a right to light is claimed, this is a matter of property law, rather than planning law. It will therefore be for the parties affected to seek a legal remedy separate from the planning application process. The Council will have no role or interest in any private dispute arising and it will be for the owner or occupier affected to seek a legal remedy. Impact on right to light will not therefore justify a reason to refuse planning permission.

Appendix B Lichfield District Council Sustainability Checklist

1 Policies within the 'Sustainable Communities' section of the Local Plan require new development to contribute to sustainable development and enhance the quality of life for residents, now and in the future.

2 Core Policy 3: 'Delivering Sustainable Development' underpins the Local Plan and sets out principles against which all development proposals will be assessed to ensure the creation and maintenance of sustainable communities.

3 Development management Policy SC1: 'Sustainability Standards for Development' seeks to ensure the sustainable design and construction of buildings, particularly through reducing carbon emissions, and thereby contribute to sustainable communities.

4 Core Policy 13: Our Natural Resources is the over arching policy which safeguards our natural resources including biodiversity and development management policy NR3: Biodiversity, Protected Species and their Habitats protects, enhances, restores our biodiversity and geodiversity and seeks to deliver a net gain for biodiversity where impacts arise from development proposals. Development Management policy NR2: Development in the Green Belt seeks to enhance the beneficial use of the Green Belt whilst retaining its character and openness in accordance with national policy and NR5: Natural and Historic Landscapes provides the development management policy safeguard through decisions which protect, conserve and enhance sites of international, national , regional and local importance.

5 Core Policy 14: Our Built and & Historic Environment is an over arching policy which serves to protect and improve the built environment this further supported through development management policy BE1: High Quality Development: All developments proposals should ensure that a high quality sustainable built environment can be achieved.

6 To assist applicants in achieving the aims of these policies the District Council has developed the a sustainability checklist which will form Appendix B of this document and become part of the Planning Validation requirements once approval from the relevant Committees has been gained.

Appendix B Lichfield District Council Sustainability Checklist

Appendix C Objectives of Urban Design

1 Taken from: By Design – Urban design and the planning system: towards better practice, (2000) DETR and with reference to the principles contained within the NPPG, established 2014).

Character

- a place with its own identity
- to promote character in townscape and landscape by responding to and reinforcing locally distinctive patterns of development, landscape and culture

Continuity and Enclosure

- a place where public and private spaces are clearly distinguished
- to promote the continuity of street frontages and the enclosure of space by development which clearly defines public and private areas

Quality of the Public Realm

- a place with attractive and successful outdoor areas
- to promote public spaces and routes that are attractive, safe, uncluttered and work effectively for all in society, including the less able and elderly

Ease of Movement

- a place that is easy to get to move through
- to promote accessibility and local permeability by making places that connect with each other and are easy to move through, putting people before traffic and integrating land uses and transport

Legibility

- a place that has a clear image and is easy to understand
- to promote legibility through development that provides recognisable routes, intersections and landmarks to help people find their way around

Adaptability

- a place that can change easily
- to promote adaptability through development that can respond to changing social, technological and economic conditions

Diversity

- a place with variety and choice
- to promote diversity and choice through a mix of compatible developments and uses that work together to create viable places that respond to local needs

Appendix D Lichfield District Council Parking Standards

Introduction

1 This section sets out recommended parking standards for new developments within Lichfield District.

2 Policy ST2 (Parking Provision) of the Local Plan Strategy requires that appropriate provision is made for off street car parking in development proposals in accordance with maximum car parking standards set out in this document.

3 Policy ST2 states that in considering the level of car parking provision, the District Council will have regard to:

1. The anticipated demand for parking arising from the proposed, or other uses which the development may be put without needing planning permission;

2. The scope for encouraging alternative means of travel to the development that would reduce the need for on-site parking. This will be particularly relevant in areas well-served by public transport;

3. Provision for alternative fuels including electric charging points;

4. The impact on safety and residential amenity from potential on-street parking and the scope for measures to overcome any problems; and

5. The need to make adequate and convenient provision for disabled parking.

4 It is however to be appreciated that the NPPF and Core Policy 5 of the Local Plan Strategy encourage a reduction in car usage by promoting sustainable transport choices. Such considerations will be taken into account in the determination of applications for new developments and the standards set out below are to be seen as 'maximum' standards.

Objectives

5 The main objective of this guidance is to ensure that sufficient space is provided within new developments to accommodate its generated parking needs, having regard to the location, layout, size, shape, access needs and design quality.

6 The maximum parking standards set out in the table below are intended to ensure that parked vehicles do not become either a safety hazard or environmental nuisance.

7 These standards will however be applied in a flexible manner in having regard to the location and needs of the development/end user. For example, in central areas that are well served by good public transport links developments may require less parking provision.

8 The following criteria will be considered in negotiating the level of parking provision within developments:

- The nature of the development/type of use
- The location of the development (Town centre; Conservation Area; urban or rural area etc)
- The development type i.e. new build/redevelopment/refurbishment or conversion
- The proximity to public parking areas, including availability of on-street parking
- Accessibility of the site/development by sustainable transport links

- Number of employees/end users
- Assessment of use of development by the local populace/work force
- Any special operational requirements of the development
- Levels of car ownership
- Multiplicity of uses proposed and the degree of combined usage

Design Standards for Car Parking

9 The size, layout and location of parking spaces within all developments should meet up to date standards (as set out in Manual for Streets), to allow the adequate access and manoeuvring of vehicles thereto.

10 At minimum car parking spaces should be 2.4m by 4.8m for perpendicular parking spaces, with adequate clear zone around to allow manoeuvring thereto/from. An aisle between parking bays set at 90 degrees to it shall have a minimum width of 6m or alternatively an aisle between parking bays set at 45 degrees to the traffic flow may have a minimum of 3m.

11 Regard should also be had to the provision of disabled car parking spaces, particularly in relation to commercial or community use/developments. Such spaces should be a minimum size of 2.4m by 4.8m plus 1.2m accessibility zone between and a 1.2m safety zone on the vehicular side of the parking bays. Please refer to Inclusive Mobility (DfT 2005) and Traffic Advisory Leaflet 05/95 (DfT) for further advice on best practice in designing spaces for disabled people.

Cycle Parking Provision

12 Policy ST2 also requires provision of sufficient, safe, weatherproof, convenient and secure parking and associated facilities within all new developments to assist in promoting cycle use.

13 In most cases the provision for cycle parking should be made within developments, although in some cases there may be scope for communal cycle parking area e.g. within village/town centres. Recommended cycle parking standards are set out in Table D1 below.

How to use the Standards

14 The standards relate to uses defined in the Town and Country Planning (Use Classes) (Amendment) (England) Order 2010. For any use not included in the standards, the number of parking spaces will be determined based on the individual merits of the scheme.

15 All standards are based on gross floor area by external measurement. The term gross floor area includes the total floor space of a building, including areas such as service corridors and lifts and toilets.

16 Mixed uses will be assessed as a sum of the parking requirements of the individual elements of the scheme based of the standards, unless the timing of demand associated with individual uses can be shown to allow dual use of spaces.

Table D.1 Car Parking Standards

Development/Use Type	Car Parking Requirement	Cycle Parking Requirement
Residential (C3)	5 bed plus: 3 spaces per dwelling	1 & 2 bed: 1 space per dwelling. Garage or other secure store within curtilage of 3 bed plus units: min 2 per dwelling.
	3 & 4 bed: 2 spaces per dwelling	
	1 & 2 bed: 1 space per dwelling plus 1 space per 3 dwellings for visitors.	
Sheltered Housing (C3)	1 car space per 3 units for visitors/residents plus 1 space per resident staff.	1 space per resident staff.
Residential Institutions (C2)	1 space per residential staff	1 space per 5 staff.
	1 space per 4 beds for visitors.	
	Plus 2 spaces for servicing/emergency vehicles.	
Higher/Further Education (D1)	1 space per 2 staff members	1 space per 10 students.
	1 space per 15 students.	
Primary/Secondary Schools (D1)	1 space per staff member.	1 space per 2 staff members.
Children's Day Nursery/Creche (D1)	1.5 spaces per 2 full time staff plus 1 drop off space per 10 children.	1 space per staff member
Hotels (C1)	1 space per bedroom. Plus 1 space per 3 staff at busiest time.	1 space per 5 staff
Public Houses (A4)	1 space per residential staff member. Plus 1 space per 5sqm of dining area.	1 space per 60sqm gross floor area.
Shops (A1)	Food Retail: 1 space per 15sqm gross floor area.	1 space per 200sqm gross floor area.
	Non food: 1 space per 25sqm gross floor area.	

Development/Use Type	Car Parking Requirement	Cycle Parking Requirement
Business Use (B1)	1 space per 25sqm up to 250sqm then 1 space per 30sqm gross floor space.	1 space per 200sqm gross floor space.
General Industrial (B2)	1 space per 45sqm gross floor space	1 space per 300sqm gross floor space.
Warehouse (B8)	1 space per 90sqm gross floor space.	1 space per 500sqm gross floor space.
Community Centres/Exhibition Halls etc (D1)	1 space per 2.5 staff members at the busiest time plus 1 space per 5 sqm of public floor space.	1 space per 5 staff plus 1 space per 100 sqm.
Clinics/GP/Health Centres (D1)	1 space per GP plus 1 space per 2.5 other staff plus 3 spaces per consulting room.	1 space per 5 staff plus 1 space per 3 consulting rooms.