Foreword

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Councillor Marilyn Ashton, Portfolio Holder for Planning, Development and Enterprise

Welcome to the Sustainable Building Design SPD

In July 2007 the Council signed up to the Nottingham Declaration and in doing so committed to actively tackle climate change in the borough, specifically by working with stakeholders to reduce carbon emissions and improve energy efficiency. Harrow is a vibrant outer London borough. However increasingly we are going to need to accommodate more people and build more homes in a way that uses natural resources in a more sustainable way.

The Council is committed to improving the quality of the life of its residents, specifically by improving the sustainability of homes and buildings. The Council recognises that every resident can play a role in helping to achieve this aim, by better insulating their homes, reusing materials, using energy efficient lighting, installing solar panels or simply turning off unnecessary appliances. Equally, in all new developments much can be done to ensure that energy efficiency is integrated into building design, such as green roofs and roof gardens, reusing and refurbishing materials and installing grey-water recycling.

The focus of this Sustainable Building Design SPD is to ensure that the Council will encourage developments that are more efficient, cost less to run (heat and maintain) and that are more sustainable.

Councillor Marilyn Ashton

Portfolio Holder for Planning,
Development & Enterprise

Sustainable Building Design Checklist

Harrow Council - Sustainable Building Design SPD - Post consultation version

Sustainable Building Design Checklist

1 Introduction

1.0.1 In July 2007 Harrow signed up to the Nottingham Declaration and committed to actively tackle climate change in the borough, specifically by working with stakeholders to reduce carbon emissions and improve energy efficiency. To give effect to this Declaration the Council is developing a borough wide Climate Change Strategy. This Sustainable Building Design Supplementary Planning Document (SPD) supports the principles of this strategy to champion initiatives and influence policies to help reduce the impact of the built environment and people's life choices to reduce climate change.

1.0.2 Harrow is a vibrant outer London borough with a culturally, historically and physically diverse landscape. The quality of the borough makes it a desirable place to live, work and visit. However, Harrow faces global pressures such as climate change, increased population densities and inefficient use of scarce resources.

1.0.3 Presently Harrow does not have any detailed local guidance on ensuring development is more sustainable and therefore relies on the requirements of the current Building Regulations. As a result the Council has produced this SPD to ensure that existing and new buildings subject to planning applications in the borough are designed and built in a more sustainable way. This document sets out to identify how the Council will take account of international, national and regional policies on sustainable development and set out how they will be applied in Harrow. Specifically the SPD will:

- provide greater detail on achieving energy efficiency and resource use improvements
- identify what aspects of sustainability are locally important and the incremental improvements that will need to be made in order to meet the Government's energy efficiency targets for the future
- be taken into consideration for all planning applications including new and retrofitted buildings to ensure that over time the buildings in Harrow become more energy efficient.

1.0.4 The Council expects the following benefits from producing a Sustainable Building Design SPD to include:

- either reduced running costs associated with energy and water use, or lower utility costs such as maintenance and refurbishment
- reduced environmental impacts associated with energy and resource use
- improved comfort for users of buildings and increased quality of life
- improved adaptability of buildings to future changes in use as well as changes in climate

1.0.5 It is anticipated that ultimately the housing market will demand more sustainably built developments especially as the general cost of living increases and finite natural resources become more scarce.

1.0.6 This SPD sets out the Council's requirements for Sustainability Checklists to accompany planning applications and gives guidance on the range of measures and techniques that can be employed to achieve more sustainable development. A summary of all relevant local sustainable development considerations is included in the Sustainability Checklists. There are two checklists found in the Appendices, **Appendix A** is for Householder applications while **Appendix B** is for Major and Minor applications.

1.0.7 It is intended that this SPD and associated checklists be read alongside the London Plan, Harrow UDP, relevant Local Development Framework documents and any other guidance produced by the Government or regionally. In addition the Council expects that other relevant SPDs and guidance prepared such as Accessible Homes or Access for All and the Section 106 Planning Obligations SPDs are taken into consideration.

Sustainability in Harrow

1.0.8 The Council is committed through the Nottingham Declaration to ensure that all new development achieves much higher sustainability standards. Harrow's Sustainable Community Plan states priorities for the borough. One of these priorities, acknowledging the Nottingham Declaration, is that Harrow aspires to "be recognised as a leader in the race to reduce carbon emissions through technological innovation and community action."

1.0.9 The emerging Climate Change Strategy is currently being prepared by the Council to give clear direction to the borough's actions against climate change. This SPD supports the principles of the developing strategy and the Nottingham Declaration and is one of the ways by which the Council will address the challenges of climate change by promoting a reduction of carbon emissions through sustainable development.

1.0.10 It is recognised that there is a continuing need for new homes in Harrow due to increasing population and therefore households. This opportunity to provide high quality, sustainable homes and commercial space will be realised through this SPD. Predominantly the residential form is of inter-war housing stock, comprising semi-detached and short terraces of dwellings typical of the era. There are a number of large scale development sites in Harrow Town Centre and elsewhere and it is anticipated that these will be developed in the next few years. However the number of existing properties in Harrow far outweigh any new development coming forward. Renovation or refurbishment of these existing buildings provides opportunity to improve energy efficiency across the Borough.

1.0.11 For the Borough to be recognised as a leader in the reduction of carbon emissions the Council wishes to promote development that strives to go beyond the minimum standards in this document. Also it is anticipated that the minimum targets will be revised as technology and construction techniques for more sustainable buildings become available.

Content of the SPD

1.0.12 The Council wants to ensure that all new and renovated development results in homes and buildings that are more efficient. This SPD includes the following:

- the overarching objectives that promote sustainable development
- details on how to achieve sustainable buildings through design
- the criteria to assess the sustainability of individual planning applications
- advice on how to improve the environmental performance of buildings/ developments
- advice on how to find more information on achieving better environmental performance

1.0.13 The guidance and requirements set out in this document, specifically chapters 4 and 5 and Appendix A & B (the sustainability checklists), will be a material consideration when determining the outcome of all planning applications by the Council. It is intended that this Sustainable Development SPD will be used by local residents, planners, developers and builders involved in preparing, commenting on or determining a planning application.

Structure of the SPD

1.0.14 The Sustainable Development SPD is structured as follows:

Chapter 1 (this chapter) - sets out the purpose of this SPD. It summarises how the document has been prepared and how the document will be used.

Chapter 2 - places the SPD within the wider international, national, regional and local statutory framework and sets out the relationship that this document will have with the existing UDP and the emerging LDF.

Chapter 3 - identifies two 'Overarching Objectives' and two 'Requirements'. These objectives provide broad sustainability outcomes that the Council expects developments to achieve.

Chapter 4 - headed Supporting Sustainable Achievement, identifies specific sustainable outcomes for all developments to achieve.

Chapter 5 - provides the sustainable design themes to be applied and the objectives to be achieved.

Appendix A - is the sustainability checklist that is to be completed as part of Householder Applications.

Appendix B - is the sustainability checklist that relates to Major and Minor Applications.

Appendix C - list of Relevant Planning Policy Guidance & Planning Policy Statement documents and the Regional and Local Policy Framework

Appendix D - is the Code for Sustainable Homes summary

Appendix E - minimum Residential Floor Areas for Flats

Appendix F - identifies key words and abbreviations where further explanation is needed.

1.0.15 Within Chapter 5 - Sustainable Design Themes and Outcomes, each theme has four parts:

- Relevant Policies: this details relevant regional and local policies for each theme.

- Outcomes: this details the aspirations for each theme that the Council will encourage developers to meet or exceed. It is noted that outcomes for householders are different from those expected from major and minor developments, and this is reflected in the checklists in **Appendix A** and **B**.

- Principles: this details the outcomes sought, linked to National and London policies and guidance. The principles also provide information on how the outcomes identified can assist in achieving the relevant Code for Sustainable Homes Level or BREEAM Standards.

- Signposts: this details relevant supporting information and guidance to help achieve the stated outcomes for each theme. Links to national, regional and local policies, plans and strategies as well as other organisations documents are detailed, in an attempt to guide where further information on building innovation and inventions is available. As technology change is ongoing, the signposts are not intended to be exhaustive or complete. Refer to Appendix C for a summary of all policy and other documents and signposts detailed in the SPD.

Consultation and Involvement

1.0.16 Public consultation on the draft SPD commenced on 16 October 2008 and ended on 19 November 2008. The consultation was undertaken in accordance with the Council's adopted Statement of Community Involvement (August 2006).

1.0.17 A total of 16 responses were received from various statutory authorities, developers, local interest groups and individuals. These comments and responses were used to revise and inform the SPD to better determine the level of sustainability that future developments within the Borough will be required to meet. A full summary of the comments raised by each respondent, and the Council's response to these comments, is available on the Council's website at http://www.harrow.gov.uk/site/scripts/documents.php?categoryID=200074.

2 Relationship of SPD with other Planning Documents

2.0.1 This SPD is intended to give greater guidance to householders and developers on how to ensure all new developments are more sustainable, specifically to reuse materials, reduce energy use and carbon emissions in an attempt to minimise wider climate change impacts, through taking into account of international, national, regional and local planning documents and guidance. This section of the SPD provides a summary of international, national, regional and local level policy and guidance in respect of sustainable building design. The analysis of this hierarchy of policy considerations, objectives and targets, provides an understanding of the context within which this SPD has been prepared.

International and National Policy

2.0.2 The UK signed up to the European Declaration on Sustainable Development in 1999. Also as part of the EU, the UK ratified the Kyoto Protocol which became a legally binding treaty in 2005. This is an international agreement on climate change which had the objective of reducing greenhouse gases that cause climate change.

2.0.3 These international agreements have resulted in action from the UK Government introducing a set of policies targeting climate change and sustainable development in planning. A key goal of the Government is to reduce carbon emissions by 20% below 1990 levels by 2010 and 60% by about 2050. Other legislation and guidance include:

- the Planning and Compulsory Purchase Act (2004) contains a statutory requirement for Local Planning Authorities to undertake functions with the objective to contribute towards sustainable development
- Energy White Paper (2003) and the Climate Change Bill (2007). This aims to put in place a framework to achieve a mandatory cut in the UK's carbon emissions by 2050
- Securing the Future - The UK Government's Sustainable Development Strategy (2005) among other things has four agreed priorities, sustainable consumption and production, climate change, natural resource protection and sustainable communities
- The relevant Planning Policy Statements and Guidances, a full list is found in **Appendix C**. These documents cover topics such as housing, biodiversity, sustainable waste management, renewable energy, pollution control, flood risk, noise and transport. In particular PPS1: Delivering Sustainable Development and the Supplement to PPS1: Climate Change specifically outlines how planning authorities should approach tackling climate change. As PPS1 states, these policies complement other national planning policies and should be read in conjunction with other relevant statements of national planning policy.

2.0.4 Other national standards have been produced which inform this SPD, including standards that have been created in partnership by government, the Building Research Establishment (BRE) and the Construction Industry Research and Information Association (CIRIA).

- Code for Sustainable Homes (2006) gives a rating from Level 1 to Level 6, with Level 6 being a zero carbon home. All homes must now have a rating even if that rating is NIL.
- the Building Research Establishment Environmental Assessment Method (BREEAM) Standards which can be used to assess the environmental performance of any

type of building (new and existing). BREEAM Standards give ratings of poor, good, very good and excellent

2.0.5 The existing UK Building Regulations are the national standard that exist to ensure the health and safety of people in and around buildings as well as the energy efficiency of buildings. These regulations and standards are separate from planning but apply to most new buildings and many alterations of existing buildings. However these regulations are set as a minimum requirement for relevant developments.

2.0.6 The objectives and targets set out in this SPD are set above current Building Regulations. The Council will require development, where feasible, to fulfil the objectives and requirements set out in this SPD and may, in some cases, require external examination or certification by an independent assessor, separate from the Council, to review the applicant's assessment of feasibility in complying with the requirements of this SPD. Achieving these higher targets is supported by national legislation such as the Planning and Compulsory Purchase Act and PPS1, Supplement to PPS1 as well as regional policy.

2.0.7 The Supplement to PPS1 makes it clear that it may be appropriate for planning authorities to require higher levels of building performance in advance of the Building Regulations. For new homes, local standards should be based on the Code for Sustainable Homes. Increasingly Boroughs in London and other Councils nationally are taking this approach.

2.0.8 The consultation document '*Building a Greener Future*' (CLG, December 2006) sets out the overall strategy for moving towards zero carbon development. The anticipated timetable to see the requirements of the Building Regulations revised to the equivalent to the following levels of the Code is as follows:

- Level 3 (25 per cent improvement on 2006 regulations) in 2010
- Level 4 (44 per cent improvement on 2006 regulations) in 2013
- Level 6 (zero carbon development by 2016

2.0.9 PPS1 requires Development Planning Documents to be kept up to date and in line with national policy. To be recognised as leader in climate change Harrow would see a graduated approach to the requirements set out in this SPD. Therefore the objectives and outcomes set in this document will be revised and kept above any relevant changes in the Building Regulations.

Regional Policy

2.0.10 The consolidated London Plan provides sustainable development policy and direction for all London Boroughs including Harrow. Relevant broad development strategies in chapter 2 include policies:

- **2A.1 Sustainability criteria** - which promotes, supports and encourages the development of London in ways that secure the London Plan's social, environmental and economic objectives; and
- **2A.9 The Suburbs: supporting sustainable communities** - which supports sustainable communities in suburban areas of both inner and outer London. Relevant policies for these areas should seek to enhance the quality of life, economy and environment of suburban London (*inter alia*) by:

- encouraging a low carbon dioxide emission approach across London's suburbs, including lower density areas, taking into account the need to foster more sustainable approaches to the re-use, recycling and management of waste and the use of water, energy and land by Londoners themselves through changing lifestyles: within the existing stock of buildings; in the design and construction of new development, and in transport use and choices.

2.0.11 Particular detailed policies relevant to this SPD are the policies found in Chapter 4A 'Climate Change and London's Metabolism' of the London Plan. The most relevant policies include but are not exclusive to policies:

- **4A.1 Tackling climate change** - requires developments to make the fullest contribution to the mitigation of and adaptation to climate change and to minimise emissions of carbon dioxide; and
- **4A.3 Sustainable design and construction** - seeks to ensure future developments meet the highest standards of sustainable design and construction

2.0.12 Links are provided to these and other relevant policies in Chapter 4 the 'Overarching Sustainability Objectives and Achievements' and Chapter 5 'Sustainable Building Design Outcomes' in this SPD. Also further detail to policies and principles are found in the Mayor of London's Supplementary Planning Guidance - Sustainable Design and Construction (2006).

2.0.13 This SPD is also informed by other regional strategies including:

- Action Today to Protect Tomorrow: The Mayor's Climate Change Action Plan (2007)
- London Climate Change Adaptation Strategy (2008)
- Connecting with London's Nature: The Mayor's Biodiversity Strategy (2002)
- Green Light to Clean Power: The Mayor's Energy Strategy (2004)
- Water Matters: The Mayor's Draft Water Strategy (2007)
- Sounder City: The Mayor's Ambient Noise Strategy (2004)
- Cleaning London's Air: The Mayor's Air Quality Strategy (2002)
- The Mayor's Transport Strategy (2006)
- Rethinking Rubbish in London: The Mayor's Municipal Waste Management Strategy (2003)

Local Policy and Targets

2.0.14 This SPD supplements 'saved' policies in the Harrow Unitary Development Plan (UDP) adopted in 2004, giving greater detail to the policies within the UDP that promote sustainable development in the Borough, and will be a material consideration in the determination of planning applications. The relevant saved policies are:

2.0.15 **Policy S1: The Form of Development and Pattern of Land Use**

2.0.16 This policy seeks development that achieves conservation and enhancement of natural resources, which minimise water and reduces pollution. Paragraph 2.38 of the reasoned justification to the policy provides further clarification on theses aspects:

2.0.17 *"The location, design (including built form) and layout of buildings should minimise resource consumption, including energy and water resources, and the amount of waste and pollution produced. New development can be an opportunity to enhance natural*

resources, including local biodiversity. Use of sustainable construction materials and techniques, including, where possible, use of local materials and resources and disposal of waste in line with the proximity principle, will also secure the conservation of resources. The Council wishes to see good practice in all new development, encourages renewable energy and and low energy schemes, and will seek to demonstrate projects exemplifying the principles of sustainable design, use and construction..."

2.0.18 **Policy EP12: Control of Surface Water Run-Off**

2.0.19 This policy seeks attenuation measures to be incorporated in all development that generates surface water run-off. Again the reasoned justification to the policy to the policy, in paragraph 3.48 provides further clarification:

2.0.20 *"New development normally increase surface water run-off, where permeable surfaces are replaced by impermeable surfaces such as roofs and paving, and through compaction from vehicular movement. Increasing the risk of flooding, pollution and silt deposition, untreated run-off damages habitat and leads to river instability. Effects can occur at a distance remote from the development. Flood risk management needs to be applied to the whole river catchment and not be restricted to floodplains. Developers are advised to give careful consideration to the role that trees, open land, including where appropriate rough grassland and scrub, and vegetation play in slowing down the flow of rainwater into the drainage system, offsetting some of the adverse effects of surface water run-off... Consideration should be given to the use of SUDS, retention of vegetation and the role of tree planting in reducing surface water run-off and hence flood risk...."*

2.0.21 **Policy EP15: Waste Management, Disposal and Recycling Facilities**

2.0.22 Policy EP15 encourages recycling and waste minimisation by ensuring the provision of appropriate facilities and by responding favourably to proposals which are consistent with theses aims. Paragraphs 3.57 and 3.58 amplify what is sought by this policy:

2.0.23 *"The Council recognises that to encourage people to recycle, adequate recycling facilities must be provided. Minimising waste from construction can be integral to the design and construction of new development and is closely linked to resource efficiency. Considerable scope exists within the construction industry to reduce waste, for example, by recycling demolition and construction wastes, where possible on site by using recycled materials... and resource efficient construction methods. Opportunities for incorporating recycled/re-used materials in new development and hence to minimise waste arisings should always be considered. Where appropriate, recycling facilities and/or provision for storing waste will be sought as part of new development..."*

2.0.24 *"...Waste to energy facilities may have a role to play in reducing the need to landfill waste, with the added benefit of recovering some value from waste in the form of heat or heat and electricity (via Combined Heat and Power). However, such facilities should be small scale and burn residual waste (waste left over from recycling) in order not to compete with recycling or undermine efforts to minimise waste by removing the incentive to reduce waste..."*

2.0.25 **Policy EP26: Habitat Creation and Enhancement and EP28: Conserving and Enhancing Biodiversity**

2.0.26 These policies seek to protect existing biodiversity, encourage the creation of new habitats and the consideration/mitigation of biodiversity impacts associated with new development. The reasoned justification to the policies refers to the rich variety of habitats in that exist in the Borough and the preparation of a Harrow Biodiversity Action Plan (which has subsequently been completed and was adopted in 2008)

2.0.27 **Policy D4: The Standard of Design and Layout and D7: Design of Retail Areas and Town Centres**

2.0.28 Policy D4 lists the factors to be taken into account when considering planning applications for development including energy efficiency, renewable energy and sustainable design and construction. Policy D7 states that new buildings in town centres should also comply with Policy D4. Paragraph 4.13 of the reasoned justification to Policy D4 deals specifically with energy efficiency, renewable energy and sustainable design and construction:

2.0.29 *"The promotion of energy efficiency and the adoption of sustainable design principles will help reduce the overall environmental impact of development and land use in the Borough. Such matters need early consideration in the design process. Development proposals should maximise energy efficiency and contribute to lower resource consumption, through layout , orientation, siting of windows, materials used, insulation, air movement, solar access and building design and construction. In terms of water usage, building design should minimise consumption, encourage on-site filtration and waste treatment. Development proposals should, where possible, aim to minimise waste production and/or re-use waster materials. Buildings should be designed to be flexible, adaptable and maintainable with minimal use or resources. Developers are encouraged to carry out life cycle analysis to identify the overall environmental impact of their proposals and to take account of the British Research Establishment's Environmental Assessment Method 'BREEAM' on cost effective measures to conserve energy, reduce waste and environmental impact. The Council may use conditions to ensure that BRE recommended standards are met and that buildings are BREEAM certified."*

2.0.30 **Policy D9: Streetside Greenness and Forecourt Greenery**

2.0.31 This policy seeks to to resist proposals which would result in the complete hard-surfacing of front gardens and encourages the retention/provision of landscaping. Although the policy is largely intended to safeguard and improve the aesthetic environment of the Borough, the reasoned justification recognises that green areas can contribute to wildlife habitats.

2.0.32 **Policy EM22: Environmental Impact of New Business Development**

2.0.33 This policy applies to applications for business, industrial and warehousing development or redevelopment and, amongst other things, requires the following to be taken into account:

- The process to be carried out and emission of noise, smoke and other pollutants
- The expected energy use and reliance on fossil fuels.

2.0.34 Links are made to relevant policies in the UDP in Chapter 4 the 'Overarching Sustainability Objectives and Achievements' and Chapter 5 'Sustainable Building Design Outcomes' in this SPD.

2.0.35 Other documents prepared by the Council that are relevant to this SPD include:

- Harrow Council's Sustainable Community Strategy which shows how the organisations making up Harrow Strategic Partnership will try to shape the effects of global, national, regional and local trends and events to work towards successful outcomes for Harrow's community.
- Harrow Council's Corporate Plan sets out the Council's high level priorities and targets for the coming years. Specifically the Plan contains:

  - the Council's vision, which is a long-term statement about the borough

  - a set of corporate priorities for the next three years listing what the council considers to be most important; and

  - a number of flagship actions for the coming year which demonstrate what our corporate priorities mean in practice.

- Harrow Council's Biodiversity Action Plan sets out a framework for the protection, conservation and enhancement of wildlife within the borough and has identified various habitats and species, which are of importance within the borough.
- Harrow Council's Contaminated Land Strategy outlines this authority's aims, objectives and priorities for inspection, identification and remediation of contaminated land.
- the Harrow Council's Strategic Flood Risk Assessment which highlights the potential level of risk from flooding on land throughout the Borough with the aim to reduce the risk of flooding on new development.

2.0.36 These and other relevant documents and strategies produced by the Council or other agencies and organisations are highlighted in the Signposts at the end of section.

3 Submitting a Planning Application

3.0.1 The principal aim of this SPD is to inform the preparation of planning applications and to contribute to the achievement of more sustainable development in Harrow. The relevant checklist must be completed and submitted with a planning application; the checklists serve to point applicants to the sustainability features and initiatives that should normally be incorporated into a scheme as well as demonstrate to the Council that these issues have been considered. This SPD and the accompanying Checklists will be a material consideration in the determination of planning applications submitted to the Council. The information provided by applicants completing the relevant Checklist will be used by the Council in the assessment of the application.

3.0.2 The two Checklists that accompany this SPD are found at **Appendices A** and **B** and are summarised as follows:

Checklist A - Household Planning Applications: this covers applications for extensions and alterations on private dwellings such as houses or flats (refer to **Appendix A**).

Checklist B - Minor and Major Applications: this must be filled out for all applications for developments such as all new dwellings, commercial, industrial and retail buildings, extensions to non-residential buildings and change of use including conversions of houses and other buildings to flats (refer to **Appendix B**).

3.0.3 The Council will require the relevant sustainability checklist to be submitted for all planning applications as it will help demonstrate what sustainability features have been incorporated. The sustainability checklists have been structured in the same order as the guidance found in chapters 4 and 5. This should make completing the checklist easier by referring back to the relevant sections in this document.

3.0.4 It is important that the relevant checklist is completed for the application it accompanies and should be treated as part of the application. The checklist will be publicly available alongside the application for anyone to see. Failure to submit a completed checklist may cause delay in determining the planning application.

Checklist A: Submitting a Householder Application

3.0.5 **Checklist A - Householder Applications** has been designed to raise awareness of initiatives and steps that householders can take to make their homes more efficient and sustainable. Many of the initiatives and features within this SPD can be easily implemented alongside the other work proposed and whilst an extension or other work is taking place on a home it may be more cost effective to install sustainability initiatives at the same time, minimising disruption to occupiers. The benefit of a more energy efficient home is that it not only reduces a family's carbon footprint, but it can help save on utilities bills by reducing the amount of energy and water used.

3.0.6 The **Checklist A** should be submitted to the Council as part of any Householder Planning Application to provide information on proposed sustainability initiatives and features. Some outcomes found on **Checklist B - Minor and Major Applications** have been omitted in the Householder Checklist as it is considered unreasonable to expect householder application's to meet all of these requirements. However the Council urges householders to look at the checklist with a view to implementing as many initiatives

as possible. In the signposts there are links to organisations that can assist householder's e.g. grants, as well as free products or services which may reduce initial installation costs to make homes more efficient and sustainable.

3.0.7 Not all development requires a planning application. Prior to carrying out any work it is strongly advised to check with the Council as to whether planning permission is required. Householder's are strongly encouraged by the Council to consider sustainability initiatives in developments where planning permission is not required.

Checklist B: Submitting a Minor or Major Application

3.0.8 **Checklist B** is to be submitted along with all Minor and Major planning applications. Like the Householder Checklist, it has been designed to raise awareness of sustainability issues. By completing the checklist, applicants are able to demonstrate the consideration and inclusion of sustainability initiatives in their development. The amount of information provided in **Checklist B** should reflect the complexity of the application. Small extensions to commercial property will require less information than proposals for large scale residential developments. The information produced will be alongside the other documents submitted as part of the application and will be available for anyone to see and make comments on.

3.0.9 All relevant sections of **Checklist B** should be completed. Sections left blank should be accompanied by a brief explanation as to why the section is not considered relevant to the development proposed.

3.0.10 Where applications are for small extensions and do not result in major refurbishment or renovation of the entire building then only the new extension will be assessed by the Checklist. However applicants are strongly encouraged to implement sustainability measures into the rest of the building.

3.0.11 Applications for the conversion of houses or other buildings to flats will be required to complete all aspects of **Checklist B**.

Pre-application Advice

3.0.12 The Council welcomes and encourages discussion before an application for development is submitted. Such advice can be of great assistance to the applicant by identifying the principle planning issues and requirements and speeding up the statutory planning process. Completing the relevant checklist as much as possible as part of seeking advice can assist both applicants and the Council.

3.0.13 More information on the planning department's pre-application advice service can be found on the Harrow Council website at: www.harrow.gov.uk or by contacting the Department on tel: 020 8736 6068

4 Overarching Sustainability Objectives and Achievements

4.0.1 Through this SPD, the Council has developed a sustainable development vision to help give greater guidance to developers and the community on the importance of sustainability. It is important to ensure Harrow actively strives to reduce its impact on climate change and reduce carbon emissions.

Sustainable Building Design Vision

By 2025, Harrow will be a more sustainable outer London Borough that has integrated national standards (BREEAM and Code for Sustainable Homes) and sustainability initiatives into all developments, to reduce the impact of society on the environment by reducing our carbon footprint, waste, pollution and energy consumption and by promoting sustainable construction and design through the use of renewable energy, conservation of water and reduced flood risk.

4.0.2 In order to achieve Harrow's sustainable development vision, the following crosscutting objectives have been identified as integral to guide all development and growth within the borough to help deliver the vision. The objectives and achievements outlined within this chapter are designed to provide a framework for the more specific and detailed standards outlined in chapter 5. The following crosscutting objectives are further discussed in subsections 4.1, 4.2 and 4.3 of this Chapter. Relevant links to the key policies, strategies and other information is included in subsection 4.4 of this Chapter.

Crosscutting Objective 1: Achieving Sustainable Design, to ensure that developments are of a high quality design, all developments will:

- enhance the existing built environment, the visual amenity and wider public realm
- be flexible for different uses in the future as well as adaptable to future climatic conditions
- be made heat resilient in design, construction and operation.

Crosscutting Objective 2: Achieving Efficient Resource Use, to ensure that development is built in a way that makes the best possible use (and reuse) of materials and energy, not only during construction, but throughout the life of the development, by:

- limiting the amount of natural resources used, particularly those which are finite and not sustainable
- using resources that are derived from replaceable or renewable sources
- reducing the impact that development has on the environment specifically through waste or pollution as well as other undesirable impacts on the environment

Crosscutting Objective 3: Enhancing Biodiversity, to ensure that development conserves, protects and enhances the biodiversity of Harrow:

- by ensuring that they mitigate any adverse or harmful impacts on habitats and biodiversity
- by taking steps to conserve existing biodiversity in the borough
- and where possible enhance existing and provide for a net gain of biodiversity

4.0.3 To ensure sustainability is integrated into all developments in Harrow it is essential that Sustainable Design measures are considered at the outset of the developments design as opposed to being added in an ad hoc fashion to the development at the final stages.

4.0.4 As well as the crosscutting objectives above, there are two achievements that the Council expects all development to meet. These achievements are taken from national standards. The following achievements are further discussed in subsections 4.5 & 4.6 and signposts in subsection 4.7 of this Chapter.

Achievement 1: Meeting the Code for Sustainable Homes and BREEAM Standards, to ensure that all residential development achieves, as a minimum, Level 3 of the Code for Sustainable Homes, with an aim of achieving Level 4 and beyond by 2010 ahead of national targets.

To ensure that all non-residential development achieves a minimum rating of 'VERY GOOD' of the BREEAM standards.

Achievement 2: Responsible Site Management, to ensure that all development sites are responsibly managed, by complying with;

- the Council's Considerate Contractors Code of Conduct
- the emerging Council's Construction Skills Training Co-ordination Programme (specifically major applications)

4.1 Achieving Sustainable Design (Crosscutting Objective 1)

4.1.1 It is important that sustainability is seen in an integrated way. Successful development will incorporate sustainable principles early in the inception and design of the scheme. This ensures that measures are integral to the design and are not simply added in an ad-hoc fashion to the development at the final stages.

4.1.2 This document does not intend to tell developers what to design or how to design it. It has been created to highlight key principles to sustainable development and the expectations of the Council to the steps developers and applicants should aspire to. When investigating which sustainability initiatives will best suit their development, developers are encouraged to keep good design principles in mind. Developments demonstrating a high quality of design will be supported by the Council.

Amenity

4.1.3 The Council requires a high standard of design in all developments and applications will be assessed on their individual merit based on relevant development plan policies. Sustainability initiatives or features must not come at the expense of the amenity of the surrounding area. A well designed building can positively add to the street scene and character of an area and all developments should make the most efficient use of a site, reflecting its particular characteristics and surrounding **s** . Good design ensures attractive usable, durable and adaptable buildings and places and is a key element in achieving sustainable development.

4.1.4 It is important to note that some areas in the Borough may have stricter planning controls such as Conservation Areas and applications for or affecting the setting of Listed Buildings. An applicant should check with the Planning Department in the first instance to gather further information regarding their particular site.

Adaptability

4.1.5 Buildings add a lasting legacy to the urban environment and it is important that they not only efficiently fulfil the function they are designed for today but are adaptable to meet the needs of future generations.

- Buildings should be designed to be adaptable so that they are useful not only for their current use but possible future different uses.
- Buildings should also be flexible to adapt to changing climatic conditions.
- Buildings should be made heat resilient in design, construction and operation.

4.1.6 The Lifetime Homes Standards allow buildings to be easily adapted for use by all people. Lifetime Homes Standards and other accessibility guidance can be found in the Council's Access for All and Accessible Homes SPDs.

4.1.7 Moreover buildings could be adversely affected by changes in climate. Climate change could lead to impact on the structural integrity, external materials, internal environment and their suitability for use. An adaptable building is more sustainable as significantly less resources are required to refurbish a building than to redevelop a site.

4.1.8 The Mayor of London has produced detailed guidance on how to achieve urban and building design that can adapt to possible climate change. The principle anticipated impacts of climate change on London are:

- warmer, wetter winters
- hotter, drier summers
- possible increase in the heat island effect
- more frequent extreme rainfall events
- rising sea levels
- possible higher wind speeds

4.1.9 *Adapting to Climate Change: A Case Study Companion to the Checklist for Development (London Climate Change Partnership, March 2007),* provides case studies of developments or buildings that use techniques relevant to key climate change adaptations issues such as location, site layout, ventilation, drainage, water, outdoor spaces and connectivity. The examples were chosen because they demonstrate techniques or design features which can minimise exposure to climate risk through their design life. Developers are encouraged to consider, at the design stage of their development, the range of techniques that are available to 'build in' resilience to climate change.

Heritage Buildings and Conservation Areas

4.1.10 Harrow has over 300 listed buildings and 28 conservation areas. Particular consideration must be given to the special interest of these buildings. The majority of buildings of special interest can accommodate some improvements to make them warmer and many are capable of incorporating renewable energy systems, but there are some that if altered their special interest would be severely compromised and as such are subject to greater controls on development than other buildings. Assessing whether the energy efficiency of historic buildings can be increased should be undertaken on a case-by-case basis to ensure that the approach meets each building's individual needs.

4.1.11 To check whether a building requires any form of special consent, applicant's are encouraged to contact the Council's Conservation Officer or the Duty Planner for general advice on Conservation Areas.

Phases of Design and Construction

4.1.12 Below is an outline of the three phases of a schemes design and construction and the considerations that should be taken at each phase with regard to sustainability.

Three Phases of Design and Construction	
Feasibility	• Is the site a Greenfield or a Brownfield site? • Are there existing buildings on the site? Is it feasible to refurbish, renovate or reuse these buildings? Are any existing buildings listed? • Is the location suitably close to relevant transport routes and existing utilities? Does this location affect the scale of the development? • What other site conditions are there? Is the site in a Conservation Area? Is the site in an area prone to flooding? Is the site a possible habitat of protected species? • What is the scope for renewables on site? • Appoint a BREEAM or Code for Sustainable Homes assessor (where applicable) • Appoint an ecologist/environmental consultant (where applicable)
Design and Planning	• Does the design respect the prevailing character of the locality that it will be part of? • Will it have any impact on the amenity of existing and neighbouring occupiers? Are these impacts unacceptable? Can they be mitigated? • Building form and orientation; does the design maximise daylight and natural surveillance and minimise external noise nuisance? • Does the design allow easy adaption for different uses throughout the life of the building? • Does the design incorporate resource and energy efficient services (heating, ventilation, water etc) • Does the design accommodate cycling needs, if required? • If the design includes car parking, does this allow for adaptation to accommodate disabled motorists? • Does the design take account of the need for accessible recycling and waste facilities, including internal and external facilities?
Construction	• Considerate Constructors Scheme • Waste Management of construction materials • Air quality • Protecting existing biodiversity • Construction Training Initiative

4.2 Efficient Resource Use (Crosscutting Objective 2)

4.2.1 Sustainable development relies on efficient and prudent use of the Earth's resources. It is recognised that efficient resource use should not only be applied in the construction process but throughout the life of the building.

4.2.2 The three phases of a schemes design and construction are, therefore, not independent of each other. Rather they are inter-related and the achievement of efficient sustainability initiatives may influence considerations across two or even all three of the phases.

Reducing Resource Use

4.2.3 The first phase in the sequence is the cheapest and easiest option to implement. This involves less resource being wasted through more efficient use. Designing efficiencies into the development will have a follow on effect reducing the amount of resources used and costs as well as reducing waste. This phase also requires a consideration of minimising the invisible embodied energy. This is the energy used in obtaining the raw resource and then the manufacturing and transport of the materials to the development site.

Renewable or Replaceable Resources

4.2.4 Renewable resources are derived from replaceable sources, such as the sun, wind, water and plant material. Other sources include reused or recycled resources that do not involve use of natural resources. Using renewable resources can be made more effective through using initiatives to reduce overall resource use.

Mitigating the impact on the environment

4.2.5 The consideration of appropriate mitigation measures seeks to manage or minimise negative or undesirable impacts of development on the environment, such as waste arisings or pollution. Development should not have adverse impacts on either the natural or built environment, including people's health and wellbeing.

4.3 Enhancing Biodiversity (Crosscutting Objective 3)

4.3.1 Some 1,334 hectares (21%) of the Borough's area is given over to green spaces mainly in the north, but there are few areas of wildlife habitat in the heavily built up south. Within the borough these areas consist mainly of neutral grassland and woodland, farmland, public open space and Metropolitan Open Land, all of which supports biodiversity. However it is not only designated open space that can provide habitats. Other land, including privately owned gardens, streams, railway land and allotments can all support biodiversity.

Biodiversity and Habitat Protection

4.3.2 The Council seeks to conserve, protect and, where possible, increase and enhance the biodiversity of Harrow and supports the aims of the Harrow Biodiversity Action Plan. All applicants should assess the impact of development on habitat and biodiversity in the borough. This should be considered during construction as well as throughout the lifetime of the building.

4.3.3 It is important that healthy trees, even if they are not subject to a Tree Preservation Order, are incorporated into the layout of a development, to ensure existing natural heritage, habitats and biodiversity are not needlessly lost to accommodate development. This also will preserve the character of Harrow through retaining the existing 'greenness' of the borough, prized by its residents. The London Tree and Woodland Framework has published 'Connecting Londoners with Trees and Woodlands' in 2005, which contains 'right place - right tree checklist' and the Council advocates this approach, which seeks to ensure that new planting and colonisation are appropriately located and designed.

4.3.4 All new development should consider at the initial design stage any measures that could contribute to the protection and improvement of the natural environment - at a level of a detail appropriate to the planning application in question. This consideration should be given in any accompanying Design and Access Statement if appropriate.

4.3.5 Other methods, such as the use of green roofs and green walls can be appropriate for developments in areas of biodiversity deficiency.

4.4 Crosscutting Objective Signposts

4.4.1 Key policies, strategies and other information relating to the three Crosscutting Objectives are identified below. Refer to **Appendix C** for a summary of the key documents and internet links;

Key document links - Crosscutting Objectives 1, 2 and 3	Signposts - Policy	Date of Publication
1, 2 and 3	**Department of Communities and Local Government:Planning Policy Statement 1**: Delivering Sustainable Development	January 2005
1, 2 and 3	**Department of Communities and Local Government:Planning Policy Statement 1** (supplement): Planning and Climate Change	December 2007
1, 2 and 3	**Greater London Authority**: The London Plan (Consolidated with Alterations)	February 2008
1, 2 and 3	**Greater London Authority** : Sustainable Design and ConstructionSupplementary Planning Guidance (SPG)	May 2006
1 and 2	**Department of Communities and Local Government : Planning Policy Statement 3**: Housing	November 2006
1 and 2	**Department of Communities and Local Government :Planning Policy Guidance 3** (companion guide): Better Places to Live By Design	September 2001
1 and 2	**Greater London Authority**: Action Today to Protect Tomorrow: The Mayor's Climate Change Action Plan	February 2007

Key document links - Crosscutting Objectives 1, 2 and 3	Signposts - Policy	Date of Publication
1 and 2	**Harrow Council**: Harrow Unitary Development Plan (HUDP)	July 2004
1	**Greater London Authority**: London Plan Climate Change Adaptation Strategy Draft Summary Report	August 2008
1	**Greater London Authority**: Adapting to Climate Change: A Checklist for Development	November 2005
1	**Harrow Council**: Accessible Homes Supplementary Planning Document (SPD)	
1	**Harrow Council**: Access for All Supplementary Planning Document (SPD)	April 2006
1	**Harrow Council**: Extensions - A Householders Guide Supplementary Planning Document (SPD)	March 2008
1	**Harrow Council**: Designing New Development Supplementary Planning Document (SPD)	March 2003
2	**Greater London Authority**: Mayor of London's Energy Strategy 'Green Light to Clean Power'	February 2004
3	**Greater London Authority**: The Mayor's Biodiversity Strategy - Connecting with London's Nature	July 2002

Key document links - Crosscutting Objectives 1 and 3	Signposts - Other Information	Date of Publication
1	**Commission for Architecture and the Built Environment (CABE)**:By Design - Urban Design in the Planning System: Towards Better Practice	May 2000
1	**Department of Communities and Local Government**: Safer Places – the Planning System and Crime Prevention	April 2004
1	**Department of Communities and Local Government**:Planning and Access for Disabled People: A Good Practice Guide	March 2003
1	**Habinteg Housing Association**: Lifetime Homes Standard	
1	**ACPO Crime Prevention Initiatives:** Secured by Design **Principles**	June 2004

Key document links - Crosscutting Objectives 1 and 3	Signposts - Other Information	Date of Publication
1	**Commission for Architecture and the Built Environment (CABE), House Builders Federation:** Building for Life Standards	November 2008
1	**Construction Industry Council:** Design Quality Indicator toolkit	
3	**Harrow Council:** _ Harrow Biodiversity Action Plan	2008
3	**Harrow Council:** Roxeth Recreation Ground; Canons Park; & Harrow Recreation Ground Management & Improvement Plans 2006 - 2011	January 2008
3	**Department for Environment, Food and Rural Affairs:** Biodiversity Indicators in Your Pocket	June 2007
3	**Greater London Authority:** Connecting Londoners with Trees and Woodlands, a Tree and Woodland Framework for London	March 2005

4.5 Code for Sustainable Homes and BREEAM Standards (Achievement 1)

4.5.1 The Building Research Establishment (BRE) have produced a set of nationally recognised measures that are considered to be the standard for sustainable development in the country. Residential development can be measured against the Code of Sustainable Homes while non- residential buildings can use the Building Research Establishment's Environmental Assessment Method (also known as BREEAM).

Code for Sustainable Homes Principles

4.5.2 In April 2007 the Code for Sustainable Homes was introduced as the new environmental assessment method for new housing in England. Housebuilders who currently work with EcoHomes will find the credit system of the Code familiar. Like EcoHomes, the Code method measures the sustainability of homes across 7 categories and is measured on a scoring system with six levels from Code Level 1 to Code Level 6 which is based on zero carbon emissions for the dwelling. The Code also includes a NIL rating for houses that fall outside of the standard. The different levels are made up by achieving both the appropriate mandatory minimum standards together with a proportion of the 'flexible' standards. Refer to **Appendix D** for a summary of the categories and levels.

4.5.3 All applications involving new build residential units will be expected to achieve Level 3 as a minimum target for residential developments. The Council's preference is for the attainment of Level 4 or above in the majority of developments but acknowledges that, in certain circumstances, this could result in additional building costs that might impact on development viability.

4.5.4 The achievement of Code Level 3 is already a requirement for affordable housing seeking social housing grant in the next Homes and Communities Agency funding round. For major development sites, for which a portion of residential development will be affordable, the Council considers that it is appropriate for the market housing on such sites to be of, at least, an equivalent standard.

4.5.5 The Council will require Householder Applications that involve major refurbishment and/or substantial residential extensions to achieve Level 3 of the Code where feasible. The Council will not expect houses that benefit from small extensions or alterations to achieve Level 3 or above under the Code although all sustainability measures are encouraged and supported.

4.5.6 After 2010 this SPD will require the attainment of Level 4 of the Code, and by 2013 the Council will seek Code Level 6 for all residential developments.

BREEAM Standards Principles

4.5.7 Major non-residential developments can be assessed under the Building Research Establishment's Environmental Assessment Method (also known as BREEAM). BREEAM standards are designed to address the environmental impact of buildings and have become a nationally recognised way of measuring the efficiency of buildings. These standards are updated regularly in line with UK Building Regulations and different building versions have been created to assess various building types. Although the versions are for buildings with different uses they essentially look at the same broad range of environmental impacts including:

- Management
- Health and Wellbeing
- Energy
- Transport
- Water
- Material and Waste
- Landuse and Ecology
- Pollution

4.5.8 Credits are awarded in each of the above areas according to performance. A set of environmental weightings then enables the credits to be added together to produce a single overall score. The building is then rated on a scale of: PASS, GOOD, VERY GOOD or EXCELLENT and a certificate awarded to the development.

4.5.9 This SPD will require the attainment of Very Good in all non-residential development. After 2010 this SPD will require the attainment of Excellent under the BREEAM Standards or equivalent if other legislation or standards are introduced.

Assessment of the Code or BREEAM Standards

4.5.10 Assessment for either the Code for Sustainable Homes or BREEAM Standards is carried out in two phases:

- Initial assessment and interim certification is done during the design stage of a scheme. This review is based on design drawings, specifications and commitments

made by the applicant. This assessment results in an interim certificate of compliance.

- A mandatory final assessment and certification is carried out after construction. The post-construction review is based on the design stage review.

4.5.11 It is the responsibility of the applicant to supply the relevant information and arrange inspections to obtain certification from a licenced and registered Code for Sustainable Homes or BREEAM Assessor. Information of the intended Code Level or BREEAM Standard that the scheme will achieve should also be included in the Design & Access Statement that accompanies the application. Failure to supply this information may result in the application being found invalid, delaying the progress for determination.

4.5.12 Confirmation of whether there is a requirement to comply with the Code for Sustainable Homes or BREEAM Standards should be obtained through pre-application advice sought from the Planning Department before a planning application is submitted. In cases of major refurbishment of listed buildings and buildings in conservation areas special consideration will need to be made. In these cases an applicant must show that meeting the requirements of the Code or BREEAM Standards would have adverse effects which would harm the existing building or character or appearance of the historic environment. It is strongly recommended that further advice is obtained from the Council's Conservation Officers.

4.5.13 Both design stage/design and procurement assessments and post-construction certificates will need to be completed and issued by qualified licenced and registered assessors of the Code for Sustainable Homes and/or BREEAM. These assessments are separate from Building Regulations. A list of assessors can be found at: www.breeam.org. Also if you wish to become an assessor, further information on training can be found on the BREEAM website.

4.6 Responsible Site Management (Achievement 2)

4.6.1 Sustainable management of development sites during construction can minimise nuisance caused to neighbours and the general public. Also through skills training, opportunities can be given to local job seekers to assist them to get employment.

Considerate Contractor's Code of Conduct

4.6.2 All contractors are required to sign the Council's Considerate Contractor's Code of Conduct. This is an agreement between the contractor and the Council that acknowledges that some actions during demolition or construction can cause nuisance to neighbours as well as pollution and damage to the environment. Moreover some of these actions may be contrary to Environmental Health legislation. By abiding to the Code of Conduct contractors can minimise nuisance to neighbours and ensure good site management practices.

4.6.3 The Code of Conduct requires all contractors and sub contractors to:

- **Be Considerate** - All work is to be carried out with positive consideration to the needs of traders and businesses, site personnel and visitors, and the general public. Special attention is to be given to the needs of those with sight, hearing and mobility difficulties.

- **Be Aware of the Environment** - Consider the environmental impact of your site and minimise as far as possible the effects of noise light and air pollution. Efforts should be made to select and use local resources wherever possible. Attention should be paid to waste management. Reuse and recycle materials where possible.
- **Ensure Site Cleanliness** - The working site is to be kept clean and in good order at all times. Site facilities, offices, toilets and drying rooms should always be maintained to a good standard. Surplus materials and rubbish should not be allowed to accumulate on the site or spill over into the surroundings. Dirt and dust from construction operations should be kept to a minimum.
- **Be a Good Neighbour** - General information regarding the Scheme should be easily accessible for all neighbours affected by the work. Full and regular communication with neighbours, including adjacent residents, traders and businesses, regarding programming and site activities should be maintained from pre-start to completion.
- **Be Respectful to Others** - Respectable and safe standards of dress should be maintained at all times. Lewd or derogatory behaviour and language should not be tolerated under threat of severe disciplinary action. Pride in the management and appearance of the site and the surrounding environment is to be shown at all times. Operatives should be instructed in dealing with the general public.
- **Ensure Everyone is Safe** - Construction operations and site vehicle movements are to be carried out with care and consideration for the safety of site personnel, visitors and the general public. No building activity should be a security risk to others.
- **Be Responsible** - Ensure that everyone associated with the site understands implements and complies with this code.
- **Be Accountable** - The Considerate Constructors Scheme poster is to be displayed where clearly visible to the general public. A site's contact details including phone numbers should be obvious to anyone affected by its activities.

4.6.4 By signing the Code of Conduct the contractor and any sub-contractors hired to do the work, agrees to abide by these principles. Signing up to the Code of Conduct is free and each development should have a separate Code signed. Once work commences, the Code will be displayed prominently so that members of the public can read it.

Harrow Construction Skills Training Programmes

4.6.5 The Council supports construction skills training programmes which provide sustainable solutions for unemployed adults to access construction and trades skills training. This provides residents with valuable skills to make them more employable, while providing the industry with a pool of trained staff.

4.6.6 The Council will seek from major developments an obligation towards providing construction and trades skills training for Harrow residents. This will be administered through an independent organisation that has partnered with the Council.

4.6.7 For further information on this scheme please contact the Planning Department on tel: 0208 736 6089.

ISO 14001 Standard

4.6.8 ISO 14001 is an internationally accepted standard that sets out how companies and organisations can in place an effective Environmental Management System (EMS). The standard is designed to address the delicate balance between maintaining profitability and reducing environmental impact and can be implemented at the construction phase of development, reducing environmental impacts and improving resource efficiency.

4.6.9 The Council's Public Realm and Engineers Service Department is the only organisation in the Borough with a EMS who has currently reached the recognised standards in ISO 14001. Other major developers are encouraged by the Council to adopt ISO 14001 recognised EMS in their organisations.

4.7 Signposts - Achievements 1 and 2

4.7.1 Key policies, strategies and other information relating to the two Achievements are identified below. Refer to **Appendix C** for a summary of the key documents and internet links;

Key document links - Achievements 1 and 2	Signposts - Policy	Date of Publication
1 and 2	**Department of Communities and Local Government : Planning Policy Statement 1:** Delivering Sustainable Development	January 2005
1 and 2	**Department of Communities and Local Government: Planning Policy Statement 1** (supplement): Planning and Climate Change	December 2007
1 and 2	**Department of Communities and Local Government: Planning Policy Statement 3:** Housing	November 2006
1 and 2	**Department of Communities and Local Government:** (Companion Guide) Better Places to Live By Design	September 2001
1 and 2	**Greater London Authority:** The London Plan (Consolidated with Alterations)	February 2008
1 and 2	**Greater London Authority:** Sustainable Design and Construction Supplementary Planning Guidance	May 2006
1	**Department of Communities and Local Government:**The Code for Sustainable Homes	December 2006
1	**Department of Communities and Local Government:** Code for Sustainable Homes: Technical Guide	October 2008

Key document links - Achievements 1 and 2	Signposts - Policy	Date of Publication
1	**Building Research Establishment:** The BREEAM family of assessment methods and tools	

Key document links - Achievements 1 and 2	Signposts - Other Information	Date of Publication
1	**The Housing Corporation:** Cracking the Code: Achieve Code level Three and Above	May 2008
1	**Building Research Establishment Trust (BRE):** Costing Sustainability: How Much Does It Cost to Achieve BREEAM and Ecohomes Ratings?	March 2005
1	**Building Research Establishment Trust (BRE) :** Putting a Price on Sustainability	July 2005
1	**English Partnerships and the Housing Corporation:** The Cost of Achieving New Code for Sustainable Homes Revealed	April 2007
1	**Department of Communities and Local Government:**Report on Carbon Reductions in New Non-Domestic Buildings	December 2007
1	**www.ccinw.com** The Centre for Construction Innovation Overview of BREEAM	
1	Rough Guide to BREEAM: Assessing the Performance of Buildings	
2	Considerate Contractor's Code of Conduct	
2	Construction Skills Training Programmes	
2	**www.considerateconstructorsscheme.org.uk** National Considerate Contractor's Scheme	
2	**Department for Business, Enterprise and Regulatory Reform (BERR):** Building a Better Quality of Life	April 2000

5 Sustainable Building Design Outcomes

5.0.1 It is expected that sustainable design measures and initiatives are incorporated into developments of all sizes and scales. Outlined below are examples of sustainable design methods and the Sustainable Outcomes that the Council wishes to see in all developments. The suggestions here are not presented as an exhaustive list, rather the Council welcomes applications which demonstrate creative and innovative quality design and that support the Sustainability Objectives in the previous chapter.

5.0.2 Many of these sustainability measures, when incorporated into a development, can achieve credits under the Code for Sustainable Homes or BREEAM Standards. This document, however should not be viewed as a comprehensive guide to the Code or BREEAM Standards. Detailed guidance should be sought from BREEAM or the Technical Guide for the Code in order to meet these standards so that developments achieve Sustainable Design Achievement 1.

5.1 Land And Building Reuse

5.1.1 London has a high population and a comparatively small land area. The Council therefore considers land is a precious and limited resource. Harrow has 1,334 hectares of open space in public and private ownership, equivalent to 26% of the land area of the Borough. Publicly and privately accessible open amenity space can improve the quality of life of users of a development as well as contribute to the amenity of a locality.

5.1.2 The reuse of existing buildings can help preserve the local character of an area. Moreover, rather than demolishing and rebuilding, less resources, time and disruption to neighbours will be used through reusing an existing structure.

Relevant Policies

5.1.3 The most relevant regional and local policies relating to land and building reuse are summarised below;

London Plan Policies:

- **3D.8 Realising the value of open space and green infrastructure** - serves to protect, promote and improve access to London's network of open spaces, to realise the current and potential value of open space to communities and to protect the many benefits of open space.
- **3D.9 Green Belt** - seeks to maintain the protection of London's Green Belt and a general presumption against inappropriate development in the Green Belt.
- **3D.10 Metropolitan Open Land** - maintains the protection of Metropolitan Open Land (MOL) from inappropriate development
- **4A.3 Sustainable design and constructio**n - seeks to ensure future developments meet the highest standards of sustainable design and construction.

Harrow UDP Policies:

- **EP32 Green Belt: Acceptable Land Uses** - land in the Green Belt as shown on the proposals map will be kept primarily open in character and free from building development.
- **EP44 Metropolitan Open Land** - Metropolitan Open Land as shown on the proposals map will be kept primarily open in character and free from building development.
- **EP47 Open Space** - The Council will protect and where appropriate enhance the borough's open spaces, parks, playing fields and recreation grounds, regardless of ownership.

Outcomes

Sustainability Issues	Sustainability Outcomes Sought	Reasons
Land reuse	Encourage all development on existing brownfield sites	• To protect the existing Green Belt, MOL and other open space land from development • To encourage better use of derelict, vacant or underused sites, particularly sites close to Harrow Town and district centres, public transport links and growth areas in the emerging core strategy
Building re-use and/or refurbishment	Refurbish and re-use existing on site buildings	• To retain the built character of the borough • To encourage reuse of existing buildings • To reduce the waste from demolishing existing buildings and the need to use additional raw materials to construct new buildings

Land Reuse

5.1.4 The Council places great value on the existing Metropolitan Green Belt, Metropolitan Open Land and other open spaces within the Borough. The Green Belt stretches across the north of the Borough although there is also a separate area of Green Belt at Pinner Park Farm, between Hatch End and Pinner. In total the Green Belt covers nearly 20% of the total area of the Borough.

5.1.5 In order to preserve and protect the Borough's existing Green Belt, Metropolitan Open Land and other open spaces, all development will be located on previously developed or 'Brownfield' land. This principle serves to promote regeneration as well as rehabilitate previously developed land that perhaps may be contaminated.

Building Re-use

5.1.6 In Harrow many existing buildings can be refurbished or re-used removing the need for substantial demolition. The re-use of existing buildings can minimise resource use, construction nuisance, time and cost in the scheme. Also re-using existing buildings will help to enhance and preserve (e.g. in conservation areas) the character or appearance of historic or valued street scenes.

5.1.7 Buildings that are re-used or significantly refurbished or extended will comply with the other sustainability criteria found in this SPD and applicants should submit the relevant checklist with any planning application.

5.1.8 It is acknowledged that some buildings are subject to greater controls on development such as listed buildings or those in conservation areas. In these cases sustainability initiatives will only be acceptable if they do not compromise the special interest of the building or serve to preserve or enhance the conservation area.

Land and Building Reuse in the Code for Sustainable Homes and BREEAM Standards

5.1.9 There are no specific credits to be earned in the Code or BREEAM Standards for development on brownfield land or building reuse. However these principles are supported by high level policies such as PPS1 and the London Plan. Development not on brownfield land is likely to be strongly resisted by the Council.

Signposts

5.1.10 Along with the relevant key regional and local policies identified in this section, other key policies, strategies and other information relating to Land and Building Reuse are identified below. Refer to **Appendix C - Table C7** for a summary of the following key documents and internet links.

Key Policy Documents - Land and Building Reuse	Date of Publication
Department of Communities and Local Government: Planning Policy Guidance 2: Green Belts	January 1995
Greater London Authority: Sustainable Design and Construction Supplementary Planning Guidance. (Relevant sections 2.1.1 Introduction, 2.1.2 Land, and 2.1.3 Buildings)	May 2006

Other Information - Land and Building Reuse	Date of Publication
Energy Efficiency in Buildings Relevant information regarding the refurbishment of existing buildings is included in chapter 16.	2004

5.2 Efficient Energy

5.2.1 According to the Energy Saving Trust, 40% of carbon emissions come from heating and lighting our homes. As a predominantly suburban Borough with a large percentage of inter-war housing stock, Harrow is faced with a real challenge to increase energy efficiency and reduce emissions.

Relevant Policies

5.2.2 The most relevant national, regional and local policies relating to energy efficiency are summarised below;

London Plan Policies:

- **4A.4 Energy assessment** - requires improved energy efficiency and increasing the proportion of energy used generated from renewable sources.
- **4A.5 Provision of heating and cooling networks** - safeguards existing heating and cooling networks and maximise the opportunities for providing new networks that are supplied by decentralised energy. Also ensures new development is linked to existing networks.
- **4A.6 Decentralised Energy: Heating, Cooling and Power** - requires all developments to demonstrate that their heating, cooling and power systems have been selected to minimise carbon dioxide emissions.
- **4A.7 Renewable Energy** - requires Boroughs to adopt a presumption that developments will achieve a reduction in carbon dioxide emissions of 20% from on site renewable energy generation.
- **4A.10 Overheating** - strongly encourage development that avoids internal overheating and excessive heat generation and contributes to the prevention of further over-heating.

Outcomes

Sustainability Issues	Sustainability Outcomes Sought	Reasons
Energy efficiency	Require high quality insulation in all developments through the following or other measures: • cavity wall and roof insulation • draught proofing • double glazing	• To reduce heating costs, by improving the amount of heat retained within a building / development
Decentralised energy	Encourage developments to use decentralised renewable energy sources through the following or other measures: • community heating systems • combined heat and power (CHPs) • combined cooling, heat and power systems (CCHP)	• To encourage energy efficiency gains from individual and multiple developments by sharing energy infrastructure
Renewable energy	Require renewable energy technology in all developments through the following or other measures: • solar heating • photo-voltaics • biomass • wind turbines • heat pumps • Light wells/tubes	• To require greater energy efficiency in developments from renewable energy sources

5.2.3 The Council promotes the Mayor of London's Energy Hierarchy which identifies a set of three principles (detailed below) to guide decisions on energy, while optimising environmental and economic benefits. These principles are intended to be applied in sequence. All developments should demonstrate that consideration has been given to the hierarchy.

The Mayor of London's Energy Hierarchy	
Energy efficiency	• Use energy wisely • Improve energy efficiency • Incorporate passive heating and cooling in design
Decentralised heat and power	• Cut transmission losses through local generation (ie on site generation using renewables, see above) • Use combined heat and power and community heating
Renewable energy supply	• On site: install renewable energy technologies, such as solar water heating, photovoltaics, biomass heating, micro-scale CHP and wind turbines • Off site: Import renewable energy generated elsewhere conserving natural resources and reducing carbon emissions

Energy Efficiency

5.2.4 The Council recognises that the energy efficiency of a building is largely determined by its design, the choice of materials and the choice of appliances around the home or plant and equipment in industrial or commercial buildings. However the energy requirements of an existing or proposed buildings can be reduced through increased efficiency. Relatively simple measures to reduce energy use include:

- increasing the energy efficiency of a building through better insulation such as cavity wall insulation, draught proofing or double glazed windows to minimise heat loss;
- using appliances with better energy efficiency ratings or using low energy light bulbs. Even by turning off appliances rather than leaving them on standby when not in use can save a significant amount of energy.

5.2.5 Passive solar design is the next stage of reducing energy use through a more energy efficient design of the building. Passive solar design ensures that buildings are designed to capture maximum light and heat from the sun. One of the main factors in utilising passive solar heating is the location and orientation of the building. Having the main living or working areas of the building facing south with large double glazed windows can allow natural heating by the sun and reducing the need for artificial light.

5.2.6 Natural ventilation and cooling can be incorporated into a design to reduce the reliance on mechanical ventilation. It is important that large glazed areas such as atriums or conservatories are adequately ventilated and separate from the rest of the building to avoid overheating in summer or excessive heat loss in winter. Also passive shading of windows in summer can reduce the need for artificial cooling by reducing heat trapped inside the building.

5.2.7 Passive solar design can only be considered at the design stage; it provides a one-off opportunity to save energy during the lifetime of a building, generally at no cost. In modern housing, up to 20-25% of heating and lighting energy can be saved by the application of passive solar design principles. Extensions or the refurbishment of buildings can provide another opportunity to incorporate passive solar design, therefore improving the efficiency of a building.

Decentralised Heat and Power

5.2.8 In many cases energy supplied from the national supply network (gas or electricity) is not the most efficient or sustainable method. The use of decentralised renewable energy sources on or close to the site where the energy is used can deliver energy more efficiently than from the national grid. New developments should seek to connect to existing decentralised heat and power networks as well as investigate the potential to link developments through the provision of new networks in accordance with the London Plan.

5.2.9 These community energy sources could include:

- community heating systems
- district combined heat and power systems (CHP)
- district combined cooling, heat and power systems (CCHP)

5.2.10 CHP or CCHP systems simultaneously generate heat and electricity in a single process. These district wide systems are suitable for larger schemes and may result from contributions from a number of developers. Provision of these community initiatives may come through Section 106 agreements.

Energy from Renewable Sources

5.2.11 Renewable energy is derived from renewable or replaceable resources, such as the sun, wind, water and plant material. Various technologies are suitable for developments in Harrow.

5.2.12 The Mayor of London as well as many London Boroughs have adopted policies requiring a percentage of a development's expected carbon emissions are offset through the use of renewables. The London Plan has set a target of 20% of energy from developments to come from renewables, which exceeds the Merton Rule. The Council strongly supports measures taken by developers to achieve and exceed this target in all developments. Renewable energy sources should be integrated with initiatives above to reduce energy use for maximum efficiency. If a building is more efficient then its energy requirements will be less.

5.2.13 Renewable energy technologies can include initiatives such as:

- solar water heating systems which use heat from the sun to work alongside your conventional water heater
- solar photovoltaic tiles use energy from the sun to create electricity
- biomass or biofuels which are produced from organic materials, either directly from plants (such as wood) or indirectly from industrial, commercial, domestic or agricultural products.

- wind turbines that use the wind's lift forces to turn a rotor which creates electricity.
- heat pumps which transfer heat from the ground, air or water into a building to provide heating

5.2.14 Further information on the different types of renewable energy sources can be found in the 'Signpost' section below.

Energy in the Code for Sustainable Homes and BREEAM Standards

5.2.15 There is a mandatory requirement for the improvement of the Target Emission Rate above Building Regulations. This reduction in carbon dioxide emissions can be achieved through both energy efficiency and renewable energy technologies outlined above. Further detail can be found in the Signposts below.

5.2.16 Other considerations for the Code include the total amount of heat lost through poor insulation or draughts. Credits are awarded for the proportion of fixed internal light fittings installed which can only accept energy efficient light bulbs.

5.2.17 Under BREEAM Standards reductions in energy use are credited however there are no mandatory targets set. BREEAM Standards also encourage efficient use of energy through the actions of occupiers through regular maintenance of plant, equipment and buildings as well as education.

Signposts

5.2.18 Along with the relevant key regional and local policies identified in this section, other key policies, strategies and other information relating to Efficient Energy are identified below. Refer to **Appendix C - Table C7** for a summary of the following key documents and internet links:

Key Policy Documents - Efficient Energy	Date of Publication
Department of Communities and Local Government: Planning Policy Statement 22: Renewable Energy	August 2004
Department of Communities and Local Government: Planning for Renewable Energy: A Companion Guide to PPS 22	December 2004
Greater London Authority: Sustainable Design and Construction Supplementary Planning Guidance. (Relevant sections 2.3.2 Energy and Appendix D - Energy Statements)	May 2006
Greater London Authority: Mayor of London's Energy Strategy Green Light to Clean Power	February 2004

Other Information - Efficient Energy	Date of Publication
www.merton.gov.uk Merton Council - information on the rule adopted by Merton Council in 2003 that has also become part of national planning guidance	

Other Information - Efficient Energy	Date of Publication
Greater London Authority: 'Integrating renewable energy into new developments: Toolkit for planners, developers and consultants' provides an overview of the renewable energy technologies and their costs, and an understanding of planning requirements and methods for meeting them.	September 2004
www.itsuptoallofus.com - an online community within Harrow, West London, that wants to share and stimulate efforts to make Harrow more environmentally friendly, and get us travelling in more sustainable ways, more often.	
www.energysavingtrust.org.uk The Energy Saving Trust - information on different options for renewable energy generation. This website also has a comparison site where various popular household appliances are Energy Saving Recommended products can be compared for price.	
www.londonwarmzones.co.uk London Warm Zones - a not for profit organisation working with local councils, the Government and EDF Energy. Includes information and help on obtaining grants for insulation and central heating.	
www.citizensadvice.org.uk Citizen's Advice Bureau - general advice on energy efficiency and saving money for householders.	
www.chpa.co.uk The Combined Heat and Power Association - Works to promote the wider use of combined heat and power and community heating	
Greater London Authority: The London Community Heating Development Study Summary Report - shows specific areas where community heating infrastructure could be developed, building on existing networks	May 2005
www.cibse.org The Chartered Institute of Building Services Engineers publishes Guidance and Codes on matters relating to construction, engineering and sustainability.	

5.3 Sustainable Materials

5.3.1 Materials used in development can have a significant impact on the buildings carbon emissions. This may be through the role of the materials specified and their contribution to the efficiency of the building. Further considerations include embodied energy (the energy used in obtaining the raw materials, manufacturing and transport to the development site) and sustainably sourced materials for use.

Relevant Policies

5.3.2 The most relevant regional policies relating to sustainable material use are summarised below:

London Plan Policies:

- **4A.3 Sustainable design and construction** - seeks to ensure future developments meet the highest standards of sustainable design and construction.

- **4A.30 Better use of aggregates** - to ensure an adequate supply of aggregates through recycling
- **4A.31 Spatial policies to support the better use of aggregates** - seeks to minimise environmental impact and the embodied energy of aggregates

Outcomes

Sustainability Issues	Sustainability Outcomes	Reasons
Renewable materials	Encourage the use of materials from sustainable sources	• To encourage the use of green procurement in all developments • To reduce the use of peat and natural weathered limestone in developments and landscaping • To avoid materials with potentially toxic or damaging impacts
Recycled materials	Encourage the use of recycled materials in a development or from a development, such as; • Hardcore and bricks • building fixtures and fittings (i.e. door and window frames, glass, tiles, plumbing fittings)	• To increase the amount of materials that can be reused and recycled form all developments • To help achieve the national standard of recycling at least 10% of the materials from a development

Sustainable Material Use

5.3.3 Material specifications should consider the impact of the procurement of materials carefully to ensure they are as lean, clean and green as possible. Materials from a sustainable, renewable or a recycled source can limit the amount of the earth's finite resources used. Materials such timber from sustainable forests certified by an organisation such as Forest Stewardship Council (FSC) which is independent, non-governmental, not for profit and established to promote the responsible management of the world's forests.

5.3.4 Materials should be sourced with minimal impact on the environment and with low embodied energy. Materials such as aluminium that requires a large amount of energy to extract, process and transport is an example of having a high embodied energy.

5.3.5 Consideration should be given to the biodiversity impacts of the use of materials such as peat, weather-worn limestone or other materials from vulnerable habitats.

5.3.6 Durability and the adaptability of the materials should also be considered. Thought needs to be given to the whole life cycle of the development. Consideration such as the durability and the amount of maintenance the materials will require should be answered during the planning and design of the development.

5.3.7 Also the role that materials can play in passive solar design should be considered at the design stage for example when seeking pre-application advice.

Re-used or Recycled Materials

5.3.8 Rather than end up as waste, some building materials can be re-used or recycled in new projects. Examples of materials that can be re-used include bricks, hardcore or timber doors. These may may require inspection to ensure their suitability or in the case of timber simple repairs. This can reduce the amount of raw natural resources used in the construction of a building and may also help retain the character of an area, particularly for Listed Buildings and Conservation Areas.

5.3.9 Recycled materials are those which require re-processing before re-use. Re-use materials are preferred in environmental terms because energy, resource use, and often energy used in transport, are less than is the case with recycled materials.

5.3.10 The design and the procurement of materials for a development should also maximise the proportion of materials and components that can be re-used or recycled at the end of the buildings life.

5.3.11 Rather than demolition, sustainable buildings should use materials that can be used after deconstruction or disassembly. Deconstruction or disassembly means that the building is dismantled or taken apart in a way that various components can be reused or recycled in a future development. Therefore, there is less resultant waste ending up as landfill. This further limits the amount of the earth's resources that we use and minimises waste.

5.3.12 Organisations such as London Remade can act as brokers for construction products from recycled materials. Further information can be found in the Signposts section below.

Materials in the Code for Sustainable Homes and BREEAM Standards

5.3.13 The consideration of building materials is a compulsory part of the Code for Sustainable Homes and credits can be achieved for selecting more sustainable options. The environmental impact as well as whether materials are sourced responsibly will achieve credits under the Code. Materials are also a consideration in the Building Research Establishment's Environmental Assessment Method (BREEAM) Standards.

5.3.14 This SPD does not give specific guidance on individual material types or specific sources. The Green Guide to Specification produced by Building Research Establishment (BRE) provides more information on the use of materials in specifications. The Green Guide provides ratings for construction materials and components (more information on the Green Guide can be found in the Signpost section below). The methodology of the rating system takes a 'cradle to grave' approach incorporating:

- embodied impact in the extraction and processing;
- the environmental impacts of the product in use; and finally
- the disposal of the materials at the end of the material's useful life.

Signposts

5.3.15 Along with the relevant key regional and local policies identified in this section, other key policies, strategies and other information relating to Sustainable Materials are identified below. Refer to **Appendix C - Table C7** for a summary of the following key documents and internet links;

Key Policy Documents - Sustainable Materials	Date of Publication
Department of Communities and Local Government: Planning Policy Statement 1: DeliveringSustainable Development	January 2005
Department of Communities and Local Government: Planning and Climate Change - Supplement to Planning Policy Statement 1	December 2007
Greater London Authority: Sustainable Design and Construction Supplementary Planning Guidance(Refer to relevant section 2.3.3 Materials)	May 2006

Other Information - Sustainable Materials	Date of Publication
Building Research Establishment: Green Guide to Specification & BRE Green Guide to Housing Specification - provide designers and specifiers with easy-to-use guidance on how to make the best environmental choices when selecting construction materials and components.	First published in 1996 and regularly updated
www.fsc.org Forestry Stewardship Council (FSC) - FSC certified forests are managed to ensure long term timber supplies while protecting the environment and the lives of forest-dependent peoples.	
www.wrap.org.uk Waste and Resource Action Programme (WRAP) - offers tools, guidance and support for improving efficiency in the use of materials throughout the supply chain.	
www.greenprocurementcode.co.uk The Mayor of London's Green Procurement Code - a free support service for London based organisations committed to reducing their environmental impact through responsible purchasing.	
www.londonremade.com London Remade - a not for profit business working in partnership to develop and improve waste management, recycling and green procurement in London that can act an independent broker for construction materials.	
www.ecoconstruction.org Recycled Materials for Construction Website - provides guidance on issues ranging from planning, choosing and specifying recycled materials, to case studies of recycled & reclaimed material use and links to other informative sites.	

5.4 Water Use and Conservation

5.4.1 Water is a limited resource but we are all using more and more of it. London is one of the driest capitals in the world and the effects of climate change is likely to further reduce supply and increase demand. Water shortages are becoming increasingly common. We need to use the water we have sparingly and sustainably.

Relevant Policies

5.4.2 The most relevant regional and local policies relating to water usage and conservation are summarised below;

London Plan Policies:

- **4A.3 Sustainable design and construction** - seeks to ensure future developments meet the highest standards of sustainable design and construction
- **4A.16 Water supplies and resources** - seeks to protect and conserve water supplies and water resources in a sustainable manner

Harrow UDP Policy:

- **EP15 Water Conservation** - development proposals should include appropriate measures to conserve water

Outcomes

Sustainability Issue	Sustainability Outcomes Sought	Reasons
Water Efficiency	Reduce the amount of water used in developments to protect existing potable water supplies to meet future needs. This can be achieved through the installation of the following and other measures; • dual flush toilets • low flow bathroom and kitchen fittings • low water consumption appliances • durable plumbing • grey water and water recycling systems • water butts and other on site water retention systems	For residential buildings the Code for Sustainable Homes minimum target to achieve Level 3 requires: • 105 litres per person per day for residential buildings. • However the Council aspires for development to seek usage of 80 litres per day

Sustainability Issue	Sustainability Outcomes Sought	Reasons
		For non residential buildings, in order to ensure water efficiency the Council requires: • achieve 50% of the possible credits available under a BREEAM Standards assessment.

Water Efficiency

5.4.3 Developers in Harrow can influence building occupiers to use water more efficiently through water saving initiatives. The main uses of water consumption in new developments are:

- water consumed within the buildings for the purposes of drinking, washing and flushing toilets
- water used for watering plants, irrigating landscaping and washing cars

5.4.4 Developments should minimise the need for water. Water saving devices incorporated into new and refurbished buildings that will reduce the amount of water consumed. The simplest way to do this is through installing efficient water fittings and plumbing such as:

- dual flush toilets,
- low flow shower fittings,
- low water consuming white goods and other appliances such as washing machines
- as well as the use of more durable plumbing which can prevent leakages.

5.4.5 Using non-potable sources of water (water not suitable for drinking) can greatly reduce the amount of potable water being used unnecessarily. Simple measures can be put into place which enable storage of rainwater for non-potable uses. Rainwater can be captured and stored for uses such as flushing toilets. Sources like grey water and water recycling can be used for non-potable uses such as using shower water to flush toilets.

5.4.6 Other uses such as watering plants should also be considered as usually potable water is used. Outdoor landscaping has the benefit of rainfall and an effective way to minimise water use is to ensure that the outdoor plants selected are able to survive with local rainfall only. If plants need to be watered, this should be done with locally collected non-potable sources of water.

5.4.7 Planning applications should demonstrate that grey water and water recycling initiatives have been investigated and where feasible implemented. Justification should be provided where such initiatives are not utilised. Development should make use of grey water and water recycling sources for suitable non-potable uses where it is feasible to do so.

Water Consumption in the Code for Sustainable Homes and BREEAM Standards

5.4.8 The Council has set minimum requirements to be achieved under the water section of the relevant Code for Sustainable Homes or BREEAM Standards.

5.4.9 The Code's mandatory criteria requires internal potable water consumption should be reduced to 105 litres per person per day to attain Level 3 and 4. The Council's preferred target would be 80 litres per person per day and encourages developers to aspire to savings of that level.

5.4.10 The Council has set a minimum target of a score of at least 50% of available credits in the water section of the relevant BREEAM assessment. The preferred target would be above 60% of the available credits. BREEAM credits are awarded where the following measures are in place:

- Water efficient appliances (e.g. low flush toilets)
- Water metering
- Leak detection systems

Signposts

5.4.11 Along with the relevant key regional and local policies identified in this section, other key policies, strategies and other information relating to Water Usage and Conservation are identified below. Refer to **Appendix C - Table C7** for a summary of the following key documents and internet links;

Key Documents - Water Usage and Conservation	Date of Publication
Department of Communities and Local Government: Planning Policy Statement 1: Delivering Sustainable Development	January 2005
Department of Communities and Local Government: Planning Policy Statement 3: Housing	December 2007
Greater London Authority: Sustainable Design and Construction Supplementary Planning Guidance (Relevant section 2.3.4 - water)	May 2006
Greater London Authority: Water Matters: The Mayor's Draft Water Strategy	February 2007

Key Documents - Water Usage and Conservation	Date of Publication
Department of Communities and Local Government: The Code for Sustainable Homes	February 2008
Department of Communities and Local Government: Code for Sustainable Homes: Technical Guide'	April 2008
The British Research Establishment: The BREEAM family of assessment methods and tools	
The Construction Industry Research and Information Association (CIRIA) 'Key Performance Indicators for Water Use in Offices' & 'Key Performance Indicators for Water Use in Hotels'	2006
Other Information -	
The Environment Agency	
www.envirowise.gov.uk - Envirowise is a government programme designed to offer free independent support and advice to help businesses become more sustainable.	
www.waterguide.org.uk **-** The Water Guide offers tips and advice on water related issues	
DirectGov - public service website	

5.5 Mitigating Flooding

5.5.1 Flooding is a natural process and floods can happen at any time. With climate change, the frequency, patterns and severity of floods are likely to become more damaging and flooding can occur even when the site is not near an open water course. The risk of flooding increases with development as the increased area of impermeable surface promotes rapid rain run off rather than soaking into the ground, which can result in localised flooding on the site as well as adding to flooding in other locations down stream.

Relevant Policies

5.5.2 The most relevant regional and local policies relating to Mitigating Flooding are summarised below:

London Plan Policies:

- **4A.11 Living roofs and walls** - expects major developments to incorporate living roofs and walls where feasible.
- **4A.17 Water quality** - seeks to protect and improve water quality.
- **4A.12 Flooding** - identify areas of Flood Risk and within areas at risk (flood zones) the assessment of flood risk for development proposals should be carried out in line with PPS25.

- **4A.13 Flood risk management** - requires the management of existing risk of flooding and the future increased risk and consequences of flooding as a result of climate change.
- **4A.14 Sustainable drainage** - seeks to ensure that surface water run-off is managed as close to its source as possible.

Harrow UDP Policies:

- **EP11 Development within Floodplains** - states development within floodplains will not normally be permitted unless in exceptional circumstances.
- **EP12 Control of Surface Water Run-Off** - requires that appropriate attenuation measures should be incorporated in all development generating surface water run-off.
- **D9 Streetside Greenness and Forecourt Greenery** - the Council will seek to achieve and retain a high quality of streetside greenness and forecourt greenery in the borough.

Outcomes

Sustainability Topic and Issue	Sustainability Outcomes Sought	Reasons
Flood Risk	Planning Applications will comply with the Environment Agency's Flood Risk Standing Advice and Local Planning Authority advice.	The Environment Agency's Flood Risk Standing Advice (FRSA) Matrix gives guidance on acceptable landuses in different flood zones. Permission contrary to this advice only be granted in exceptional circumstances where: • benefits from the development outweigh the risks from flooding; and • there are no reasonably available sites in areas of lower flood risk.
Drainage systems	Reduced surface water run off by encouraging the use of sustainable urban drainage systems (SUDS) and other measures; • soft landscaping/ gardens and greenscape • pervious pavements and greenspaces • swales and basins • ponds and wetlands • infiltration trenches • green roofs	To reduce the impact of flood events due to increased impervious paving and faster rain water-run off into drains and culverts. The level of hard surfacing of residential front gardens should not exceed 5 square metres and if porous materials are not used, provision must be made to direct runoff water from hard surfaces to permeable or porous areas within the curtilage of the property

Flood Risk

5.5.3 The cause of flooding can come from different sources.

- rising river levels;
- directly from heavy sustained rainfall;
- rising ground water;
- incapacity of sewers and drainage systems.

5.5.4 Measures to minimise the risk of flooding, both on site and elsewhere, should be designed into the developments.

5.5.5 Traditional drainage is designed to move rainwater as quickly as possible from the point at which it has falls to a discharge point, either a watercourse, river, drainage system or soakaway. This approach can have harmful effects:

- run-off from impervious areas including roads, paving, roofs and driveways can increase the risk of fast rising flooding downstream,
- surface water run-off can contain pollutants. This can have a detrimental impact on public health, waterborne environments and the biodiversity of our ecosystems.
- by diverting rainfall to piped systems, water is stopped from infiltrating into aquifers. This can lead to a depletion of ground water, reducing flows in watercourses in dry weather and natural process of recharging ground water aquifers

5.5.6 The Council will require that the location of development is in areas which will avoid flood risk to people and property in accordance with Planning Policy Statement 25. The Council will seek to ensure that flood risk is taken into account at all stages of the planning process to avoid inappropriate development in areas at risk of flooding and to direct development away from areas at highest risk. Therefore the Council will only permit development in areas of flood risk when:

- there is no objection from the Environment Agency or the Local Authority;
- there are no reasonably available sites in areas of lower flood risk that have not been identified in Harrow's Strategic Flood Risk Assessment; and
- the social and economic benefits of the development will outweigh the risks from flooding.

5.5.7 The onus is on the applicant to prove to the satisfaction of the Council that there are no reasonably available sites and that the benefits outweigh the risks. Applicants should consult the the Environment Agency's Flood Risk Map of the UK, the Flood Risk Standing Advice (FRSA) Matrix and Harrow's SFRA.

Sustainable Urban Drainage Systems

5.5.8 Sustainable development includes reducing flood risk to and from new development through location, layout and design incorporating Sustainable Urban Drainage Systems (SUDS). SUDS can reduce the total amount by attenuating increased flows of surface water that runs directly to rivers through storm water systems which would otherwise surcharge existing under capacity surface water systems damaging property, infrastructure and the environment. Also opportunities can be offered by new development to mitigate and improve the impact elsewhere.

5.5.9 SUDS should be considered and incorporated into the site layout during the design and planning stage of development. By using landscaping features that would already be provided as part of the site scheme (e.g. grassed amenity areas, car parking) SUDS

can be easily incorporated into the site layout and offer further benefits. Wherever possible multiple benefits from SUDS should be sought, such as the provision of open space, wildlife, water ecosystem improvements and water conservation.

5.5.10 SUDS should be provided where appropriate and feasible unless advised otherwise by the Environment Agency that it would be detrimental to the environment to do so – for example where there is possible contamination of the site. If SUDS cannot be provided on site, consideration should be given to making a contribution to off-site SUDS and/or consideration given to remediation of the contaminated land.

Types of SUDS

5.5.11 Approaches to SUDS include:

- **Permeable pavements and 'green spaces' -** Soft landscaping, lawns and gardens rather than paving over outdoor spaces. This is the simplest form of SUDS and can be incorporated into many different types of landscaping schemes at all scales of development. Also permeable concrete blocks, crushed stone, permeable macadam or other surfacing allows water to infiltrate directly into the subsoil, or be stored in an underground reservoir (e.g. crushed stone layer) before soaking into the ground. Green spaces incorporated as SUDS can also contribute to the attractiveness of a street. Householders and developers should not pave over the front garden's of houses and flats, as a high level of front garden greenery can serve a dual purpose of contributing to a SUDS and to the attractiveness of the locality.
- **Swales and basins -** provide temporary storage for storm water, reduce peak flows to receiving surface water systems and can be created as landscape features within a site. They facilitate the filtration of pollutants, microbial decomposition and water infiltration directly in the ground.
- **Ponds and wetlands** - are areas put aside that act as overflows and enhance flood storage capacity of existing water courses. They enable high levels of filtering through plants and algae and also offer the potential to recycle grey water and can be fed by swales, filter drains or piped systems.
- **Infiltration trenches -** stone filled reservoirs where stormwater run-off is diverted. Water gradually infiltrates the ground from the trench.
- **Green roofs and roof gardens -** The plants and their growing medium (substrate) can provide temporary storage of storm water. Instead of running straight off the roof, the rainwater is attenuated in the the soil and growing matter of the green roof. This water then can then evaporate or is used by the plants growing on the roof.

Water Run-off and Flood Mitigation in the Code for Sustainable Homes and BREEAM Standards

5.5.12 The Code has a mandatory requirement that peak run off rates and annual run off volumes post development must not exceed the previous conditions of the site. Also credits can be gained in the Code where SUDS are used to provide run off attenuation from hard surfaces. The percentages of water attenuation on site required to earn credits depends on the flood risk of the site.

5.5.13 Additionally credits can be earned for development in low flood risk areas or for the provision of run off attenuation measures if the development is in a medium or high risk area.

Signposts

5.5.14 Along with the relevant key regional and local policies identified in this section, other key policies, strategies and other information relating to Mitigating Flooding are identified below. Refer to **Appendix C - Table C7** for a summary of the following key documents and internet links;

Key Policy Documents - Mitigating Flooding	Date of Publication
Department of Communities and Local Government: Planning Policy Statement 25: Development and Flood Risk	December 2006
Greater London Authority: Sustainable Design and Construction Supplementary Planning Document (Relevant section 2.4.4 Flooding)	
Greater London Authority: Water Matters - The Mayor's Draft Water Strategy	March 2007
Environment Agency Flood Risk Standing Advice - advice on flooding for applicants and developers as well as for local planning authorities.	
London Borough of Harrow Strategic Flood Risk Assessment	

Other Information - Mitigating Flooding	
Harrow Council Vehicle Crossing Guidance Note - Information for residents of Harrow wishing to drop a kerb to gain access to their front garden	
Harrow Council Drainage Bylaws	
Harrow Council Policy Statement for Flood Defence	
Environment Agency 'General Guidelines to the Prevention of Pollution'; Pollution Protection Guidelines 1	Updated in 2008
Environment Agency: Sustainable Drainage Systems (SUDS)	2008
CIRIA: The SUDS Manual - best practice guidance on planning, design, construction, operation and maintenance of (SUDS) to ensure their effective implementation within developments.	March 2007
CIRIA: Source control using constructed pervious surfaces, hydraulic, structural and water quality performance issues (C582)	2001
National SUDs Working Group: Interim code of practice for Sustainable Drainage Systems -	July 2004
CIRIA : Sustainable Urban Drainage Systems: design manual for England and Wales (2000) - design guidance on SUDS	2000

Other Information - Mitigating Flooding	
CIRIA: Green Roofs – an Introduction and Overview of Benefits - a research advice note promoting green roofs and roof gardens on buildings	July 2008

5.6 Soundscapes

5.6.1 Noise and vibration can be a significant nuisance and can have a negative impact on quality of life. New development can be criticised for poor insulation and can cause friction between neighbours within new and adjoining existing developments. However there are a number of design and layout principles that can reduce the adverse impact of noise. As the density of buildings and people increases the challenge to mitigate the impact of unacceptable noise also increases.

Relevant Policies

5.6.2 The most relevant regional and local policies relating to noise effects are summarised below;

London Plan Policy:

- **4A.20 Reducing noise and enhancing soundscapes** - seeks to reduce noise in London.

Harrow UDP Policies:

- **EM25 Food, Drink and Late Night Uses** - The Council will seek to ensure that proposals for food and drink uses (A3) and any late night uses do not have a harmful effect on residential amenity.
- **EP25 Noise** - In assessing planning applications the Council will take into account noise and vibration levels likely to result from or affect a proposal and will require noise, vibration and disturbance to be minimised.
- **D4 The Standard of Design and Layout** - The Council will expect a high standard of design and layout in all development proposals.

Outcomes

Sustainability Issue	Sustainability Outcomes Sought	Reasons
Minimising the effect of noise	To reduce unacceptable levels of noise so that noise-sensitive land uses or developments are not impacted by noise/ vibration generating developments or land uses. Developments will be designed, located and built in a way that minimise the impact of noise through incorporating the following and other measures:	Noise can be disruptive and detrimental to the quality of life of people and the quality of habitats. Developments may not be appropriate in certain locations: • where that development is noise sensitive and the site is where there are

Sustainability Issue	Sustainability Outcomes Sought	Reasons
	• locate habitable rooms away from external noise sources • restrict windows and doors from opening onto busy roads, railways and other noise sources. • design internal layouts to ensure rooms are stacked • locate air intake vents away from residential windows.	unavoidable high levels of intermittent or persistent noise; or • where the proposed development would cause high levels of noise in an area of low ambient noise or is located near a noise-sensitive land use.

Noise Sensitive Land Uses

5.6.3 All new development proposed should suit the existing location and take into account existing residents when considering land uses that may or may not be appropriate in specific locations. Especially on sites where there may be unavoidable high levels of intermittent or persistent noise or conversely where the development proposed would cause high levels of noise in an area of low ambient noise. It may not be appropriate to build residential accommodation or developments where vulnerable people may spend time if unacceptable noise conditions are persistent. Additionally, new buildings need to be built with materials to help minimise noise on residents and other noise sensitive land uses such as:

- dwellings and hotels;
- day care centres and health facilities;
- schools, libraries and places of worship;
- natural habitats and biodiversity can also be sensitive to noise.

Sources of Noise

5.6.4 Noise generating activities should be identified and low noise or mitigation should be considered early in the design process. Sources of noise could include:

- transport, road, rail andair travel
- air ventilation equipment
- building plant equipment
- human voices from school grounds, sporting venues and pedestrians (particularly patrons of late night entertainment venues)
- personal televisions, radios and other electronic devices
- amplified sound from late night entertainment

Noise Considerations in Design and Layout

5.6.5 The design and internal layout of a building can help reduce the occupant's exposure to noise nuisance. It is important therefore that consideration is taken by developers to ensure that the design of a building serves to mitigate potential noise nuisance.

5.6.6 The internal layout of a building can significantly mitigate any potential noise nuisance. In particular the internal stacking of like rooms above similar rooms should reduce unacceptable noise transmission between floors. Therefore all developments that have multiple dwellings in one building must avoid conflict in room arrangements.

5.6.7 External sources of noise can also lead to nuisance. Windows, opened to provide ventilation, may have implications through exposing the occupiers to these noise sources. Developments should be designed so that the buildings themselves can create a barrier between the sources of noise and spaces where people will be exposed to it. This could be achieved by locating habitable rooms away from the source of noise such as a busy road or railway.

5.6.8 Proposed developments should have regard to the impact that any associated noise may have on neighbouring occupiers. If the source of noise cannot be removed then it should be mitigated as much as is feasible. Noise minimisation should ideally be done at the source of the noise in preference to requiring noise insulation at the site of the sensitive land use. Building plant or services such as air intake vents should be positioned away from residential windows and properties and isolated from the building to mitigate noise or vibration.

Construction

5.6.9 Noise during the construction process is unavoidable however it is the responsibility of the contractor to ensure that inconvenience and disruption to neighbouring occupiers is kept to a minimum where possible. Sources of noise from construction include:

- demolition and construction activities
- construction traffic and plant supporting construction activities

5.6.10 Methods to reduce noise nuisance and inconvenience from the construction phase of a development are controlled in fulfilling **Achievement 2:** Responsible Site Management' (see section 4 of this SPD).

Noise in the Code for Sustainable Homes and BREEAM Standards

5.6.11 Credits are awarded in the Code for sound insulation above the standard prescribed in the building regulations. Also credits are awarded for design features such as internal layouts with separating walls and floors between habitable and non-habitable spaces.

Signposts

5.6.12 Along with the relevant key regional and local policies identified in this section, other key policies, strategies and other information relating to Noise Effects are identified below. Refer to **Appendix C - Table C7** for a summary of the following key documents and internet links;

Key Policy Documents - Soundscapes	Date of Publication
Department of Communities and Local Government: Planning Policy Guidance 24: Planning and Noise	October 1994

Key Policy Documents - Soundscapes	Date of Publication
Greater London Authority: - Sustainable Design and Construction Supplementary Planning Guidance (relevant sections 2.4.2 Noise and 2.5.2 Indoor Comfort)	May 2006
Greater London Authority: Sounder City - The Mayor's Ambient Noise Strategy	March 2004

5.7 Quality Air

5.7.1 Air pollution in London has been long recognised as a problem, earning the capital a nickname 'the big smoke'. Air quality has a strong relationship with the health and well being of people living in urban areas. Air pollution and emissions from motor vehicles are closely link, and this section of the SPD should be read in conjunction with section 5.8 Better Transport.

Relevant Policies

5.7.2 The most relevant regional and local policies relating to land and building reuse are summarised below;

London Plan Policies:

- **4A.3 Sustainable design and construction** - seeks to ensure future developments meet the highest standards of sustainable design and construction.
- **4A.19 Improving air quality** - achieve reductions in pollutant emissions and public exposure to pollution.

Harrow UDP Policies:

- **D4 The Standard of Design and Layout** - the Council will expect a high standard of design and layout in all development proposals.
- **EM25 Food, Drink and Late Night Uses** - seeks to ensure that proposals for food and drink uses and any late night uses do not have a harmful effect on residential amenity.

Outcomes

Sustainability Issues	Sustainability Outcomes Sought	Reasons
Emissions from development	Gas boilers installed in residential developments will meet the minimum requirement of the Code for Sustainable Homes to earn credits. Gas boilers installed in non-residential developments will meet the minimum requirement of the BREEAM Standards to earn credits	• Reducing emissions from buildings can significantly reduce air pollution. Both the Code and BREEAM have a minimum emissions ratings to earn credits. • It is acknowledged that these minimum ratings may not be achievable with the use of biofuel or biomass boilers. If these are to be installed then justification and relevant details must be submitted in

Sustainability Issues	Sustainability Outcomes Sought	Reasons
		the Design & Access Statement accompanying the application.
Smell and Nuisances	Locate commercial ventilation ducts away from dwellings to limit nuisance odours	• Smell nuisance from development can adversely impact the quality of life of people.

Emissions

5.7.3 There are a number of principles that can be incorporated into the design and construction of buildings. It is important to consider the projected lifetime of the building and to design it to be as low emitting as possible. Reducing emissions from the use of buildings can also depend greatly on the methods used to improve energy efficiency in section 5.2.

5.7.4 Reducing emissions from the use of buildings can significantly reduce air pollution. 20% of nitrogen oxides (NOx) emissions is from domestic heating in London. As a suburban borough Harrow has an opportunity to ensure that boilers are as efficient and non-polluting as possible particularly in residential developments.

Smell and Nuisance

5.7.5 In the case of odour emissions from restaurants, cafes, pubs and other establishments that prepare food, consideration must be given to the location of air vents to ensure that odours do not cause a nuisance to neighbours. Although not usually noxious, these odours can cause a great deal of nuisance and stress on the occupiers of neighbouring properties.

5.7.6 This applies particularly to mixed use developments or change of use of existing shops to restaurants, cafes or pubs where there are dwellings or other sensitive uses above or neighbouring.

5.7.7 The impact of other odours emitted as a result of development should be considered on neighbouring occupiers. No odours should cause and unacceptable impact on the occupiers of any other nearby building. The effect of such odours should be mitigated.

Construction Emissions

5.7.8 Causes of air pollution from construction include:

- dust arising from demolition and construction activities
- emissions from construction traffic and plant supporting construction activities

5.7.9 Methods to reduce emissions from the construction phase are discussed in '**Achievement 2**: Responsible Site Management'.

Air Quality in the Code for Sustainable Homes and BREEAM Standards

5.7.10 Residential developments will meet the minimum requirement of the Code for Sustainable Homes to earn credits for boilers. In order to earn credits, boilers need to meet a standard of emissions of less than 100mg of nitrogen oxide (NO_x) per kilowatt hour. Householders may wish to consider other simpler boiler efficiency ratings, such as the SEDBUK rating, which rates boilers in efficiency from A to G, with A being the most efficient.

5.7.11 An exception may be made if the development proposes biomass boilers for heating. It is considered that biomass systems are to reduce the impact of fossil fuel depletion by employing a renewable combustion fuel source and are also recognised as low carbon. However, as they can produce a significant amount of NOx, biomass boilers may not achieve credits in the Code for Sustainable Homes. However they can score highly in the Energy section of the Code or BREEAM Standards.

5.7.12 In Harrow, a boiler will only be viewed as acceptable if it is eligible for credits in the Code or BREEAM Standards, unless justification can be given.

Signposts

5.7.13 Along with the relevant key regional and local policies identified in this section, other key policies, strategies and other information relating to Quality Air are identified below. Refer to **Appendix C - Table C7** for a summary of the following key documents and internet links;

Key Policy Documents - Quality Air	Date of Publication
Department of Communities and Local Government: Planning Policy Statement 23: Planning and Pollution Control also Annex 1: Pollution Control, Air and Water Quality	November 2004
Greater London Authority : Sustainable Design and Construction Supplementary Planning Guidance (Refer to relevant sections 2.4.3 air pollution and 2.5.2 indoor comfort)	May 2006
Greater London Authority and London Councils: The Control of Dust and Emissions from Construction and Demolition Best Practice Guidance	November 2006
Greater London Authority: Cleaning London's Air: The Mayor's Air Quality Strategy	September 2002
Department of Communities and Local Government: The Code for Sustainable Homes	February 2008
Department of Communities and Local Government: Code for Sustainable Homes: Technical Guide	April 2008
The BREEAM family of assessment methods and tools	

Other Information - Air Quality	Date of Publication
www.energysavingtrust.org.uk **Energy Saving Trust** - gives information on efficiency ratings for boilers	

5.8 Better Transport

5.8.1 The way people travel to and from a development is an important consideration. A significant amount of energy in the borough is wasted through inefficient transport. More efficient energy consumption can be achieved through the greater use of public transport and the promotion of cycling and walking and the reduced reliance of private vehicles such as cars.

Relevant Policies

5.8.2 The most relevant regional and local policies relating to better transport are summarised below;

London Plan Policies:

- **3A.3 Maximising the Potential of Sites** - Seeks to ensure that development proposals achieve the maximum intensity of use compatible with local context.
- **3C.1 Integrating transport and development** - seeks to ensure the integration of transport and development.
- **3C.2 Matching development to transport capacity** - Proposals for development should be considered in terms of existing transport capacity
- **3C.3 Sustainable transport in London** - encourage shifts to more sustainable modes of transport, access improvements to and within town centres and their residential hinterlands by public transport, walking and cycling.
- **3C.4 Land for transport functions** - seeks to ensure the provision of sufficient land and appropriately located sites for the development of an expanded transport function
- **3C.17: Tackling congestion and reducing traffic** - seeks to reduce road traffic and congestion
- **3C.20: Improving conditions for buses** - seeks to implement London-wide improvements to the quality of bus services for all.
- **3C.21: Improving conditions for walking** - ensure safe, convenient, attractive and accessible pedestrian routes
- **3C.22: Improving conditions for cycling** - ensure high quality, direct, cycling routes, segregated from pedestrians that are safe and convenient
- **3C.23 Parking Strategy** - seeks to ensure that on-site car parking is the minimum necessary and there is no over-provision that could undermine the use of more sustainable non-car modes.
- **3C.24 Parking in town centres** - sets out signposts for appropriate parking standards for town centres.
- **Annex 4 Parking Standards** - sets out the approach to determining appropriate maximum parking standards within the policy context.

Harrow UDP Policies:

- **T6 The Transport Impact of Development Proposals** - requires the assessment of the numbers of vehicle visits created by proposed development, and to consider alternative measures and air pollution caused
- **T7 Improving Public Transport Facilities** - promotes greater use of public transport
- **T8 (p141): Rail Freight Transport** - encourage the use of rail transport for freight
- **T9 Walking** - improve pedestrian movement
- **T10 Cycling** - will seek to develop a programme of cycle route links and spurs serving destinations of borough importance
- **T11 Cycle and Motor Cycle Parking in Public Places** - developers will be required to provide pedal and motor cycle parking
- **T12 Reallocating Available Road space and Managing Traffic** - seeks to encourage a switch away from car usage, reducing the impact of traffic on the environment and increasing road safety
- **T13 Parking Standards** - the Council will expect new developments to make appropriate provision for car parking
- **T14 Public Car Parking** - hierarchy of importance starting with disabled people using vehicles displaying blue badges; people visiting local businesses and other premises, shoppers or visitors staying for a short to medium duration and other types of parking
- **T15 Servicing of New Developments** - off-highway service areas and access roads - for all appropriate development, off-highway service areas and access roads should be provided.
- **T19 Heavy Goods Vehicles** - heavy goods vehicles will continue to be excluded from those residential areas within the heavy goods vehicle ban zones except for access to properties within them.
- **T20 Heavy Goods Vehicles-Operating Centres** - the Council will endeavour to ensure that operating centres for heavy goods vehicles are permitted in appropriate areas only and are adequate in size for the purpose intended

Outcomes

Sustainability Issues	Sustainability Outcomes Sought	Reasons
Car Parking	The number of car parking spaces should be minimised in the context of the Council requirements.	• Developments will take consideration of the London Plan's PTAL ratings. • Proposed developments that result in an increase in density in areas of low PTAL may be unacceptable unless justification can be provided or the development includes proposals to make the site more accessible by public transport.
Alternatives to Motor Vehicles	Development layouts should be permeable and accessible to all pedestrians, cyclists and public transport users.	• attractive, accessible and convenient pedestrian routes through and around developments can help promote walking and accessibility to transport

Sustainability Issues	Sustainability Outcomes Sought	Reasons
	Designs should help promote cycling through: • provision of adequate cycle parking and storage; and • shower facilities accessible to cyclists in non residential developments	options other than private motor vehicles • Suitable, safe and convenient cycle storage as well as shower and changing facilities can assist promoting cycling as an alternative to private cars

Car parking and PTAL Ratings

5.8.3 Road space can be seen as a finite resource as building new roads can be considered unfeasible, impractical and very disruptive. Reliance on cars as the primary transport option can lead to congestion, in terms of traffic generation, parking requirements and poorer air quality (particularly along main transport routes) . This leads to an ever increasingly unhealthy and inefficient way of travelling.

5.8.4 It is important to consider whether the location is appropriate for the proposed development in terms of transport accessibility. Applications with large densities should be within an easy distance of public transport and shops, thereby reducing the need to travel by car. Moreover applications involving the increased density of a site including flat conversions may not be acceptable in locations of relatively low Public Transport Accessibility Level (PTAL) rating unless fully justified, having regard to the development as a whole or where development includes proposals to make the site more accessible by public transport. This can lead to an increased reliance on cars for transport, the cumulative impact can lead to increased congestion.

Alternatives to Motor Vehicles

5.8.5 For a development to be more sustainable it is important that modes of travel other than by car are promoted. Schemes should encourage patterns and that reduce the need to travel, especially by car. Alternatives to the use of cars should be considered at the earliest possible design phase to ensure they are properly integrated into the development.

5.8.6 As well as appropriate density in relation to PTAL ratings, developers should provide reasonable steps to cater for pedestrians and cyclists. This should include permeability for pedestrians and cyclists, providing safe convenient and attractive routes around and through the development. In order to make cycling a practical alternative, people need somewhere convenient and safe to store their bicycles. Also showers and changing facilities should be made available to employees and other users of a development who choose to cycle.

5.8.7 High trip generating development are more likely to be supported only at locations with both high levels of public transport accessibility (high PTAL ratings) and proposed capacity sufficient to meet the transport requirements of the development. Developing to an appropriate density should result in more efficient transport. It is important that the cumulative impact of transport requirements of all developments in an area are considered.

5.8.8 Where existing transport capacity is not sufficient to allow for travel generated by proposed developments, and no firm plans exist for a sufficient increase in capacity to cater for this, the Council will ensure that development proposals are appropriately phased until it is known these requirements can be met.

5.8.9 The Council will require a full Transport Assessment for all major developments (and any other developments at the Council's discretion). This assessment will need to set out the expected transport requirements associated with the new development and to quantify these in terms of annual carbon dioxide emissions. The Assessment will need to investigate what measures can be implemented to ensure a sustainable shift towards greater use of public transport, and walking and cycling. In addition to this, the Assessment must show as a comparison the total annual carbon dioxide emissions that would arise from alternative realistic, but substantively different, development options (including significantly different ratios of unit-densities to habitable room-densities) and show that air quality implications have been considered. Mitigation measures may also include contributions towards public transport infrastructure as well as a commitment to a travel plan to find ways to promote alternative means of travel to minimise the use of private cars. Further information on workplace travel plans can be found in the Transport for London 'Guidance for Travel Planning for Development', which is signposted below.

Transport in the Code for Sustainable Homes and BREEAM Standards

5.8.10 Measures are encouraged in the Code for the wider use of bicycles as transport by providing adequate and secure cycle storage facilities, thus reducing the need for short car journeys. Credits are awarded where adequately sized, safe, secure, convenient and weatherproof cycle storage is provided for each dwelling.

5.8.11 Credits are also awarded under the Code for provision of a space suitable for a home office. This can help reduce the need to commute to work by providing residents with the necessary space and services to be able to work from home. Credits are awarded on the basis of the provision of space and services that enable a room to be used effectively as a home office.

5.8.12 Credits can be awarded under the BREEAM Standards where measures proposed encourage patterns that reduce the need to travel by car. This may be achieved through good access to and from public transport networks for commuting and or business travel. Also where there is provision of cycling facilities including sheds or lockable storage for cycles as well as showers. Additional credits can be achieved where there is also the provision of changing facilities including lockers and a drying space.

5.8.13 Travel surveys to determine travel patterns of the building users who work at, and commute to, the building and evidence to demonstrate that a travel plan has been developed and tailored to the specific needs of the users of the assessed development can also achieve credits under the BREEAM Standards.

Signposts

5.8.14 Along with the relevant key regional and local policies identified in this section, other key policies, strategies and other information relating to Better Transport are identified below. Refer to **Appendix C - Table C7** for a summary of the following key documents and internet links;

Key Policy Documents - Transport	Date of Publication
Department of Communities and Local Government: Planning Policy Guidance 13: Transport	April 2001
Greater London Authority: The London Plan (Consolidated with alterations) Relevant section chapter 3C Connecting London - Improving Travel in London	February 2008
Greater London Authority: Sustainable Design and Construction Supplementary Planning Guidance (relevant sections 2.1.2 Land, 2.2.3 Adapting to Climate Change, 2.5.3 Designing Inclusive environments and 2.5.4 Secure Design)	May 2006
Greater London Authority: The Mayor's Transport Strategy	Updated July 2006
Harrow Council: Accessible Homes, Supplementary Planning Document	
Harrow Council: Access for All, Supplementary Planning Document	April 2006
Transport for London: Guidance for Workplace Travel Planning for Development	March 2008

Other Information - Transport	
Transport for London: Streetscape Guidance - gives guidance on creating excellent London streetscapes through specific design principles and the use of preferred materials and products.	Updated January 2009
www.securedbydesign.com Secured By Design - is a Police initiative supporting the principles of "designing out crime" by use of effective crime prevention and security	
Commission for Architecture and the Built Environment (CABE) and the House Builders Federation: Building for Life Standards - Building for Life is the national standard for well-designed homes and neighbourhoods	

5.9 Recycling and Waste

5.9.1 The design and layout of a development is critical to ensure that sustainable waste management is achieved. Well designed and adequate refuse and recycling storage facilities can assist occupiers of a dwelling to develop actions that promote recycling and minimising refuse in a sustainable way in their day to day lives.

Relevant Policies

5.9.2 The most relevant regional and local policies relating to recycling and waste are summarised below;

London Plan Policies:

- **4A.21 Waste strategic policy and targets** - to reduce waste and encourage greater levels of recycling.
- **4A.22 Spatial policies for waste management** - requires *inter alia* that developments provide suitable waste and recycling storage facilities.
- **4A.28 Construction, excavation and demolition waste** - developers should be required to produce site waste management plans to ensure efficient use of materials and to minimise construction, excavation and demolition waste.

Harrow UDP Policy:

- **EP16 Waste Management, Disposal and Recycling Facilities** - the Council will actively encourage recycling and waste minimisation by ensuring that appropriate facilities are provided.

Outcomes

Sustainability Issue	Sustainability Outcomes Sought	Reasons
Refuse and Recycling Storage	Sufficient and appropriate space for refuse and recycling bin storage. Designs should ensure that: • Recycling facilities should be as easy to access as waste facilities • the location of bins do not have the potential to cause nuisance to occupiers of the development or those nearby • there is no adverse impact on the amenity of the area	• Suitable, accessible and convenient recycling storage facilities can assist in ensuring recycling of waste is undertaken by occupiers

Refuse and Recycling Storage

5.9.3 The Mayor of London's SPG includes the following waste hierarchy. Sustainable waste management involves producing less waste and dealing better with the waste that is produced. The waste hierarchy provides a framework for the consideration of sustainable waste management to be applied at all stages of a developments design, construction and operation.

1. Reduce the amount of waste generated - most desired option within the waste hierarchy
2. Reuse
3. Recycle

4. Recovery (of energy & materials)
5. Disposal - this is the least desirable option

5.9.4 Refuse and recycling storage facilities must be considered early in the design stage of any development. Consideration must be taken as to the location of bins to ensure there is no nuisance caused to occupiers of the development or negative impact on the amenity of the area. Integration of sustainable waste management principles into design includes:

- storage and recycling facilities: recycling facilities should be as easy to access as waste facilities. Developers must ensure that sufficient space is available for appropriate level of bin storage and that easy access is available for the collection of bins.
- composting: provision for composting in properties with gardens or landscaped space.

5.9.5 Further information regarding size and numbers of bins can be found in Harrow Council's 'Code of Practice for the Storage and Collection of Refuse and Materials for Recycling in Domestic Properties'.

5.9.6 In Harrow, the refuse storage requirements for residential units are as follows:

- Wheeled bin requirements are 3 bins per unit: - 1 brown bin for organic waste - 1 blue bin for recycling - 1 dark grey bin for residual waste (in flat developments 1 brown bin per 2 flats, resulting in a total requirement of 5 wheeled bins may be acceptable)
- Bins should be sited to the side or rear of a property, so that the bins do not have an impact on visual amenity
- Siting on frontage could be unacceptable where the proposed site would be highly visible, in a small garden, or where there is a change in levels from street to frontage

5.9.7 For refuse storage and collection requirements for other uses please contact Harrow Council Planning Department.

Site Waste Management Plans

5.9.8 In April 2008, new Regulations came into force making Site Waste Management Plans (SWMP) compulsory for all construction projects in England costing over £300,000. A SWMP records the amount and type of waste produced on a construction site and how it will be reused, recycled or disposed.

5.9.9 The Regulations aim to:

- increase the amount of construction waste that is recovered, re-used and recycled and improve materials resource efficiency
- prevent illegal waste activity by requiring that waste is disposed of appropriately, in accordance with the waste duty of care provisions.

Waste Management in the Code for Sustainable Homes and BREEAM Standards

5.9.10 Under the Code there is a mandatory requirement that sufficient space is provided externally to store waste and recycling bins provided by the Council. Also credits are awarded where a composting service, either run by the local authority or overseen by

a management plan is in operation. If the dwelling has a private garden then provision of a composting bin will be sufficient to gain this credit. For all levels of rating, the Code requires a SWMP to be produced, in accordance with relevant guidance from WRAP, Envirowise, BRE and DEFRA (signposted below). Extra credits are available for demonstrating improved waste minimisation and management.

5.9.11 The BREEAM Standards also give credits for provision of central dedicated storage space for recycling materials either within the building or on site, provided good access for collections and appropriate operational procedures are put in place to cover the collection and recycling of consumables.

Signposts

5.9.12 Along with the relevant key regional and local policies identified in this section, other key policies, strategies and other information relating to Waste Management are identified below. Refer to **Appendix C - Table C7** for a summary of the following key documents and internet links;

Key Policy Documents - Recycling and Waste	Date of Publication
Department of Communities and Local Government: Planning Policy Statement 10: Planning for Sustainable Waste Management	July 2005
Greater London Authority: Sustainable Design and Construction Supplementary Planning Guidance (Relevant sections include: 2.7 Promoting Sustainable Waste Behaviour)	May 2006
Greater London Authority: Rethinking Rubbish in London: The Mayor's Municipal Waste Management Strategy	September 2003
Department for Environment, Food and Rural Affairs: Non-statutory guidance for Site Waste Management Plans	April 2008

Other Information - Recycling and Waste	Date of Publication
Harrow Council: Code of Practice for The Storage and Collection of Refuse and Materials for Recycling in Domestic Properties - Information for developers regarding size of bins and numbers needed for residential development. Also outlines collection of waste	March 2008
www.capitalwastefacts.com Capital Waste Facts - A website that contains data and information on municipal waste in London.	
www.recycleforlondon.com Recycle for London - part of a major campaign by the Greater London Authority to encourage Londoners to recycle more	
www.wrap.org.uk **Waste & Resources Action Programme** - helps individuals, businesses and local authorities to reduce waste and recycle more. WRAP have created a web based Site Waste Management Plan template, which is presented as a series of 14 steps that cover the project construction cycle, from pre-design to protect completion.	

Other Information - Recycling and Waste	Date of Publication
www.smartwaste.co.uk A free tool that has been developed by BRE to help the industry prepare, implement and review SWMPs in full compliance with the legal requirements. It can also be used to meet the Code for Sustainable Homes mandatory requirement for waste.	
www.netregs-swmp.co.uk **Netregs:** Site Waste - Its Criminal. A Simple Guide to Site Waste Management Plans	January 2009

Sustainable Design Checklist for Householder Developments
Appendix A

Appendix A Sustainable Design Checklist for Householder Developments

The Householder Checklist is a simplified version of the Major and Minor Applications Checklist. This is in recognition that some sustainability measures are not feasible for inclusion on applications for householder extensions.

Therefore, the householder checklist does not include Section 1 or 6 from the Major and Minor Applications Checklist. Also, the householder checklist does not include questions relating to decentralised energy (section 5.2), flood risk (section 5.5) and smell and nuisance (section 5.9) and asks for alternative information on air quality from the Major and Minor Applications Checklist.

Table A: Householder Checklist (refer to Chapter 5 of Sustainable Building Design SPD for more detailed information)

Sustainable Topic	Sustainable Issue	Sustainable Outcomes Sought	Yes/ No	Details
5.1: Land and Building Reuse		Not Applicable		
5.2: Efficient Energy	**Energy Efficiency**	Question 1: What insulation initiatives are to be incorporated into the proposed development: • cavity wall insulation • loft insulation • draught proofing • double (or triple) glazed windows • other forms of insulation (please give details)		Provide details separately
		Question 2: Will the development incorporate the following: • light fittings to be low energy lighting only • Microgeneration • incorporation of a Combined Heat and Power (CHP) system • all white goods to have an energy rating of A or above • other energy efficiency measures such as smart meters (please give details)		
		Question 3: Have the following design elements beenincorporated into the development: • orientating windows of main living areas towards the south • natural _ventilation • shading to windows • other passive design features such as thermal storage (please give details)		
	Renewable Energy	Question 4: What renewable energy technologies, listed below, will be incorporated into the development: • solar water heating systems • solar panels • generation from biomass or biofuels • wind turbines		

Sustainable Topic	Sustainable Issue	Sustainable Outcomes Sought	Yes/ No	Details
		• heat pumps • other renewable energy technologies (please give details)		
5.3: Sustainable Materials	**Sustainable Materials**	Question 5: Will the materials used in construction be from renewable sources such as: • Forestry Stewardship Council or • another recognised sustainable source (please give details)		Provide details separately
	Recycled & Reused Materials	Question 6: Will the proposal use recycled and salvaged building materials such as; • hardcore and bricks • building fixtures and fittings (i.e. door and window frames, glass, tiles, plumbing fittings)		
5.4: Water Use and Conservation	**Water Efficiency**	Question 7: What water use reduction measures or fixtures will be installed: • dual flush toilets • low flow bathroom and kitchen fittings • low water consumption appliances • durable plumbing • grey water and water recycling systems • water butts and other on site water retention systems • other measures (please give details)		Provide details separately
5.5: Mitigating Flooding	**Flood Risk**	Question 8: Is the proposed development in a known flood zone?		Provide details separately
	Sustainable Urban Drainage Systems	Question 9: Does the level of hard surfacing of the front garden comply with permitted tolerances? (the level of hard surfacing should not exceed 5 square metres and if not of porous materials, provision must be made to direct runoff water from hard surfaces to permeable or porous areas within the curtilage of the property)		
		Question 10: Have any Sustainable Urban Drainage Systems (SUDS) or other water attenuation measures been proposed: • soft landscaping/ gardens and landscaping • Permeable hard standing e.g. gravel • swales and basins • ponds and wetlands • infiltration trenches • green roofs • other SUDS measures (please give details)		
5.6: Sound Scapes		Not Applicable		
5.7: Quality Air	**Emissions**	Question 11: Do proposed gas boilers have an energy efficiency (SEDBUK) rating of A?		Provide details separately
5.8 Better Transport		Not Applicable		

Sustainable Topic	Sustainable Issue	Sustainable Outcomes Sought	Yes/ No	Details
5.9: Recycling and Waste	**Refuse and Recycling Storage**	Question 12: Is there sufficient and appropriate space for refuse storage to ensure that: • recycling and organic waste facilities are as easy to access as waste facilities • the location of bins does not cause nuisance • there is no adverse impact on the amenity of the area (Refuse storage requirements for residential units are three wheeled bins per unit (one for organic waste, one for recycling, one for residual waste). Flat development are two wheeled bins per flat, (one for recycling and one for residual waste, with one bin for organic waster per two flats)		Provide details separately

Sustainable Design Checklist for Major and Minor Applications

Appendix B

Appendix B Sustainable Design Checklist for Major and Minor Applications

Table B1: Sustainable Building Design SPD Requirements for Minor and Major Planning Applications (refer to Chapter 4 of Sustainable Building Design SPD for details)

Achievements	Outcomes Sought	Yes/ No	Details
1: Code for Sustainable Homes and BREEAM Standards	Will the development achieve the appropriate level to meet the Code for Sustainable Homes or BREEAM Standards? Provide certification and other details in the Design and Access statement		Provide details separately
2: Responsible Site Management	Has the developer signed Harrow's Considerate Contractors Scheme and/or another Nationally recognised Considerate Contractors Code of Conduct to ensure that all contractors and sub-contractors are aware and abide by the standards set out?		Provide details separately

Table B2: Minor and Major Sustainable Design Checklist (refer to Chapter 5 of Sustainable Building Design SPD for details)

Sustainable Topic	Sustainable Issue	Sustainable Outcomes Sought	Yes/ No	Details
5.1: Land and Building Reuse	**Land reuse**	Question 1: Will the development or re-development of the site(s) will be wholly on Brownfield land?		Provide details separately
	Building reuse/ refurbishment	Question 2: Has the feasibility of any buildings that could be refurbished or re-used in whole or in part been considered in the Design & Access Statement? Things to consider include: • whether the density of the proposed buildings is optimal for the location and • whether the buildings to be re-used meet or have the potential to meet other sustainability criteria minimum targets		
5.2: Efficient Energy	**Energy Efficiency**	Question 3: What insulation initiatives are to be incorporated into the proposed development: • cavity wall insulation • loft insulation • draught proofing • double (or triple) glazed windows • other forms of insulation (please give details)		Provide details separately
		Question 4: Will the development incorporate any of the following: • light fittings to be low energy lighting only • Microgeneration • incorporation of a Combined Heat and Power (CHP) system • all white goods to have an energy rating of A or above • other energy efficiency measures (please give details)		

Sustainable Topic	Sustainable Issue	Sustainable Outcomes Sought	Yes/ No	Details
		Question 5: Have the following design elements been incorporated into the development: • orientating windows of main living areas towards the south • natural ventilation • shading to windows • other passive design features such as thermal storage (please give details)		
	Renewable Energy	Question 6: What renewable energy technologies below will be incorporated into the development to off-set the energy total needs of the development: • solar water heating systems • solar photovoltaic tiles • generation from biomass or biofuels • wind turbines • heat pumps • other renewable energy technologies (please give details)		
	Decentralised Energy	Question 7: Does the development incorporate community energy efficiency measures such as community heating systems or district Combined Heat and Power (CHP)? (please briefly give details)		
5.3: Sustainable Materials	**Sustainable Materials**	Question 8: Will the materials used in construction, as specified in the Design & Access Statement, be from renewable sources such as: • Forestry Stewardship Council or • Any other recognised sustainable source (give details)		Provide details separately
	Recycled & Reused Materials	Question 9: Will the proposal use recycled and salvaged building materials such as; • aggregate and bricks • building fixtures and fittings (i.e. door and window frames, glass, tiles, plumbing fittings)		
5.4: Water Use and Conservation	**Water Efficiency**	Question 10: What water use reduction measures or fixtures will be installed: • dual flush toilets • low flow bathroom and kitchen fittings • low water consumption appliances • durable plumbing • grey water and water recycling systems • water butts and other on site water retention systems • other measures (please give details)		Provide details separately
5.5: Mitigating Flooding	**Flood Risk**	Question 11: Is the proposed development in a known flood zone?		Provide details separately
		Question 12: Has it been demonstrated in the Design & Access Statement that the guidance from the Environment		

Sustainable Topic	Sustainable Issue	Sustainable Outcomes Sought	Yes/ No	Details
		Agency's Standing Advice Flood Risk Matrix or any Local Authority advice been considered?		
	Sustainable Urban Drainage Systems	Question 13: Does the level of hard surfacing of the frontage facing a roadway comply with permitted tolerances? (the level of hard surfacing should not exceed 5 square metres and if not of porous materials, provision must be made to direct runoff water from hard surfaces to permeable or porous area within the curtilage of the property)		
		Question 14: What Sustainable Urban Drainage Systems (SUDS) or other water attenuation measures have been proposed: • soft landscaping/ gardens and landscaping • swales and basins • ponds and wetlands • infiltration trenches • green roofs • other SUDS measures (please give details)		
5.6: Soundscapes	**Minimising the Effect of Noise**	Question 15: Has the development been designed, located and built in a way to minimise the impact of noise through incorporating the following and other measures: • locate habitable rooms away from external noise sources • restrict windows and doors from opening onto busy roads, railways and other noise sources. • design internal layouts to ensure rooms are stacked • locate air intake vents away from residential windows • developments of new dwellings should not only have windows that open towards busy roads, railways or other identified sources of noise.		Provide details separately
5.7: Quality Air	**Emissions**	Question 16: Do proposed gas boilers meet a minimum standard of emissions less than 100mg/kWh? (minimum requirement to earn credits under the Code for Sustainable Homes or BREEAM Standards) If 'no' please give justification in the Design & Access Statement.		Provide details separately
	Smell and Nuisances	Question 17: Are all commercial ventilation ducts located and positioned away from dwellings to limit nuisance odours?		
5.8: Better Transport	**Car Parking**	Question 18: Is the proposed development in a location that has a high PTAL rating?		Provide details separately
		Question 19: Are the parking spaces allocated compliant with the London Plan and Harrow Council's Parking		

Sustainable Topic	Sustainable Issue	Sustainable Outcomes Sought	Yes/ No	Details
		Standards outlined in the adopted Unitary Development Plan? -		
		Question 20: Does the development provide parking for disabled motorists and powered two wheelers in line with the London Plan? -		
	Alternatives to Motor Vehicles	Question 21: Has it been demonstrated in the Design & Access Statement that the layout of the development is permeable and accessible to all pedestrians, cyclists and public transport users.		
		Question 22: Does the development help promote cycling through: • sufficient provision of cycle parking and storage; and • shower facilities accessible to cyclists in non residential developments		
5.9: Recycling and Waste	**Refuse & Recycling Storage**	Question 23: Is there sufficient and appropriate space for refuse and recycling bin storage to ensure that: • Recycling facilities are as easy to access as waste facilities • waste and recycling facilities can be easily accessed by waste disposal vehicles • the location of bins does not cause nuisance • there is no adverse impact on the amenity of the area		Provide details separately

Summary of key documents and links to signposts **Appendix C**

Harrow Council - Sustainable Building Design SPD - Post consultation version

Appendix C Summary of key documents and links to signposts

Table C1: Key International and National Documents

Key Document Title	Key Document Summary
The Kyoto Protocol	The International Framework Convention on Climate Change which had the objective of reducing greenhouse gases that cause climate change.
Department of Trade and Industry Energy White Paper (2003) and Department for Environment, Food and Rural Affairs Climate Change Bill (2007).	The White Paper and subsequent Bill aim to put in place a framework to achieve a mandatory cut in the UK's carbon emissions by 2050
Department for Environment, Food and Rural Affairs Securing the Future - The UK Government's Sustainable Development Strategy (2005)	Among other things has four agreed priorities, sustainable consumption and production, climate change, natural resource protection and sustainable communities
Department for Communities and Local Government The Planning and Compulsory Purchase Act (2004)	Contains a statutory requirement for Local Planning Authorities to undertake functions with objective to contribute towards sustainable development
Department for Communities and Local Government Code for Sustainable Homes (2006)	The Code was developed by the Department of Communities and Local Government (DCLG) with the Building Research Establishment (BRE) and the Construction Industry Research and Information Association (CIRIA). This code gives a rating from Nil Level through Level 1 to Level 6, with Level 6 being a zero carbon home. All homes must now have a rating.
Department for Communities and Local Government Code for Sustainable Homes: Technical Guide' April 2008	This technical guidance sets out the requirements for the Code and the process by which a Code assessment is reached.
British Research Establishment BREEAM Standards	BREEAM Buildings can be used to assess the environmental performance of any type of building (new and existing). Standard versions exist for common building types and less common building types can be assessed against tailored criteria under the BREEAM Bespoke version.
Housing Corporation Cracking the Code: Achieve Code level Three and Above' (May 2008)	This guide complements the formal guidance and helps and developers to kick-start the process of attaining Code ratings and complements the formal Code for Sustainable Homes technical guidance.
British Research Establishment Costing Sustainability: How Much Does It Cost to Achieve BREEAM and Ecohomes Ratings?' (March 2005)	A study done by the BRE and Cyril Sweett investigating the the perception that sustainability initiatives incur substantial additional costs. It provides a costing analysis, using real cost data for a broad range of sustainability technologies and design solutions, contradicts this assumption and demonstrates that significant improvements in environmental performance can be achieved at very little additional cost. In addition, more sustainable buildings can offer major cost savings when in use.
British Research Establishment Putting a Price on Sustainability' (2006)	Another report done by the BRE identifying the costs associated with a range of sustainable solutions for different building types, demonstrating that improvements in the sustainability performance of a building can be achieved at very little additional cost.
English Partnerships/Housing Corporation The Cost of	A study by English Partnerships and the Housing Corporation investigating the different costs in achieving Level 3 of the Code compared to the

Table C2: Key Planning Policy Statements (PPS) and Planning Policy Guidance (PPG) Documents

Key Document Title	Key Document Summary
Planning Policy Statement 1: Delivering Sustainable Development	Sets out how sustainable development should be delivered through the planning system. Gives the government's overarching policies. States that sustainable development should be pursued in an integrated manner and contribute to global sustainability.
Planning Policy Statement: Planning and Climate Change - Supplement to PPS1	Sets out how spatial planning should contribute to reducing emissions and stabilising climate change (mitigation) and take into account the unavoidable consequences (adaptation).
Planning Policy Statement 3: Housing	Underpins the delivery of the Government's strategic housing policy objectives and the Government's goal to ensure that everyone has the opportunity to live in a decent home, which they can afford in a community where they want to live. This policy also states that the resource efficiency of a property should be improved by using the Code for Sustainable Homes.
Better Places to Live By Design: A Companion Guide to PPG3	This document does not set new policy, rather it is a companion to PPG3 and PPS3 which replaced it and should be read alongside this document.
Planning Policy Statement 9: Biodiversity and Geological Conservation	Sets out planning policies on protection of biodiversity and geological conservation through the planning system.

Key Document Title	Key Document Summary
Planning Policy Statement 10: Planning for Sustainable Waste Management	Sets out the Government's policy to be taken into account by waste planning authorities and forms part of the national waste management plan for the UK.
Planning Policy Statement 22: Renewable Energy	Sets the Government's policies for renewable energy, which planning authorities should have regard to when taking planning decisions.
Planning Policy Statement 23: Planning and Pollution Control	The Government attaches great importance to controlling and minimising pollution. Its commitment to the principles of sustainable development in relation to mitigating the effects of pollution are set out in this policy.
Planning Policy Statement 25: Development and Flood Risk	Sets out Government policy on development and flood risk. It's aims are to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas of highest risk. Where new development is, exceptionally, necessary in such areas, policy aims to make it safe, without increasing flood risk elsewhere, and, where possible, reducing flood risk overall.
Planning Policy Guidance 2: Green Belts	Outlines the history and extent of Green Belts and explains their purposes. It describes how Green Belts are designated and their land safeguarded.
Planning Policy Guidance 4: Industrial, Commercial Development and Small Firms	The principles of sustainable development require the responsible use of man-made and natural resources by all concerned in a way that ensures that future generations are not worse off. Careful attention to environmental issues makes good economic sense for business and industry.

Key Document Title	Key Document Summary
Planning Policy Guidance 13: Transport	Objectives are to integrate planning and transport at the national, regional, strategic and local level and to promote more sustainable transport choices both for carrying people and for moving freight.
Planning Policy Guidance 17: Planning for Open Space, Sport and Recreation	Promoting more sustainable development - by ensuring that open space, sports and recreational facilities (particularly in urban areas) are easily accessible by walking and cycling and that more heavily used or intensive sports and recreational facilities are planned for locations well served by public transport.
Planning Policy Guidance 24: Planning and Noise	Guides local authorities on the use of their planning powers to minimise the adverse impact of noise and considers both noise-sensitive developments and for those activities which generate noise.

Table C3: Key Regional Documents

Key Document Title	Key Document Summary
Greater London Authority The London Plan (2008) (Consolidated with Alterations)	The London Plan sets out the Mayor's commitment to addressing climate change and sustainable development. This commitment is found in chapters 4A and 4B of the London Plan. These chapters in particular set principles and targets that are relevant London wide
Greater London Authority Sustainable Design and Construction SPG (2006)	London Plan chapter 4A and particularly policy 4A.3 relates to sustainable design and construction and sets the context for this SPG. The SPG provides guidance on the way that the seven measures identified in the policy can be implemented to meet the London Plan objectives.
Greater London Authority Action Today to Protect Tomorrow: The Mayor's Climate Change Action Plan (2007)	Sets out how London will contribute and show leadership in meeting the threat of climate change.
Greater London Authority Draft London Climate Change Adaptation Strategy (2008)	A draft strategy to highlight the effect of climate change and how London will need to adapt.
Greater London Authority Connecting with London's Nature: The Mayor's Biodiversity Strategy (2002)	The strategy promotes public access to nature and open space and seeks to protect London's biodiversity

Key Document Title	Key Document Summary
Greater London Authority Green Light to Clean Power: The Mayor's Energy Strategy (2004)	Aims to minimise the impacts on health and the natural environment of meeting the essential energy needs of all those living and working in London. Specifically, it aims to reduce London's contribution to global climate change, tackle the problem of fuel poverty and promote renewable and energy efficient technologies.
Greater London Authority Water Matters: The Mayor's Draft Water Strategy (2007)	This strategy's purpose is to promote improved water management – such as drinking water as well as sewage and floodwater in the wrong place.
Greater London Authority Sounder City: The Mayor's Ambient Noise Strategy (2004)	Seeks to address sources and the impacts of 'ambient' or 'environmental noise' - long term noise in London
Greater London Authority Cleaning London's Air: The Mayor's Air Quality Strategy (2002)	This Strategy recognises that the goal of improving air quality to a level where it does not pose a risk to health is very challenging in London. Aims to identify and reduce the sources of degraded air quality in London and provides targets and strategies to meet and exceed European and National targets.
Greater London Authority The Mayor's Transport Strategy (2006)	The Transport Strategy is an integrated package of measures to improve transport, enhance the environment and foster London's economic development.
Greater London Authority Rethinking Rubbish in London: The Mayor's Municipal Waste Management Strategy (2003)	This strategy seeks to promote the reduction of waste generation, encourage recycling and reuse of material and promote the wise disposal of refuse.
Merton Council The 'Merton Rule'	The Mayor of London as well as many London Boroughs have adopted a requirement that a percentage of the energy used in new developments must come from on-site renewable energy sources. This type of policy is often known as the 'Merton Rule' after the London Borough who first adopted it.

Table C4: Key Local Documents

Key Document Title	Key Document Summary
Harrow Council Unitary Development Plan (HUDP or UDP) (2004)	The land use plan for Harrow. The UDP provides the statutory planning framework for the local planning authority.
Harrow Council Corporate Plan (2009)	Council's vision, which is a long-term statement about the borough, a set of corporate priorities for the next three years listing what the council considers to be most important and a number of flagship actions for the coming year
Harrow Council Sustainable Community Plan (2006)	Which shows how the organisations making up Harrow Strategic Partnership will try to shape the effects of global, national, regional and local trends and events to work towards successful outcomes for Harrow's community.
Harrow Council Contaminated Land Strategy (2001)	Outlines the Council's aims, objectives and priorities for inspection, identification and remediation of contaminated land.

Key Document Title	Key Document Summary
Harrow Council Harrow Biodiversity Action Plan (2008)	Sets out a framework for the protection, conservation and enhancement of wildlife within the borough and has identified various habitats and species, which are of importance within the borough.
Harrow Council Roxeth Recreation Ground; Canons Park; & Harrow Recreation Ground Management & Improvement Plans 2006 - 2011	These management plans aim to ensure that the management, regeneration and sustainability of these parks take place in a well-organised and structured manner
Harrow Council Considerate Contractor's Code of Conduct	Guidance for all Contractors operating in Harrow on conduct on and around site to ensure minimal disturbance to neighbours or impact on the environment.
Harrow Council Construction Skills Training Programmes	A programme to assist job-seekers gain valuable work experience on construction sites within the borough.
Harrow Council Accessible Homes Supplementary Planning Document (SPD)	Harrow Council's guidance for providing accessible residential developments. Gives information on measures to meet Lifetime and Wheelchair accessible homes.
Harrow Council Access for All Supplementary Planning Document	Harrow Council's guidance for providing accessible developments
Harrow Council Extensions: A Householders Guide Supplementary Planning Document	Provides detailed guidance on designing residential extensions in the Borough
Harrow Council Designing New Development Supplementary Planning Document	Provides guidance on layout, design and other considerations to be taken into account when designing a new development.
Harrow Council Strategic Flood Risk Assessment	Which is highlights the potential level of risk from flooding on land throughout the Borough with the aim to reduce the risk of flooding on new development.
Harrow Council Code of Practice for The Storage and Collection of Refuse and Materials for Recycling in Domestic Properties	This document has been prepared as general guidance for Developers and Architects who are planning a residential development or redevelopment within Harrow
Harrow Council Vehicle Crossing Guidance Note	Guidance for residents seeking to create a vehicle crossing onto the highway

Signpost Links

Table C5: Signpost Links for all Chapters

Document Title	Internet Link
Planning Policy Statement 1: Delivering Sustainable Development	www.communities.gov.uk
Planning and Climate Change - Supplement to PPS1	www.communities.gov.uk
Planning Policy Statement 3: Housing	www.communities.gov.uk

Document Title	Internet Link
Better Places to Live By Design: A Companion Guide to PPG3	www.communities.gov.uk
The London Plan (Consolidated with Alterations February 2008)	www.london.gov.uk
Action Today to Protect Tomorrow: The Mayor's Climate Change Action Plan	www.london.gov.uk
Harrow Unitary Development Plan	www.harrow.gov.uk
Mayor of London - Sustainable Design and Construction SPG	www.london.gov.uk
The Code for Sustainable Homes	www.communities.gov.uk
Code for Sustainable Homes: Technical Guide	www.communities.gov.uk
The BREEAM family of assessment methods and tools	www.breeam.org

Table C6: Signpost Links for Chapter 4

Crosscutting Objective 1: Achieving sustainable design	Internet Links
By Design - Urban Design in the Planning System: Towards Better Practice	www.cabe.org.uk
Draft London Climate Change Adaptation Strategy	www.london.gov.uk
Accessible Homes SPD	www.harrow.gov.uk
Access for All SPD	www.harrow.gov.uk
Extensions: A Householders Guide SPD	www.harrow.gov.uk
Designing New Development SPD	www.harrow.gov.uk
Safer Places - The Planning System and Crime Prevention	www.crimereduction.homeoffice.gov.uk
Planning and Access for Disabled People: A Good Practice Guide	www.communities.gov.uk
Lifetime Homes	www.lifetimehomes.org.uk
Secured by Design	www.securebydesign.org.uk
Building for life Standards	www.buildingforlife.org
Design Quality Indicator Toolkit	www.dpi.org.uk
ACPO Crime Prevention Initiatives: Secured by Design Principles	www.securedbydesign.com/
Construction Industry Council: Design Quality Indicator Toolkit	www.dqi.org.uk/
Crosscutting Objective 2: Achieving efficient resources use	**Internet Links**
Mayor of London's Energy Strategy 'Green Light to Clean Power'	www.london.gov.uk
Crosscutting Objective 3: Enhancing Biodiversity	**Internet Links**
Connecting with London's Nature: The Mayor's Biodiversity Strategy	www.london.gov.uk
Harrow's Harrow Biodiversity Action Plan	www.harrow.gov.uk
Roxeth Recreation Ground; Canons Park; & Harrow Recreation Ground Management & Improvement Plans 2006 - 2011	www.harrow.gov.uk

Crosscutting Objective 1: Achieving sustainable design	Internet Links
Biodiversity in Your Pocket	www.defra.gov.uk
Greater London Authority: Connecting Londoners with Trees and Woodlands, a Tree and Woodland Framework for London, March 2005	www.london.gov.uk
Achievement 1: Code for Sustainable Homes or BREEAM Standards	**Internet Links**
Cracking the Code: Achieve Code level Three and Above, April 2008	www.info4local.gov.uk
Costing Sustainability: How Much Does It Cost to Achieve BREEAM and Ecohomes Ratings?, March 2005	www.bre.co.uk
Putting a Price on Sustainability, 2006	www.bre.co.uk
The Cost of Achieving New Code for Sustainable Homes Revealed, April 2007	www.egovmonitor.com
Report on Carbon Reductions in New Non-Domestic Buildings, December 2007	www.communities.gov.uk
The Centre for Construction Innovation Overview of BREEAM	www.ccinw.com
Rough Guide to BREEAM: Assessing the Performance of Buildings	www.hvnplus.co.uk/files/breeam.pdf
Achievement 2: Responsible Site Management Signposts	**Internet Links**
Considerate Contractor's Code of Conduct	www.harrow.gov.uk
Construction Skills Training Programmes	www.harrow.gov.uk
National Considerate Contractor's Scheme	www.considerateconstructorsscheme.org.uk
Building a Better Quality of Life	www.sustainable-development.gov.uk

Table C7: Signpost Links for Chapter 5

Internet Links for Section Signposts in Chapter 5	
Section 5.1: Land and building reuse	**Internet Links**
Planning Policy Guidance 2: Greenbelts	www.communities.gov.uk
Energy Efficiency in Buildings, 2004	www.cibse.org
Section 5.2: Efficient energy	**Internet Links**
Mayor of London's Energy Strategy 'Green Light to Clean Power'	www.london.gov.uk
Integrating renewable energy into new developments: Toolkit for planners, developers and consultants, Sept 2004	www.london.gov.uk
The Energy Saving Trust	www.energysavingtrust.org.uk
Its Up to All of Us Blog	www.itsuptoallofus.com
London Warm Zones	www.londonwarmzones.co.uk
Citizen's Advice Bureau	www.adviceguide.org.uk

Internet Links for Section Signposts in Chapter 5	
The Combined Heat and Power Association	www.chpa.co.uk
The London Community Heating Development Study - Summary Report	www.london.gov.uk
The Chartered Institute of Building Services Engineers	www.cibse.org
Section 5.3: Sustainable building materials	**Internet Links**
BRE Green Guide to Specification & BRE Green Guide to Housing Specification	www.thegreenguide.org.uk
Forestry Stewardship Council (FSC)	www.fsc-uc.org
Waste and Resource Action Programme (WRAP)	www.wrap.org.uk/construction
The Mayor of London's Green Procurement Code	www.greenprocurementcode.co.uk
London Remade	www.londonremade.com
Recycled Materials for Construction Website	www.ecoconstruction.org
Section 5.4: Water use and conservation	**Internet Links**
Water Matters: The Mayor's Draft Water Strategy	www.london.gov.uk
Key Performance Indicators for Water Use in Offices' & 'Key Performance Indicators for Water Use in Hotels	www.ciria.org.uk
The Environment Agency	www.environment-agency.gov.uk
Envirowise	www.envirowise.gov.uk
The Water Guide	www.water-guide.org.uk
DirectGov - public service website	www.direct.gov.uk
Section 5.5: Mitigating flooding	**Internet Links**
Planning Policy Statement 25: Development and Flood Risk	www.communities.gov.uk
Environment Agency's Flood Risk Standing Advice	www.pipernetworking.com/floodrisk/
General Guidelines to the Prevention of Pollution; Pollution Protection Guidelines (PPG1), 2003	http://publications.environment-agency.gov.uk
Harrow Vehicle Crossing Guidance Note	www.harrow.gov.uk
London Borough of Harrow Drainage Bylaws	www.harrow.gov.uk
Harrow Council Policy Statement for Flood Defence, 2001	www.harrow.gov.uk
Strategic Flood Risk Assessment, 2008	www.harrow.gov.uk
The SUDS Manual	www.ciria.org/downloads.htm
Interim Code of Practice for Sustainable Drainage Systems	www.ciria.org.uk/suds/icop
Sustainable Urban Drainage Systems: design manual for England and Wales, 2000	Published by: Construction Industry Research & Information Association (May 2000)
Sustainable Drainage Systems (SUDS)	http://publications.environment-agency.gov.uk

Internet Links for Section Signposts in Chapter 5	
Source control using constructed pervious surfaces – hydraulic, structural and water quality performance issues	Published by: Construction Industry Research & Information Association (Oct 2002)
Green Roofs – research advice note	www.bco.org.uk
Section 5.6: Soundscapes	**Internet Links**
Planning Policy Guidance 24: Planning and Noise	www.communities.gov.uk
Sounder City: The Mayor's Ambient Noise Strategy	www.london.gov.uk
Section 5.7: Quality Air	**Internet Links**
Planning Policy Statement 23: Planning and Pollution Control	www.communities.gov.uk
Planning Policy Statement 23**:** Annex 1: Pollution Control, Air and Water Quality	www.communities.gov.uk
Cleaning London's Air: The Mayor's Air Quality Strategy	www.london.gov.uk
Section 5.8: Better transport	**Internet Links**
Planning Policy Guidance 13: Transport	www.communities.gov.uk
The Mayor's Transport Strategy	www.london.gov.uk
Transport for London: Guidance for Workplace Travel Planning for Development	www.tfl.gov.uk
Harrow Council Accessible Homes SPD	www.harrow.gov.uk
Harrow Council Access for All SPD	www.harrow.gov.uk
Planning and Access for Disabled People: A Good Practice Guide	www.communities.gov.uk
Secure By Design	www.securedbydesign.com
Streetscape Guidance	www.tfl.gov.uk
Building for Life Standards	www.buildingforlife.org
Section 5.9: Recycling and waste	**Internet Links**
Planning Policy Statement 10: Planning for Sustainable Waste Management	www.communities.gov.uk
Rethinking Rubbish in London: The Mayor's Municipal Waste Management Strategy	www.london.gov.uk
Code of Practice for The Storage and Collection of Refuse and Materials for Recycling in Domestic Properties	www.harrow.gov.uk
Capital Waste Facts	www.capitalwastefacts.com
Recycle for London	www.recycleforlondon.com
Waste & Resource Action Plan Site Waste Management Template	www.wrap.org.uk
BRE Smartwaste	www.smartwaste.co.uk
Netregs Site Waste - Site Waste - Its Criminal: A Simple Guide to Site Waste Management Plans	www.netregs-swmp.co.uk

Other Links

Table C8: Internet Links to Other Relevant Organisations

Relevant Organisations	Internet Links
Association for Environmental Conscious Building	www.aecb.net
Building Research Establishment (BRE)	www.bre.co.uk
CABE and CABESpace	www.cabe.org.uk
Carbon Trust	www.thecarbontrust.co.uk
Centre of Alternative Technology	www.cat.org.uk
Centre of Excellence for Sustainable Buildings	www.sustainable.doe.gov.uk
Chartered Institution of Building Services Engineers (CIBSE)	www.cibse.org
Construction Industry Research and Information Association (CIRIA)	www.ciria.org.uk
Combined Heat and Power Association	www.chpa.gov.uk
Constructing Excellence	www.constructingexcellence.org.uk
Central Point of Expertise in Timber (CEPT)	www.proforest.net/cpet
Energy Efficiency Advisory Service	www.saveenergy.co.uk
Energy Saving Trust	www.est.co.uk
English Heritage	www.english-heritage.gov.uk
Green Building Store	www.greenbuildingstore.co.uk
LEARN: Low Energy Architecture Research Unit	www.unl.ac.uk/LEARN/
London Biodiversity Partnership	www.lbp.org.uk
Sustainable Construction	www.sustainableconstruction.org.uk
UK Government Sustainable Development Website	www.sustainable-development.gov.uk

Code for Sustainable Homes Summary **Appendix D**

Harrow Council - Sustainable Building Design SPD - Post consultation version

Appendix D Code for Sustainable Homes Summary

Code for Sustainable Homes Summary

D.1 The Code has a scoring system of six levels (above nil) which include the following:

- NIL - dwelling falls below the standards of the Code.
- Code Level 1 - above current building regulatory standards and a similar standard to BRE's Ecohomes PASS level and the Energy Saving Trust's Good Practice Standard for energy efficiency.
- Code Level 2 - a similar standard to BRE's EcoHomes GOOD level.
- Code Level 3 - a broadly similar standard to BRE's EcoHomes VERY GOOD level and the Energy Saving Trusts Best Practice Standard for energy efficiency. Code Level 3 represents a 25% improvement on 2006 Building Regulation Part L levels regarding carbon emissions. The Government have indicated that they will expect all new homes to be built to Code Level 3 from 2010.
- Code Level 4 - Broadly set at current exemplary performance. Government guidance has suggests this level should become mandatory by 2013.
- Code Level 5 - Based on exemplary performance with high standards of energy and water efficiency.
- Code Level 6 - Aspirational standard based on zero carbon emissions for the dwelling and high performance across all environmental categories. The Government has suggested that Code level 6 will be a compulsory level for all new homes built from 2016.

D.2 To achieve compliance with the Code for Sustainable Homes sufficient credits must be obtained under some or all of the following categories. It should be noted that some of the credits are mandatory and would need to be obtained to achieve a score.

- Energy Efficiency /CO_2 emissions
- Water Efficiency
- Surface Water Management
- Site Waste Management
- Household Waste Management
- Use of Materials
- Lifetime Homes

Please note that this is only an explanatory summary and that reference should always be made to the Code for Sustainable Homes and accompanying Technical Guidance.

Glossary **Appendix E**

Appendix E Glossary

Glossary

E.1 **Air** - Air is a compound of gases with Nitrogen about 77%, Oxygen about 20%, Argon about 1%, Carbon dioxide about 0.04%, Water vapour about 1% and other gases.

E.2 **Air Pollution** - Air pollution is the introduction into the atmosphere of chemicals, particulates, or other materials that cause harm or discomfort to humans or other living organisms, or damages the environment.

E.3 **Biodiversity** - The range and variety of life (including plants, animals and micro-organisms) as well as habitats, ecosystems and ecological processes.

E.4 **Biofuels** - a type of fuel that can be made from crops including corn, rapeseed or sugar cane.

E.5 **Biomass** - a renewable energy source, often made from plant based material that can be used as fuel, for example, wood chippings.

E.6 **BREEAM** - this stands for the **B**uilding **R**esearch **E**stablishment **E**nvironmental **A**ssessment **M**ethod (see Chapter 4)

E.7 **Brownfield** (**site/land**) - Previously developed land.

E.8 **Building Research Establishment** (**BRE**) - Acting a Trust, the BRE Group are a UK based world leading research, consultancy, training, testing and certification organisations delivering sustainability and innovation across the built environment. The BRE Trust is to be held as a national asset on behalf of the construction industry and its clients, independent of specific commercial interests. This protects BRE's impartiality and objectivity in research and advice.

E.9 **Carbon Emissions** - Carbon dioxide (CO_2) is an atmospheric gas comprised of one carbon and two oxygen atoms. It is recognised that emissions of CO_2 is a contributor to the Greenhouse Effect.

E.10 **Combined Heat and Power (CHP)** - Two thirds of energy generated by centralised power stations is lost as 'waste' heat. CPH is the simultaneous generation of usable heat and power (usually electricity) in a single process that can be used within the local area.

E.11 **Climate Change** - Climate change is any long-term significant change in the “average weather” that a given region experiences. Average weather may include average temperature, precipitation and wind patterns. Mainstream scientific consensus suggests a link between human activity and modern climate change.

E.12 **Code for Sustainable Homes** - this is a Government accreditation system for measuring the sustainability of new housing development

E.13 **Communities and Local Government** (**'the Code'**) (**DCLG**)- The department responsible for determining national planning polices as well as the rules that govern the operation of the planning system in England.

E.14 **Conservation Area** - An area of special architectural or historic interest, the character of which is desirable to preserve or enhance. There is a total of 28 Conservation Areas in Harrow of varying size and character. Conservation Areas are usually designated by the Council although the Secretary of State can also designate them.

E.15 **Construction Industry Research and Information Association** (**CIRIA**) - a member-based research and information organisation dedicated to improvement in the construction industry. Members include representatives from all parts of the supply chains of the modern built environment, covering building and civil engineering as well as transport and utilities infrastructure. CIRIA's work is recognised as being independent and objective.

E.16 **Cultural Heritage** - Buildings and other structures considered to be of a special architectural or historic quality or interest. This includes, but may not be limited to, Listed Buildings and Conservation Areas.

E.17 **Curtilage** - the land within which a building is set.

E.18 **Department for Environment, Food and Rural Affairs** (**Defra**) - The UK Government department tasked with issues such as the environment, rural development, the countryside, wildlife, animal welfare and sustainable production

E.19 **Density** (of dwellings) - A measure used to describe the numbers of housing units within a given area, usually expressed in terms of the number of habitable rooms per hectare. The site area includes the total area within the defined site including roads within the site and also private garden space, car parking space, incidental open space and landscaping, and children's play areas where these are provided.

E.20 **Development Plan Documents** (**DPD**s) - Documents that help to make up the Local Development Framework including the Core Strategy, Proposals Map, Site Specific Allocations, Area Action Plans.

E.21 **Economy** - The system of human activities related to the production, distribution, exchange, and consumption of goods and services. Harrow's economy is part of the wider London, United Kingdom and world economy.

E.22 **Embodied energy** - The energy used in obtaining the raw resource and then the manufacturing and transport of the materials to the development site.

E.23 **Environment** - Includes the 'natural' environment (air water, land, plants and animals and all associated cycles and ecosystems) and the 'built' environment (buildings and other structures built by humans).

E.24 **Greater London Authority** (**GLA**) - Is the city-wide governing body for London and has responsibility for transport, policing, development and strategic planning within Greater London

E.25 **Green Belt** - An area subject to special control under a national designation. The purpose of Green Belts is to protect the countryside from further development. There is a general presumption against development in the Green Belt.

E.26 **Greenfield** (**site/land**) - Land that has not had buildings or development on it before, undeveloped land or open space.

E.27 **Greenhouse Effect** - Greenhouse gases trapping heat within the atmosphere rather than letting the heat escape into space.

E.28 **Greenhouse Gas** - The gases present in the earth's atmosphere which warm near-surface global temperatures through the greenhouse effect. Greenhouse gases are essential to maintaining the temperature of the Earth; without them the planet would be so cold that it would be uninhabitable. The most abundant greenhouse gases are, in order of relative abundance: water vapour (including clouds), carbon dioxide, methane, nitrous oxide, ozone and chlorofluorocarbons (CFCs)

E.29 **Grey Water** - waste water from all sources in a property other than toilet, which can often be recycled for purposes that do not require drinking water quality.

E.30 **Habitat** - It is the environment in which an organism lives.

E.31 **Harrow Unitary Development Plan** (**UDP**) - Adopted in 2004, this is a land use plan for Harrow. It provides the statutory planning framework for the local planning authority by setting out the objectives, policies and proposals for the use of land and buildings in the Borough.

E.32 **Ground Source Heat Pumps** - uses pipes to buried in the ground to extract heat from the earth, which is often used to warm radiators or underfloor heating.

E.33 **Hectare** - 10,000m²

E.34 **Infiltration Trench** - a shallow excavated trench, backfilled with stones to create an underground reservoir that will divert storm water.

E.35 **Key Stakeholders** - A person or organisation with a legitimate interest in various aspects of the planning process in Harrow.

E.36 **Kyoto Protocol** - A protocol to the international 'Framework Convention on Climate Change' which is an international agreement signed by one hundred and thirty-seven countries including the European Union acting as a single party. This agreement has the objective of reducing greenhouse gases produced through human activity in an effort to prevent climate change.

E.37 **Listed Building** - A building that is of national, architectural or historic importance. The Secretary of State (Department of Media, Culture and Sport) is responsible for the Statutory List of Buildings of Architectural or Historic Interest. Any building they deem to be of national historic and architectural value can be added to this list, and therefore becomes a listed building.

E.38 **Local Development Documents** (**LDD**) - Individual planning documents comprising of Development Plan Documents and Supplementary Planning Documents.

E.39 **Local Development Framework** (**LDF**) - The portfolio of planning documents that makes up the Development Plan for a Local Authority. The emerging Harrow LDF will eventually replace the existing Urban Development Plan (UPD).

E.40 **London Plan** - Is the Regional Spatial Strategy for London and is prepared by the Mayor of London. As the RSS, local policies must be in general conformity with the London Plan. Provides a vision and strategic guidance on planning matters for the whole of London.

E.41 **Major developments** - residential developments are defined as developments where the number of dwellings to be provided will be 10 or more, or the site area is 0.5 hectares or more. Non-residential development are defined where the floor space to be provided will be 1,000 square metres or more or where the site area is 1 hectare or more.

E.42 **Mayor of London** - Democratically elected politician who has executive powers in the Greater London Authority. The Mayor of London's office produces

E.43 **Metropolitan Open Land** (**MOL**) - Strategic open land within the urban area of London that is subject to special control under a London Plan designation. There is a general presumption against inappropriate development of MOL and should have the same level of protection as the Green Belt under the London Plan.

E.44 **Minor applications** - residential developments are defined as developments where the number of dwellings to be provided will be less than 10, or the site area is less than 0.5 hectares. Non-residential development are defined where the floor space to be provided will be less than 1,000 square metres or where the site area is less than 1 hectare.

E.45 **Non-potable water** - Water that is not of drinking water quality, but which may still be used for many other purposes, depending on its quality.

E.46 **NO_x** (**Nitrogen Oxides**)- A generic term for mono-nitrogen oxides (nitric oxide or NO and nitrogen dioxide or NO_2). These oxides are produced during combustion, especially combustion at high temperatures. Both nitric oxide (NO) and nitrogen dioxide (NO_2) are pollutants and poisonous if inhaled.

E.47 **Office of Gas and Electricity Markets** (**Ofgem**) - Regulates the electricity and gas markets in Great Britain.

E.48 **Office of the Deputy Prime Minister** (**ODPM**) - The Government department that was responsible for planning until May 2006. Communities and Local Government is the department now responsible for determining national planning polices as well as the rules that govern the operation of the planning system.

E.49 **Office of the Water Services Regulation Authority** (**Ofwat**) - Regulates water and sewerage providers in England and Wales.

E.50 **Passive Shading** - buildings can be designed to make the best use of winter sun, whilst Shading that can make the best use of sunlight on north facing windows, whilst shading walls and windows from the more direct hot summer sun.

E.51 **Passive Ventilation** - can naturally ventilate homes by using the natural upward movement of warm air and the downward movement of cool air, without the need for air conditioning or electric fans.

E.52 **Permeable or porous materials** - allow water to soak through the surface and into the ground. When used on driveways, permeable or porous materials can help prevent flooding.

E.53 **Photo-voltaic** - the process used by solar cells in energy production by converting sunlight directly into electricity.

E.54 **Planning Policy Guidance** (**PPG**) - National planning policies set out by Central Government.

E.55 **Planning Policy Statements** (**PPS**) - National planning policies set out by Communities and Local Government which are gradually replacing Planning Policy Guidance (PPG).

E.56 **Potable water** - Water of a quality suitable for drinking, cooking and personal bathing.

E.57 **Public Transport Accessibility Level** (**PTAL**) - The extent and ease of access, by public transport, from one place to another. Usually given a rating from 1 to 6, the PTAL is calculated taking into account the distance from any given point to the nearest public transport stops and the frequency of the service from those stops. On the scale, 6 is close to public transport and **1** is further away.

E.58 **Planning Obligations** - Are legal agreements that secure measures and or controls that could not be achieved by imposing planning conditions (these are also sometimes referred to as S.106 agreements (see below)

E.59 **Recycled water** - Any water that has been used at least once and then supplied for reuse, either treated or untreated.

E.60 **Refurbishment** - The process of major maintenance or repair of a building, either aesthetically or functionally.

E.61 **Section 106 agreements** - this is an alternative term for Planning Obligations (see above) because the power to enter into Planning Obligations was made by section 106 of the Town and Country Planning Act 1990

E.62 **SEDBUK rating stands for 'Seasonal Efficiency of a Domestic Boiler in the UK'.** Developed under the Government's energy efficiency best practice programme, and rates the average annual efficiency of any domestic boiler.

E.63 **Site Water Management Plans (SWMP)** - a requirement for all construction projects costing £300,000 or more, design to reduce waste and improve material resource efficiency.

E.64 **Smart Meters** - measure electricity consumption designed to allowing householders to monitor and reduce energy use.

E.65 **Spatial Development Strategy** - Provides a vision and strategic guidance on planning matters for the whole of London. The document is prepared by the Mayor of London and is generally referred to as the “London Plan”.

E.66 **Statement of Community Involvement** (**SCI**) - A statement prepared by the Local Authority for consultation on the LDF as a whole (as well as on planning applications). This explains how information is to be made available, who is to be consulted and how and when consultation is to take place.

E.67 **Supplementary Planning Document** (**SPD**s) - SDPs expand upon or add detail to policies within Development Plan Documents. They do not introduce new policies and must be consistent with local, regional and national policies. This SPD provides greater detail to higher level policies in the Harrow UDP and the London Plan requiring sustainability measures to be included in building design within the borough.

E.68 **Supplementary Planning Guidance** (**SPG**s) - SPGs expand upon or add detail to policies within the London Plan. Similar to SPDs, SPGs do not introduce new policies and must be consistent with regional and national policies. They too can take the form of design guides or area development briefs.

E.69 **Sustainable Community Strategy** - The Sustainable Community Strategy shows how the organisations making up the Harrow Strategic Partnership will try to shape the effects of global, national, regional and local trends and events to work towards successful outcomes for Harrow.

E.70 **Sustainable Development** - Development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs.

E.71 **Swales** - Shallow drainage channels in the ground where run-off can collect and soak away or carry water through a site.

E.72 **Unitary Development Plan** (**UDP**) - see Harrow Unitary Development Plan

E.73 **Waste & Resource Action Programme (WRAP)** - An organisation that helps individuals, businesses and local authorities to reduce waste and recycle more, making better use of resources and helping to tackle climate change.