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Haringey Local Development Framework

DRAFT
Sustainable Design & Construction

SUPPLEMENTARY PLANNING DOCUMENT

Consultation Draft
October 2010

www.haringey.gov.uk

Haringey Council

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PURPOSE OF THIS DOCUMENT

1.1 What is a Supplementary Planning Document?

This document is a supplementary planning document (SPD). It provides guidance on how new development in Haringey should be designed and built in a way it has a positive impact on the environmental quality, biodiversity, natural resources and health in the borough. It covers the following topics:

- Energy use and minimising CO2 emission
- Avoiding climate change risks and adaptation measures including flood resilient design
- Conserving water
- Avoiding environmental pollution
- Avoiding waste and minimising landfill including reuse of buildings and recycling of building materials
- Sustainable Waste management in new developments
- Protecting and enhancing biodiversity

The Supplementary Planning Document is an important material consideration in helping the Council make decisions about planning applications. It forms part of the Haringey's Local Development Framework.

1.2 How does this document relate to other Planning Policy documents

This SPD does not create new policy, but provides detailed guidance on how our current and emerging planning policies will be applied to new developments in the Borough. Our current policies are set out in the London Plan (consolidated with alterations) 2008, the Unitary Development Plan (UDP) adopted in 2006 and the saved in 2009.

The Core Strategy is currently being prepared and this document supports the policies of the emerging Core Strategy. Please make sure that you check our website to ensure you use our most up-to-date planning policies and guidance.

This SPD should be considered along with other planning documents that provide guidance on other aspects of sustainable development. These include the following:

- Core Strategy- Submission draft expected to be submitted to Secretary of State in February 2011
- Development Management Development Plan Document (draft)
- Sites Allocations Development Plan Document (draft)

- Area Action Plans and Supplementary Planning Documents relating to specific areas and sites. These will identify more specific targets and opportunities for maximising the environmental benefits of new development, such as district heating and power or water supply schemes.

The Sustainable Design and Construction SPD have been prepared so that it is consistent with national, regional and local planning policy and guidance. The key policies that apply to this document are listed in the Appendix X.

This SPD will replace existing Supplementary Planning Guidance (SPG) on

- SPG 8a (adopted) – waste
- SPG 8b (draft) -materials
- SPG8c (draft)-environmental performance
- SPG8d (draft)-biodiversity, landscaping and trees
- SPG8e (draft)-light pollution
- SPG8 (draft)-ecological impact assessment
- SPG8i (draft)-air quality
- SPG9 (draft) - sustainability statement guidance

1.3 Link to Other Strategies

The Guidance will seek to contribute to achieving the vision in Haringey's Sustainable Community Strategy which states that "We want to tackle climate change and manage our environmental resources more effectively, increase levels of recycling, improve and promote sustainable transport and create sustainable and energy efficient homes and buildings. We want to reduce the borough's environmental footprint. We will engage children and young people in environmental issues encouraging our future citizens to be our first 'green generation".

The implementation of measures identified in the draft SPD will help the Council to meet the various obligations for environmental quality and carbon reductions targets set at national, regional and local levels.

The draft SPD will play a key role in the implementation of the Greenest Borough priorities and especially help towards meeting the borough carbon reduction targets. This includes the Council's aspirational target for CO2 emissions by 40% by 2020 on a 2005 baseline and the targets in the London Plan, the emerging Core Strategy. This SPD also links well with the some key actions and projects under the Greenest Borough Strategy including the development of local (decentralised) energy networks in Haringey. Other strategies include Haringey's Housing Strategy (July 2009); Haringey's Regeneration Strategy (2008); Well - Being Strategic Framework (2007); Biodiversity Action Plan (2009); Draft Housing Investment Plan (2010)

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HOW TO USE THIS DOCUMENT

2.1 What development does it apply to?

This document applies to all planning applications that involve building or landscape works. Although the guide may have more detail on housing related measures, the general principles of sustainable design and construction applies to all types of land uses including housing, offices, industrial development, retail, community and leisure facilities.

This includes:

- New buildings
- Refurbishment to existing buildings
- Extensions to existing buildings
- Public areas such as landscaped areas around the round buildings, and new or improved open spaces

2.2 How to use the information in this document

Sections 1,2,3 provides important background information on what this document is and how it will be used. Sections 4-11 explain the design principles and standards that all new development in Haringey is expected to follow. Following these principles will help you to achieve the standards we expect new development to meet. You will find a summary of the standards in Section 12 which apply to major development and minor developments:

- Major developments: Generally proposals for 10 or more dwellings or over 1,000sqmof floorspace
- Minor developments: Those that fall below the above threshold

We will use these to help decide if a planning application meets our policies. There are a number of appendices which provide further information on a range of issues. A glossary is provided at Appendix X to explain technical terms.

3

GENERAL PRINCIPLES

3.1 Approach

Sustainable Design and Construction requires a holistic approach involving all stages of development and also considerations on how the building will be used after occupancy. Therefore we ask you to assess and take the relevant measures suitable to each stage to meet the challenges in Haringey:

- Planning a site
- Designing buildings
- Mechanical systems
- Demolition and Construction
- Occupancy

3.2 Responding to Challenges in Haringey

Climate change

The earth's temperature is getting warmer as a result of accumulation of greenhouse gases in the atmosphere. There are national, regional and local targets for reducing CO_2 emissions. Emissions are caused by from burning fossil fuels to produce electricity, drive transport, construct and heat buildings and produce food and other goods, including building materials. Haringey's emissions for the XX have been estimated at 968 kilotonnes per annum (ktpa). Residents. Energy use in buildings is responsible for a large amount of CO_2 emissions in Haringey. Methane produced from landfill sites in the UK also contributes to climate change.

London weather is predicted to become hotter and drier in summers, and warmer and wetter in winters. There will be more extreme weather, and flash flooding and wider flooding if not mitigated. This will have implications for people's health, safety and comfort, food production, biodiversity and infrastructure.

Air pollution

The Council has declared the whole borough an Air Quality Management Area (AQMA) especially taking into account the pollution from nitrogen dioxide and particulate matter. The dominant source of air pollution in Haringey is road transport with a variety of other sources contributing to emissions. Dust blown from construction sites also contributes to external air pollution. Inside buildings, chemicals used in building materials and furnishings can lead to poor air quality. This is made worse by poor ventilation. Air pollution can have a detrimental impact on health aggravating existing heart and lung illnesses. In addition, anticipated climate change in

London will make air pollution worse as a result of hotter drier weather. It can also damage plants and ecosystems, for example from acid rain.

Water pollution

This is closely linked to air, soil pollution, and climate change and flood risk. Water run-off from the urban environment washes chemicals, sediment and litter from pavements and roads, construction sites, industry and gardens into waterways. Contaminated soil and landfill sites also cause water pollution. Misconnecting household sewage to rain water drainage increases water pollution. Chemical spills from industrial sites or construction sites can also pollute nearby waterways. Increases in hard surfaces in our cities will increase the amount of run-off and flash flooding events.

Polluted water can cause damage to wildlife and river habitats. It can also affect human health through direct contact with water or by eating contaminated seafood.

Noise pollution

Dense mixed use urban areas have higher concentrations of noise. Traffic, industrial activity, construction activity, mechanical ventilation, recreation and entertainment venues and areas where people gather in large numbers. Placing noise generating and noise sensitive uses close together and not providing enough sound insulation make the problem worse. Noise can have a significant effect on the environment and on the quality of life enjoyed by individuals and communities. Dense mixed use urban areas have higher concentrations of noise arising from a variety of different sources

Light pollution

Dense urban areas have higher levels of artificial lighting. Poorly designed or directed lighting of streets and public spaces, external areas of buildings, and flood lighting of outdoor sports facilities can cause light pollution. Lighting left on unnecessarily can also lead to light pollution. Dense urban areas also have higher levels of artificial lighting. Apart from energy wastage, which can contribute to climate change and high running costs, light pollution can also impact on people's quality of life, causing stress and disrupting sleep. It can also be damaging to wildlife.

Contaminated Land

Many areas of the borough have been in industrial use at some point. Harmful chemicals used in industrial activities can become absorbed by land in, on or under a site. Chemicals can be harmful to people's health. Wildlife can also be harmed. If contaminated land is to be developed for a different more sensitive use such as housing it will need to be cleaned. Contaminated land also pollutes groundwater and waterways.

Increasing amounts of waste

Disposing of waste in landfill sites has economic and environmental costs. Left over materials from demolition and construction activities, excessive packaging and increased consumption of goods and by-products from

manufacturing processes and industrial/ commercial activities all contribute to the increasing amounts of waste.

Rubbish sent to landfill can lead to water and air pollution and land contamination. Landfill is not an efficient use of land and destroys habitat. Methane produced in landfill contributes to climate change. Litter is unsightly and can be dangerous to animals. Energy is wasted processing waste and producing goods from raw materials.

Loss of biodiversity

Haringey is a small, largely urban borough with a wide variety of natural environmental assets. In urban environments native plants and animals are under threat. Clearing of habitat to allow development and recreation, paving of gardens, air, water, soil and light pollution, climate change, pesticide and fertiliser use, and invasive weed species all contribute to the loss of biodiversity in the borough. Poorly managed construction activities and inappropriate maintenance of green spaces also contributes to the loss of plants and animals.

Birds, stag beetles, bats and amphibians are particularly affected. Many species of plants and animals are now protected by law. Increased pollution as plants help filter air, water and soil and also help control water run-off. Plants also absorb CO2 and help keep urban environments cool.

The natural environment is also important to the health and wellbeing of humans. The loss of natural habitat means parks and gardens have become important habitats. Parts of buildings, such as roofs, may also become important habitat.

Water scarcity

Across London, the amount of water being used is close to the total amount of water available, and demand for water is rising. A growing population, inefficient appliances and fittings, leaking taps and pipes, non-native plants all contribute to increased demand for water. Climate change will result in hotter, drier summers, which could reduce the amount of water available.

In the short-term there could be increasing water restrictions. Longer-term consequences could include water shortages and rising water prices. Currently, all mains water is treated to drinking standard, which is an expensive and energy intensive process.

Flood risk

Parts of the borough are identified to be in a Level 2-3 flood zone. But the risk with predicted climate changes will increase the risk of flooding in the future. Water and sewerage infrastructure also pose a risk. The Surface Water Flooding is also an issue in London. Poorly maintained drainage, increasing amounts of hard surfaces from new development and poorly maintained flood defences will increase the risk and severity of flooding and flash floods. Flood risk has implications for lives and livelihoods, and will require increased investment to maintain flood defences. Responding to flood events and

repairing damage also costs the community through business losses, insurance bills and environmental damage.

Land as a resource

Apart from the need for accommodating competing land uses such as housing, infrastructure, open spaces, there is also lack of sufficient land for food growing purposes.

4

TOWARDS A LOW CARBON BOROUGH

MINIMISING ENERGY USE IN BUILDING DESIGN AND CONSTRUCTION

This section looks at how new development can reduce greenhouse gas emissions through the way energy is used to build and operate buildings. The Council policies require developers to achieve standards beyond Building regulations. Haringey local studies on climate change and buildings showed that the most new built homes can meet the national Code for Sustainable Homes level 4 energy standards as a minimum. The studies also indicate that the use of on-site renewable energy technologies to meet the current London Plan target helps developers to meet the Code Level 4 energy standards. The technical assessments are supported by a financial viability study. Level 4 of the Code for Sustainable Homes means a 44 per cent improvement in energy efficiency over Building Regulations Part L 2006. The Council also expects non-residential developments to achieve BREEAM Very Good as a minimum standard. The Code does not prescribe how to achieve this target, but the London Plan requires that all developments adopt an energy hierarchy for providing energy for heating, lighting, and cooling.

4.1 The Energy Hierarchy

All development will need to be designed in accordance with the energy hierarchy. You will be asked to provide information at planning application stage how you complied with the energy hierarchy.

Lean - use good design to minimise the development's energy needs

Before any mechanical systems are considered the development should be made as energy efficient as possible by maximising the use of sunlight, thermal mass and the site's microclimate to provide natural lighting, heating and cooling of buildings. Green roofs and walls should also be used where possible. High ceilings and windows heights for natural light and ventilation are preferred options.

Clean- make the most use of efficient energy, heating and cooling systems

If mechanical heating, cooling and ventilation are needed, this needs to be as efficient as possible. The priority is to use local (called “decentralised”) energy sources, in particular combined heat and power (CHP) systems.

Green- use renewable sources of energy

There may still be demand for energy (for appliances, lighting and machinery). As much as possible this remaining energy demand should be met through zero and low carbon energy sources.

The London Energy Partnership has developed the Low Carbon Designer, which is an electronic toolkit that allows the energy performance of a proposed development to be assessed in line with the energy hierarchy.

4.2 Passive Solar Gain

The Council will expect all development proposals to maximise the potential for passive solar gain. Site layout should use landform and landscape to benefit from shelter to minimise heat losses in winter and avoid over-shadowing of the solar orientation of buildings. Design principles should be applied to new buildings that maximise the capture and use of passive solar energy while avoiding excessive solar gain in summer. Site layout and landscape should provide adequate shade in summer.

Passive solar energy houses need not be significantly different in construction or appearance to conventional housing. The key principles are:

- Design the internal layout to ensure the main living room and other frequently used rooms are on the south side and rooms that benefit less from sunlight (bathrooms, utility rooms) on the north side. Kitchens are better positioned on the north side to avoid excessive heat gain.

- Provide thermal mass and storage by using solid walls to buffer against heat fluctuations and provide cooler conditions in summer.

- Locate the main glazed elements on the south elevation.

- Arrange internal layout to distribute solar energy gains using through-rooms.

- Avoid single aspect flats. Dual aspect should be the first option that designers explore for all new developments. Where single aspect dwellings are proposed, the designer should demonstrate how good levels of ventilation, daylight and privacy will be provided to each habitable room and the kitchen.

Passive solar energy houses do not require especially large south-facing windows. If windows are too large, heat loss may outweigh solar gain, and occupants' desire for privacy is likely to lead to the installation of net curtains or blinds which significantly reduce passive solar gain. Likewise, if the windows on the north, east and west facing elevations are too small to achieve reasonable internal light, occupants will resort to daytime use of artificial lighting, eroding the energy savings from passive solar energy.

Haringey supports the Mayor's standards in Housing Design Guide (2010) for minimum ceiling heights since it has significant effect on availability of natural light and ventilation. The minimum floor to ceiling height in habitable rooms is 2.5m between finished floor level and finished ceiling level. A minimum floor to ceiling height of 2.6m in habitable rooms is considered desirable and taller ceiling heights are encouraged in ground floor dwellings.

Similarly, the glazing to all habitable rooms not less than 20% of the internal floor area of the room is encouraged.

Natural ventilation should be used in preference to conventional mechanical air cooling systems which generate high energy demands. But, as external temperatures rise, natural ventilation may become inadequate and demand for additional air cooling is also set to rise. Furthermore, in large buildings adequate natural ventilation may be hard to achieve. Gas and heat-fired absorption cooling are significantly more energy efficient than grid electricity powered air cooling systems. If heat-fired absorption cooling is combined with CHP (Combined Heat and Power) 'green electricity' can be generated as a by product.

Development proposals should demonstrate how the design of dwellings will avoid overheating during summer months without reliance on energy intensive mechanical cooling systems.

Conservatories can help to harness passive solar energy and provide shelter to external walls. However, they should be carefully incorporated into a design to ensure effective distribution of heat around the home, avoid heat loss in winter through large glazed areas, and prevent over-heating in summer. It is important to be able to thermally isolate a conservatory from the rest of the house to prevent excessive heat loss. Sunspaces (glazed elevations within conventional walls) can create warm and light spaces within buildings. They are particularly useful in flats and apartments where they can throw light further back into deep plans and can provide an attractive internal space where no private garden space is available. Low-e glazing is essential in these cases where the sunspace forms an integral part of the building, and heat losses can be further reduced by the installation of thermal blinds or curtains to prevent heat loss at night.

For detailed design guidance and examples of best good Practice: Passive Solar Estate Layout General Information Report 27 (BRE/Energy Efficiency Best Practice Programme). Copies of this guide and other good practice information on energy efficiency in housing is available from the Energy Saving Trust at: www.est.org.uk/bestpractice

Information on energy efficiency in non-domestic developments is available at: www.actionenergy.org.uk

4.3 Choosing materials and fittings carefully

As well as passive solar design measures, the energy used to build a development needs to be considered:

- reuse and recycle building materials
- source materials using local suppliers
- do not use materials containing substances which contribute to climate change through ozone depletion

Buildings should be fitted with energy efficient lighting and appliances. Lighting should be designed to minimise wasted light spilling to where it is not needed or being reflected to the night sky.

4.4 Efficient energy systems- Decentralised energy and Combined Heat Plant and Combined Heat and Cooling Plant

Where mechanical heating and cooling is required, development proposals should investigate using energy more efficiently through local (decentralised) energy generation, through small energy sources generating electricity and heat near the point of use. The London Plan expects all major new developments to connect into existing heating and cooling networks, or provide site-wide CHP (Combined Heat and Power) networks where feasible, unless site specific solutions combining low carbon or renewable energy generation achieve a greater reduction in CO2 emissions.

Decentralised energy generation is a series of local systems generating heat and/or power at or near the point of use, connected to local distribution networks. This minimises energy that is lost in transmitting energy.

The most efficient form of decentralised energy systems are combined heat and power (CHP) or combined cooling, heating and power (CCHP) systems. These are efficient because they make use of the waste heat left over from creating electricity. This means that much more of the energy that goes into the systems makes it to end uses compared to energy from the national grid and heating from conventional boilers.

To make CHP or CCHP systems viable there needs to be a relatively even and constant demand for energy. For this reason, area-wide schemes that cover mixed use buildings are most likely to be economically viable.

Currently, a CHP system is being installed at Tottenham Hale. We are also considering other areas where decentralised energy systems can be developed.

The system that is most appropriate will depend on the circumstances of your scheme and where it is located, however the following order of preferences should be followed:

- connect to existing CHP or CCHP systems, including those on nearby housing estates.

- if this is not possible, use a site-wide CHP/CCHP system that connects different uses and/ or groups of buildings. This should be powered by renewables or be gas-fired.

- If this is not possible, communal heating or cooling systems should be used, preferably powered by renewables, but at the very least gas-fired.

- if none of the above are feasible, other efficient systems should be considered, such as heat pumps or heat recovery ventilation. These systems should be powered by low or zero emission fuels.

- It is important that occupants understand how to use the energy features of a building efficiently.

The design of CHP/CCHP systems should minimise impacts on air quality.

4.5 Renewable Energy

In Haringey, there is a presumption that all major development proposals will seek to reduce carbon dioxide emissions by at least 20 per cent through the use of onsite renewable energy generation wherever feasible.

Energy should be supplied from sources on-site or locally. Subscribing to green tariffs that draw energy from the national grid will not be counted as this is not an efficient energy source.

Where CHP/CCHP systems are not fuelled by renewable sources of energy, these should be used to help meet the remaining energy needs of the development that the CHP/CCHP system cannot meet .The system chosen will need to be compatible with the CHP/CCHP, usually this means electricity generating systems such as photovoltaic cells.

The following are preferred for on-site renewable energy systems:

- Solar thermal
- Wind turbines (in suitable locations)
- Photovoltaic panels
- Bio-fuels (subject to air quality standards)

- Heat pumps

LB Haringey Climate Change, Site Development and Energy Infrastructure Study (2010) showed that small-scale wind-turbines are not likely to be effective in Haringey. Applications for wind-turbines will need to demonstrate that they will be effective taking into account the site constraints. Accurate information on wind-speeds through the site will be needed, rather than regional estimates.

The analysis presented in the study suggests that PV and biomass are the likely solutions for achieving compliance with the low and zero carbon generation targets, along with gas-CHP where feasible, due to the fact that they are likely to offer the most significant CO_2 savings for the lowest cost, however other technologies may be suitable.

However, PV and Biomass both could be limited by constraints on their use. The entire Borough is designated as an air quality management area (AQMA) and proposed biomass system cannot result in exceedences of air quality limits. Such proposals should address the impacts of vehicle movements for the delivery of fuel.

The use of photovoltaics (and solar hot water) may be constrained by Conservation Area designations, of which there are a number across the Borough. Haringey has 29 Conservation Areas, 468 statutory Listed Buildings, and over 1100 Locally Listed Buildings. When considering decentralised energy options, whether they are micro-generation or larger schemes, consideration should be given to minimising physical impacts on the historic fabric of buildings and ensuring reversibility wherever practicable. Poorly designed measures could seriously detract from the historic character and fabric of buildings and landscapes, whereas well-designed measures sensitive to the historic context can help contribute to the borough's targets for reducing CO2 emissions

Heat pumps will not be counted as a 100% renewable source of energy as they are powered by electricity. The electrical energy used to operate proposed heat pumps, and the CO2 produced doing this, will be subtracted from calculations of energy provided and CO2 saved by renewable sources of energy.

Fuels containing a portion of fossil fuels, such as bio-diesel, will not be counted as a 100% renewable source of energy. Only the contribution to energy provision and CO2 savings made by the renewable portion of the fuel will be counted. Arrangements need to be put in place for the delivery and storage of bio-fuels. These should be sourced as locally as possible.

The London Renewable Energy Toolkit has been developed to assist in assessing the feasibility and viability of renewable technologies. (Webpage details)

4.6 Code for Sustainable Homes Assessments

The national code for the sustainable design and construction of new homes is in place since April 2007. The Code aims to reduce our carbon emissions and create homes that are more sustainable. The Code within England, replaces the EcoHomes awards scheme for new housing.

The Code for Sustainable Homes (CSH) measures the sustainability of a new home against categories of sustainable design, rating the 'whole home' as a complete package. The Code uses a 1 to 6 star rating system to communicate the overall sustainability performance of a new home. The Code introduces mandatory minimum standards for energy and water efficiency for every level. There are minimum standards for materials, surface water run-off and waste at entry level only. Additional points can still be gained by performance in other areas:

- Energy/CO2
- Water
- Minerals
- Surface water run-off
- Waste
- Pollution
- Health and well being
- Management
- Ecology

To achieve the levels of the Code, a number of points must be accumulated across all categories and the mandatory requirements must be met (See Appendix XX).

The CSH will be applied by a system of accredited assessors trained by the BRE via its courses for EcoHomes and the BREEAM scheme, the environmental assessment method for the non-housing sector.

CSH assessors conduct initial design assessments of a sample type of each home in a development, recommend a sustainability rating, and issue an interim CSH certificate. They can also perform a post-completion check to verify the rating before a final certificate is issued. The BRE is the training and accrediting agency. Builders (not individual architects or designers) receive the certificate showing the overall sustainability rating for the home, and a breakdown for how the rating has been achieved.

The CSH requires the following energy and CO2 emissions reduction standards for domestic buildings:

Year	Improvement on 2006 Building Regulations	Equivalent Code level for Sustainable Homes
2010	25%	Level3
2013	44% reduction	Level 4
2016 onwards	Zero carbon	Level 6

More information on the CSH can be found in the detailed technical guidance including the latest Code for Sustainable Homes Technical Guide May 2009 Version 2.

4.7 BREEAM Assessments

BREEAM Assessment is developed in 1990 and versions are updated regularly in line with UK Building Regulations. These versions essentially look at the same broad range of environmental impacts:

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

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, EXCELLENT or OUTSTANDING, and a certificate awarded to the development.

STANDARDS IN HARINGEY

Reductions in total CO_2 Emissions

Residential Buildings: Haringey Council study to local potential indicates the all new housing development, except small scale ones, can achieve 44% reduction in CO_2 emissions compared to a house built to 2006 Part L Building Regulations. The emerging Core Strategy has the following standards which will be updated where necessary to reflect new national or regional policies and local evidence.

Year	Improvement on 2006 Building Regulations	Equivalent Code level for Sustainable Homes
2011-2013	44% reduction	Level 4
2016 onwards	Zero carbon	Level 6

Non-Domestic Buildings: For Commercial Buildings, the Council expect minimum BREEAM Very Good standards.

Standard	Schools	All non-domestic buildings
BREEAM very good	2010	2010
Zero carbon	2016	2019

Renewable Energy:-Reduction in CO_2 emissions by 20% by use of renewable energy on-site is required.

Statements and Certificates:

Code for Sustainable Home (CHS) and BREEAM Certification

- A CSH or BREEAM design stage assessment should be submitted with the application. These should be carried out by a licensed assessor. The assessor's name and license number should be clearly stated. If, at the time the application is submitted, there is not sufficient information to enable an assessment to be made, for example in the case of an outline planning application, the council will condition any approval to ensure that a CSH or BREEAM design stage assessment is submitted prior to the commencement of construction of the development.

- The council will condition any approval to ensure that the targeted BREEAM ratings are met and that certificates are submitted to the council once the development has been completed at post construction stage. The BREEAM certificates are issued after a post-construction review. An interim certificate is issued at design stage.

Energy statement

An energy statement is a useful way of showing how you have achieved the reduction in energy use and reduced the CO_2 emissions from your development.

You can provide this statement as part of the Sustainability Statement or as a stand-alone assessment. It should show the following:

- Calculation of baseline energy demand and carbon dioxide emissions on a 'whole energy' basis, showing the contribution of emissions both from uses covered by building regulations and those that are not

- Proposals to reduce carbon dioxide emissions through the energy efficient design of the site, buildings and services;

- Proposals to further reduce carbon dioxide emissions through the use of decentralised energy where feasible, such as district heating and cooling and combined heat and power (CHP); and

- Proposals to further reduce carbon dioxide emissions through the use of onsite renewable energy technologies.

Statement on Decentralised Energy Generation Options Assessments:

Major development proposals should evaluate the feasibility of Combined Heat and Power (CHP) systems, and where a new CHP system is appropriate also examine opportunities to extend the system beyond the site boundary to adjacent sites.

The methodology for demonstrating compliance with Haringey requirements is outlined below. For each of these steps the developer will be required to provide evidence in the energy strategy to support their approach:

Have you checked for existing or planned district (distributed) energy networks?

- Check the London Heat Map
- Check the Council Policies and Guidance

⇓⇓

Assess technical and financial feasibility for Combined Heat and Power

- If feasible, have you contacted an energy supplier that may be interested in running the network?

⇓⇓

Assess any neighbouring building for potential connection

- Check London Heat Map and the Haringey Council sources
- Collect data and enter into dialogue

4.8 Assessing distributed energy options

Potential opportunities to meet the first priority in this hierarchy are outlined in the London Heat Map tool. The Council has, working with the LDA, developed Haringey-specific information on the London Heat Map. The Council has also identified potential developments sites where Decentralised Energy hubs could be developed (see map)

Where future network opportunities are identified, proposals should be designed to connect to these networks.

⇓⇓

If there is no spare capacity in the system, the feasibility of contributing to expanding the capacity or upgrading the system should be investigated.

⇓⇓

If a development will be completed before the decentralised energy network it will connect to be completed, an efficient boiler system should be used temporarily. The development should be designed so that it can quickly switch to the network once it is completed. Planning obligations will be used to ensure connection occurs.

4.9 The London Heat Map

The London Heat Map (available at **www.londonheatmap.org.uk**) is an open-access mapping tool showing the relative heat density of different areas, locations of high heat users, large heating plant as well as existing and planned energy networks (users can register free of charge to access the full range of available layers).

This map should be used to assess the proximity of existing and planned district energy networks and additional suitable loads to the development site.

The map was launched at the end of 2009 and is still in development as a live document and online tool. The information presented by the maps is continuously updated and new data added as this becomes available.

The base layers give heating fuel demand up to 50m autoscale grid (shown by red and blue contours). The data added by councils and other organisations gives point loads of specific buildings, and existing large heating plant and piping routes for planned and existing networks.

Figure XX below gives a wide view of the borough, showing the contour lines and point loads. Figure XX gives a detail view, in this case showing the Broadwater Farm estate and nearby schools.

Local authorities are currently in the process of collecting additional data with which to populate the map and other users are also able to submit information, which is checked before being uploaded.

At present the Haringey area of the London Heat Map contains data from the council estate (including schools, council buildings, leisure centres and libraries) and Homes for Haringey properties. Additional data to be added includes demand from members of the Haringey Strategic Partnership, and other private organisations in the borough. This data will be added to the map as it is provided by the relevant sources.

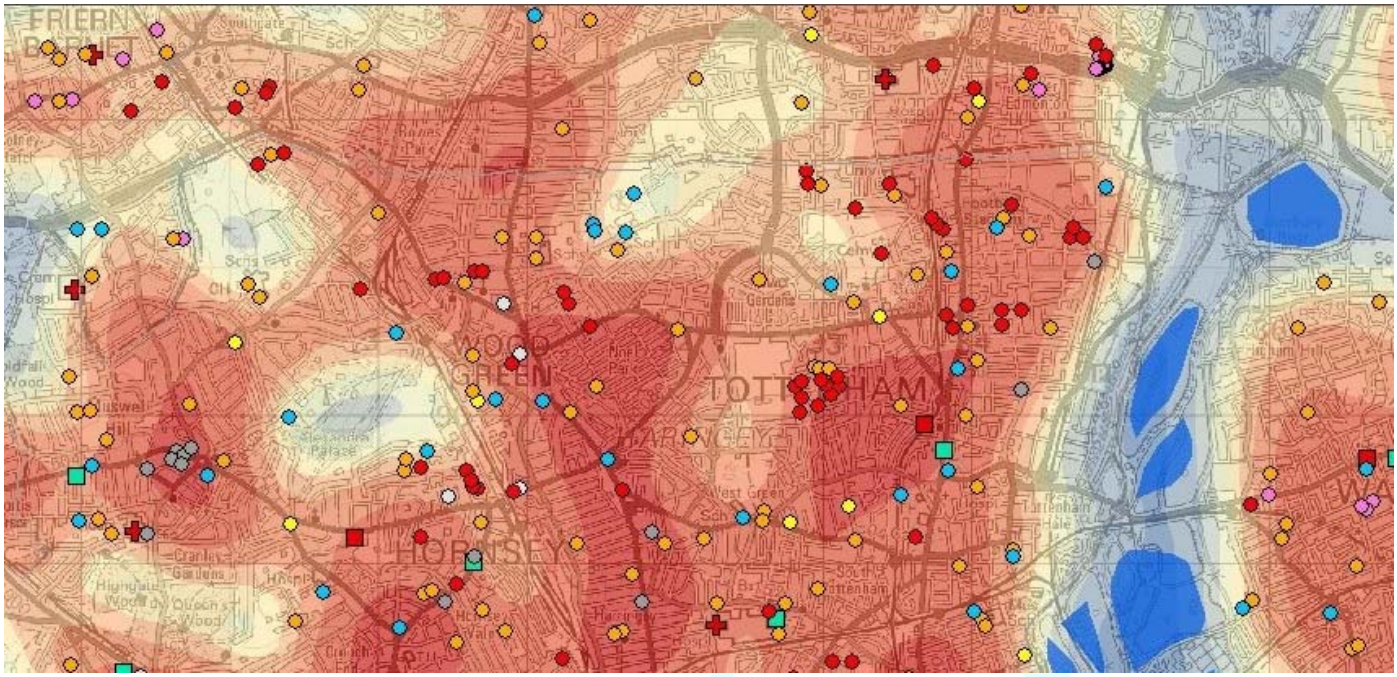


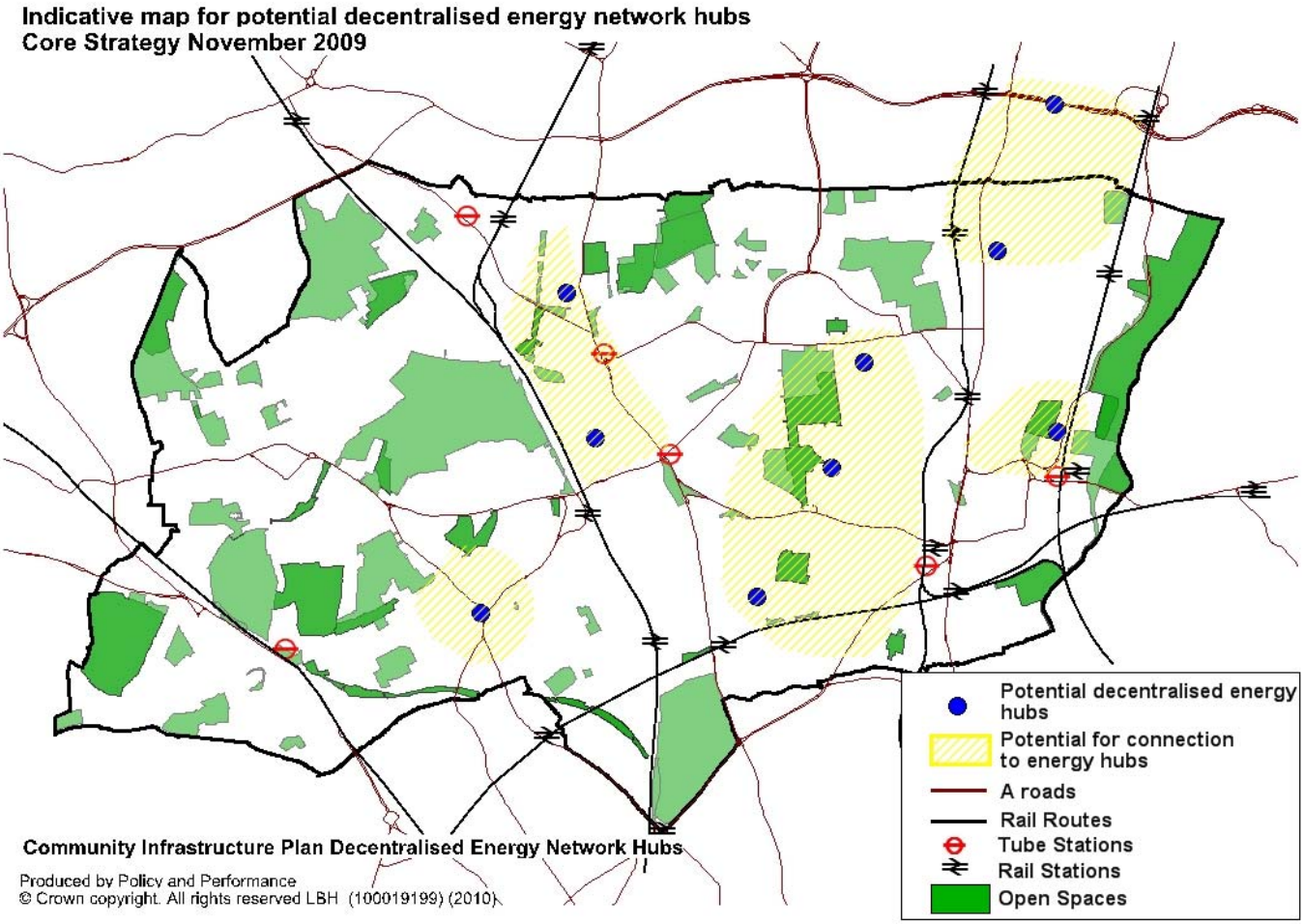
Figure XX: Wide view of Haringey from the London Heat Map (accessed 17/08/10)

To be added

Figure XX: Detail view from the London Heat map. Area shown is the Broadwater Farm estate. The red points indicate the large residential blocks, and the yellow the nearby schools (accessed 17/08

4.10 Proposed Decentralised Energy Hubs in Haringey

The following diagram shows the key development areas expected in the Borough along with the key sites being considered for Decentralised Energy Hubs.

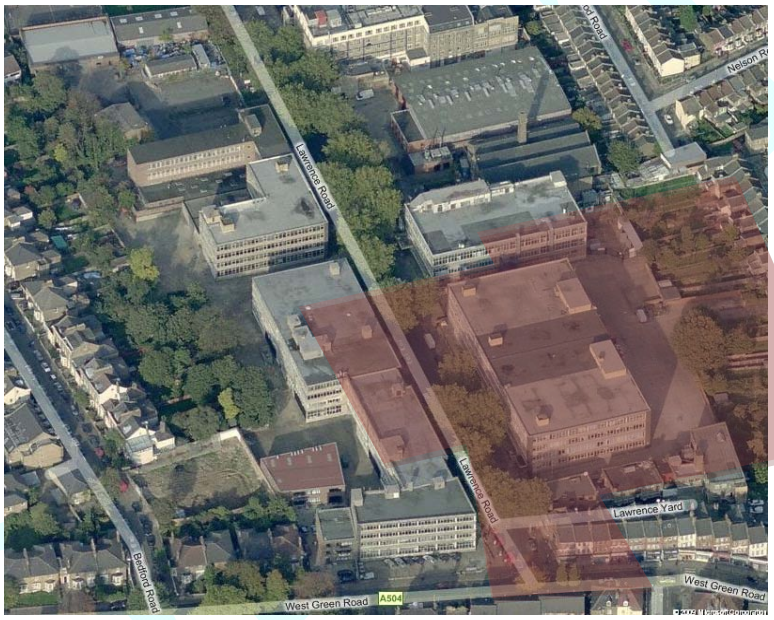


CASE STUDIES

4.11 Case Study: Lawrence Road

This case study is intended to provide an indicative guide to the likely information and analysis required to assess the potential for District Energy Networks and CHP systems in new-build developments. It is not intended as a full assessment and includes a number of general assumptions in the calculations which based on an assumed development scenario for the site. The assumptions are based on a scenario for around 400 residential dwellings, 3000sqm offices, and 500sqm restaurant. This is not intended as a statement on planning position but just a scenario to show how the developers will be expected to assess the DE options in a typical urban site.

Site Details



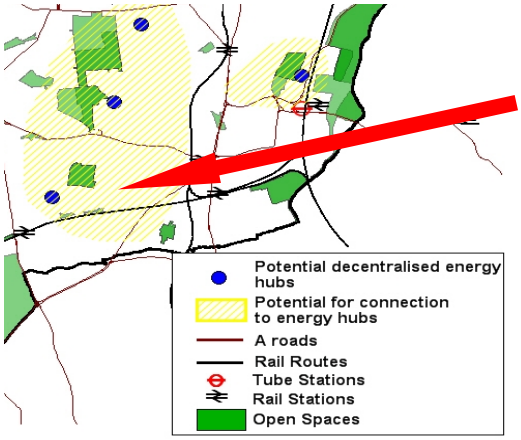
Assessing potential to connect to an existing or proposed DE system

Existing systems:

The only existing district energy system in the Borough is at the Broadwater Farm Estate, which is located approximately 1km north of the site. Haringey are currently undertaking a feasibility study looking at the potential to upgrade this network and expand it to connect to a number of buildings surrounding the estate. Assuming a mid-range cost of £1000 per metre of district heating pipework, connection from the Lawrence Road site to the Broadwater Farm Estate would cost in the order of £1M to deliver.

Proposed Systems:

The Haringey Proposed Map shows that there is the desire to create an energy hub in the Lawrence Road area. It is anticipated that this



development will be required to form part of that network and could be crucial in establishing the early building blocks for its creation.

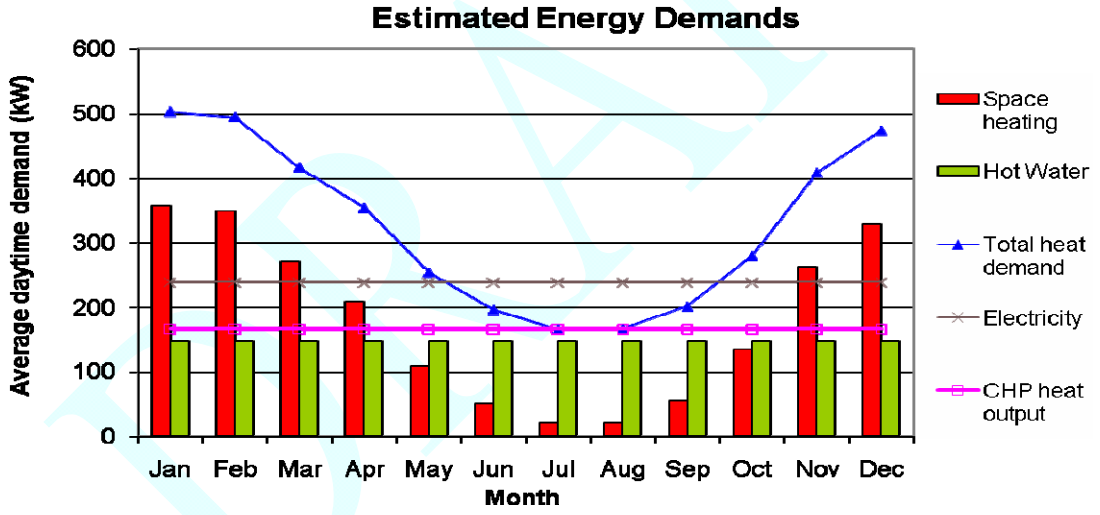
There is also a potential for an energy hub around St Anne's which is located approximately 1.3km to the south east of the development.

Local potential for District Energy

The area encompassing the three energy hubs described above has been designated as area with the potential for connection to district energy infrastructure. The London Heat Map also identifies this area as having a very high heat demand, thereby indicating a potential for future network expansion.

Summary

The district energy network proposed at the Broadwater Farm Estate is still in the feasibility stage but the proposed heat demands and location of this development could be fed into that study. When more is known about this network the potential for connection will need to be reviewed. This development will clearly play an important part in delivering the decentralised energy hub proposed for the Lawrence Road Area and there is therefore a strong case to establish for the implementation of CHP on this site.



Given the strong potential to use CHP identified at this stage, it would be recommended that a developer approach one or more ESCos to assess the level of market interest in the project.

Identifying the potential to connect to neighbouring buildings

The London Heat Map indicates that in the immediate vicinity of the site are two potentially significant heat demands, an education building and an arts centre although more information would need to be sought to see whether these demands were significant enough to warrant undertaking an assessment of the potential to establish a connection.

The most likely expansion from the site would appear to be to the neighbouring area of new development. Depending on the proposed plans and phasing for the further development identified along Lawrence Road, the developer would also be expected to contact the developer(s) involved and identify opportunities for creating links, potentially including this information on these sites in discussions with third party ESCOs to assess how a wider network might be created and the impact on the technical feasibility and cost viability.

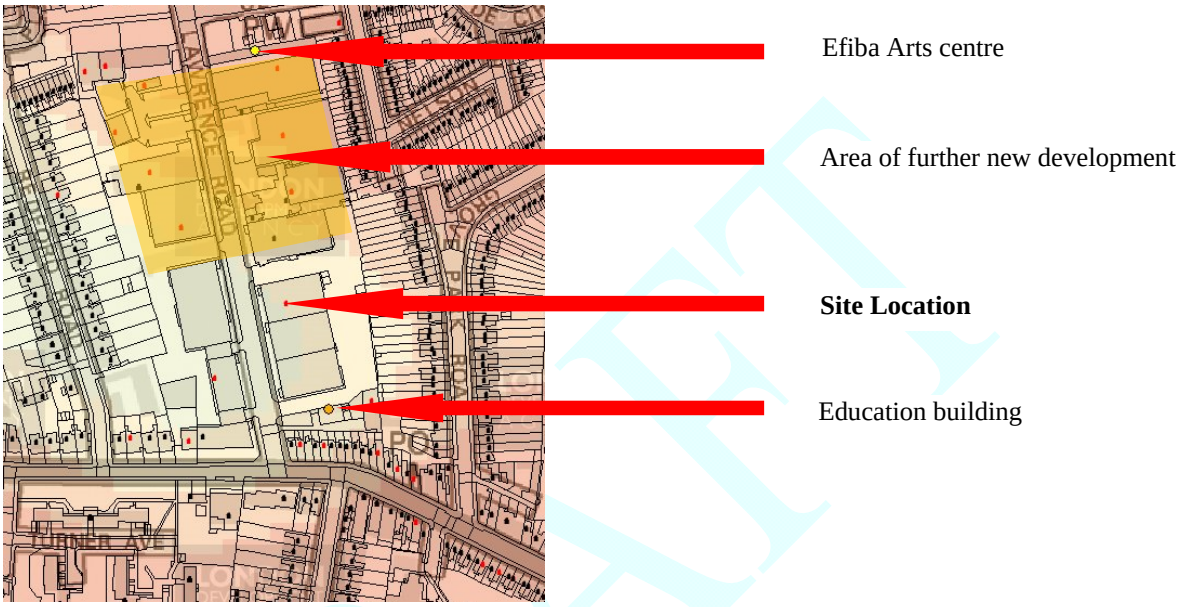


Figure 1: Excerpt from the London Heat Map showing the location of major heat loads in the vicinity of the site (accessed on 30/03/10)

4.10 Case Study: Civic Centre

This case study is intended to provide an indicative guide to the likely information and analysis required to assess the potential for District Energy Networks and CHP systems in new-build developments. It is not intended as a full assessment and includes a number of general assumptions in the calculations. The assumptions are based on a scenario for 200 Flats, 500sqm Office, 200sqm Retail, and 300sqm Restaurant. This is not intended as a statement on planning position but just a scenario to show how the developers will be expected to assess the DE options in a typical urban site.

Site Details

Assessing potential to connect to an existing or proposed DE system

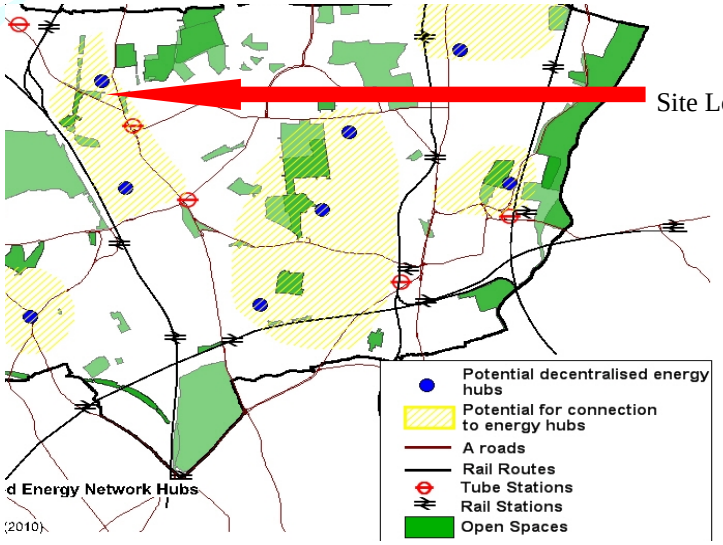
Existing District Energy Networks and CHP Systems:

There are no existing district heating systems in the vicinity of the Civic Centre. There are also no existing CHP systems.

Proposed District Energy Networks and CHP Systems:

The Haringey Proposed District Hearting Map shows that there is the desire to create an energy hub in the vicinity of the Civic Centre, and it is therefore anticipated that his development will be part of that network.

There is also a proposed energy hub located in Haringey Heartlands, around 1km to the south of the site. This area is one of the key strategic growth areas in the Borough.

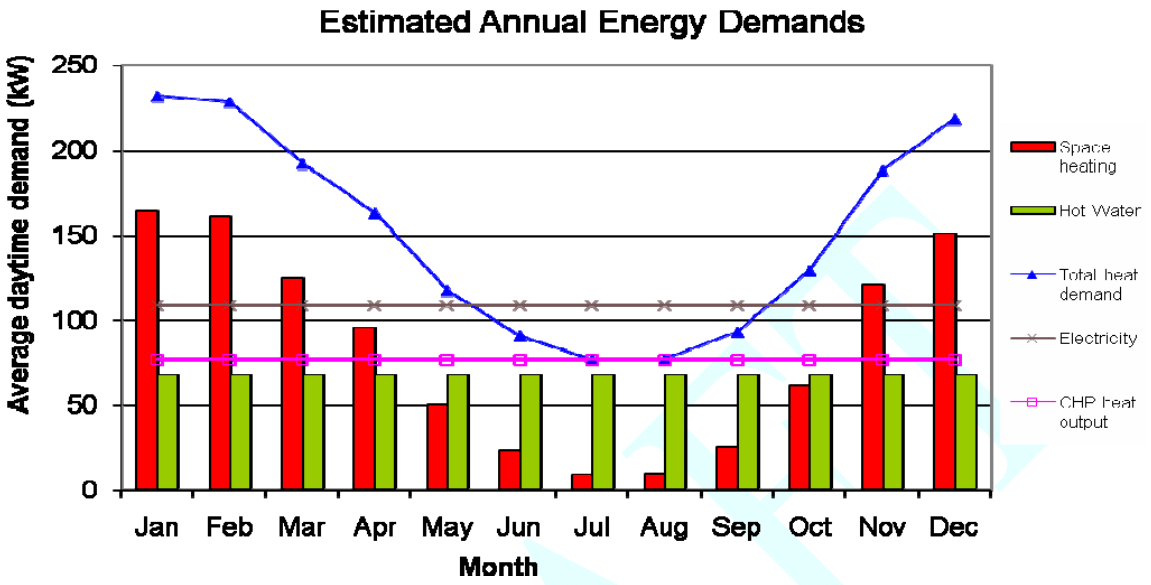


Local potential for District Energy

The site is located in an area that has been designated as area for connection to future district energy infrastructure. The London Heat Map also identifies this are as having a very high heat demand, thereby indicating a potential for future network expansion.

Summary

The Civic Centre will be an important building block for the potential and/or planned energy hub in Haringey Heartlands. This, together with the potential scale and uses proposed for the site make a strong case for investigating the potential to use CHP on the development.



The analysis suggests that the ideal CHP size for the scheme would be in the order of 60kW to ensure over 5,500 running hours per year. However, this is at the lower end of the viability for such systems and therefore the scheme would benefit from an increased heat demand in order to enable the specification of a larger and more efficient system, possible options for connecting to other buildings are discussed in the following section.

Identifying the potential to connect to neighbouring buildings

Directly adjacent to the site are a number of potentially significant heat demands, most notably two schools and a health centre. The schools are likely to offer a more attractive proposition because, as they are publically owned, and therefore there is likely to be a greater possibility of committing to a long term energy supply contract.

Figure 2: Excerpt from the London Heat Map showing the location of major heat loads in the vicinity of the site (accessed on 30/03/10)

As a starting point the developer would be expected to make enquiries with the school to determine interest in connecting to a heat network and to obtain information on the plant and heating demands, plant room locations and plant replacement schedules. If these discussions were to prove to be fruitful then the energy data could then be included into the feasibility assessment with a view to proposing a wider network. An indicative connection option is outlined below:

Assuming both Nightingale School (red) and St Michaels C of E school (purple) were interested in connection to a heat network, and that a connection was technically feasible, the indicative heat pipe network layout set out above could cost in the region of £140,000 to deliver, based on 200 meters of pipework at around £700 per meter. Establishing a more accurate network length would depend upon the locations of the energy centre at the Civic Centre and the existing plant rooms at the two schools as well as other physical constraints.

In situations like this, the local councils are in a strong position to broker such deals, in this case being both the owner of the Civic Centre site and the two schools. Furthermore, the Council would be potentially able to enter into a long term energy supply contract, thus making the network more attractive to an ESCo. So developers will be expected to discuss their plans with the local council.

The viability of installing a CHP system on the Civic Centre site, based on the scale of the proposed development, is at the low end of what is usually recommended. Expanding to connect to the two neighbouring schools, which would provide both an increased heating demand and variable load profile, should improve the operational hours of the CHP as well as the electrical output which will improve overall viability.

TOWARDS ZERO CARBON DEVELOPMENTS

4.12 Building Regulations (Part L) and the route to Zero Carbon

Following consultation, the Government's *'Building A Greener Future: Policy Statement'* announced in July 2007 that all new homes will be zero carbon from 2016. The Government indicated in their recent *'Zero Carbon for New Non-Domestic Buildings Consultation on Policy Options'* Report (November 2009) that non-domestic buildings will be required to be zero carbon by 2019, with the public sector leading the way with schools from 2016 and other central Government estate from 2018.

The focus has now turned to the final details of the zero carbon methodology and the suitable intermediary step changes in requirements in 2010 and 2013. Until 2013, the standard is likely to continue to be set with reference to those sources of emission (space, water heating and lighting) that are contained in the 2006 regulations and to offer the option of adopting Low and Zero Carbon (LZC) technologies. The step to zero carbon in 2016 is likely to include emissions from other sources (principally electrical appliances), which would result in the need for significant renewable generation capacity as well as other LZC systems[1]. The following diagram sets out, with respect to CO_2 emissions, the improvements upon 2006 standards that are proposed for implementation in 2010, 2013 and 2016. These equate to the energy

[1] Building Regulations Energy efficiency requirements for new dwellings. A forward look at what standards may be in 2010 and 2013, Department for Communities and Local Government, July 2007

performance standards in the Code for Sustainable Homes Levels 3, 4 and 6 respectively.

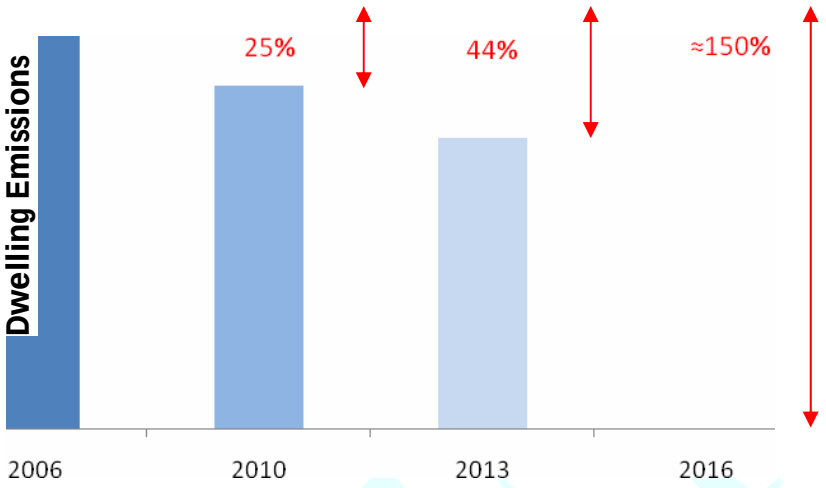


Figure xx: Relative reduction in emission rates from new domestic dwellings in the proposed Building Regulations for 2010, 2013 and 2016 compared to current (2006) Building Regulations.

In December 2008 the Government published the *'Definition of Zero Carbon Homes and Non-Domestic Buildings: Consultation'* to consult on the definition of zero carbon homes and in particular an approach based on:

- Energy Efficiency: High levels of energy efficiency in the fabric of the home
- Carbon Compliance: A minimum level of carbon reduction to be achieved onsite or through directly connected heat; and
- Allowable Solutions: a list of (mainly offsite) measures for dealing with the remaining emissions (including unregulated emissions from appliances)

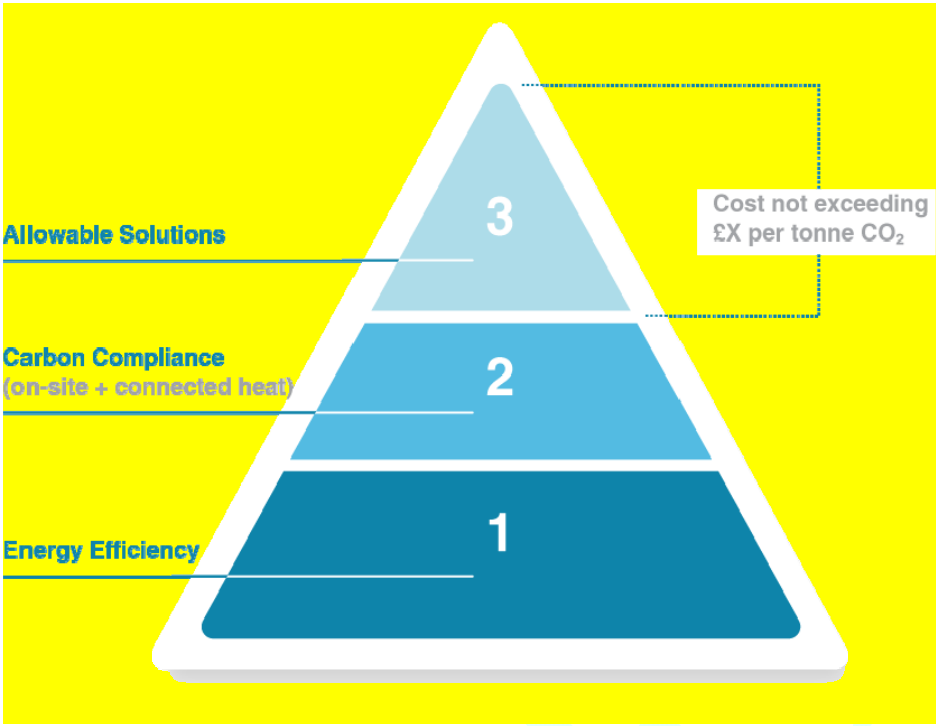


Figure X: Proposed approach to delivering Zero Carbon

Evidence demonstrating that the building complies with these criteria is required by building control both at design stage and at completion. The final "as built" calculation must be based on the building as constructed, incorporating any changes to the performance specifications that have been made during construction as well as the measured air permeability, ductwork leakage and fan performance as commissioned.

The energy efficient requirements are not yet been finalised but a Task Group set up to examine and advise on the energy efficiency standards have proposed setting a minimum space heating requirement, using kWh/m^2/yr as the metric.

The government announced in July 2009 that the Zero Carbon Definition will follow the methodology outlined in the 2008 consultation with the Carbon Compliance element set at 70% of regulated Emissions (the DER). This will include the emissions saved through energy efficiency and on-site or connection to decentralised, low or zero carbon energy generation technologies.

Allowable Solutions will cover the remaining CO_2 emissions and may include:

- Additional Carbon Compliance
- Energy efficient appliances
- Advanced building control systems
- Exports of low carbon or renewable heat
- Investments in community heat infrastructure

This list has undergone a number of changes but the latest guidance appears to be that all possible solutions are currently being considered.

REFURBISHMENTS

The 2008 Climate Change Act requires the UK to reduce its carbon emissions by 80% by 2050 against a 1990 baseline. The Department of Communities and Local Government shows the contribution the residential sector will be expected to make in achieving this reduction.

The average household in the UK produces over ten tons of carbon dioxide per year from energy use in the home, consumption of food and products and transport. Under the new target this will need to be 8 tons by 2020 and 2 tons by 2050. The reduction of carbon emissions in the existing housing stock will become increasingly important challenge and may entail a programme of physical renovation of the building fabric, and installation of low carbon technologies.

Low Cost measures

- Low Energy Light-bulbs
- Hot Water Tank Insulation
- Heating Controls i.e. TRV's, Programmers and Thermostats

Medium Cost measures i.e.

- New Gas Condensing Boilers
- Loft Insulation
- Cavity Wall Insulation

Building Fabric and Glazing

- External Wall Insulation
- Internal Wall Insulation
- Floor Insulation
- Double Glazing

Low Carbon Technology and Renewable Energy Technology i.e.

- Communal Heating Systems
- Photovoltaic Panels
- Solar Thermal Evacuated Tube

Some of these measures may require Building Control and Planning permission.

BOX - Muswell Hill Low Carbon Zone

Haringey Council is one of 10 London Boroughs to have been awarded funding from the Mayor of London and is the only London borough that has also been selected to take part in the Department of Energy and Climate Change, Low Carbon Communities Challenge, receiving in total around £700,000 to develop an exemplar scheme providing Haringey with the know how to deliver carbon reduction schemes across the borough. The aim of the project is to achieve a 20% reduction in CO2 emissions by 2012 and a 60% reduction by 2025. This will be achieved by working in partnership with residents and community organisations, local businesses and schools.

Energy saving measures will form the largest part of the Low Carbon Zone target, with an anticipated 14% saving from the baseline. A further 3.5% will be achieved through behaviour change advice alone, and a further 1% saving will be achieved from each of sustainable transport measures, community buildings and domestic micro renewable energy. A 0.5% saving is expected from energy efficiency in businesses.

Muswell Hill Sustainability Group (MHSG) has played a key role in developing the project and has set up 'En10ergy' as an Industrial Provident Society which residents can invest in. En10ergy will lease roof spaces locally to install renewable energy technologies and recycle revenue generated back into further carbon saving measures. En10ergy is also working to engage local residents to find out how they can be a part of the Low Carbon Zone initiative.

BOX – DELIVERING CARBON REDUCTIONS BY ENERGY EFFICIENCY

METROPOLITAN HOUSING TRUST -GOOD PRACTICE EXAMPLE IN HARINGEY

Metropolitan Housing Trust London (MHT London) is a registered social landlord, which has a large property base in Haringey. In 2004, with 600 hard-to-treat homes with very high reactive repairs costs, the MTH decided to run a rolling retrofitting programme to achieve typical carbon savings of 45%.

The works, as described above, deliver CO2 reductions through the primary route of energy efficiency. High levels of insulation (including floor and solid wall), efficient heating systems, double glazed windows and low energy lighting provide the most cost effective means of reducing CO2 and focus on getting the basics of building performance right. The programme decants the residents for a period of approximately 14 weeks, during which time the property undergoes significant works, including:

- 300mm Loft insulation
- 100mm floor insulation under suspended timber floors
- Cavity wall insulation (where applicable)
- 60mm internal wall insulation
- Double glazed windows (often double glazed timber sash windows due to conservation area restrictions)
- Sound insulation between flats
- Complete electrical rewiring
- Necessary structural works
- Complete central heating upgrade including A-rated condensing combi boiler, TRVs and roomstats
- Low energy lighting
- New carpet or laminate flooring
- Water butts and garden improvements where appropriate
- Resident-designed kitchen and bathroom replacement and complete redecoration in colours of residents' choice

The programme has delivered over 300 of these refurbishments so far, with 62 in the last 18 months, typically achieving the following results:

- SAP rating of 80
- Primary energy use of 164 kWh/m^2 per year
- Carbon emissions 2.3 tonnes per year which, across the programme, amount to over 140 tonnes/year in the last 18 months.

BOX- REDUCING CARBON EMISSIONS BY 80% IN EXISTING HOUSING STOCK

PEABODY TRUST GOOD PRACTICE EXAMPLE IN HARINGEY

Peabody Trust is working on a project with the aim to demonstrate how to achieve 80% reductions in the CO2 emissions of the existing housing stock. The Trust is working with the HTA Sustainability & Innovation Design Consultants which are winners at the British Homes Awards 2010.

Peabody Trust who manage more than 19,000 homes across the capital wanted to assess how to treat some of their more modern housing stock, built in the 1970's and have chosen a terrace of four dwellings in Elizabeth Place, Haringey N15 to pilot the project.

The project aim to aim to reduce carbon emissions by 80% in existing housing stock by retrofitting homes to be energy efficient. Key retrofit features of the project will include:

- Insulating the dwellings from the outside,
- Replacing windows with high performance versions,
- Replacing individual heating systems with a communal system which will be housed in a small boiler room at the end of the terrace, and will feature a large hot water store fed from a shared solar thermal system
- Installing a photovoltaic array

The main internal works will be to install a Mechanically Ventilated Heat Recovery system. This will contribute to reducing the heating demand in the winter months and will provide background ventilation to the kitchen and bathrooms all year around.

This project is part of the Retrofit for the Future Programme, funded by the Technology Strategy Board. The project gained Planning Permission in June and will commence in August 2010 & will be monitored by the Energy Savings Trust for one year after completion.

For more information: www.hta.co.uk

Key sources of further information:

LB Haringey Greenest Borough Strategy
LB Haringey Energy Infrastructure Study
London Renewables Toolkit, Greater London Authority, 2004
Green Guide to Specification, 3rd Edition, Building Research Establishment, 2007
Energy Efficiency in Buildings, the Chartered Institution of Building Services Engineers, 2004
London Energy Partnership, www.lep.org.uk
Energy Savings Trust, www.est.org.uk
Historic Environment: Local Management (HELM) web site: at www.helm.org
Peabody Trust
MHT

5

AVOIDING CLIMATE CHANGE RISKS - OVERHEATING

Even if we limit the emission of greenhouse gases, a certain amount of climate change will still occur because of emissions that have already occurred. This is likely to mean hotter drier summers and wetter milder winters with more intense rainfall. New development will need to be designed so that it remains comfortable for users over its lifetime and avoids making local climactic conditions worse.

5.1 Risk of High Summer Temperatures

All urban areas create an ”urban heat island” effect where higher ambient temperatures are experienced after sunset in comparison with rural areas, this is especially the case in the highly built up areas in London. The hard surfaces of buildings and roads absorb more solar radiation than green spaces and vegetation. Combined with man-made heat emissions from buildings, machinery and traffic, this can make the centre of London up to eight degrees warmer than the green belt on summer nights.

In London the ‘urban heat island effect’ is likely to exacerbate the intensity of heat waves. This will increase the need for, as well as the challenges involved in, designing buildings that maintain comfortable internal temperatures.

Without design or retrofit for future higher temperatures, it is predicted that many buildings will suffer from overheating by the 2020s. A common approach to cooling buildings in the past has been to rely on air conditioning. However, use of mechanical cooling, and particularly use of air conditioning, can be energy intensive with high associated levels of carbon dioxide (CO_2) emissions and significant heat output. This can in turn exacerbate the overheating of dense urban areas.

Energy use associated with air-conditioning (refrigeration, fans, pumps etc) in UK offices is estimated to account for almost a third of the energy expended in an air-conditioned office building. An analysis of future cooling demand by the GLA in London indicated that, if left unchecked, the growth in active cooling systems in London could lead to a doubling of CO_2 emissions from this source by 2030.

The Council will expect development proposals to demonstrate how the design of dwellings will avoid overheating during summer months without reliance on energy intensive mechanical cooling systems.

Development should orientate buildings and streets to minimise summer and maximise winter solar gain, use trees and other shading, include green roofs and walls, maximise natural ventilation, and help create green spaces. The type of building materials and even the colour of finishing will also affect heat absorption.

Development will need to be adaptable to allow for additional shading or cooling requirements as the climate changes. Large expanses of hard surfacing, such as car parks, should be avoided. Where unavoidable they should be shaded as much as possible and be light in colour.

5.2 Low Energy Cooling

Passive design- to minimise unwanted heat gain and manage heat – For example by using building orientation, shading, a well insulated And air tight building envelope, high levels of thermal mass and energy Efficient lighting and equipment. **Single aspect flats are discouraged.**

Passive/natural cooling – using outside air to ventilate and cool a building without the use of a powered system, for example by maximising cross ventilation (single aspect developments are generally discouraged), passive stack ventilation, night-time cooling and/or ground coupled passive cooling.

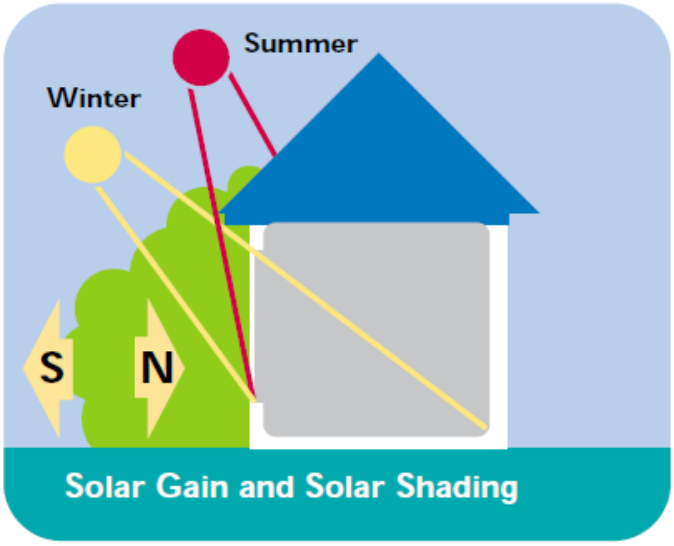
Mixed mode cooling with local mechanical ventilation/cooling provided where required to supplement the above measures using (in order of preference):

i. Low energy mechanical cooling (e.g. fan-powered ventilation with/without evaporative cooling or ground coupled cooling)

ii. Air conditioning (not a preferred approach as these systems are energy intensive)

Full building mechanical ventilation/cooling system using (in order of preference):

i. Low energy mechanical cooling
ii. Air conditioning



HARINGEY STANDARDS

Developers will required to set out how low energy cooling will be achieved

Around the Buildings

Green cooling - Plants have evaporative cooling effects. A matrix of green corridors, smaller open spaces, street trees, and green roofs and walls can dramatically reduced the Urban Heat Island Effect.

Shading – Measures such as planting, shading and advanced glazing systems should be used to reduce solar heat gain. Large, shade providing trees provide cool, shady areas during summer.

Water cooling - Innovative use can be made of water for cooling, including by using ground or surface water.

Thermal storage - Thermal storage or mass, particularly where it is exposed, can be used to absorb heat during hot periods so that it can dissipate in cooler periods, usually using ventilation. Ground coupled systems can also be used to make use of thermal storage in the ground.

Cool surfaces – 'Cool' pavement materials on roadways or large parking areas can increase surface reflectivity (though it is important to avoid glare problems) or increase rainfall permeability to encourage the cooling effect of evaporation. Porous cool pavements offer the additional benefit of rainwater infiltration at times of heavy rain. Networks of 'cool roofs' made of light coloured materials can reduce solar heat gain and the need for mechanical cooling.

6

AVOIDING CLIMATE CHANGE RISKS: PLANNING FOR FLOOD RISK

Flooding not only poses a risk to people's lives, but can also cause significant damage to businesses and people's livelihoods. New development should therefore be located, designed, built and operated in ways that reduce the risks from flooding as much as possible.

Climate change is likely to increase the likelihood of flooding in London. Flood risk can be reduced by locating new developments in appropriate places, through sensitive flood resilient design and construction, and by measures to reduce surface water run-off.

The government's PPS25 and the Code for Sustainable Homes aim to encourage housing development in low flood risk areas and to take measures to reduce the impact of flooding on houses built in medium or high risk areas. Under the London Plan, flood risk should be assessed in accordance with PPS25. Where development in areas at risk from flooding is permitted, management and mitigation measures should be implemented.

HARINGEY STANDARDS

The Council have the following requirements:

- All developments in areas with flood risk must demonstrate that a flood risk assessment has been carried out.
- Where development is permitted in an area at risk of flooding, it should incorporate flood resilient design in accordance with PPS25.
- New development should adhere to standards for surface water run-off as set out in the Code for Sustainable Homes.
- New development should incorporate Sustainable Urban Drainage Systems and green roofs where appropriate.
- New housing schemes should be designed to ensure that no more than 105 litres of water is consumed per person per day. This is equivalent to Code level 4 standard

6.1 Flood Risk Areas

Global warming is likely to result in an increased risk of flooding in certain parts of the borough. The areas which are currently regarded to be of risk are shown on Map XX "Indicative Flood Zones", as Zone 2 and Zone 3. These boundaries are subject to periodic review by the Environment Agency.

A certain level of protection is provided along the watercourses. However there is still a flood risk in the borough. A Strategic Flood Risk Assessment has been prepared for Haringey which explains the level and type of flood risk in different parts of the borough. Much of these areas are already built up and it is not realistic to expect all new development to occur outside the flood risk area.

Haringey Flood Risk Map

INCLUDE MAP

Developments on the floodplains result in the reduction in capacity of the available floodplain and impede the flow of water, thereby increasing the risk of flooding elsewhere. The definition as to what constitutes "functional floodplain" in Flood Zone 3 will be determined on a case by case basis by the Environment Agency. Applicants are advised to consult the Environment Agency prior to making a planning application for relevant schemes requiring a flood risk assessment.

6.2 Flood Risk Assessments

Development proposals in areas of flood risk, identified by the Environment Agency as being located within Flood Zones 2 or 3 should demonstrate that there is no increase in flood risk, including in areas downstream due to additional surface water runoff and that flood storage capacity is not reduced. The applicants will demonstrate that by carrying out a site specific flood risk assessment to establish whether the proposed development will

- Increase the risk of current or future flooding;
- Whether it will add to flood risk elsewhere;
- Whether there are proposed mitigating measures to address the affects identified;
- Provide evidence within the application so that the PPS25 Sequential Test can be applied in order to assess whether the development will be safe; and
- Where applicable, provide evidence within the application in order to assess the Exemption Test.

Where appropriate, attenuation measures will be required on the development site. The Council will, in conjunction with the Environment Agency, British Waterways Board and developer, explore ways of storing water on site through the creation of lakes and ponds, which will increase the ecological value and landscaping value of the site and its surroundings.

The Environment Agency is likely to object to cases where it considers the flood risk assessment does not or cannot adequately address the flood risk issues. The Agency requirement is that there is to be no reduction of storage in the floodplain and no interruption of flow conveyancing; and that within the functional floodplain within Zone 3, buildings on stilts and those with storage void beneath will generally be opposed.

The Council requires, where appropriate, proposals for flood protection and attenuation to take into account their ecological impact and, where possible, to make use of natural materials that contribute to wildlife habitat and amenity.

On sites of 1 - 5 hectares, the Flood Risk Assessment is to relate to fluvial flood risk and surface water run-off.

6.3 Making Buildings Safe

Development in flood risk areas will need to be made safe from flooding through the site layout (locating the most vulnerable uses in lower risk parts of the site and ensuring buildings do not block key flood routes) and the design of building (such as raising floor levels of buildings or locating vulnerable uses on upper levels).

It is preferable that less vulnerable uses (such as shops, offices and leisure facilities) are located at ground floor level. Generally, basements should be avoided or used for storage, servicing or parking purposes only. At the very least, sleeping areas should not be located below the predicted 1 in 200 year flood level.

Buildings also need to be designed and built to remain structurally sound and be easily repairable in the event of a flood.

Flood resilient v Flood resistant design
Flood resistant design, or 'dry proofing', is used to help prevent flood water entering a building. For example using flood barriers across doorways and airbricks, or raising floor levels.

Flood resilient design, or 'wet proofing', accepts that flood water will enter the building and allows for this situation through careful internal design for example raising electrical sockets and fitting tiled floors. The finishes and services are such that the building can quickly be returned to use after the flood.

6.4 Measures to Minimise Flood Risk

Reducing flood risk
There are a number of measures which can be incorporated within development to ensure they do not contribute to increased flood risk. These relate to s**ource control and prevention**:

Sustainable Urban Drainage (SUDS) – SUDS reduce the quantity of runoff from a site, limiting both the volume and rate of runoff. They do this through a management train involving source, site and regional control mechanisms to capture, filter and store rainwater on site.

Green space - Green open space, verges and green roofs can be designed to filter and store rainwater, thus reducing pressure on drainage systems during heavy rainfall. Trees also reduce surface water runoff – research has suggested a 5% increase in tree cover can reduce runoff by as much as 2%.

Rainwater harvesting - rainwater can be collected from roofs for reuse in flushing toilets or watering plants and landscaped areas. Rainwater collected in permeable paving can also be reused in these ways.

Green roofs – planted 'green' roofs can attenuate up to 60% of runoff, depending on their type and depth, as well as providing a range of wider benefits.

Permeable paving - rainwater filters through permeable paving where it may soak directly into the ground or be stored in an underground chamber.

Wherever possible, water from source control mechanisms should be fed into wider site control systems, as described below. Where this is not possible because of space constraints, runoff from the site (for example from the green roof or permeable paving) should be fed at a controlled rate into the conventional drainage system.

6.5 Sustainable Urban Drainage Systems (SUDS)

SUDS are a term used to describe the various approaches that can be used to manage surface water drainage in a way that mimics the natural environment. SUDS help reduce the amount of surface water leaving a site and slow down the rate as it does this. It also helps improve water quality by filtering out contaminants. SUDS can also provide broader benefits, including the capture and re-use of site runoff for irrigation and/or non potable uses, and the provision of greenspace areas offering recreation and/or aesthetic benefits, and habitat for wildlife.

The SUDs technique suitable for a site will depend on its location, size, the density of development, the type of soils, and depth of the groundwater and the presence of contamination. A combination of techniques might be most effective. This combination should provide a water quality and biodiversity benefit as well as reducing the amount and rate of run-off leaving a site. The following order of preference should be followed:

i. Where possible, water should be collected and stored on-site for later use. In non-clay areas use infiltration techniques such as porous surfaces,

ii. The next preference is for collecting water for slow release into a waterway (the preference is to store water in ponds or open water features, otherwise rainwater tanks or sealed water features should be used).

iii. The next preference is to drain water directly into a watercourse. Where this is not possible, water should be directed into surface drains.

iv. Only where none of the above measures are practical due to site constraints should water be directed directly into sewers. There will need to be adequate spare capacity in sewers to allow this.

Drainage techniques relying on water soaking into the soil underneath a site (known as infiltration systems) will not be effective in parts of the borough with clay soils as they become waterlogged easily.

More advice on flood risk and related measures can be obtained from the Environment Agency and their website www.environment-agency.gov.uk.

6.6 Surface Water and Drainage

Surface water discharge from the developed site should mimic that of an undeveloped greenfield site, up to and including a 1 in 100 year critical duration storm event. Greenfield run off rates are generally between 2-8 litres/second/hectare (l/s/ha) for storm events up to the critical 1 in 100 year return period event. This is irrespective of whether the site falls within a flood risk area.

Drainage Hierarchy

i. store rainwater for later use
ii. use infiltration techniques, such as porous surfaces in non-clay areas
iii. attenuate rainwater in ponds or open water features for gradual release
iv. attenuate rainwater by storing in tanks or sealed water features for gradual release
v. discharge rainwater direct to a watercourse
vi. discharge rainwater to a surface water sewer/drain

vii. discharge rainwater to the combined sewer.

The design of drainage is very important. This needs to be able to cope with the heaviest of storms expected over the buildings lifetime.

The disposal of surface water into the River Lee is not a right. Discharge may be permitted, subject to an agreement and/or licence from British Waterways.

6.7 Green Roof and Walls

These can take many forms including vegetated roofs, roof terraces and roof gardens and have many benefits, including:

- acting as insulation, reducing the energy needs of a development and making indoor
- environments more comfortable
- keeping local areas cooler (reducing the ”heat-island effect”)
- absorbing rainfall and reducing run-off
- improving biodiversity
- improve amenity for occupiers and improve the appearance of a development

There are two main types of green roofs:
Intensive: A deep growing medium is used to allow more substantial planting such as trees and shrubs. The roof will require extra loading requirements within the building structure and a complex irrigation system. Intensive roofs are principally designed to provide amenity and recreational use usually in the form of roof gardens or terraces.

Extensive: Uses a shallow growing medium, requires minimal maintenance and is generally less expensive to install than an intensive roof. There are three main types:

Sedum mats – a base layer sprinkled with sedum cuttings and installed as a sedum blanket when plants are mature. Sedums are used because they are wind, frost and drought resistant

Substrate based – crushed recycled brick is used as the base with sedum added on top

Green/brown roofs – recycled aggregate used as the base and the roof is either left to colonise naturally or can be seeded with wild flowers or local plants.
How is a green roof structured?

Green roofs should incorporate a number of layers, as shown opposite:

- Substrate - provides a low weight growing medium (e.g. crushed brick)

- Filter membrane – prevents soil being washed into the drainage layer
- Drainage element – holds some rainwater, while allowing the excess to drain away, preventing water logging
- Moisture mat – retains water and helps prevent the roof drying out; also protects the waterproofing layer
- Root barrier and waterproofing – protects the roof from water or root damage

Green Walls
Green walls provide a living, self-regenerating cladding system using climbing plants either planted into the structure of the wall itself or upon a structure attached to the wall.

OTHER IMPACTS OF CLIMATE CHANGE

6.8 Ground Conditions

Ground conditions and land stability are affected by temperature and precipitation.

As a result, climate change may have significant impacts on ground conditions in some areas. During longer, hotter summers shrinkable clay soils are likely to dry out, making buildings and service pipes vulnerable to cracking. Wetter winters will contribute to risks of 'heave' where ground swells. The risk of subsidence and heave is strongly dependent on local soil type with the most susceptible land found in the South East of England. Developments should incorporate measures to address this.

Vegetation management - Careful choice and placement of trees should avoid building subsidence in shrink-swell soils. Vegetative cover can also be used to provide additional external surface protection.
Surface erosion control structures - Stronger retaining walls and fences with good drainage or use of vegetation can prevent surface erosion.
SUDS – Use of SUDS techniques, such as permeable paving or swales, which increase infiltration into the ground, can reduce subsidence caused by drying out of soils.
Foundation design - Foundations should be designed to be strong enough and extend downward below the zone that may be affected by seasonal variations in moisture content. Other measures include underpinning with concrete supports that extend under existing foundations into more stable soils and infilling of foundations.

6.9 Impact of Climate Change on Building Materials

Materials will be affected by climate change. Climate change will increase the importance of optimising thermal mass to maintain a comfortable internal

environment with minimum energy use. The characteristics of materials may also alter with changes in temperature and humidity. Developers and their design teams should ensure the materials specified will perform adequately in the climate throughout the lifetime of the development; and that the construction methods to be used are suitable for the weather conditions at the time of construction. Some considerations are listed below:

• Concrete: strength affected by curing at higher temperatures
• Lime mortar, stone: affected by increased CO2 and driving rain
• Plastics: affected by increased UV
• Bricks: strength affected by change in moisture content
• MDF/Chipboard: not to be used where flooding is expected
• Roofing felt: increased UV is likely to accelerate degradation

Key sources of further information:
London Borough of Haringey Strategic Flood Risk Assessment (north London)
Building A Better Environment: A Guide for Developers, Environment Agency, 2006
Adapting to Climate Change: A Checklist for Development, Three Regions Climate Change Group, 2005
Environment Agency Standing Advice on Flood Risk Assessment, www.environment-agency.gov.uk/research/planning/33098.aspx
Development and Flood Risk: A Practice Guide Companion to PPS25, Department for Communities and Local Government, 2007
Interim Code of Practice for Sustainable Drainage, National SUDS Working Group, July 2004
C635 CIRIA Guidance documents - Designing for Exceedance in Urban Drainage, London 2006.
Improving the Flood performance of new buildings - Flood resilient construction, DEFRA, May 2007
The London Climate Change Partnership has produced helpful detailed guidance for developers - Adapting to Climate Change: A Checklist for Development, Three Regions Climate Change Group, 2005
TCPA
Environment Agency green roof toolkit: www.environment-agency.gov.uk/greenroofs
Independent UK Resource For Green Roof Information: www.livingroofs.org
Environment Agency advice on SDC

7

CONSERVING WATER

Water use per person is affected by several factors, the principal ones being: household occupancy; water use of appliances, fixtures and fittings within the property; householders' water use behaviour; garden use and whether the property is metered. Our approach to water conservation is to reduce the need for water through good design and then supply the water that is needed as efficiently as possible, reducing reliance on treated mains water.

The Environment Agency's assessments show high demand for water has led to summer surface waters and most groundwater sources to be fully committed. Within Thames Region (including London) we use between 165-180 litres per head per day compared to the national average of 154 litres per head per day. The Thames region has a calculated water availability of just 266 cubic metres per person per day. The region which includes Haringey has been identified as an area of 'serious' water stress under the Environment Agency's published document 'identifying Areas of Water Stress'.2.

7.1 Reduce the need for water

In the first instance, developments should minimise the need for water. The simplest way of doing this is through installing efficient water fittings and plumbing, such as dual flush toilets, low flow shower heads and low water consuming washing machines. The use of durable plumbing is also important to prevent leakages.

Individual dwellings and tenancies should be provided with water meters. These should be visible to occupants, as this has been shown to result in reductions in water use.

7.2 Supply water efficiently

At least 50% of water consumed in homes and workplaces does not need to be of drinkable quality (for example water used for flushing toilets, washing laundry and watering parks and gardens). Rainwater should be collected or grey water reused to supply these uses. Grey water systems are often only feasible on large schemes as they require a dual plumbing system to be installed.

2 See http://www.environment-agency.gov.uk/research/library/publications/default.aspx

It may also be possible to draw water locally from boreholes, or connect to existing local water supply systems that source water from boreholes. Generally, sites over chalk soils will be suitable for boreholes.

In new and existing homes, it is generally more economic to reduce water use by fitting more water efficient appliances and educating users in 'waterwise' behaviour before considering the use of either rainwater (except a garden water butt) or greywater. Also, efficiency measures save energy and CO_2 emissions, whereas greywater and rainwater systems often increase the total amount of energy and emissions.

Greywater – water originating from the mains wholesome water supply that has been used for bathing (showers or baths) and in hand basins are usually clean enough for flushing the WC, following the relevant treatment.

Rainwater – water collected from the external surfaces of buildings or hard-standing areas by diverting the flow to a storage tank.

Where gardens or landscape schemes need a lot of watering, simple, low cost greywater diversion systems can save considerable quantities of water at a time of peak demand. Similarly, the water butts and rain water collection tanks is able to capture rain from summer showers. .

For new large scale developments, using an alternative source of water for some applications that do not require drinking quality water may be a feasible Option, providing it is taken into account at the planning or construction stage.

It is important that occupants understand how to use the water supply systems in a building.
For more information refer to Environment Agency website

HARINGEY STANDARDS

Applications should demonstrate how the water demand of the development has been minimised through water efficient design.

- Residential developments should achieve a potable water use target of minimum 105L per person per day.
- Non-residential development should achieve at least 1 BREEAM credit for water consumption.
- Highly efficient water saving fixtures, fittings and appliances should be used.
- Development should include a system to collect rainwater for use in external irrigation/watering, unless this is not feasible due to site constraints.

- Selecting drought resistant or low water use plants will greatly reduce water demands associated with landscape.
- The development should connect to a local water supply or borehole where this is available.
- There should be 100% metering of all newly built property

In addition to the minimum standards, development should aim to:

- Residential developments should achieve a potable water use target of 80L per person per day.
- Non-residential development should achieve at least 2 BREEAM credit for water consumption.
- Use of grey-water for all non potable uses where feasible and safe.

Key sources of further information:
Adapting to Climate Change: A Checklist for Development, Three Regions Climate Change Group, 2005
Conserving Water in Buildings: Fact Sheets, Environment Agency, www.environmentagency.gov.uk
Building a Better Environment: A Guide for Developers, Environment Agency, 2006

8

AVOIDING ENVIRONMENTAL POLUTION

This section looks at air quality, noise, land contamination, water quality and the amenity impacts of construction activity and how these can be addressed through:

- site selection,
- designing the development,
- planning construction activity, and
- the operation and use of the finished development.

The Council will adopt the precautionary principle on the issue of pollution, by taking decisions on planning applications so as to avoid possible environmental damage when the scientific evidence for acting is inconclusive but the potential damage could be great.

As part of the requirements to control and reduce potential or actual pollution resulting from development in the borough, developers will be required to carry out relevant assessment and set out mitigating measures in line with the national guidance.

8.1 Air Quality

The whole of the borough of Haringey is an Air Quality Management Area (AQMA) for the pollutants of NO_2 and PM10. The dominant source of NO_2 and PM10 emissions in Haringey is road transport with a variety of other sources contributing emissions.

Any development in an area of air pollution concern or is of a major size will require an air quality assessment (aqa) to be submitted with the planning application as part of the decision making process. In principal an AQA will be required;

- If the development is likely to cause deterioration in local air quality (i.e. once completed it will increase pollutant concentrations)
- If the development is located in an area of poor air quality (i.e. it will expose future occupiers to unacceptable pollutant concentrations/new exposure)
- If the demolition/construction phase will have a significant impact on the local environment (e.g. through fugitive dust and exhaust emissions).
- If the development prevents implementation of measures in the Air Quality Action Plan

Any mitigation measures should be incorporated into the design prior to application submission. The maps below show the main areas of air pollution concern.

Figure 1 - Modelled NO_2 Annual Mean 2007 for Haringey

Figure 2 – Air Pollution 'Hotspots' Areas

A comparison of emissions of the site both before and after development may also be required to inform the decision making process. Haringey Council Environmental Health will be able to provide further guidance and detailed information.

A planning application which does not include an air quality assessment that requires one will either delay the decision making process or planning permission will be refused.

Sources of Advice for Air Quality:

- London Councils Air Quality and Planning Guidance 2007.
- Mayor of London's Air Quality Strategy 2010.
- Haringey Council Air Quality Action Plan 2010
- Haringey Council Annual Air Quality Reports.

8.2 Contaminated Land

Contaminated land is a material planning consideration and the development phase is the most cost effective time in which to deal with problems associated with past soil contamination. Sufficient information on the level and risks posed by contamination and whether it can be remediated to a safe level needs to be known before a development can proceed.

Where contamination is present, the site will need to be remediated to a level that is appropriate for the use being proposed. The most sensitive uses are housing, schools, nurseries, hospitals; children's play areas and allotments.

Haringey Council will deal with proposed development sites that may be contaminated by use of a Planning Condition. This condition will inform of the steps that must to be taken prior to any development being carried out and to ensure that the site is 'fit for purpose' and does not present risk of significant harm to people, the environment or structures (local receptors).

Haringey Council Environmental Health will be able to provide further advice and guidance.

Sources of Advice on Contaminated Land:

- Part IIA of the Environmental Protection Act 1990

- ODPM (2002); Development on Land Affected by Contamination consultation Paper on Draft Planning Technical Advice,
- British Standards Institution (2001); Code of Practice for the Identification of Potentially Contaminated Land and its Investigation - BS 10175:2001;
- A London Boroughs' Publication (2003); Contaminated Land: A Guide to Help Developers Meet Planning Requirements.
- Guidance for the Safe Development of Housing on Land Affected by
- Contamination (National House Building Council and Environment
- Agency) R&D publication 66
- Defra/ EA CLR guidance Documents.

8.3 Noise

Noise can have a significant effect on the environment and on the quality of life enjoyed by individuals and communities. In the London Borough of Haringey, noise can be a planning issue arising from a variety of different sources, in particular major roads and railways (e.g.London Underground, Stansted Express line, the Barking-Gospel Oak line). Dwellings that only have windows that open onto busy roads or railways are not supported by the council. Glazing should be used on windows to reduce noise levels inside buildings. However, this will only be effective when windows are closed and so should be used in conjunction with other solutions. Noise generating developments should contain noise through appropriate sound insulation and other noise reducing technologies.

PPS 24 states that noise is a material planning consideration. A noise assessment will be required to be submitted with the planning application if the proposed development is either a noise-sensitive development or an activity with the potential to generate noise. Assessments for residential developments will be assessed in accordance with the Noise Exposure Categories A-D within PPS 24. Developments adjacent to railways will require a vibration assessment as well.

Mechanical systems

Mechanical systems should only be used as a complement to natural ventilation to ensure a constant standard of indoor air quality. They should not create a noise nuisance and should be efficient, where possible including technology to recover heat energy for other uses. Where mechanical systems are used, careful consideration will need to be given to ensure air intakes are positioned appropriately.

Where mechanical ventilation is used, it should be designed to ensure no noise nuisance is caused to occupiers of other properties and that noise disturbance does not affect the property in which ventilation is situated.

Any mitigation measures should be incorporated into the design prior to application submission.

A planning application requiring a noise assessment that does not include one will result in either a refusal of planning permission or a delay in the decision making process. Haringey Planning & Enforcement teams may be able to provide further guidance and detailed information.

Sources of Advice on Noise:

- Mayor of London Noise Strategy
- British Standard 4142:1997 - "Method for rating industrial noise affecting mixed residential and industrial areas".
- Approved document E of the Building Regulations - "Acoustic Design of Schools".
- "Sound Control for Homes", (Building Research Association and Construction Industry Research Association) 1993
- British Standard 8233:1999 "Sound insulation and noise reduction for buildings – Code of practice",
- British Standard 6472:1992 "Guide to evaluation of human exposure to vibration in buildings (1Hz to 80 Hz)"
- British Standard 4142:1997 "Method for rating industrial noise affecting mixed residential and industrial areas"

In addition to the standards above the Council have the following statutory powers to control noise existing outside the planning system. The granting of planning permission does not remove the need to comply with these controls:

Environmental Protection Act 1990 Part III (as amended by the Noise and Statutory Nuisance Act 1993)

- Noise Act 1996
- Control of Pollution Act 1974 – Construction site noise and Noise Abatement Zones.
- Clean Neighbourhoods and Environment Act 2005
- London Local Authorities Act 2004 - Fixed penalty for nuisance
- Anti-Social Behaviour Act 2003
- Crime and Disorder Act 1998
- British Standard Institution Codes of Practice

8.4 Light Pollution

Poorly aimed lights can result in unnecessary light spillage. Any lighting installed should be designed so that it is directed to where it is needed and does not spill into neighbouring residential properties or affect wildlife.

Any development scheme which involves the installation of external lighting will consider the effect of light pollution. Light pollution is caused by obtrusive light penetrating into facing rooms or impeding the views of the night sky, causing glare or light spillage. Light pollution can involve the use of wasted electricity which is a waste of resource but also unnecessary use of energy.

Light pollution is a material planning consideration and therefore a light assessment will be required to be submitted with the planning application in order to assist determination. As a general guide, where it is proposed to

incorporate lighting in development sites, applicants are encouraged to submit details of lighting schemes, including light scatter diagrams, as part of the planning application in order to demonstrate that the proposed scheme is appropriate in terms of its purpose in its particular setting. In doing this it aims to minimise potential pollution from glare and spillage to neighbouring properties, roads and countryside.

A planning application requiring a light assessment that does not include one will result in either a refusal of planning permission or a delay in the decision making process. Haringey Planning & Enforcement teams may be able to provide further guidance and detailed information.

Sources of advice on Light Pollution:

- Guidance Note on Light Pollution 1994 - Institute of Lighting Engineers
- Starry Starry Night - BAA/CPRE Leaflet March 1994
- Factfile 2 - Floodlighting for Sport 1993 - Sports Council
- LG4 Sport - Chartered Institute of Building Services Engineers (CIBSE)
- Domestic and Commercial Security Lights and the Night-Time
- Environment 1993 - British Astronomical Association
- Lighten Our Darkness; lighting our cities - successes, failures and opportunities 1994 - The Royal Fine Art Commission
- Road Lighting and the Environment 1993 - Department of Transport

8.5 Biomass

Whilst it is widely recognised that biomass boilers are effective for meeting the 20% energy renewable requirement of developments for CO_2 savings and low carbon fuel, emissions from biomass boilers have an impact on air quality. Emissions include particulates and oxides of nitrogen (NO_x), which are of particular concern in Haringey, as well as dioxins and PM2.5. Both PM10 and NO_2 are pollutants of local concern that are controlled under the European Air Quality Directive and the Air Quality Standards (England) Regulations 2007. Both pollutants are exceeded across the borough and so the use of biomass in the urban environment requires careful consideration.

At the time of writing, regional policy on the use of biomass in Air Quality Management Areas is an emerging policy. The latest guidance and policy documents must be used when biomass plant is considered for any development within the borough.

For new development proposals requiring planning permission that include biomass boilers an emissions assessment must be undertaken and submitted with the planning application (this assessment will be coupled with the the normal concentration modelling assessment as required for certain development types). This emissions assessment must demonstrate NOx and PM10 emissions achievable under normal operating conditions are capable of meeting set emission standards as appropriate and determined by the Mayor. An annual certificate will be required as evidence of meeting these emission limits. Annual emissions will be controlled through an s106 agreement. In addition consideration must be given to the following:

- that the biomass meets national legislative requirements under the Clean Air Act. The whole of the borough of Haringey is designated a Smoke Control Area under the Clean Air Act 1993.

- that the biomass may require regulation by either the Environment Agency (EA) or the Local Authority (LA). Regulation is dependant on the size of the biomass; > 3MW inc. aggregated will require regulation by the EA, between 0.4 and 3MW is regulated by the LA. Developers must be aware that there are annual fees and charges applicable and that the permit will contain conditions that must be adhered to at all times. Biomass <0.4MW do not require regulatory controls.

- a chimney height calculation will be required with the planning application.

Haringey Council Environmental Health will be able to provide further guidance and detail regarding the information required. A planning application which does not include an air quality assessment that requires one will either delay the decision making process or planning permission will be refused.

Sources of advice for Biomass:

- Biomass and Air Quality Guidance for Local Authorities Leaflet by EPUK.
- Mayor of London Air Quality Strategy 2010.
- Biomass boiler information request template for local authorities – EPUK.
- Measurement and Modelling of Fine Particulate Emissions (PM10 and PM2.5) from Wood-Burning Biomass Boilers – Scotland SEPA report.
- Review of the Potential Impact on Air Quality from Increased Wood Fuelled Biomass Use in London – London Councils 2007

8.6 Protecting Water Sources

The London Borough of Haringey is underlain by the London Clay. Beneath the London Clay is the Chalk Aquifer which is the major aquifer of the London Basin, the River Lee being a tributary of the Thames. As it is overlain by impermeable clay, there is a low risk of the chalk aquifer being contaminated by surface water or groundwater. The only exception is the potential for piling or building foundations to penetrate the London Clay thus increasing the risk to groundwater.

However the groundwater vulnerability maps by the Environment Agency show source protection zones protecting two drinking water extraction sites in Haringey. This is in order to maintain the quality of this water source in line with Environment Agency: Ground Water Protection Policy and Practice, (GP3). Development proposals are not likely to be acceptable where there is an unacceptable risk of pollution of groundwater within Source Protection Zones 1 and 2, as defined by the Environment Agency.

Sources of advice for Water Sources
Building A Better Environment: A Guide for Developers, Environment Agency, 2006

8.7 Considerate Construction

Construction sites should be carefully managed and maintained to prevent sediment and chemicals washing into waterways or drains which empty into waterways, and also to control dust and noise emissions and vibrations causing nuisance to surrounding properties. The type of machinery used, hours that construction occurs and the times that deliveries are made should be carefully managed so as to reduce impact.

Planning conditions will be used to control impacts from the construction of new development. This may include restrictions on hours of operation and construction.

9

AVOIDING WASTE AND MINIMISING LANDFILL

BUILDING CONSTRUCTION

The type and source of materials in buildings has a major impact on sustainability. The production and use of building materials consumes large quantities of energy and resources and generates waste. The choice of materials used in a building therefore has important implications for the environment; wherever possible they should be selected to minimise negative environment impacts and the consumption of non-renewable resources.

A key concept when thinking about what materials to use is 'life cycle stewardship'. By considering the whole-life cost of materials, waste and carbon emissions resulting from the sourcing and construction of building materials can be greatly reduced. This means that the consequences and impacts of using materials must be considered from the point at which they are mined/harvested, through processing and manufacture, to installation, use, reuse/recycling and disposal.

9.1 Prevention > Preparing for reuse > Recycling > Other recovery > Disposal

All developments will be expected to follow a waste minimisation hierarchy: Prevention **>** Preparing for reuse **>** Recycling **>** Other recovery **>** Disposal

- Avoiding the creation of waste in the first place
- Reusing waste that is created as much as possible
- Allowing left-over waste to be recycled elsewhere as much as possible, minimising the waste that ends up in landfill.
- Thinking of the future of the new or reused building will have; will it in the future make reduced use, reuse of the building as a whole or recyclability its components as easy as possible through its robustness and flexibility.

HARINGEY STANDARDS

Council's priority is to reduce the amount of raw materials used over the lifetime of a development:

- Existing buildings on a site should be adapted and reused as much as possible. It may be possible to achieve other environmental objectives (such as improving energy efficiency) by small additions and adaptations to the fabric (such as new window fittings and extra insulation). Therefore the justification of need for demolition of building in an application will be required.
- Where the adaptive reuse of the whole building is not appropriate, developments should investigate reusing parts of the existing building.
- Demolition materials should be reused on-site where possible, such as for aggregate, fill or landscaping, or as part of new structures.
- Where additional building materials are required, the use of recycled materials is preferred and these should be from sustainable or local sources
- Demolition materials or surplus materials not required for the development should be collected for reuse and recycling in other building schemes.

Certificates

A Site Waste Management Plan will need to be submitted. The SWMP will need to contain a commitment to minimise waste generated on site and sort, reuse and recycle construction, demolition and excavation waste.

Demolition to be carried out in accordance with an approved Demolition Protocol.

The Council will expect a Green Purchasing Plan be provided in conjunction with any major development, and will expect that such a plan addressed each of the topics highlighted in this section.

The Council expects that at least 10% of materials in all new developments will be from recycled or reused sources.

London Plan suggests 95% of construction and demolition waste should be recycled and re-used by 2020. 80% of that waste should be aggregates in London by 2020. The London Plan is supported by supplementary planning guidance covering sustainable design and construction and renewable energy.

Building materials should be long lasting, taking into account what they are being used for and the conditions they will be exposed to (such as frequent traffic, pollution, weather and extremes of temperature). This will reduce the amount of materials needed to maintain them a building. 50% timber and timber products from Forest Stewardship Council (FSC) source or other approved source, and the balance should come from a known temperate source.

REUSE

9.2 Reuse of Existing Buildings

Existing buildings are an important resource. You should look to conserve rather than demolish buildings. It should be noted that separate building conservation policies in national, regional and local planning policy requires permissions and justifications for demolitions relating to designated Heritage Assets.

9.3 Reuse of Building Elements

Where development involves the demolition of existing structures, a Demolition Waste Audit should be undertaken using established methodologies, for example the BRE SMART Waste strategy. In the case of demolition, the opportunities for reuse of existing building structures for aggregate or lower quality uses such as access roads and footpaths should be maximised.

The Council expects that at least 10% of materials in all new developments will be from recycled or reused sources. Reclaimed materials are recovered from the waste stream and put back into use with minimal or no reprocessing. Examples include bricks, which may require removal of any adhering mortar and inspection for cracks, or timber doors, which may only require simple repairs.

Recycled materials require reprocessing before reuse, either as a primary material such as aluminium, or as a secondary material. An example of the latter is rubber floor tiling made from motor vehicle tyres.

Reclaimed and recycled materials can be used in many parts of the house building process, as well as for external site works such as roads and landscaping features.

As part of all demolition or partial demolition, you should seek to reuse suitable elements whole, including at least those elements listed below.

FACT BOX - Building Elements Suitable for Reuse

- Timber Doors and Windows can usually be removed whole and reused; all that is needed is for a structural opening to be made to fit the frame. In this respect timber has advantages over metal and particularly plastic (usually uPVC), which have to be anchored into the structure and particularly in the case of plastic are often damaged on removal.
- Other items of timber joinery including staircases can often be reused whole. as can steel staircases, bridges, etc
- Metal railings and gates can also be easily reused whole.
- Decorative stonework.
- Some Kitchen and many Sanitary Fittings.
- Some light fittings (although certification may be an issue).

If materials from demolished buildings on the site can not be re used, then they should as far as possible be disposed of to a second hand building materials supplier for use elsewhere. Concrete crushing, and the impact of demolition work on neighbours, should be discussed with the Local Authority.

Where development involves demolition, a Site Waste Management Plan (SWMP) will need to be submitted. The SWMP will need to contain a commitment to minimise waste generated on site and sort, reuse and recycle construction, demolition and excavation waste. Further information on what to include can be found on http://www.netregs-swmp.co.uk/. WRAP also has guidance documents on www.wrap.org.uk

DESIGNING ADAPTABLE LONG –LIFE BUILDINGS

Buildings should be designed to be adaptable. This will extend a building's lifetime. Building in flexibility is one way to enable adaptation as needs change. However, one cannot always predict correctly how needs will change; robustness and simplicity of design and use of common forms and timeless archetypes has been shown to also contribute to reusability.

9.4 Designing for "loose fit" buildings

Such buildings are not restrictively tailored to the requirements of the initial occupier. They are likely to be capable of being split up to allow for occupation by several different users, and to accommodate a range of different uses. The location of services and stairs are the most critical features in determining the flexibility of a building, as these are the most difficult and expensive to relocate.

9.5 Build and environmental quality

A building which is to be designed for a long life, should aim at high quality materials and high quality design, in order to encourage re use at a future time, in preference to demolition and redevelopment.

USE OF LOW IMPACT BUILDING MATERIALS

Building materials should be selected as far as possible on the basis of a sustainable supply, and on the basis of the least possible energy consumption being involved in their manufacture. Such low impact materials include things like earth, straw, cork and hemp. Timber is also a relatively low impact product, but care should be taken that sources of supply are managed in a sustainable way. The growth of trees has the further advantage of locking up atmospheric carbon. Consideration can be given to use of cement or lightweight concrete using waste or by product materials. On the other hand, high energy input materials include plastic, steel, aluminium, and uPVC.

9.6 Minimisation of transport costs for building materials

Materials should be selected in such away that overall transport costs are minimised. This includes all aspects of transport, from the collection of raw

material, to delivery to the building site. The transportation of materials to site contributes significantly to carbon emissions. The Council expects that 50% of materials will be locally sourced in order to minimise carbon emissions from transportation.

Maximum transport distances for reclaimed materials

(source: BRE's Green Guide to Housing Specification) **Materials**	**Distance (miles)**
Reclaimed tiles	100
Reclaimed slate	300
Reclaimed bricks	250
Recycled aggregates	150
Reclaimed timber (e.g. floor boards)	1000
Reclaimed steel products	2500
Reclaimed aluminium products	7500

[1]The requirement is defined as a % of materials value, not total project value, i.e.: it excludes labour and various other costs. The selected metric is value and not mass as this reflects the availability of cost data within standard construction practice — whereas a percentage by mass or volume would be expensive and impractical to implement. It also encouraged high-value application of recycled materials.
[2]WRAP — Opportunities to use Recycled Materials in House Building:

9.7 Embodied Energy

The Building Research Establishment (BRE) has produced a **Green Guide** to Specification, which assesses the embodied energy of different materials.

In the BRE Green Guide, building materials and components are assessed in terms of their environmental impact across their entire life cycle - from 'cradle to grave', within comparable specifications. This accessible and reliable information will be of great assistance to all those involved in the design, construction and management of buildings as they work to reduce the environmental impact of their properties.

The Council requires that at least 3 out of the 5 following elements be specified using materials with an embodied energy rating between A+ and D.

- Roof
- External walls
- internal walls (including separating walls)
- Upper and ground floors (including separating floors)
- Windows

WRAP (Waste and Resources Action Programme)is a not for profit company backed by the Government to help individuals, businesses and local authorities reduce waste, recycle more, make better use of resources and help tackle climate change. WRAP has produced numerous publications and tools to help minimise waste in the construction process, which can accessed on www.wrap.org.uk

London Remade is a not for profit business that works in partnership to develop and improve waste management, recycling and green procurement in London. Their recycling programmes include a sustainable product directory. Further information can be found on www.londonremade.com

ICE Demolition Protocol
The Institute of Civil Engineers (ICE) and Chartered Institute of Waste Management (CIWM) Protocol provides methods to assess and recover demolition material as well as specify recovered (recycled & reclaimed) material in the new build. The detailed documents can be found on the following websites:
www.ice.org.uk
www.envirocentre.co.uk

RESPONSIBLE SOURCING CERTIFICATES

The responsible sourcing of materials provides a holistic approach to managing a product from the point at which a material is mined or harvested in its raw state through manufacture and processing, through use, re-use and recycling, until its final disposal as waste.

9.8 Timber

Timber is the material most associated with certification of responsible sourcing. The incorporation of timber from sustainable sources is considered best practice. Haringey would anticipate that at least 50% of timber be from Forest Steward Council approved products and that the remainder be sourced from temperate, rather than tropical sources.

When buying timber products, look for the Forestry Stewardship Council (FSC) or Programme for Certification of Forest Management (PEFC) logos or equivalent environmental scheme, together with chain of custody certification, which verify the timber is from a sustainable source.

9.9 LB Haringey Corporate Guidance

Haringey Council will only accept Change of Custody (CoC) certification if it is from a Government approved programme. These are from the Forest Stewardship Council, Programme for the Endorsement of Forest Certification,

Sustainable Forestry Initiative and Canadian Standards Association. Currently as shown below:

Building Resource Establishment (BRE Global) has launched a new framework standard for the responsible sourcing of construction products - *BRE Environmental and Sustainability Standard (BES) 6001: 2008*, intended to assist with the assessment for Code for Sustainable Homes ratings.

Softwoods (including Pine and Western Red Cedar) are generally more likely to be from sustainable sources as they are so much faster growing; low priced tropical hardwoods are almost certainly the result of unsustainable clear felling of virgin tropical rainforest. Sourcing timber grown in the UK reduces transport environmental damage but sources of durable softwoods are generally overseas.

Where paints and/or preservatives are used, their sustainability needs to be considered from the point of view of materials required in their production (particularly heavy metals and hydrocarbons), health hazards in their use and maintenance (particularly watch for fumes from some paints and stains and runoff if it may affect drinking water) and the likely problems of disposal at their end of life (they may render timber hazardous waste that should not be burned).

In contrast, untreated timber can easily be recycled at the end of life, otherwise it can be safely disposed of, and issues with preservatives do not apply. Untreated Western Red Cedar can have up to 40-60 years of life span

Fixing materials and other accessories need also to be considered from a sustainability point of view. Metal fixings may be reusable or recyclable if they can be separated.

FACT BOX - Timber Cladding

Appendix A offers our Code of Practice for the use of Timber Cladding, covering:

- Timber as building material, outlining history and principals.
- Suitable Species and Finishes, including where there is a requirement for treatment of preservatives.
- Appearance and Colour (treated and untreated).
- Sustainability of all the products used; the timber itself; treatments, coverings and fixings
- Design and Construction Strategies for Durability.
- Suitability in Conservation Areas.
- Good Practice Examples in Haringey.
- and Links.

Key Sources of Information

www.londonremade.com

Not for profit organisation helping source reclaimed or recycled materials

www.salvo.co.uk/

Listing of sources for salvaged construction material

http://www.wrap.org.uk/procurement

The Recycled Product Guide (WRAP); targeted brochures on Demolition Protocol

http://www.aggregain.org.uk/procurement/quick_wins/opportunities_1.html

'One-stop' source of practical information on the use of recycled and secondary aggregates. Opportunities to use Recycled Materials in Building: Reference Guide

http://www.aggregain.org.uk/procurement/quick_wins/opportunities_to.html
Opportunities to use Recycled Materials in House Building: Reference Guide

http://www.aggregain.org.uk/procurement/quick_wins/opportunities_3.html
Opportunities to use Recycled Materials in Preliminary Building Works and Civil Engineering: Quick Wins Guide

http://www.greenspec.co.uk/ NGS GreenSpec; Technical specifications, design and product information for sustainable construction

www.recycledproducts.org.uk Comprehensive listing of recycled products available in the UK

Code of Practice – Use of Wood Cladding

Timber as building material

Timber is one of the oldest materials used for building construction. It is a popular cladding material. It is versatile and widely available, of natural origins, and easily worked and fitted dry. It is also widely perceived as having potentially strong environmental qualities; renewable, reusable, biodegradable and of minimal embodied energy. These qualities should be balanced against transport costs, level of chemical treatment, and the level of maintenance needed for some timbers as discussed below.

In Haringey, timber cladding would be considered appropriate in a rural, parkland or garden setting but would be unlikely to be considered appropriate in a more urban conservation area. For instance, the Bowling Pavilion in Bruce Castle Park is seen as a positive contribution to the Bruce Castle Conservation Area; however, this building stands in a green parkland context. Wood cladding will not be appropriate in the Tottenham High Road. Its character appraisal states that "the highest quality red and yellow stock facing brickwork is recommended to match the predominant materials that define the appearance of the High Road."

When timber is used as cladding, providing there is a good water run-off, adequate ventilation behind the cladding and sensitive design, it should last many years. However, choice of species, design strategies and construction methods make a big difference to durability and sustainability of timber cladding. Some of these issues are discussed below:

Suitable Species and Finishes

Appearance, durability, cost and workability influence choice of materials. Most timber species require protection from decay. There are many reasons why timber deteriorates, but the main cause of failure is fungal decay, which occurs if the moisture content within the timber is in excess of 20%.

- Non-durable species such as spruce, fir or pine / European Redwood (Pinus Sylvestris) require **chemical treatment**, typically by pressure impregnation of chemicals with preservative properties such as boron or organic solvents.

- **Thermally modified timber** is a new alternative; controlled heat treatment to temperatures over 200°C confers improved durability and stability. Expected service life for thermally modified, uncoated timber cladding is 30 years.

- Some species **do not require any treatment or preservatives**; these include some naturally dense hardwoods (usually tropical and expensive for use as cladding), durable temperate hardwoods such as European Oak and Sweet Chestnut (but not their sapwood) and

durable softwoods such as European Larch and Western Red Cedar, that themselves produce oils that act as a preservative.

Appearance and Colour

Untreated wood, for instance Western Red Cedar, undergoes a radical change of colour from red-brown to silver-grey. When it reaches this, it remains stable and durable for many years. However less exposed areas such as beneath overhangs may take longer to undergo the change. Because it does not require any chemical treatment, the use of hardwoods like Western Red Cedar is considered to be more sustainable. Untreated Western Red Cedar can have up to 40-60 years of life span.

For softwood, use of paint, stain or varnish, even supposedly colourless or matt stains and varnishes will always change the appearance of the timber from its "natural" state. This should be borne in mind when appearance is assessed. Maintenance issues need to be taken into account such as the likelihood and easiness of reapplication of paint and varnishes.

Design and Construction Strategies for Durability

Although timber cladding is reasonably easy to fix, there are some key points that need to be taken into account to ensure long term durability and quality. Key areas are ventilation, detailing at corners and near to the ground, avoiding the exposure of endgrain and choice of fixing materials.

Some design strategies that can enhance durability by reducing the risk of wetting and removing moisture promptly are:

- Protect from rainwater with large eaves overhangs – 600mm optimal;
- Splash Zone - terminate the cladding at least 150mm above ground levels, preferably 250mm;
- Ensure cladding is not directly in contact with porous materials;
- Include a well ventilated and drained cavity behind the cladding. This should be at least 19mm wide;
- Seal End Grain; exposure is often fatal to durability of timber, it being so much more susceptible to soaking up moisture, and also to simple abrasion damage which may result in exposure of untreated substrate;
- Battens should be preservative treated, structurally graded and fixed in the opposite direction to boards; watch for their visibility between gaps;
- Moisture Content of timber; should be between 13 – 19%, less for heat-treated timber;
- Allow sufficient gap between cladding sections to prevent capillary paths; 5mm is recommended; greater where cladding is treated as a "rainscreen" and some rain is allowed to be blown into the cavity and managed there;

- Corners, especially with horizontal boarding, should never be mitred; in horizontal timber cladding best appearance is achieved with a vertical batten of the same timber in the same plane, but this requires careful detailing;
- Use stainless steel fixings : Reactions of incompatible materials, particularly metals used in fixings and zinc in flashing in many woods with high tannin content including Western Red Cedar or any "young" timber, can be avoided by such methods as only using stainless steel fixings in and below the wood;
- "Green" (not colour, or ecological standards, but kiln dried recently cut) timber; allowance must be made in detailing for inevitable shrinkage;
- Tongue and Grooved timber of any timber type must accommodate inevitable natural thermal shrinkage and expansion.

Suitability in Conservation Areas

In Conservation Areas the use of external facing material generally matching in appearance or complementary to those historically dominant is important, as is ensuring those materials; detailing and finishes are all of the highest quality.

Timber cladding would only be considered in Conservation Areas where that would be consistent with the character of the conservation area. Haringey's SPG2, Conservation and Archaeology, Clause D1 requires that "traditional or other durable natural" materials should be used.

Good Practice Examples in Haringey:

- Finsbury Park Café, Finsbury Park, N4
- Broadwater Farm Children's Centre, Adams Road, N17
- Housing at Sakura Drive, Albert Close, N22
- Housing at Silver Court, Reform Row, N17
- Bruce Castle Bowls Club N17

Links:

- TRADA (Timber Research and Development Association) Info Sheet: External Wood Cladding
- BRE (Building Research Establishment) Timber leaflet
- Wood For Good: Fact Sheet No. 2: Timber Cladding
- Lambeth Recommended Materials Spreadsheet
- Designing with Green building materials

TRADA (http://www.trada.co.uk/index.html) and BRE (http://www.bre.co.uk/) provide detailed good practice guidance.

10

SPACE FOR SUSTAINABLE WASTE MANAGEMENT

Sustainable Waste Management

The Council will seek to ensure that new developments in the borough help implement borough wide targets on recycling and composting. At least 45% of household waste to be recycled or composted by 2015. The Council also aims in its own facilities and services and requires developments to contribute to provide facilities to recycle 70% of commercial and industrial waste by 2020.

Waste Hierarchy

All developments will be expected to follow a waste minimisation hierarchy:

Prevention > Preparing for reuse > Recycling > other recovery > Disposal

This will apply to the way a development is constructed. However, the design of development will need to ensure it can be used in accordance with the above principles. Recycling facilities should be as easy to access as waste facilities.

This includes providing sufficient facilities and enough space for composting organic waste, and for storage of dry recyclables. Compostable waste may be manually collected (usually separated into food and garden waste) or composted at home. Alternatively, the Council will encourage incorporation of or access to new waste recovery facilities (anaerobic digestion, pyrolysis/gasification) especially to provide a renewable source of energy e.g. methane or hydrogen

The Council currently has scheme in place for dry recyclables: paper, cardboard, plastic bottles, trays, pots and tubs, plastic bags, drink cartons, aluminium and steel tins/cans, glass bottles and jars. More products are continuously being added as technology is developed and the council will continue to expand products collected as it becomes viable.

Supplementary guidance is provided below regarding the following:

10.1 Accessible Storage Facilities for Sustainable Waste Management

In planning for any development, consideration should be given to how storage and collection of household and commercial waste and recyclable material can best be incorporated.

It should be borne in mind that collection frequencies for recycling and commercial waste might differ from those of normal household waste and recycling. Household collections are normally on a weekly basis whereas it is not unusual for commercial waste to be collected on a daily basis.

Each application will have to be judged according to the expectation at the relevant location with regard to anticipated volumes of recyclate and/or commercial waste.

All waste storage areas, internal and external, must be easily accessible to both collectors and occupants. Enough space should be provided on-site to securely and safely store all waste and recycling bins. This storage space should be designed according to the following principles:

- Wheelie bins or bulk waste containers must be provided for household collections and must be stored off-street at all times.
- Wheelie bins must be located no further than 25 metres from the point of collection.
- Bulk waste containers must be located no further than 10 metres from the point of collection.
- Route from waste storage points to collection point must be as straight as possible with no kerbs or steps. Gradients should be no greater than 1:20 and surfaces should be smooth and sound, concrete rather than flexible to avoid rutting. Dropped kerbs should be installed as necessary.
- If waste containers are housed, housings must be big enough to fit as many containers as are necessary to facilitate once per week collection and be high enough for lids to be open and closed where lidded containers are installed. Internal housing layouts must allow all containers to be accessed by users. Applicants can seek further advice about housings from Environmental Resources if required.
- Waste container housings may need to be lit so as to be safe for residents and collectors to use and service during darkness hours.
- All doors and pathways need to be 300mm wider than any bins that are required to pass through or over them.
- If access through security gates/doors is required for household waste collection, codes, keys, transponders or any other type of access equipment must be provided to the council. No charges will be accepted by the council for equipment required to gain access.
- Waste collection vehicles require height clearance of at least 4.75 metres. Roads required for access by waste collection vehicles must be constructed to withstand load bearing of up to 26 tonnes.

- In exceptional circumstances where it is not possible for waste to be containerised, adequate waste storage arrangements must be made so that waste does not need to be placed on the public highway other than immediately before it is due to be collected. Further detailed advice can be given on this where required.
- Occupants should not have to walk more than 30 metres to the storage area, from the point of exiting the premises.

Haringey currently uses a variety of refuse trucks, but access should be designed to accommodate the Dennis Eagle TwinPack 70/30, which is the dual-compartment version of a normal refuse truck. Given the possibilities for development of waste services, it is probably sensible for this to be used as the basis of planning guidelines, rather than the more manoeuvrable single-compartment version. Details of this vehicle's space requirements can be found at Appendix 1. Access roads used by waste collection vehicles need to be wide and constructed to withstand vehicles up to 26 tonne with sufficient radius for turns or reversing manoeuvres to be made.

Vehicles should never have to reverse into or from a highway to make a collection. Where collection vehicles do have to enter developments there should be sufficient on site turning circles or hammerheads to allow safe egreSS.

10.2 Facilities Required in Residential Developments

All new residential developments should include provision for refuse and recycling storage internally and/or preferably externally (as appropriate). Every application received will be expected to indicate on internal layout drawings an area of dedicated waste and recycling storage in the kitchen or other area as appropriate.

Typical Houses and other street properties - The standard household collection service currently provided in Haringey (c.75, 000 households) is a kerbside service for residual waste using a 240 litre wheelie bin and a separate kerbside service collecting dry recyclables (using green box – 55 litres), garden waste (foldable plastic sack – 120 litres) and food waste (21 litre lockable outdoor container - used in conjunction with 5 litre internally stored kitchen caddy).

Smaller households may be provided with smaller wheelie bins if they do not require the standard 240 litre size wheelie bin, for example one-person-households. However size provision should take the precaution of over providing to allow external collection point storage space for:

- 2no. 240 litre wheelie bins (in case the green box recycling service is replaced by a wheelie bin recycling service);
- 1no. food box; and
- 1no. re-usable garden waste sack.

Where wheelie bins are to be used they must be located within 1.2 metres of the front, side or rear boundary of the property according to where the collection vehicle is required to gain access to them. The characteristics of the path over which wheelie bins need to be pulled to the collection vehicle should be similar to those stated at 10.1 above. However, wheelie bins will not require individually installed dropped kerbs provided any kerb to be negotiated is no greater than 100mm in height. The maximum pulling distance for wheelie bins from storage to collection point is 25 metres but where possible this should be less.

Container sizes are detailed in appendix X.

Typical blocks and estates - The standard household waste collection service currently provided for managed blocks and estates in Haringey (c.23, 000 households, private, social landlord and council-managed) is separate on-site bulk bins for residual waste and dry recyclables. Containers supplied for both are usually 1100 litre Eurobins. The ratio between the numbers of Eurobins required to the number of households using them has been established over time but as the emphasis on recycling increases, these ratios are changing. When determining the number of eurobins required for waste and recycling containers in blocks of flats, and therefore the space required to store them, the following principles should be used:

- the ratio for the overall number of waste and recycling containers required is 1:5, i.e. one 1100 litre Eurobin per five households based on once per week collection, therefore every block must have space for at least this number of containers, no matter what the mix between residual and recycling containers may be;

- the ratio for residual waste eurobins can rise to 1:8 based on once per week collections where recycling eurobins are provided; and

- the ratio for recycling eurobins is 1:10 based on once per week collections where residual eurobins are provided.

These ratios may not translate easily to small blocks of flats. Where specific advice and guidance is required to determine numbers and space for waste and recycling containers the Environmental Resource Service will provide this.

The Council does not currently provide food waste collections for blocks of flats but is planning to do so in future, probably using 240 or 360 litre wheelie bins. As such it would be prudent to allow space for a ratio of 1:5 based on once per week collections and for any housing of food waste bins to be separated if possible in a vermin-resistant and smell-proof enclosure within the main waste container storage area. Further information will be provided when available.

Housings for bulk waste containers should be large enough to hold enough containers so that a once per week collection is sufficient and high enough to allow lids of containers to be fully opened. Internal layouts need to allow all

containers to be accessed by occupants without the need for bin rotation. Housings may need to be lit so that they are safe to use and service during the hours of darkness. Ideally, larger housings should have washing down facilities and drainage.

Container sizes are detailed in appendix XXX.

For large developments the Council may provide twice per week collections to avoid unnecessarily large waste housings being constructed. Developers should seek advice from the Environmental Resource Service regarding waste storage requirements, preferably before submitting planning applications.

Also, for very large developments, consideration should be given to providing large scale modern waste and recycling handling arrangements which can help to improve recycling performance. Developers that may be interested in such a system should seek advice from the Environmental Resource Service, preferably before the design stage.

Large blocks of flats often suffer from problems with bulky waste being left randomly in waste container areas or elsewhere on the property, causing eyesores and encouraging flytipping which adversely affects residents. Therefore it is prudent to provide bulky waste storage areas where residents can leave their large waste items for collection. If these areas are protected from the weather, it enhances the possibility that unwanted items can be taken for re-use rather than disposal. Developers should seek advice from the Environmental Resource Service regarding dimensions, design and access requirements for bulky waste stores, preferably at the design stage.

Flats above shops - A limited number of properties (c.5000) are offered a daily sack only collection service for residual waste and dry recycling using clear sacks. This service is generally offered only to flats above shops on main roads with sacks being collected from the pavement outside at the same time as collections from businesses. Collecting waste in sacks from the pavements is not an ideal collection model and should avoided unless absolutely necessary as it goes against the Council's policy that all waste must be containerised wherever possible.

New developments incorporating flats above shops must have waste and recycling storage provision in accordance with the guidelines set out above for blocks of flats and estates. Refurbishments of flats above shops should seek to allow for off-street waste and recycling container storage, but where this is not feasible, collection of sacks from the pavement will be allowed.

Some purely residential areas have a dry recyclable and residual waste sack-on-the-street collection because the existing houses have no space for storage. This is not acceptable in new developments.

Home Composting - Space for on-site composting should also be provided. For homes with private gardens, there should be:

- Enough to hold 240L of organic waste per dwelling with a garden and 70L per dwelling without a garden.
- Designed as part of private or communal green spaces on a site.
- Located in an easily accessible location that is well drained and receives as much sun as possible.

Where it is not possible to treat compost on-site due to site constraints, waste storage areas should be to be adapted to store organic waste separately from other refuse, should collection schemes for organic waste be provided in the future.

Where blocks and estates or groups of cooperating homes wish to set up shared or managed composting this is encouraged. We also encourage linking such schemes with local food production.

Space should be provided inside buildings where occupants can separate out waste into separate containers for recyclables, organic waste and non-recyclables.

10.3 Facilities Required in Non-Residential Developments

Applications will need to provide information on the expected waste to be generated by the proposed use and the frequency of collection and explain how the storage capacity provided is adequate, including for organic waste. Generally, enough space to store waste for a week should be provided.

British Standard BS 5906:2005 should be used to calculate the capacity of waste storage needed. Where the end user of a building is not known, calculations should assume the highest levels of waste generation likely for that use class.

Adequate internal storage must be provided for the storage of recyclables and waste matter on all non-residential development. Consideration will be given to the type of use of the premises and the likely level of the generation of waste, as well as the type of container that may be required for the waste.

Environmental Health must be consulted prior to the submission of any planning application involving the provision of food or drink, and their comments submitted to Planning as part of the application.

Where extensions to commercial premises are proposed, consideration will be given to the storage of waste on the site, and care will be taken to ensure that adequate space is provided within the curtilage of the development. Under no circumstances will the storage of any waste be permitted on the public highway or footway.

Additional considerations:

- Storage of bins on public streets will not be supported.

- Storage areas for household bins should be separate from storage areas for non-residential development.
- Recycling facilities should be as easy to access as waste facilities.
- Larger restaurants must include separate storage provision for waste cooking oil and this must be indicated on the specified waste drawing. Advice will be sought from Environmental Health as to whether such facilities are required when a restaurant is proposed
- An operational waste management plan should be submitted with the application.

Developers should seek advice from the Environmental Resource Service regarding commercial and household waste storage requirements at mixed use developments, preferably before submitting planning applications.

Street Waste Bins - Bring Banks (1100 L bins) and Recycling Litter Bins for dry recyclables on high streets, near transport hubs and in other public areas.

Community Recyclables Collection Centres - Recycling Bins for dry recyclables are provided at all schools and a number of community centres and council office buildings.

Provision should be made for local shared recycling facilities at the rate of one site per 500 persons or per 1000 habitable rooms as well as facilities for kerb side collection. Developments that incorporate this number of units or would take existing provision in an area over this rate should include local Community Recycling Collection Centres or similar facilities in the development.

10.4 Waste Management Plans

The Council requires large developments to provide a Waste Management Plan with any planning application. The form of the plan is at the discretion of the applicant. The content of the plan must include full details of the arrangements for the storage and collection of waste for disposal (residual waste) along with waste to be recycled (recyclate). The plan must make reference to the following:

- The number, type and size of receptacles to be dedicated to storage of residual waste.
- The number, type and size of receptacles to be dedicated to storage of recyclate.
- The position where both types of receptacles are to be stored between collections.
- The size, design and materials used in construction of any housing built for the storage of both types of receptacle.
- Access arrangements for persons using receptacles showing that consideration has been given to safety, equalities, convenience, user

friendliness and maximum walking distances under building regulations.

- Access arrangements for persons collecting residual waste and recyclate giving consideration to Health and Safety at Work Act, recommended maximum pulling distances for receptacles, vehicle access/height/turning requirements and the construction and width of pathways, doors and access ways.
- For mixed use developments, how commercial/industrial residual waste and recyclate will be stored separately from household residual waste and recyclate so as to avoid abuse of facilities by either user.

10.5 Hazardous Substances

Under the Planning (Hazardous Substances) Act 1990, the accompanying regulations and Circular 11/92: Planning Controls for Hazardous Substances, hazardous substance consent must be obtained for the presence of amounts above the controlled quantity. The Planning (Hazardous Substances) Regulations 1992 specify the substances and their controlled quantities. Under these controls the Council will give consideration to whether the proposed storage or use of a significant quantity of the hazardous substances is appropriate in a particular location.

The latter contains further detailed guidance on the storage and disposal, including recycling, of waste material. It also provides advice to small businesses on issues around sustainability.

10.6 Treatment of contamination on site

Suitable measures to treat contamination, if possible on site, so as to enable development of the land to take place are to be encouraged.

10.7 Development Proposals for Improved Waste Management

This includes the development of new or improved facilities which provide for amore effective waste management service, subject to satisfactory environmental considerations.

Due regard should be given to the policies as set out in the North London Joint Waste Strategy[2] which incorporates the Council's Recycling Plan. The strategy considers the waste hierarchy, the management of specific waste streams and identifies the waste facilities that North London will require to meet its targets for recycling/composting and diverting waste from landfill over the next 16 years.

The Mayor of London has produced a Municipal Waste Management Strategy[3]. The Mayor's vision is that by 2020 municipal waste should no longer compromise London's future as a sustainable city. This leaflet has

been prepared in accordance with the broad aims of the Mayor's Draft Waste Strategy.

Further information

A Report on the Demolition Protocol, prepared by EnviroCentre Ltd for London Remade

Building A Better Environment: A Guide for Developers, Environment Agency, 2006

British Standard BS 7543:2003 – Guide to durability of buildings and building elements, products and components

Green Guide to Specification, Building and Research Establishment

British Standard BS 5906:2005 – Waste management in buildings

Building Regulations Approved Document H – Drainage and Waste Disposal

www.londonremade.com Not for profit organisation helping source reclaimed or recycled materials

www.salvo.co.uk/ Listing of sources for salvaged construction material

www.aggregain.org.uk Sustainable Aggregates Information Service, WRAP,

The reduction of waste will have cost saving implications for any business, small or large. The provision of space for recyclable material in commercial developments is likely to result in lower commercial waste collection charges. The following bodies may be of help in disposing/cutting down on the production of waste for businesses:

www.envirowise.gov.uk The Government's Envirowise can carry out a waste mapping and costing exercise for your business (more suited to manufacturing businesses), and if you are a SME they can arrange a free site visit. A large number of Guides are available free on the website to download which will help with the more energy efficient running of businesses. Green Efficiency: Running a Cost Effective Environmentally Aware Office (GG256) is an example of their publications.

Mail Preference and Fax Preference Service Unsolicited mail can be cut down by contacting the Mail Preference and Fax Preference Service on 08457 034 599. Good practice in use of paper in offices can further reduce waste, and excess paper production should always be recycled.

OFFERS Office furniture can be reused by contacting OFFERS (Office Furniture Fittings and Equipment Recycling Scheme) on 020 7703 5222.

www.realise-it.org REALISE is a computers/IT equipment recycling network in central London.

www.bioregional.com Bioregional provides a free advice line and support materials on how to begin recycling in your office. They also stock 100% recycled paper.

www.londonremade.com London Remade has information on organisations providing office recycling services. They are a strategic partnership

developing markets for recycled products and are responsible for the Mayor's Green Procurement Code.

www.createuk.com CREATE Tottenham recycle certain electrical appliances (washing machines, televisions videos and computers).

11

PROTECTING and ENHANCING BIODIVERSITY

Haringey is a small, largely urban borough. However there are a wide variety of natural environmental assets in our area. The Lee Valley Regional Park straddles the eastern boundary of Haringey. Areas of the Lee valley are protected by European laws. Beyond the Lee Valley there are 44 sites of biodiversity importance in Haringey identified in the planning policy documents.

It is important that development proposals respect and protect existing habitats and wildlife in Haringey. The proposals should also contribute to enhancing the local environment.

To do this it will be important to understand the site and its context which should be built into the development process early on. We expect to see that considering biodiversity early in the design process, measures identified to preserve and enhance biodiversity can be incorporated into buildings at little extra cost.

Biodiversity does not have to limit development but can enhance it through features such as green roofs for insulation and rain retention, and ponds for SUD systems.

The Council will expect the following hierarchy and measures incorporated to the design and construction of new developments.

11.1 Avoid harm to protected and priority species and their habitat

There is potential for protected and priority species of plants and animals to be located on most sites. All types of development, including changes in the way land is used, alterations to roofs and walls, and extensions have the potential to harm or disturb plants and animals. It is important that enough information is known about the ecology of a site to allow development to occur in a safe way.

Development that will result in disturbance or harm to protected and priority species must be avoided. Natural features that could provide habitat, such as mature trees, hedges, shrubbery, ponds and deadwood, should be retained, as it is preferable to work with existing habitats than replace with new ones.

In many cases, potential harm to plants and animals can be minimised by sensitively designing the layout, scale and landscaping of a development. This includes avoiding the loss or damage to trees and ensuring buildings do not change the microclimate on a site in a way that damages plants and animals (such as through overshadowing, heat from walls or wind tunnels). Overspill from lighting can also affect habitats and wildlife.

The way a development is built can also cause disturbance or harm to animals and plants. The construction process should be carried out in a way that avoids disturbance and harm to plants and animals. Root protection zones should be defined around trees and kept clear of buildings, construction activity and hard paving.

Appropriate maintenance and management plans should be prepared to ensure that plants and animals are protected during use of land and buildings. This includes controlling the use of outdoor lighting, considering how lawns should be mown and installing signage to educate the public about features of nature conservation.

The council will protect trees that are considered to be an important feature of the local environment by designating them with a Tree Preservation Order. Planning obligations will be used to control the impact of development on protected and priority species and their habitat. This includes requiring the monitoring of impacts and the submission of evidence that compensation has been implemented successfully.

11.2 Compensate for any unavoidable harm

The negative impacts of the development should first be reduced as much as possible through design, construction and management. The compensation could include replacement, enhancement, recreation or relocation of habitat or species. The type, quantity and quality of compensation should result in a net overall benefit to protected and priority species. Generally, this means ‘like for like’ replacement or better.

11.3 Create and enhance habitat

Even where little biodiversity interest has been identified on a site, developers should aim to create features that will provide habitat for wildlife. The design of landscaping presents an obvious opportunity for enhancing biodiversity. However even where there are space constraints, there are many different ways habitat improvements can be achieved in cost effective ways, including through green roofs and installing bat bricks, bird boxes or stag beetle loggeries.

New habitat should link to existing nearby habitat and opportunities taken to improve the ecological value of nearby public open spaces. This includes by contributing to green corridors between larger areas of open space. Native plant species should be used.

Where new habitat is created, it should be properly maintained and protected against vandalism and accidental damage.

Trees should be planted in appropriate locations where they have enough space to grow and will not cause unwanted overshadowing.

Where problem species exist on a site these should be removed and replaced with more appropriate species. Development may also contribute to biodiversity by replacing problem species that exist in locations near to a site.

Landscape Schemes

Some general principles to consider in a landscape scheme:

Provide a good vegetation structure – trees and shrubs will provide shelter, food and nesting sites for a whole host of birds, bats and other mammals.

Incorporate tree planting on or off site, including by ensuring adequate space is provided for larger, shade providing trees to grow. Tree planting should be designed to complement the other enhancements provided, including by connecting up areas of canopy cover and creating green corridors by providing links with green areas off site.

Supply feeding areas – planting a range of flowering plants, including Night-scented plants, will provide a source of nectar for a range of species such as butterflies and bumblebees and will attract insects for bats to feed on. Also consider berry producing shrubs to provide a natural food source for birds.

Use space innovatively – even small areas of landscaping can be designed for biodiversity, for example through incorporation of climbers on walls and fences to provide shelter and a food source.

Incorporate loggeries - dead wood and log piles will provide a habitat for insects such as Stag Beetles and hibernation sites for small mammals such as hedgehogs.

Use rain water – harvested rainwater can be used for landscape irrigation or to create natural water features which benefit birds. Use of drought resistant plants which will need less water should also be considered.

Complement landscape schemes with **other biodiversity features** – consider the use of other features such as hedgehog boxes, ladybird houses and insect hibernaculas to complement your landscape design.

Wildlife friendly planting – when deciding on planting schemes consider a variety of nectar rich plants and shrubs which flower at different times of the year to provide all year round colour and nectar.

BOX- HARINGEY STANDARDS

Avoiding Harm
Developers must comply with protected species legislation. A precautionary approach will be taken. Where development could result in harm to protected or priority species, a Scoping Study will be required. This study will identify if protected or priority species are using the site. In many cases this will involve a quick assessment by a trained ecologist.

Site surveys should be undertaken at the appropriate time of year for the species concerned.

The council will refuse applications that do not provide enough information on protected or priority species.

There should be no net loss in ecological value of a site. The proposal must not reduce access to nature or harm the ecological value of any site of importance for nature conservation (SINC) or local nature reserve (LNR).

A Tree Report should be submitted

Enhancing Biodiversity
All development needs to contribute to improving biodiversity in the borough and should increase the number and coverage of plant species on a site.

Artificial habitats, such as Swift boxes, bat bricks and stag beetle loggeries, should be integrated into the design of buildings, unless this is demonstrated to not be feasible. This is particularly important where is limited space for natural habitats.

Green walls or roofs are to be included in the scheme, unless this is not feasible.

Design and Access Statements should explain how the development has been designed to maximise its contribution to nature conservation in light of site constraints. This should include information on plant species that will be used and how opportunities to link with nearby open spaces have been addressed.

Where specialist habitat areas are proposed, information on how the new habitat will be managed and maintained throughout the lifetime of the development should be provided.

Net gain of biodiversity and access to nature on the development site and a reduction in areas of deficiency in access to nature

Special Consideration for Sites Known to Contain Protected or Priority Species

Where species are known to use a site, or a Scoping Study recommends, a full ecological assessment should be submitted with planning applications. This assessment should explain how negative impacts have been minimised. Where negative impacts are unavoidable, justification should be provided on how these are outweighed by the environmental, social and economic benefits of the scheme.

Details on what alternative development options have been considered to avoid or reduce negative impacts should be provided, along with an explanation of why the option chosen is the best one.

Details of proposed compensation will need to be provided, including when the compensation will be provided and how it overcomes the negative impacts.

A licence may be required from Natural England where development is to occur on sites where there are protected species.

Swift boxes

Swift Bricks are an example of bird bricks. Made of a type of concrete with a hollow interior for the birds to nest in, the bricks can be used in blockwork or brickwork walls, ideally as the top course to provide a very cost effective contribution to biodiversity. The outer face of the brick can be rendered or faced with stone so that they appear inconspicuous on a façade. The bricks should be located out of direct sunlight or else shaded beneath broad eaves and be 5 metres or more above ground. The nests should not be obstructed by nearby trees, cables, creepers or aerials. Swifts are very clean and don't leave piles of droppings that some other birds do.

Install 1 to 4 Swift Bricks on a medium to large house, from 4 to 10 on a small block of flats, and 10 to 20 on a large site like a school, hospital or warehouse, or a major apartment development.

For more Information
http://www.londons-swifts.org.uk/Nestboxes&Attraction.htm

NATURE CONSERVATION IN HARINGEY

Despite its urban environment Haringey is blessed with a variety of valuable habitats for wildlife such as the ancient woodlands of Bluebell, Coldfall, Highgate and Queen's Woods in the west of the borough and Tottenham Marshes in the east, as well as large and historic public parks including Finsbury Park and Alexandra Palace. The large number of private gardens and housing estate land also play a significant part in habitat provision throughout the Borough.

The Council adopted a Biodiversity Action Plan in 2009. This Plan replaces the Plan that dated from 2004. The plan contains a number of actions in respect of biodiversity. These Actions include:

- Improved active management of SINCs as defined by National Indicator 197.
- A reduction in the area of nature conservation deficiency by removing barriers to access (e.g. at Stroud Green Railway Embankment), improving the biodiversity of existing sites to increase their designation to Borough grade SINC (e.g. Lordship Recreation Ground) and the creation of new sites in areas of deficiency (e.g. Northumberland Park through pursuit of planning gain from new development).
- The designation of new LNRs by 2014 (Greenest Borough Strategy target is for 3 new LNRs).
- Explore the opening of the New River (Site of Metropolitan Importance for Nature Conservation) as a green chain and walking route as proposed in 2006 UDP.
- The adoption of new habitat and species action plans for allotments, gardens, parks and open spaces, woodland, standing water, built structures and bats;
- The production of habitat statements on wasteland, railway land and rivers and streams.

11.4 Sites

Sites of Importance for Nature Conservation
Sites of Importance for Nature Conservation (SINCs) are areas protected through the planning process having been designated for their high biodiversity value. The borough has a total of 59 areas designated as SINCs, of these 5 are of Metropolitan importance, 9 of Borough Grade I importance, 13Borough Grade II and 32 of Local importance.
Despite a large network of SINCs there are some areas of the Borough where is deficiency in access to Grade II SINCs or sites with a higher designation. These areas are predominantly but not exclusively in the east of the Borough.

Local Nature Reserves
Local Nature Reserves (LNRs) are places with wildlife or geological features that are of special interest locally. They offer people special opportunities to

study or learn about nature or simply to enjoy it. LNRs are a statutory designation made under the National Parks and Access to the Countryside Act 1949**.**

There are currently 3 Local Nature Reserves in Haringey;

- Parkland Walk
- Railway Fields
- Queen's Wood

Four possible new sites for LNR designation have been identified;

- Alexandra Palace Nature Reserve
- Coldfall Wood
- Tottenham Marshes
- The Paddock

Ecological Corridors are relatively continuous areas of green space running through built up areas that allow the movement of plants and animals to other areas and habitats. In Haringey they largely follow the railways and rivers but they also link to larger open spaces such as Finsbury Park and Highgate Wood.

11.5 Habitat Action Plans

Haringey contributes to the regional and UK Biodiversity Action Plans by helping selected habitat and species that are important to the borough. Each has its own action plan that sets out ways to improve its condition. These plans cover

- allotments,
- gardens and housing estate land,
- parks and green spaces,
- woodland,
- standing water,
- built structures and bats.

Three additional habitats found in Haringey have been identified for special mention due to their significance within the borough. These are waste land, rivers and streams, and railway land.

Waste land comprises the range of habitats that develop on land whose industrial, commercial or residential use has declined or ceased. Much of Haringey's waste land is also termed brownfield land – land that has been previously developed. Waste land provides ideal foraging habitat for birds like goldfinches, linnets and, on a few these areas makes many sites excellent for invertebrates and reptiles.

Land owned and managed by Network Rail and Transport for London includes several Sites of Importance for Nature Conservation (SINC), as well as ecological and green corridors. Together these play an important role in Haringey's green infrastructure providing links for wildlife between natural green spaces across and beyond the borough.

Rivers and Streams

Unfortunately as with the majority of London's rivers and streams Haringey's watercourses have suffered as a result of urbanisation to the extent that now only a few sections of the Borough's natural streams can be seen above ground. Improving these habitats will be essential in mitigating any negative effects of climate change.

11.6 Species

In 2004, Haringey was found to support 12 nationally important species, 6 London priority species, 4 London Flagship species, 18 Haringey priority species and 15 Haringey Flagship species. These include:

Bats all species; Haringey knotweed (Railway Fields); rustyback, wall bedstraw (Markfield Recreation Ground); tawny owl (Tottenham Cemetery); spotted flycatcher (Downhils and Bruce Castle Park); pochard, tufted duck, bullfinch (Tottenham Cemetery); song thrush linnet and dragonflies (general) common reed, Wurzell's wormwood, bird's foot trefoil, flowering rush, knotted bur-parsley, wall bedstraw, arrowhead, dragonflies, brown argus, grass snake, kestrel, reed bunting, kingfisher, skylark, meadow pipit, yellow wagtail, water vole (Tottenham Marsh); imperforate St. John's-wort, lady's smock, bullfinch, tawny owl, dragonflies, white-letter hairstreak (Alexandra Park).

The GLA's best practice guidance relating to Development Plan Policies for Biodiversity provides advice on the conservation and enhancement of the biodiversity and natural heritage of London. Proposals for development should give full consideration to their direct and indirect effects on ecology.

Black Red Starts

The black redstart is a small robin-sized bird that has adapted to live at the heart of industrial and urban centres. Its name comes from the plumage of the male, which is grey-black in colour with a red tail. With fewer than 100 breeding pairs in the UK, the black redstart is on the amber list of Birds of Conservation Concern.

The London population is concentrated along the Thames east of Tower Bridge and in the Lea Valley. Areas of sparse 'wasteland' vegetation and stony ground are necessary for feeding. Many of the brownfield sites they are associated within London and Birmingham adequately provides this habitat requirement. Extensive areas of open brownfield land are not favoured by black redstarts. They appear to require many vertical features whether they are buildings gantries, flood defence structures, or gasometers. Such structures correlate to the gorges and cliff faces, which is their natural habitat in continental Europe, and also provides high singing posts. Proximity to open water, such as canals, that provide midge, gnat and other insect food. In addition the importance of weatherworn and dilapidated flood defences and jetties provide foraging areas and nest sites. The current desire by developers for sheet piling will do little to enhance their status.

11.7 Improving River Corridors

There are limited opportunities to improve or increase this habitat due to the built up nature of the Borough. However, the Council seeks to promote river corridors as an important environmental resource and to proactively manage tributaries of the River Lee to improve access and water quality. This involves

- conserving existing areas of value within river corridors and, wherever possible, seeking to restore and enhance the natural elements of the river environment, for example by deculverting and/or naturalisation.

- supporting initiatives which will result in improvements to water quality.

- promoting public access in and to river corridors (including by users of public transport and cyclists.

- identifying appropriate locations for water related recreation along river corridors.

- contributing towards the improvement in the quality and provision of open space along all rivers; and

- contributing towards the conservation and enhancement of the ecology of all rivers and the floodplain and their environment.

The Council will only permit development which will not have an adverse impact on the water environment, particularly in relation to rivers, ponds, wetlands, public access in river corridors and water-related recreation. It is also necessary for proposals for flood protection and attenuation to take their ecological impact into account.

11.8 East London Green Grid

East London Green Grid framework presents an opportunity for Haringey to enhance inter-borough green corridors.

Map

GROWING FOOD

There is considerable scope for growing food inside London on existing plots or more unconventional sites. Experience has shown that good quality soil is not necessarily required to use a plot for food growing as there are number of solutions including raised beds, builders bags and skips that use soil separate from the potentially

contaminated, barren or simply sealed ground. Entirely soil-less options include hydroponics or even beehives.

In order to provide more land for growing food in London, new developments could include suitable plots. They could be integrated in the overall soft landscaping strategy of the site or be allocated as flexible space depending on local demand. In housing developments, allotments and community gardens appear most suitable.
Almost any site, irrespective of size, location or soil conditions can be used for food growing operations by making use of raised beds, and bags filled with good quality soil. Green roofs can also provide "urban farmland", if structurally suitable, and accommodate both growing beds and greenhouses.

Where a developer or landowner has obtained planning permission for a larger building, but due to financial reasons construction is delayed, sometimes by a number of years, the land left vacant, that could be turned to other uses such as food growing. More information can be obtained from the Environmental Resources Team

Key sources of further information:

Haringey Biodiversity Action Plan, 2004 (draft)
Haringey Biodiversity Action Plan 2009
Design for Biodiversity: A guidance document for development in London, London Development Agency
www.right-trees.org.uk is an online tool to help you select the right tree for your site
Planning for Biodiversity and Geological Conservation: A Guide to Good Practice, Department for Communities and Local Government, 2006
Biodiversity by Design: A Guide for Sustainable Communities, Town and Country Planning Association, 2004
British Standard BS5837:2005 – Trees in Relation to Construction
Building Green: A guide to using plants on roofs, walls and pavements, Mayor of London, May 2004

Natural England, www.naturalengland.gov.uk (Natural England published a range of mitigation guidelines for protected species)
Connecting with London's Nature, the Mayor's Biodiversity Strategy, and July 2002
Connecting Londoners with Trees and Woodland: A Tree and Woodland Framework for London, March

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Summary

HARINGEY COUNCIL SUMMARY TABLE OF SUSTAINABLE DESIGN & CONSTRUCTION STANDARDS SEPTEMBER 2010

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Page Number in the SPD	STANDARDS AND REQUIREMENTS	Other requirements/Comments
	TOWARDS LOW CARBON BOROUGH	
	Demonstrate in the Sustainability Statement how the energy hierarchy is applied : **Energy Hierarchy** to be adopted (Lean-Clean-Green)	
	Demonstrate in the Sustainability Statement how the development make us of passive solar design **Passive Solar Design** • Design the internal layout to ensure the main living room and other frequently used rooms are on the south side and rooms that benefit less from sunlight (bathrooms, utility rooms) on the north side. • Provide thermal mass and storage by using solid walls to buffer against heat fluctuations and provide cooler conditions in summer.	

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	• Locate the main glazed elements on the south elevation. Arrange internal layout to distribute solar energy gains using through-rooms. • Avoid single aspect flats. Dual aspect should be the first option that designers explore for all new developments. Where single aspect dwellings are proposed, it should be demonstrated how good levels of ventilation, daylight and privacy will be provided to each habitable room and the kitchen.	
	Carbon Reduction targets	
	Carbon Emissions Reductions - Residential buildings • 2010- 25%Improvement on 2006 Building Regulations (Equivalent Code level for Sustainable Homes Level 3) • 2011 onwards – 44% improvement on 2006 Building Regulations (Equivalent Code level for Sustainable Homes Level 4) • 2016- Zero carbon **Carbon Emissions Reductions – Commercial buildings** Demonstrate in the Sustainability Statement the following standards are met: • 2010 - Minimum BREEAM Very Good. • Excellent by 2016 • 2016- School buildings to be zero carbon	Between 2011-2014 44%Improvement on 2006 Building Regulations (Equivalent to CSH level4) based on the Core Strategy, local evidence and London Housing Design Guide. The standards which will be updated where necessary to reflect new national or regional policies and local evidence.

Page Number in the SPD	STANDARDS AND REQUIREMENTS	Other requirements/Comments
	• 2019 Commercial buildings to be zero carbon by	
	Renewable Energy	
	Demonstrate in the Sustainability Statement the following standards are met: • Reduction in CO2 emissions by 20% by use of renewable energy on-site.	
	Certificates Required	
	Code for Sustainable Home (CHS) and BREEAM Certification: • A CSH or BREEAM design stage assessment should be submitted with the application. • These should be carried out by a licensed assessor. • The assessor's name and license number should be clearly stated. • If, at the time the application is submitted, there is not sufficient information to enable an assessment to be made, for example in the case of an outline planning application, the council will condition any approval to ensure that a CSH or BREEAM design stage assessment is submitted prior to the commencement of construction of the development. • A post CHS and BREEAM certification will be required upon completion.	
	Energy Statements as part of the Design and Access Statements or as a stand-alone assessment, should show the following: • Calculation of baseline energy demand and carbon dioxide emissions on a 'whole energy' basis, showing the contribution of emissions both from uses covered by building regulations and those that are not • Proposals to reduce carbon dioxide emissions through the energy efficient design of the site,	

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	buildings and services; • Proposals to further reduce carbon dioxide emissions through the use of decentralised energy where feasible, such as district heating and cooling and combined heat and power (CHP); and • Proposals to further reduce carbon dioxide emissions through the use of onsite renewable energy technologies.	
	Feasibility of DE Networks; evidence in the energy strategy that: • Checked for existing or planned District Energy networks • Assess technical and financial feasibility for Combined Heat and Power • Assess any neighbouring building for potential connection • Where future network opportunities are identified, proposals should be designed to connect to these networks. • If there is no spare capacity in the system, the feasibility of contributing to expanding the capacity or upgrading the system should be investigated. • If a development will be completed before the Decentralised energy network it will connect to be completed, an efficient gas or bio-fuel boiler system should be used temporarily. The development should be designed so that it can quickly switch to the network once it is completed. Planning obligations will be used to ensure connection occurs.	
AVOIDING CLIMATE CHANGE RISKS		
	LOW ENERGY COOLING IN BUILDINGS	

Page Number in the SPD	STANDARDS AND REQUIREMENTS	Other requirements/Comments
	Show in the Sustainability Statement how the following hierarchy is applied. • **Use passive design** to minimise unwanted heat gain and manage heat. For example by using building orientation, shading, a well insulated and air tight building envelope, high levels of thermal mass and energy Efficient lighting and equipment. **Single aspect flats are discouraged.** • **Use passive/natural cooling** to utilise outside air to ventilate and cool a building without the use of a powered system, for example by maximising cross ventilation (single aspect developments are generally discouraged), passive stack ventilation, night-time cooling and/or ground coupled passive cooling. • **Mixed mode cooling** with local mechanical ventilation/cooling provided where required to supplement the above measures using (in order of preference): **I.** Low energy mechanical cooling (e.g. fan-powered ventilation with/without evaporative cooling or ground coupled cooling) **ii.** Air conditioning (**not a preferred approach** as these systems are energy intensive) • **Full building mechanical ventilation/cooling system** using (in order of preference): **i.** Low energy mechanical cooling **ii.** Air conditioning	Where it is proven by the developer that air conditioning units are unavoidable, developers will be required to indicate compensatory measures such as greening of roofs and walls to reduce urban heat island effect.
	COOLING AROUND THE BUILDINGS	

Page Number in the SPD	STANDARDS AND REQUIREMENTS	Other requirements/Comments
	Show in the Sustainability Statement how the following measures are taken on board. **Green cooling** - Plants have evaporative cooling effects. A matrix of green corridors, smaller open spaces, street trees, and green roofs and walls can dramatically reduced the Urban Heat Island Effect. **Shading** – Measures such as planting, shading and advanced glazing systems should be used to reduce solar heat gain. Large, shade providing trees provide cool, shady areas during summer. **Water cooling** - Innovative use can be made of water for cooling, including by using ground or surface water. **Thermal storage** - Thermal storage or mass, particularly where it is exposed, can be used to absorb heat during hot periods so that it can dissipate in cooler periods, usually using ventilation. Ground coupled systems can also be used to make use of thermal storage in the ground. **Cool surfaces –** 'Cool' pavement materials on roadways or large parking areas can increase surface reflectivity (though it is important to avoid glare problems) or increase rainfall permeability to encourage the cooling effect of evaporation. Porous cool pavements offer the additional benefit of rainwater infiltration at times of heavy rain. Networks of 'cool roofs' made of light coloured materials can reduce solar heat gain and the need for mechanical cooling.	
	PLANNING FOR FLOOD RISK	
	• New housing schemes should be designed to ensure that no more than 105 litres of water is	

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	consumed per person per day. This is equivalent to Code level 4 standards. • Where development is permitted in an area at risk of flooding, it should incorporate flood resilient design in accordance with PPS25. • New development should adhere to standards for surface water run-off as set out in the Code for Sustainable Homes. • New development should incorporate Sustainable Urban Drainage Systems and green roofs where appropriate.	
	Demonstrate in the Sustainability Statement how the Surface Water Drainage Hierarchy is applied • store rainwater for later use • use infiltration techniques, such as porous surfaces in non-clay areas • attenuate rainwater in ponds or open water features for gradual release • attenuate rainwater by storing in tanks or sealed water features for gradual release • discharge rainwater direct to a watercourse (This requires permission) • discharge rainwater to a surface water sewer/drain • discharge rainwater to the combined sewer. The disposal of surface water into the River Lee is not a right. Discharge may be permitted, subject to an agreement and/or licence from British Waterways.	
WATER CONSERVATION		

Page Number in the SPD	STANDARDS AND REQUIREMENTS	Other requirements/Comments
	Demonstrate in the Sustainability Assessment how the water demand of the development has been minimised through water efficient design: • Residential developments should achieve a potable water use target of minimum 105L per person per day. • Non-residential development should achieve at least 1 BREEAM credit for water consumption. • Highly efficient water saving fixtures, fittings and appliances should be used. • Development should include a system to collect rainwater for use in external irrigation/watering, unless this is not feasible due to site constraints. • Selecting drought resistant or low water use plants will greatly reduce water demands associated with landscape. • The development should connect to a local water supply or borehole where this is available.	In addition to the minimum standards, development should aim to: • Residential developments should achieve a potable water use target of 80L per person per day. • Non-residential development should achieve at least 2 BREEAM credit for water consumption. • Use of grey-water for all non potable uses • There should be 100% metering of all newly built property

Page Number in the SPD	STANDARDS AND REQUIREMENTS	Other requirements/Comments
	ENVIRONMENTAL POLLUTION	
	Demonstrate in the Sustainability Statement how the precautionary approach have been applied to Environmental Pollution: The Council will adopt the precautionary principle on the issue of pollution, by taking decisions on planning applications so as to avoid possible environmental damage when the scientific evidence for acting is inconclusive but the potential damage could be great. As part of the requirements to control and reduce potential or actual pollution resulting from development in the borough, developers will be required to carry out relevant assessment and set out mitigating measures in line with the national guidance. Local information from the Council on pollution hotspots should be fully utilised and a comparison of emissions of the site both before and after development may also be required to inform the decision making process. Haringey Council Environmental Health will be able to provide further guidance and detailed information. A planning application which does not include relevant assessment that requires one will either delay the decision making process or planning permission will be refused.	
	Light Pollution	

Page Number in the SPD	STANDARDS AND REQUIREMENTS	Other requirements/Comments
	A light assessment will be required to be submitted with the planning application in order to assist determination. As a general guide, where it is proposed to incorporate lighting in development sites, applicants are encouraged to submit details of lighting schemes, including light scatter diagrams, as part of the planning application in order to demonstrate that the proposed scheme is appropriate in terms of its purpose in its particular setting. In doing this it aims to minimise potential pollution from glare and spillage to neighbouring properties, roads and countryside.	
	Biomass For new development proposals requiring planning permission that include biomass boilers an emissions assessment must be undertaken and submitted with the planning application (this assessment will be coupled with the the normal concentration modelling assessment as required for certain development types). This emissions assessment must demonstrate NOx and PM10 emissions achievable under normal operating conditions are capable of meeting set emission standards as appropriate and determined by the Mayor. An annual certificate will be required as evidence of meeting these emission limits. Annual emissions will be controlled through an s106 agreement. In addition consideration must be given to the following: • that the biomass meets national legislative requirements under the Clean Air Act. The whole of the borough of Haringey is designated a Smoke Control Area under the Clean Air Act 1993. • That the biomass may require regulation by either the Environment Agency (EA) or the Local	

Page Number in the SPD	STANDARDS AND REQUIREMENTS	Other requirements/Comments
	Authority (LA). Regulation is dependant on the size of the biomass; > 3MW inc. aggregated will require regulation by the EA, between 0.4 and 3MW is regulated by the LA. Developers must be aware that there are annual fees and charges applicable and that the permit will contain conditions that must be adhered to at all times. Biomass <0.4MW do not require regulatory controls. a chimney height calculation will be required with the planning application.	
	AVOIDING WASTE	
	CONSTRUCTION WASTE	
	Reuse of buildings and materials hierarchy Demonstrate in the Sustainability Statement how the development proposes to reduce the amount of raw materials used over the lifetime of a development. • Existing buildings on a site should be adapted and reused as much as possible. It may be possible to achieve other environmental objectives (such as improving energy efficiency) by small additions and adaptations to the fabric (such as new window fittings and extra insulation). **Therefore the justification of need for a building in an application will be required.** • Where the adaptive reuse of the whole building is not appropriate, developments should investigate reusing parts of the existing building.	

Page Number in the SPD	STANDARDS AND REQUIREMENTS	Other requirements/Comments
	• Demolition materials should be reused on-site where possible, such as for aggregate, fill or landscaping, or as part of new structures. • Where additional building materials are required, the use of recycled materials is preferred and these should be from sustainable or local sources • Demolition materials or surplus materials not required for the development should be collected for reuse and recycling in other building schemes.	
	The construction process should be carefully managed to reduce the creation of waste, such as by careful specification of materials and the use of prefabricated building elements. London Plan suggests 95% of construction and demolition waste should be recycled and re-used by 2020. 80% of that waste should be aggregates in London by 2020. The London Plan is supported by supplementary planning guidance covering sustainable design and construction and renewable energy. Building materials should be long lasting, taking into account what they are being used for and the conditions they will be exposed to (such as frequent traffic, pollution, weather and extremes of temperature). This will reduce the amount of materials needed to maintain them a building. The Council will expect a green purchasing plan be provided in conjunction with any major development, and will expect that such a plan addressed each of the following topics.	

Page Number in the SPD	STANDARDS AND REQUIREMENTS	Other requirements/Comments
	Certificates required	
	• 50% timber and timber products from Forest Stewardship Council (FSC) source and balance from a known temperate source. • A Site Waste Management Plan will need to be submitted containing information a commitment to minimise waste generated on site and sort, reuse and recycle construction, demolition and excavation waste • Demolition to be carried out in accordance with an approved Demolition Protocol.	
	SUSTAINABLE WASTE MANAGEMENT	
	Waste Hierarchy Demonstrate in the Sustainability Statement how the waste minimisation hierarchy is applied : • waste prevention, avoiding the creation of waste in the first place, • reuse, reusing waste that is created as much as possible, • recycling, allowing left-over waste to be recycled elsewhere as much as possible, minimising the waste that ends up in landfill.	
	Design and Access to on-site Waste facilities Demonstrate in the Sustainability Statement how the waste storage is designed:	

Page Number in the SPD	STANDARDS AND REQUIREMENTS	Other requirements/Comments
	• All waste storage areas, internal and external, must be easily accessible to both collectors and occupants. Enough space should be provided on-site to securely and safely store all waste and recycling bins. This storage space and access to it should be designed according to the principles set out in the SDC SPD.	
	Access Roads for Waste Collection Demonstrate in the Sustainability Statement how the access to site for waste collection is designed: Access roads used by waste collection vehicles need to be wide and constructed to withstand vehicles up to 26 tonne with sufficient radius for turns or reversing manoeuvres to be made. Vehicles should never have to reverse into or from a highway to make a collection. Where collection vehicles do have to enter developments there should be sufficient on site turning circles or hammerheads to allow safe egress.	
	Housing Blocks and Estates Demonstrate in the Sustainability Statement if the standards for waste facilities are met : • the ratio for the overall number of waste and recycling containers required is 1:5, i.e. one 1100 litre Eurobin **per five households** based on once per week collection, therefore every block must have space for at least this number of containers, no matter what the mix between residual and recycling containers may be; • the ratio for residual waste eurobins can rise to 1:8 based on once per week collections where recycling eurobins are provided; and • the ratio for recycling eurobins is 1:10 based on once per week collections where residual eurobins are provided.	

Page Number in the SPD	STANDARDS AND REQUIREMENTS	Other requirements/Comments
	Houses and Other Properties with Street Access Demonstrate in the Sustainability Statement if the standards for waste facilities are met:: • 2no. 240 litre wheelie bins (in case the green box recycling service is replaced by a wheelie bin recycling service); • 1no. food box; and • 1no. re-usable garden waste sack. Where wheelie bins are to be used they must be located within 1.2 metres of the front, side or rear boundary of the property according to where the collection vehicle is required to gain access to them. The characteristics of the path over which wheelie bins need to be pulled to the collection vehicle should be similar to those stated at 10.1 above. However, wheelie bins will not require individually installed dropped kerbs provided any kerb to be negotiated is no greater than 100mm in height. The maximum pulling distance for wheelie bins from storage to collection point is 25 metres but where possible this should be less.	
	Home Composting Demonstrate in the Sustainability Statement if the standards for waste facilities for on-site composting are met: For homes with private gardens, there should be: • Enough to hold 240L of organic waste per dwelling with a garden and 70L per dwelling without a garden.	

Page Number in the SPD	STANDARDS AND REQUIREMENTS	Other requirements/Comments
	• Designed as part of private or communal green spaces on a site. • Located in an easily accessible location that is well drained and receives as much sun as possible.	
	Non-Residential Developments Demonstrate in the Sustainability Statement if the standards for waste facilities are met: • Provide information on the expected waste to be generated by the proposed use and the frequency of collection and e • Explain how the storage capacity provided is adequate, including for organic waste. Generally, enough space to store waste for a week should be provided. • British Standard BS 5906:2005 should be used to calculate the capacity of waste storage needed. Where the end user of a building is not known, calculations should assume the highest levels of waste generation likely for that use class.	

	Certificates Required	
	Certificates The Council requires large developments to provide a Waste Management Plan with any planning application. The form of the plan is at the discretion of the applicant. The content of the plan must include full details of the arrangements for the storage and collection of waste for disposal (residual waste) along with waste to be recycled (recyclate) as explained in the guidance. The plan must make reference to the following: • The number, type and size of receptacles to be dedicated to storage of residual waste. • The number, type and size of receptacles to be dedicated to storage of recyclate. • The position where both types of receptacles are to be stored between collections. • The size, design and materials used in construction of any housing built for the storage of both types of receptacle. • Access arrangements for persons using receptacles showing that consideration has been given to safety, equalities, convenience, user friendliness and maximum walking distances under building regulations. • Access arrangements for persons collecting residual waste and recyclate giving consideration to Health and Safety at Work Act, recommended maximum pulling distances for receptacles, vehicle access/height/turning requirements and the construction and width of pathways, doors and access ways. For mixed use developments, how commercial/industrial residual waste and recyclate will be stored separately from household residual waste and recyclate so as to avoid abuse of facilities by either user.	

PROTECTING AND ENHANCING BIODIVERSITY		
	Demonstrate in the Sustainability Statement how the following hierarchy for protecting and enhancing biodiversity is applied: **Avoiding Harm-Initial surveys** • Developers must comply with protected species legislation. A precautionary approach will be taken. • Where development could result in harm to protected or priority species, a Scoping Study will be required. This study will identify if protected or priority species are using the site. In many cases this will involve a quick assessment by a trained ecologist. • Site surveys should be undertaken at the appropriate time of year for the species concerned. • The council will refuse applications that do not provide enough information on protected or priority species. • A Tree Report should be submitted **Compensate for any avoidable harm** • There should be no net loss in ecological value of a site. The proposal must not reduce access to nature or harm the ecological value of any site of importance for nature conservation (SINC) or local nature reserve (LNR). • The negative impacts of the development should first be reduced as much as possible through design, construction and management. The compensation could include replacement, enhancement, recreation or relocation of habitat or species. The type, quantity and quality of compensation should result in a net overall benefit to protected	

	and priority species. Generally, this means 'like for like' replacement or better. **Enhancing Biodiversity** • All development needs to contribute to improving biodiversity in the borough and should increase the number and coverage of plant species on a site. • Artificial habitats, such as Swift boxes, bat bricks and stag beetle loggeries, should be integrated into the design of buildings, unless this is demonstrated to not be feasible. This is particularly important where is limited space for natural habitats. • Green walls or roofs are to be included in the scheme, unless this is not feasible. • Sustainability Statements should explain how the development has been designed to maximise its contribution to nature conservation in light of site constraints. This should include information on plant species that will be used and how opportunities to link with nearby open spaces have been addressed. • Where specialist habitat areas are proposed, information on how the new habitat will be managed and maintained throughout the lifetime of the development should be provided. • Net gain of biodiversity and access to nature on the development site and a reduction in areas of deficiency in access to nature	
	Certificates Required	
	• Where development could result in harm to protected or priority species, a Scoping Study will be required. This study will identify if protected or priority species are using the site. Site surveys should be undertaken at the appropriate time of year for the species concerned.	

	• The council will refuse applications that do not provide enough information on protected or priority species. • A Tree Report should be submitted • An ecological Impact assessment will be required where relevant • Where protection and enhancement and specialist habitat areas are proposed, information on how the new habitat will be managed and maintained throughout the lifetime of the development should be provided.	

13 APPENDICES

Appendix XXX
Policy Background

The Sustainable Design and Construction SPD have been prepared so that it is consistent with national, regional and local planning policy and guidance. The key policies that apply are explained below.

National Policy

- **Planning and Climate Change Supplement to PPS1**

This supplement states that new development should be built to have lower carbon footprints and should be designed to withstand the likely impacts of climate change. Planning policy should contribute to meeting the government's target to reduce greenhouse gas by 60% by 2050 and secure the highest levels of energy efficiency.

The use of renewable sources of energy, alongside improvements to energy efficiency, will make a vital contribution to the government's aim of reducing greenhouse gas emissions by 60% by 2050, and to keep reliable and efficient energy supplies. 10% of UK electricity should be generated by renewables by 2010 and 20% by 2020. Policy policies should promote and encourage renewable energy development, of all sizes, whilst addressing potential negative impacts.

- **PPS9: Biodiversity and Geological Conservation**

- **PPS10: Planning for Sustainable Waste Management**

PPS10 aims to reduce waste by making sure re-use/recycling facilities are in new developments, and to manage waste as near as possible to its place of production because transporting waste itself has an environmental impact.

- **PPS22: Renewable Energy**

PPS22 states that the use of renewable sources of energy, alongside improvements to energy efficiency, will make a vital contribution to the government's aim of reducing greenhouse gas emissions by 60% by 2050, and to keep reliable and efficient energy supplies. 10% of UK electricity

should be generated by renewables by 2010 and 20% by 2020. Planning policies should promote and encourage renewable energy development, of all sizes, whilst addressing potential negative impacts.

- **PPS23: Planning and Pollution Control**

PPS23 aims to work towards minimising the levels of air, water and land pollution caused by development.

- **PPG24: Planning and Noise**

PPG24 aims to reduce the noise impacts of development by outlining issues that need to be taken into account when deciding planning applications for noise-sensitive developments and for those activities which generate noise. It also advises on the use of conditions to minimize the impact of noise.

- **PPS25: Development and Flood Risk**

PPS25 aims to avoid and reduce the impacts of flooding on people, property and the environment through good planning and management of flood risk. Flood risk needs to be taken into account at all stages of the planning process, and should be reduced through the location, layout and design of development, taking into account the impacts of climate change. Development in flood risk areas should be avoided, and should only be permitted if there are no other sites and the benefits of the development outweigh the risk from flooding. Use development opportunities to reduce the causes and impacts of flooding. Development in areas at high risk of flooding will need to have a flood risk assessment. Flood risk assessments should also be carried out for development on sites over 1ha, regardless of its location.

Regional Planning Policy - The London Plan (consolidated with alterations) 2008

- **Policy 2A.1 Sustainability Criteria**

Provides the criteria for development to secure the social, environmental and economic objectives of the London Plan

- **Policy 2A.9 The Suburbs: supporting sustainable communities**

Sustainable communities should be supported in areas of both inner and outer London in order to enhance the quality of life, economy and environment of suburban London

- **Policy 3D.14: Biodiversity and nature conservation**

New development should have regard to nature conservation and biodiversity and opportunities should be taken to achieve positive gains through the form and design of development. Development should not have a significant negative impact on protected and priority species. Damage to sites of importance for nature conservation should be avoided. Where harm is unavoidable and justified in light of the benefits of a development, appropriate compensation should be sought.

- **Policy 3D.15: Trees and Woodland**

Trees and woodland should be protected, maintained and enhanced in support of the London Tree and Woodland Framework

- **Policy 4 A.1: Tackling Climate Change**

Developments will need to make the fullest contribution to the mitigation of and adaptation to climate change and to minimise emissions of carbon dioxide. The Energy hierarchy set out will be used to assess applications.

Policy 4A.2: Mitigating Climate Change
The Mayor will work towards the long term reduction of carbon dioxide emissions by 60% by 2050 and the following minimum reduction targets for London against a 1990 base:

15% by 2010; 20% by 2015; 25% by 2020; and 30% by 2025.

Policy 4A.3 Sustainable Design and Construction
Future developments will need to meet the highest standards of sustainable design and construction. All major applications will need to include a statement on the potential implications of the development on sustainable design and construction. The statement should address demolition, construction and long term management.

Policy 4A.4: Energy Assessment
An assessment of the energy demand and carbon dioxide emissions of proposed major development is required, which should explain the steps taken to reduce energy needs of as development, supply energy efficiently and make use of renewable energy.

Policy 4A.5: Provision of Heating and Cooling Networks
Boroughs should identify and safeguard existing heating and cooling networks and maximise the opportunities for providing new networks that are supplied by decentralised energy. All new development should be designed to connect to the heating and cooling network.

Policy 4 A.7: Decentralised Energy: Heating, Cooling and Power
All developments should demonstrate that their heating, cooling and power systems have been selected to minimise carbon dioxide emissions. Developments should evaluate combined cooling, heat and power and combined heat and power systems and the opportunities to extend schemes beyond the site boundary.

Policy 4A.7: Renewable Energy
Developments will achieve a reduction in carbon dioxide emissions of 20% from on-site renewable energy generation (which can include sources of decentralised renewable energy) unless it can be demonstrated that such provision is not feasible.

Policy 4A.9: Adaptation to Climate Change
The most effective adaptation to climate change should be promoted and supported.

- **Policy 4A.10: Overheating**

Development should be strongly encouraged that avoids internal overheating and excessive heat generation and contributes to the prevention of further over heating.

- **Policy 4A.11: Living Roofs and Walls**

Major development will be expected to incorporate living roofs and walls where feasible.

- **Policy 4A.12: Flooding**

Boroughs should identify areas at risk from flooding, within which flood risk assessments of new development should be carried out in line with PPS25.

- **Policy 4A.13: Flood Risk Management**

Where development in areas at risk of flooding is permitted the risks of flooding should be managed and the future increased risk and consequences of flooding as a result of climate change.

- **Policy 4A.14: Sustainable Drainage**

Surface water run-off should be managed as close to its source as possible in line with the drainage hierarchy given. Sustainable Urban Drainage Systems should be promoted for development unless there are practical reasons for not doing so.

- **Policy 4A.15: Rising Groundwater**

Where groundwater is an existing or potential problem, reasonable steps should be taken to abstract and use that groundwater.

- **Policy 4A.16: Water Supplies and Resources**

In determining planning applications proper regard should be given to the impact of the proposals on water demand and existing capacity. A maximum water use target of 105 litres per person per day should be applied for residential development.

- **Policy 4A.17: Water Quality**

Boroughs should protect and improve water quality to ensure that the Blue Ribbon network is healthy, attractive and offers a valuable series of habitats.

- **Policy 4A.19: Improving Air Quality**

Boroughs should implement the Mayor's Air Quality Strategy and achieve reductions in pollutant emissions and public exposure to pollution.

- **Policy 4A.20: Reducing Noise and Enhancing Soundscapes**

A reduction of the negative impacts of noise will be sought by: minimising existing and potential adverse impacts of noise within or in the vicinity of development proposals; separating new noise sensitive development from major noise sources; reducing noise at source through new technologies and containing noise from late night entertainment and other 24-hour activities; and protecting areas of tranquillity.

- **Policy 4A.21: Waste Strategic Policy and Targets**

This seeks to minimise the level of waste generated, increase re-use and recycling and composting of waste and reduce landfill disposal and set out he recycling targets that should be met.

- **Policy 4A.22: Spatial Policies for Waste Management**

This seeks sufficient waste management facilities in London, including the provision of suitable waste and recycling storage facilities in new development.

- **Policy 4A.28: Construction, Excavation and Demolition Waste**

Developers should be required to produce Site Waste Management Plans to arrange for efficient materials and waste handling. Waste and materials should be transported to and from the site by rail or water transport wherever practicable.

Policy 4A.30: Better Use of Aggregates

95% of construction and demolition waste should be recycled and re-used by 2020. 80% of that waste should be aggregates in London by 2020. The London Plan is supported by supplementary planning guidance covering sustainable design and construction and renewable energy.

Local Planning Policy

One of the key visions of the Unitary Development Plan is that all development achieves or contributes towards sustainable development. This is echoed by other strategic policies which seek to protect and improve amenity and environmental quality, reduce pollution and improve environmental performance on buildings, promote the efficient use of land, promote more sustainable transport and reduce the need to travel.

Local and Regional policies supported by this SPD

The UDP is adopted in 2006 and "saved "in July 2009. It is now in line with the London Plan (2008) policies. The SPD is a cross-cutting guidance particularly relating to the UDP policies on energy, water, flood risk, waste management, biodiversity and natural environment ,water resources and water environment set out in the adopted UDP: UDP policy G1, G2, UD1, UD2, UD3, UD4, UD7, and ENV1, ENV2, ENV 4, ENV6, ENV7, ENV 11, ENV12, ENV 13 and London Plan (2008) policies on 3D.14, 4A.1 to 4A17, 4A.19 to 4A.21. And A4.28 to A4.33.

The SPD supports the following Core Strategy policies :
Strategic Policy 4- Working Towards a Low Carbon Haringey
Strategic Policy 5 Water Management and Flooding
Strategic Policy 6 – Waste and Recycling
Strategic Policy 13 – Open Space and Biodiversity
Strategic Policy12 Community Infrastructure.

APPENDIX XXX CODE FOR SUSTAINABLE HOMES

Code Level Category Minimum Standard at each level

1. Energy/CO2

Percentage improvement over 2006 building Regulations

1(□) 10%
2(□□) 18%
3(□□□) 25%
4(□□□□) 44%
5(□□□□□) Standards 100%
6(□□□□□□) A 'zero carbon home'
(Heating, lighting, hot water and **all** other energy uses in the home)

2. Water

1(□) internal potable water 120 l/p/d
2(□□) consumption measured in 120 l/p/d
3(□□□) litres per person per day (l/p/d) 105 l/p/d
4(□□□□) 105 l/p/d
5(□□□□□) 80 l/p/d
6(□□□□□□) 80 l/p/d

Code Level Category Minimum Standard only at entry level (1 □)

3. Materials

1(□) Environmental impact At least three of the following of materials† 5 key element of construction are specified to achieve a BRE Green Guide 2006 rating of at least D
– Roof structure and finishes
– External walls
– Upper floor
– Internal walls
– Windows and doors

4. Surface Water Run-off

1(□) Surface water management Ensure that peak run-off rates and annual volumes of run-off will be no greater than the previous conditions for the development site. Architects and designers will be judged on the provision of rainwater holding facilities (water butts) and the attenuation of run-off either to natural water courses or to municipal systems.

Where houses are sited in areas of flood risk, designers can gain extra points for constructing the ground level of buildings above the flood level, or designing the house with resilience against flooding to limit consequential damage.

5. Waste

1 (□) the minimum code level for waste is covered by two categories:

- Site waste management
- Household waste storage

Builders will be required to adopt a site waste management plan. This must include the monitoring of waste on site and the setting of targets to promote the efficient use of resources.

The management of household waste storage requires the containment of waste for each dwelling. The CSH requires for the greater (by volume) of either accommodation of external containers provided under the local authority's refuse collection and recycling scheme or at least 0.8 m3 per dwelling for waste management as required by BS 5906 – Code of Practice for Storage and On-site Treatment of Solid Waste from Building standards (continued

Other Categories with No Minimum Standards

There are no minimum standards for pollution, health and well-being, management and ecology.

4) Pollution

Architects can gain extra points by using insulants with little or no global warming potential or ozone depleting potential in either their manufacture or composition. This covers insulation materials used in walls, lofts, and roofs, as well as around hot water cylinders.

Nitrous oxide emissions (NOx) can be limited by using boilers with low NOx emissions as defined in BS EN 297: 1994.

5) Health and well-being

Health and well being covers comfort issues, such as daylight, sound insulation, the design of private external areas that are accessible by people with disabilities (although the CSH does not define those disabilities).

More points can be awarded for applying the standards of the Lifetime Homes scheme, which lays down design principles for homes designed to cater for people of all ages, and age-related disabilities.

Higher standards of sound insulation than required by Part E of the Building Regulations will also earn extra points. Architects need to be aware that this will either require post-completion testing, or proof of the application of robust details. The latter will presumably need to be signed off by the Building Control Officer, but the Code does not stipulate this.

The CSH awards points for achieving specific daylight factors in kitchens, living rooms and studies.

6) Management

Management covers both construction and post-construction management. Extra points can be gained by builders who abide by the Considerate Constructors Scheme, and who deliver a strategy to reduce the harmful effects of construction on the site.

Points are gained for the provision of Home User Guides, which are relevant to the operation, and environmental performance of the home.

7) Ecology

The ecology category covers the ecological value of the site, ecological enhancement, protection of ecological features and the total building footprint. Designers and builders can win points by adopting the requirements in the BRE Ecological Value Checklist.

Points can be won by limiting the effects of house construction on the local flora and fauna, and where the designers and builders can demonstrate that anything of ecological value is protected during construction works and able to thrive after completion. Extra points can be awarded if the architect has commissioned a report from a qualified ecologist.

Appendix XX - Refuse Truck space requirements and dimensions (To be added)

Appendix XXX: Bin types and dimensions

Typical Houses and other street properties -

Container type	Dimensions	Application
Garden Waste	450mm D x 450mm W x 600mm H	One Bag per household

Container type	Dimensions	Application
Externally stored food box	350mm D x 300mm W x 360mm H	One box per household

Container type	Dimensions	Application
Green recycling box	600mm D x 400mm W x 400mm H	One box per household up to 3 bedrooms. Two boxes for households of 4 bedrooms or more.

Container type	Dimensions	Application
140 litre wheelie bin	550mm D x 500mm W x 930mm H	One bin per single 1 bed dwelling when supplied for sole use.
240 litre wheelie bin	730mm D x 580mm W x 1080mm H	One per single 2/3 bed dwelling when supplied for sole use.
360 litre wheelie bin	885mm D x 620mm W x 1100mm H	One per single 4+ beds dwelling when supplied for sole use. Or one per pair of

		1/2/3 bed dwellings when supplied for shared use.

Typical blocks and estates

Container type	Dimensions	Application
1100 litre eurobin	985mm D x 1260mm W x 1370mm H	Used where there is not a drop-down chute system. Ratio of one bin per five households for once per week collection for all waste types. The ratio can rise to 1:8 based on once per week residual waste collections where recycling eurobins are also provided The ratio for recycling eurobins is 1:10 based on once per week collections where residual eurobins are also provided.
Upright square bulk refuse containers	960mm D x 1050mm W x 1410mm H	Used for drop-down chute systems. Ratios are as above for 1100 litre eurobins.

Flats above shops on main roads, some existing terraced houses*

Container type	Dimensions	Application
Black sack	Various, but standard capacity is around 70 litres. Not supplied by the Council.	Two to three per week to be left on the pavement for daily collections from main roads.
Clear recycling sack	40 litre capacity. Supplied by the Council.	Two to three per week to be left on the pavement for daily collections from main roads.

Note that this mode of waste storage and collection does not comply with the Council's waste containerisation policy and is actively discouraged. These arrangements will not be allowed in new developments.

GLOSSARY