BARNET
LONDON BOROUGH

Draft Supplementary Planning Document (SPD)

Sustainable Design and Construction

ARUP

Lancefield Consulting

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Contents

CONSULTATION ON THE DRAFT SPD

This Draft Sustainable Design and Construction Supplementary Planning Document is placed on public consultation for six weeks from 23 November 2006 until 5.00pm on 10 January 2007. Comments can be made online (www.barnet.gov.uk) and should be sent to:

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Or email to forward.planning@barnet.gov.uk

In order for the Council to speedily respond to representations, the electronic submission of comments is strongly encouraged.

Further copies of the Supplementary Planning Document and Sustainability Appraisal are available from the Council's website and at all local libraries in the Borough.

There will be a Planning and Development Forum held to discuss the document on 12 December 2006 – for more information contact the Planning Policy Team.

WHAT HAPPENS NEXT?

The Council will produce a report summarising the main issues raised following the public consultation. The report will set out the Council's response to each representation and will be submitted for approval by Cabinet before adoption. The Council will inform persons who have made representations of its proposed response prior to the Cabinet meeting.

FOREWORD

Climate change is becoming one of the greatest challenges for cities and nations. The sustainability of development is therefore increasingly being placed at the heart of policy making in order to address and limit the environmental effects of climate change.

The London Borough of Barnet is a classic suburban borough of exceptional quality. The Three Strands Approach – to Protect, Enhance and Grow – has been developed by the borough to preserve all that is excellent about Barnet, making it a sustainable place which people can choose to live in, work in and visit. Sustainable development is conventionally defined as "'d*evelopment that meets the needs of the present without compromising the ability of future generations to meet their own needs*' (Bruntland Commission, 1987). In Barnet we interpret this to mean meeting the essential needs of people today through a thriving economy and inclusive community, while protecting the local and wider environment for future generations who will depend on it to meet their own needs.

Clearly, making this happen is contingent on a much wider context – the on-going economic success of London, energy prices and of course climate change. Barnet must not only be able to adapt to these external circumstances, but also contribute to ensuring that they remain favourable. Barnet is an important part of the wider London economy and by being an attractive place for people to live and work in, the Borough plays a role in the attractiveness of the capital as a place to do business. In the environmental context, the community in Barnet needs to minimise and optimise its consumption of natural resources and seek to play its role in reducing society's emissions of carbon dioxide.

The latter factor, as with many environmental issues, is reliant on the successful functioning of the urban area as a whole, where individuals are very much constrained in their actions by what is available to them. If there is no access to public transport, a person has to resort to a private car and will therefore inevitably emit more carbon dioxide in their day-to-day life. Yet, in turn, the viability of public transport depends upon the density of development and the number of people willing to use it.

It is critical, as we move forward with the Three Strands Approach, to plan for growing communities and develop our built environment in a way that enables people to live more sustainable lifestyles. We recognise that, particularly in respect of energy use, populations living at higher densities are able to live at much lower carbon dioxide emissions per head than where people live in more dispersed circumstances. But for people to live at higher densities requires a much higher level of attention paid to design – to achieve very high quality urban and suburban environments that people will enjoy living in and where they are able to live in harmony with many more neighbours.

To achieve these ends, design is paramount and cannot be compromised. If we are all willing to play our part in seeking to improve the design of the built environment – for all sizes of project – then we will collectively leave a legacy for future generations for which they will be thankful. Today's careful planning will be tomorrow's successful places. Simultaneously with this, good construction management is critical to ensuring that we deliver high quality design without causing nuisance in an already built-up area and without causing damage to the high quality environment that already exists.

This Supplementary Planning Document sets out important guidance for delivering successful, high quality suburbs now and for the future.

PART 1
INTRODUCTION TO SUSTAINABLE DEVELOPMENT IN BARNET

Planning policy in the United Kingdom seeks to deliver sustainable development through the planning system. As the urban environment is regenerated and suburban areas are enhanced, with new developments and projects coming forward, each of these contributes to the overall sustainability of our townscape and the society that occupies that built environment. Yet, while there are general principles of sustainable development that can be applied to all areas, each location is unique and has to identify its own interpretation of the future and how today's society will leave a beneficial legacy for tomorrow. In Barnet, the Three Strand Approach is central to the council's thinking. Part 1 thus seeks to provide clarification on how projects should be designed to meet the council's policies for sustainable development – currently set out in the Unitary Development Plan and which will come to form the building blocks of the sustainable development strategy in Barnet's emerging Local Development Framework (LDF).

1 Introduction

Through the Three Strands Approach (www.barnet.gov.uk/lbb_3_strand_approach.pdf), the council has developed a long-term development strategy for the borough. The Three Strands Approach also underpins other important policies, such as Barnet's Sustainable Community Strategy. It has been interpreted in the Unitary Development Plan as achieving a more efficient re-use of land and encouraging:

- **PROTECTION** of natural resource including the Green Belt;
- **ENHANCEMENT** and preservation of the built environment; and
- **GROWTH** of well-connected, higher-density, mixed-use development in locations that are appropriate, which reduce traffic generation and have good public transport accessibility

The concept of sustainable development pervades all planning policies within the borough and, together with the Three Strands Approach, will underpin the future Local Development Framework. The purpose of this guidance is to help ensure that as Barnet grows and changes over the next decade or more, planning decisions are made in accordance with the principles of sustainable development.

This Supplementary Planning Document forms the parent document for amore detailed series of Design Guidance Notes addressing issues such as house extensions and residential conversions.

The quality of design of new development at all scales, from the smallest house extension to the largest urban regeneration project, is critical for achieving this long-term planning and development objective. This Supplementary Planning Document provides guidance on what the council considers to be good quality design and good environmental practice in the management of construction activities (UDP Policy D1[1]).

1.1 A Sustainable Barnet

In practical terms, sustainable development is conventionally described in national planning policy (PPS1 Delivering Sustainable Development) as a process of achieving an appropriate balance between the three aims of:

- **Environment**: maintaining and enhancing the quality of the environment, both urban and natural, and being prudent in the use of natural resources
- **Society**: encouraging a just, healthy and inclusive society
- **Economy**: to maintain high and stable levels of economic growth and development.

Set out below are some generic principles for the development process and the delivery of new development, which the council considers essential for achieving these broad aims of sustainable development.

DEVELOPMENT PROCESS

- Consultation and engagement with all those who might be affected by the construction and the presence of new development is a prerequisite to maintaining good social relationships and building sustainable communities. Further guidance is provided in Section 8 on the degree of consultation which the council will encourage for different scales of project (Barnet's Statement of Community Involvement).

[1] A list of UDP policies is provided in Appendix A4.

- The council will expect best practice in relation to the management of demolition and construction activities in order to minimise the possibility of nuisance caused to existing communities or pollution of the local environment (UDP Policy GEA).

DEVELOPMENT DESIGN

- The council will expect the best quality design and associated specification of materials. Design represents a process of problem solving to deliver new buildings, infrastructure and natural features to make places attractive and conducive to use and habitation by people and businesses. Optimum design represents finding the best solution taking into account all the synergistic and competing demands for a scheme, without over-emphasis on any specific parameter. This guidance identifies a broad cross-section of the issues that need to be taken into account during the design evolution to promote the creation of successful suburbs and sustainable communities and to enable people to live more sustainable lifestyles at work, at home and at play (UDP Policy GBEnv2).
- The council will encourage planning applications to incorporate a mix of land uses within buildings or areas in appropriate locations. The latter will generally be existing town centres and locations with good public transport access. Where a mix of uses is provided, applicants will be expected to show how the design enables these to operate together in harmony (Policy GMixedUse).

Table 1 provides further details of the council's strategic expectations for new development within the different parts of the Borough.

TABLE 1 : KEY SUSTAINABLE DESIGN OBJECTIVES FOR DIFFERENT AREAS OF THE LONDON BOROUGH OF BARNET

	ENVIRONMENT	SOCIETY	ECONOMY
PROTECTION Areas designated for absolute protection – generally Green Belt and Metropolitan Open Land but also including nature conservation areas, woodlands, areas of archaeological importance and landmarks	New design should seek to protect, by preserving or enhancing, buildings, areas, opens spaces or features that are of special value in architectural, townscape or landscape, historic, agricultural or nature conservation terms and to contribute towards that which is environmentally pleasing within the borough (UDP Policy GGreenBelt and GMOL).	Development should seek to enhance visual and physical access to open green space for the general public. And promote and safeguard arts, culture, entertainment and tourist facilities for the benefit of residents and visitors (UDP Policy GL1, 2 and 3).	Economic activities should be of an agricultural, hospitality or recreational nature, including sports and leisure activities, which are in someway connected to the on-going maintenance and preservation of the countryside or open spaces. There should be no development unless it strictly meets PPG2 criteria.
ENHANCEMENT Areas where there should be preservation and enhancement – generally suburban and existing residential areas and some town centres, particularly conservation areas or areas where there is limited capacity for expansion.	Designs should seek to sympathetically develop land use without reducing the sense of openness or suburban character, or increasing the perception of urban density. All new development should focus on maintaining the perception of a green, high quality residential and in many cases historic environment (UDP Policy GBEnv4).	Development should be especially responsive to the views and concerns of local communities and neighbours and focus on maintaining the character of suburban and historic areas. Particular emphasis will be placed on heritage and conservation (UDP Policy GBEnv2).	New development uses should not lead to significant increases in economic activity and certainly not increase traffic generation. Mixes of uses will be preferable where appropriate (primarily in places with better public transport access) (UDP Policy GLoc).
GROWTH Areas where there will be new major, , mixed-use development of higher densities, proximate to public transport nodes, with high levels of accessibility or expected transport improvements.	Designs should seek to achieve appropriate intensification of land use and seek in all ways to enable the resident communities and businesses to live and operate more sustainably through reduced use of non-renewable natural resources, for example through energy efficiency, renewable energy generation, and microgeneration (UDP Policy Gland and GEnergy and GBEnv2).	Development at every level should promote those parameters that will improve the quality of life experienced by resident communities. These are considered in more detail in Section 3 (UDP Policy GBEnv3 and GBEnv5 and GLoc).	Development should seek to mix compatible uses in order to achieve sustainable development and land use. Factors to consider are set out in more detail in Section 3 (UDP Policy GMixed Use).

2 New Guidance on Sustainable Design and Construction

National planning policy recognises the importance of design to the on-going success and sustainable development of our urban areas – from the wider spatial layout of the townscape down to minute architectural detail. Over the last ten years there has been a growing public and professional awareness on what represents good quality design, whether it be urban, architectural or interior. This has been championed by the Commission for Architecture and the Built Environment (CABE). This SPD is a response to this wider appreciation of the importance of design, seeking to set out how it should be applied within the local planning framework of Barnet.

The key objectives of the council in providing this Supplementary Planning Document are as follows:

1. **Providing the framework for delivery of sustainable development in Barnet**

   PPS1 provides national guidance on how sustainable development should be defined by the planning system, but recognises that this needs to be interpreted in each local planning area. The Barnet UDP provides policy for the Borough which demarcates areas for Protection, Enhancement and Growth. The SPD provides further clarification on how sustainable development should be understood for those different areas.

2. **Setting the standards for delivery of sustainable development in Barnet**

   National guidance recognises the importance of design to achieve sustainable development. The SPD on Sustainable Design and Construction will represent a significant part of the portfolio of supplementary documents to provide guidance on the council's requirements and objectives for new development. While the SPD will address the full remit of sustainability issues that are relevant to the design of new development, it will focus on environmental objectives. It will provide guidance on standards that should be achieved for good and best practice in environmental design and construction management for all new developments in Barnet.

3. **Engaging effectively to deliver sustainable development in Barnet**

   PPS1 and the Barnet draft Statement of Community Involvement recognise the importance of consultation and engagement between all parties either promoting or affected by the development process. The SPD will set out how the council should be consulted in respect of design issues on new proposals in order to facilitate an optimum outcome for all involved.

4. **Identifying information to enable effective delivery of sustainable development in Barnet**

   The SPD will identify for different scales of development what information will be required by the council in order to facilitate effective and speedy determinations of planning applications.

As stated in Section 1, the council considers good quality design and sustainable design to be intrinsic to each other. This Supplementary Planning Document seeks to provide a signpost to the wider resource base on good quality design and identify those issues which are relevant to Barnet.

2.1 Structure and Content of this Guidance

Sustainable design represents design which will contribute to the sustainable development of an area. For design to be considered sustainable it must take into consideration the full remit of social, environmental and economic issues.

In the context of the wider resource base now available on good quality design, this SPD will not seek to provide detailed guidance on all the parameters that should be taken into account in the design of a new development. This is a matter which will be addressed by Design Guidance Notes which will form the daughter documents to this SPD. In order to clearly set out the council's message on sustainable design, Section 3 provides a brief summary of the wider social and economic issues and generic factors that new designs need to take into consideration.

The major part of this SPD, Part 2, focuses on the environmental standards against which planning applications within Barnet will be judged. Part 2 sets out essential standards that apply to developments in Barnet and where appropriate a second tier of preferred standards. The essential standards are minima based on current Building Regulations, the targets set out in the Mayor of London's strategies and current good industry practice. The preferred standards indicate more exemplary approaches for Barnet that can be followed but are not yet policy requirements.

2.2 How this Guidance Applies to Different Project Types

The council fully recognises that, in providing guidance and minimum standards on design, these will affect different projects to varying degrees. In particular, it is recognised that it is the scale of a project that will affect the ability of a planning applicant to address the full extent of this guidance or to commit to certain minimum standards. To this end, the following categories of project have been identified, under the three strands of Protection, Enhancement and Growth as set out below. Within the SPD, guidance will be provided as to how these different scales of project will be expected to address, take into consideration or commit to identified principles and standards.

Development proposed in areas of PROTECTION

Any such development is most likely to represent renovation or refurbishment or minor extension of existing buildings. Given the presumption against new development in the Green Belt, Metropolitan Open Land or other protected green space, an applicant for any such development should consult the council in advance of any application to determine the appropriateness of a new development and how the guidance within this SPD should be applied.

Development proposed in areas of ENHANCEMENT

Householder Developments (for example: house extensions or single houses built for personal occupation). Where possible simple minimum standards will apply and applicants will be required to complete the simple checklist appended to this SPD in order to confirm adherence to the appropriate standards, rather than demonstrate that any particular feasibility or design studies have been carried out.

Minor Developments[2] (for example: single small office building of less than 1,000m^2, single small block of flats of less than 10 units or less than 10 houses built for sale). Again, where possible simple minimum standards will apply, but applicants will be expected to submit a basic design statement addressing key issues that are identified in Appendix A2.

[2] Minor Planning Applications as defined by the Local Government (Best Value) Performance Indicators and Performance Standards (England) Order 2005 representing Minor Developments.

Development proposed in areas of GROWTH

Major Developments,[3] comprising large single or several buildings (10 dwellings or more or more than 1,000m total floorspace or a site area of 1 hectare or more). Proposals for such developments need to demonstrate compliance with both the broader sustainable design principles and the specified environmental minimum standards. Where an applicant considers that certain minimum standards are not viable or deliverable then they will be expected to demonstrate this through design and feasibility studies. It is recognised that some Major Developments may take place in areas of Enhancement.

Large Scale Masterplanned Developments. Proposals for such developments will need to show how they fully embrace the principles, guidance and minimum standards set out in this SPD. Any aspect of a proposal which does not fully comply with what is set out in this SPD will need to be fully explained and justified.

Appendix A3 includes a longer checklist of minimum issues to address and standards to meet for both Major and Large Scale Masterplanned Developments.

[3] Major Planning Applications as defined by the Local Government (Best Value) Performance Indicators and Performance Standards (England) Order 2005 representing Major Developments.

3 Sustainable Design Principles

Delivering sustainable development requires adherence to good quality design of the built environment taking into account the full remit of social, economic and environmental parameters. This affects every aspect of the functioning of our cities – the quality of life of residents and visitors, efficient function of the economy, ability for people and companies to access services, law and order and, of course, the degree to which people are able to live more environmentally sensitive lifestyles.

Cutting across all aspects of sustainability, successful sustainable design provides places in which people can take pride, where they want to live. Making **places** requires adherence to the principles of good urban design to guide the masterplanning of larger developments and to inform the architecture of buildings. The council embraces the guidance encapsulated in CABE's publication *By Design* (2000) (www.cabe.org.uk). The principles of urban design identified by CABE are

- Character – places with their own identity
- Continuity and enclosure – places where public and private spaces are clearly distinguished
- Quality of the public realm – places with attractive and successful outdoor areas
- Ease of movement – places which are easy to get to and move through
- Legibility – places that have a clear image and are easy to understand
- Adaptability – places that can change easily
- Diversity – places with variety and choice.

Another source of principles of good urban design is the *Urban Design Compendium* published by English Partnerships.

CABE also provides extensive guidance on good practice in architectural and scheme design for different building types. In respect of new residential development, the Housing Corporation's Housing Quality Indicators provide a means to ensure that good quality local design is being achieved. The council will expect new development proposals to draw on the guidance and principles provided in these various documents.

Sustainable development is a complex process of interacting issues and the requirements of sustainable design extend beyond the principles of good urban design and high quality architecture. New development must be built to high environmental principles; minimum environmental standards are thereby provided in Part 2 of this SPD. But it is necessary to ensure that, in achieving such environmental standards, social and economic aspirations are also met. It is recognised in *Planning Policy Statement 1: Delivering Sustainable Development* that there are significant potential synergies between social, environmental and economic issues and objectives. Whilst this SPD focuses primarily on environmental issues, it is essential for it to take into consideration social and economic influences on design.

3.1 Social Influences on Design

The social influences that need to be addressed in preparation of a development proposal should lead a planning applicant to ask the following set of questions:

1. **Is there good access to good quality services?**

   For any new planning applications, the council will seek to ensure that a new development promotes better access to services. Improved access can be achieved through appropriate location, good urban design, creating permeability for pedestrians

and cyclists, or through providing a better mix of development, which serves local needs. (Policy GLoc - Reducing Need to Travel)

2. **Is there good access to local amenity?**

   The council will seek to ensure that all new development promotes access to and helps to improve the quality and quantity of amenity within the Borough. Access should be available within walking distance or easily accessible public transport. Improved access can be provided through inclusion of new amenity in a development proposal itself or because of its location with respect to existing amenity or the provision of better access to an amenity (for example, the creation of a new footpath). (Policy GBEnv4 - Special Area, GL3 - Outdoor Recreation, GCS1- Community Facilities)

3. **Does the development proposal address local housing need and help to foster the creation of mixed communities?**

   For all new residential development, the council will seek to ensure that a mix of housing of different tenures, and different values, are appropriately provided within a new development and in the context of the existing community, in order to promote mixed and sustainable, socially cohesive communities. Residential designs should not be distinguishable by tenure type. The SPD on Affordable Housing provides further guidance on the design aspirations for achieving diversity in new residential developments to promote cohesive, mixed and sustainable communities. (Policy GH2 - Dwelling Mix and Policy GH3-Affordable Housing)

4. **Does the development proposal provide for and improve the safety and inclusivity of the local urban environment and the community?**

   The design and layout of the built environment at all scales, from building to town centre and suburb, can have a strong influence on the quality of life experienced by residents and visitors to an area. A well designed environment can also play a central role in improving community safety and improving people's feelings of security. The council considers that the following principles must be adhered to for all new development:

   - **Safety and Security** – new development proposals should be designed to provide safety within the site and in nearby and adjacent areas. With the exception of house extensions, all new development must meet and be certified to the police's Secured by Design principles (Policy GBEnv3 - Safe Environment, D9 - Designing Out Crime).
   - **Accessible** – all new residential buildings must internally meet Lifetime Homes standards, and provide a commensurate strategy for building access, car parking access, and all new external public and private realm. Buildings proposed for public use should be designed in accordance with an agreed Access Strategy (Policy GBEnv5 - Accessible Environment).

5. **Does the development respect or improve local townscape, including built heritage?**

   Barnet contains some of the best preserved historic suburbs in London, including the internationally renowned Hampstead Garden Suburb Conservation Area. The council places a high importance on the quality of the townscape in the borough and especially the local cultural heritage. The council will be concerned to ensure that the designs of all new developments respond to the existing townscape, do not create any unsightly visual impacts and respect local heritage. Designs should seek to enhance the character and sense of place, particularly within areas that have been identified as having high heritage value. (Policy GBEnv1-Character, GBEnv4-Special Area)

6. **Does the development proposal itself provide a high quality environment which will promote the wellbeing of residents, workers and visitors? (Policy GBEnv2 - Design)**

   Indoor Space Standards: The quantity of private space available to an individual or family is an important contributor to a person's quality of life and well-being. This is particularly important in respect of new residential development. The council will encourage developers to provide floor areas in their schemes which meet or exceed the minimum sizes set out in the table provided in Appendix A1.

   Outdoor Space Standards: Access to the outdoor environment is also an important contributor to people's quality of life. In this respect, all new residential development must show how occupants will be provided with easily accessible external space. It is preferable that this will be in the form of private space (gardens or balconies), but it is recognised that in high density developments this may need to be provided instead through communal space only accessible to the residents within a building or group of buildings, or in urban locations such as town centres, via access to local parks and open spaces that have been funded by off-site developer contributions. Communal gardens must be overlooked by (preferably) all the properties that have access to them and should not be overlooked from the public domain. These requirements do not diminish the need for good quality public open space which fosters a sense of community and improves the urban experience for workers and visitors.

3.2 Economic Influences on Design

The economic influences that need to be taken into consideration in preparation of a development proposal should lead a planning applicant to ask the following set of questions:

1. **Is the proposed land use or are the proposed mix of land uses genuinely appropriate for the planning application site?**

   The council will take a long-term view on all planning applications to judge whether the proposed land uses are appropriate for the proposal site. Of key importance are issues such as traffic generation, influence, interaction and relationship to surrounding existing development, degree of integration with the existing townscape and long-term market conditions for the proposed development type. (Policy GMixed Use)

2. **Do the development proposals make efficient use of the site?**

   All development proposals should seek to make effective use of all land within a planning application area and seek to avoid leaving or creating any redundant areas of land, without specified private or public use or benefit or economic purpose, either within a planning application area or proximate to a new proposal. Servicing strategies and car park access should seek not to sterilise any land, should minimise space used and preferably make use of the existing road network wherever possible. (Policy Gland-Reuse of Brownfield Land)

3. **Is the development density appropriate for the level of public transport accessibility to the site and can that public transport accessibility be improved?**

   In those locations where there is good access, as defined by Barnet's UDP, then development proposals should seek to maximise development opportunities at appropriate densities. In addition to this, those land uses which generate higher levels of people movement, such as shops and offices, should seek to be located as close to existing public transport nodes as possible. If this is not possible, they must contribute to the improvement of the existing level of public transport provision accordingly. Contributions (Policy GLoc – Reducing Need to Travel, GNonCar - Sustainable Transport and UDP Policy GH1).

4. **What will be the scale of development?**

   The scale of development will dictate the degree of economic impact that a new proposal will have on the local economy. For Large Scale Masterplanned proposals, the council will expect to see an associated regeneration report which assesses the implications for the local economy in terms of employment generation, adequacy of local public and community services, urban infrastructure and engagement with all the relevant stakeholders.

5. **What will be the maintenance and management costs of the new development, who will be responsible and are costs appropriate to land value and economic use? (London Plan Policies: 3D.11 – Open Space Strategies, 3D.1 – Supporting Town Centres, 4B.4 – Enhancing the Quality of the Public Realm and 4B.6 – Sustainable Design and Construction)**

   Consideration of the long-term estate management of all aspects of all new development is critically important for the maintenance of the quality of the environment within the Borough.

   A criterion for the sustained economic success of an area is that the management and maintenance costs of all parts of the built environment are appropriate and commensurate to the long-term anticipated economic and social uses of that area: the higher the land or building value then the greater the management and maintenance costs can be. In addition, such management and maintenance must have been allocated to a party which has the resources to manage to a satisfactory standard.

   As a general principle, a key aim of all building and urban designs should be to seek to minimise likely long-term management and maintenance costs over the expected life-time of the building, park, piece of public realm or infrastructure.

   A long-term estate management strategy should influence issues such as landscaping configuration and choice of plants, choice of pavement and road surfaces, façade designs, servicing strategies and access and durability of materials. Issues to consider, but not limited to, include:

   - Levels of maintenance and watering required by plants and degree of active maintenance required of landscaping
   - Frequency of cleaning and maintenance required for different exposed surfaces and accessibility of those surfaces
   - Longevity of specified materials – do they wear well over time and how might this affect the perceived quality of the environment
   - Durability of any exposed surfaces and likely replacement rates
   - Ensuring that there are no dead-spaces or inaccessible spaces which might become littered and unsightly
   - Level of active security required
   - Costs of energy and water consumption.

   For all schemes, with the exception of householder developments, the council will expect to be provided with an outline estate management strategy for the relevant parts of any development. The relevant parts of a development will be those parts within a site boundary which include any significant open areas, public realm or communal spaces and any parts of a development where responsibility for on-going management will be handed over to an organisation other than a private profit-making company or private occupier. If a building or piece of urban infrastructure will play a significant role in creating the character of a place, then the strategy should show how the quality and

appearance of the building and/or public realm will be sustained. The council will also expect to receive an estate management strategy in those circumstances where the new development will impact on the existing management arrangements for existing public realm or another land ownership.

An estate management strategy must:

- Set out the relevant parts of the development to which it applies
- Identify the ultimate party responsible for the maintenance and management of that part of the development;
- Identify key considerations for the management and maintenance of a building or undeveloped area; and
- Demonstrate how the design has been developed so that the levels of management and maintenance will be commensurate to the use, value of the land and resources of the party responsible for management and maintenance.

The level of detail included in an estate management strategy should reflect the scale and impact of a new development.

PART 2
ENVIRONMENTAL DESIGN AND CONSTRUCTION MANAGEMENT

STANDARDS AND GUIDANCE

"A key aim for the council is to maintain and improve the quality of the borough while ensuring that there will be sufficient resources to meet the needs of future generations in Barnet. To do this it is important that environmental resources are protected and any potential adverse environmental impacts arising from development are avoided." (UDP - Section 2.3.3)

To achieve this aim, the following sections set out essential and preferred environmental design standards against which planning applications will be judged. These standards fall into two categories:

- The contribution of a development to the local environment; and
- The environmental performance of the development in terms of resource use.

4 Design and Construction Guidance to achieve "protection and enhancement of the environment"

A key objective of the Three Strands Approach is protection of the environment. The parameters that should be addressed in the design of new developments, which contribute to the local environmental quality, as experienced by residents, workers and visitors, within and around a new development are:

- Air quality and the exposure of people to air pollutants
- Noise quality and the exposure of people to noise
- Water quality and flooding risk
- The quality and integrity of the local ecology
- Lighting and the potential for light pollution
- Microclimatic conditions such as wind and temperature
- Control of construction and other activities to prevent emission of pollutants, damage to the environment or nuisance to local people.

All these factors need to be weighed up against the social and economic design aspirations outlined in Section 3 and the resource use considerations set out in Section 5. Wherever possible design solutions should be sought which are able to address all these objectives in a synergistic manner.

4.1 Air Quality (UDP Policy Env7 Air Pollution and Env7a Air Quality Management and London Plan Policy 4A.6 – Improving Air Quality)

The air quality of urban areas has a strong influence on people's health. This has been recognised by the Mayor of London, who produced strategic guidance covering London in *Cleaning London's Air – The Mayor's Air Quality Strategy* (GLA, 2002). The design of the built environment has an important role in managing the degree to which people are exposed to air pollutants.

The principal sources of air pollution are:

- Traffic emissions from vehicles
- Dust emissions from demolition and construction activities
- Emissions from construction traffic and plant supporting construction activities
- Air pollutants arising from industrial activities
- Emissions from boiler and mechanical plant within buildings.

Within Barnet, emissions from traffic have by far the most severe and pervasive impact on the reduction of local air quality.

4.1.1 Objective

To minimise the exposure of the public to air pollutants and to reduce the contribution to atmospheric pollution from activities within the built environment

4.1.2 Design and Construction Principles

The following set of generic principles should be taken into consideration in the design and construction processes.

Design Principles

- Location: ensure that development type suits development site

  In areas of very low air quality, for example next to major highways, it is not appropriate to build residential accommodation or schools or other types of development where people, in particular vulnerable people, will spend a substantial amount of time in the accommodation and thereby be exposed to continuous high levels of air pollutants. If there is no other potential use for a site, then very high design criteria will be required to prevent exposure to air pollutants both in buildings and in accessible outdoor areas proximate to buildings.

- Siting and design: ensure that where there is a localised and proximate source of air pollution buildings are designed and sited to reduce exposure to air pollutants.

  Buildings themselves can be used as barriers between sources of air pollution and those areas where people will linger in the outside environment, such as private, communal or public gardens and public realm. The building should also be designed with active ventilation where the air should be drawn from the less polluted side of the building. Consideration should be given to ensuring that the building façade, which faces directly onto a pollution source, is sealed.

- Choice of building systems: ensure that building is not contributing to poor air quality.

  This can arise from either the choice of boiler plant and other mechanical plant, such a generators, heat rejection plant and CHP, or through the activities in the building, such as cooking. Modern boiler plant is labelled according to levels of NOx emissions; developers should seek to specify low emission and high efficiency boilers. These need to be regularly maintained to ensure that their performance is sustained. In the case of the emission of odours from restaurants, then consideration needs to be given as to the location of the air vents to ensure that odours will not cause a nuisance to neighbours.

Construction Principles

- Reducing emission of air pollutants in the first place. This can be achieved through the use of vehicles which produce lower emissions and from being efficient in the transport of goods to and from a site.
- Managing and controlling emissions where they are unavoidable.

4.1.3 Standards

Essential Standards

- In locations that have been identified or clearly suffer from poor air quality the council will seek air quality assessments to show that the new development would not contribute to the worsening of local air quality and that appropriate design measures have been implemented to protect future users and occupants of the buildings and surrounding accessible outdoor spaces.
- The council expects that developments are designed to reduce people's exposure to air pollutants. In areas where there are significant air pollution sources in the vicinity of a site, then the council will require the developer to demonstrate how this has been achieved
- The council will be seeking commitment from planning applicants that boiler and other mechanical plant meets sufficient efficiency and emission standards. Where boilers are used in new buildings they must have a minimum NOx 3 rating (or equivalent).
- The council expects that, in restaurants or other odour emitting premises, air extracts are appropriately located to avoid nuisance to neighbouring buildings.

- The council expects that developers comply with the minimum standards on construction management. For all Major and Large Scale developments, where appropriate, contractors should apply the following basic management procedures to prevent dust nuisance:
  - » Enclosure of buildings in debris screens during demolition
  - » Use of low level screens to enclose the entire site throughout the construction period
  - » Provision of easily cleaned hard standings for vehicles, including areas of a site close to access points
  - » Hard surfacing and regular cleaning by brushing and water spraying of heavily used areas
  - » Provision of wheel washing facilities
  - » Dusty material stockpiles and dusty activities such as stone cutting and grinding to be sited away from site boundary or effectively screened
  - » Vehicles carrying waste material off-site to be sheeted
  - » No fires allowed on site (this applies to all construction sites).

4.1.4 Useful Signposts

Building Regulations Part F

Environmental Criteria for Design – Guide A. CIBSE. 2006

Minimizing pollution at air intakes TM 21. CIBSE. 2001

Cleaning London's Air, The Mayor's Air Quality Strategy. GLA. 2002

4.2 Noise Quality (UDP Policy Env12 Noise Generating Development and Env13 Minimising Noise Disturbance and London Plan Policy 4A.14 - Reducing Noise)

Noise can be a significant nuisance. Persistent and intermittent noises, such as those made by building services plant, sound systems, construction activities or other people, can undermine quality of life. Management of noise is an issue which significantly increases in importance for higher densities of population and economic activity. Receptors which are particularly sensitive to noise include dwellings, hotels, schools and libraries.

4.2.1 Objective

To minimise the exposure of the public to levels of noise which are unacceptable and to ensure that new development meets minimum noise standards

4.2.2 Design and Construction Principles

The following set of generic principles should be taken into consideration in the design and construction processes.

Design Principles

- Location: ensure that development type suits development site.

  In areas where there are unavoidable high levels of noise, for example next to major highways, it may not be appropriate to build residential accommodation or schools or other types of development where people, in particular vulnerable people, will spend a substantial amount of time in the accommodation and thereby be exposed to continuous raised noise levels. If there is no other potential use for a site, then very high design criteria will be required to manage exposure to acceptable levels both in buildings and in accessible outdoor areas proximate to buildings.

- Siting and design: ensure that where there are localised and proximate sources of noise, such as from roads, buildings are designed and sited to reduce noise exposure for the building and open space users and occupants.

  Buildings themselves can be used as barriers between sources of noise and those areas where people will linger in the outside environment, such as private, communal or public gardens. Internal configuration of buildings can help reduce exposure to noise, such as locating bedrooms on the quiet side of a building.

- Mixing of land uses: establish the effect of adjacent land uses on each other.

  Consideration must be given as to the appropriateness of different land uses in close proximity and how noise arising from one might affect another. An example might be the siting of a bar, likely to be open till late at night, underneath residential accommodation, particularly with the advent of more relaxed licensing regimes. Building design needs to take this into account, both within the building to prevent transmission of noise and vibration and through building configuration to limit external transmission of noise. The building itself can be designed to reduce the exposure to noise for its occupants through, for example, using a sealed façade on the side of the building which faces onto the noise source.

- Exposure to noise within buildings: provide appropriate noise insulation given the external and internal noise environment

  In order to meet the standards for internal noise, appropriate levels of noise insulation will be required. Consideration will need to be taken of the desire of occupants to open windows for ventilation and the implications this may have for internal noise. Building services such as air intake ducting should be positioned away from sensitive windows and properties and be isolated from the structure to prevent structural noise. Particular care should be taken to avoid or attenuate fan and vent noise on the 'quiet side' of buildings.

- Noise emissions from building systems: establish the impact of new development on the noise environment.

  The choice and manner of enclosure of any building systems which may emit noise, such as on roofs, should be such that they do not contribute to increasing background noise levels. Noise mitigation should always aim to be as close to the noise source as possible, thereby minimising the wider effect of the noise and its contribution to raising background noise.

Construction Principles

- Construction noise and disruption should be minimised through good site management and operation and the specification of techniques such as the use of framed construction and pre-fabricated components.
- Construction activities should be planned to limit both the level and duration of noise, to minimise disturbance to premises and amenities in the area.
- Consultation with Borough Environmental Health Officers (EHO) is required at an early stage.

4.2.3 Standards

Essential Standards

- For developments likely to generate or be exposed to significant noise, the council will expect a Noise Impact Assessment to be provided by developers. When considering noise issues the council will have regard to advice contained in PPG24 – *Planning and Noise* about acceptable noise levels, in particular the noise exposure categories for

dwellings set out in Annex 1 PPG24. For other noise-sensitive developments the council will use the standards set out for internal noise levels in BS8233 (1999) or by National Health Service Estates and the Department for Education and Skills.

- The council expects that the adverse impacts of noise have been minimised, using measures at source or between source and receptor (including choice and location of plant or method, layout, screening and sound absorption) in preference to sound insulation at the receptor, wherever possible. Planning permissions will be refused where development gives rise to unacceptable noise levels to occupants.
- The council expects that the acoustic performance of party walls and floors between dwellings are designed to exceed the minimum requirements set out in Part E of the Building Regulations and will aim to achieve an additional noise reduction of at least 3dB for impact and airborne noise. (Performance standard taken from Ecohomes)
- The council expects that dwellings are designed and built to insulate against external noise so that the internal noise level in rooms does not exceed 30dB(A) expressed as an Leq between the hours of 11pm and 7am nor 35dB(A) expressed as an Leq between the hours of 7am and 11pm (Guidelines for Community Noise, WHO). This needs to be considered in the context of room ventilation requirements.
- The council expects that any proposed plant and machinery shall be operated so as to ensure that any noise generated is "not audible" outside the nearest residential premises. A development proposal will need to provide calculations that show that the plant noise level is 10dB(A) below the lowest background level (LA90 (15minutes)) 1m from the nearest residential window, over the proposed operating hours. Tonality and intermittency must also be taken into consideration and there is a 5 dB(A) penalty for such plant. This council also requires the plant to be installed to ensure that no perceptible noise or vibration is transmitted through the structure to adjoining premises.

4.2.4 Useful Signposts

Unitary Development Plan Policies Env12 and Env13.

Sounder City, The Mayor's Ambient Noise Strategy. GLA. 2004. This represents a particularly good reference source for understanding noise and identifying appropriate guidance and standards.

Planning Policy Guidance 24: Noise. ODPM. 1994.

BS 8233: 1999 Code of Practice for Sound Insulation and Noise Reduction for Buildings. It deals with control of noise from outside the building, noise from plant and services within it and room acoustics for non-critical situations.

BS 5228: Parts 1, 2, 3 and 5: 1997; BS 5228-4: 1992: Noise and vibration control on construction and open sites. Provides a method for predicting construction site noise and several parts are Codes of Practice under the Control of Pollution Act, 1974.

Noise and Vibration Control for HCVA, Guide B5. CIBSE. 2002 (now part of 'Heating, Ventilating, Air Conditioning and Refrigeration Guide B. CIBSE. 2005).

Noise and Vibration Control – Guide B5. CIBSE. 2002.

Sound Control of Homes. BRE/CIRIA. 1993.

BS 6472:1992 Guide to evaluation of human exposure to vibration in buildings (1 Hz to 80 Hz)

Guidelines for Community Noise. World Health Organisation. Geneva. 1999

4.3 Water Quality and Flooding (Policy Env8 Water Quality, Env9 Flood Risk Areas, Env10 Increased Flood Risk, Env12 Drainage Infrastructure)

Water is an essential environmental resource and its quality is a key determinant of the overall local environmental quality. The water environment comprises surface water and ground water, where the latter may be made up of more than one unconnected aquifer at different depths below ground.

Managing surface water flows and drainage is essential to prevent flooding and resultant damage to property and infrastructure.

4.3.1 Objective

To maintain the quality of the water environment in Barnet, avoid pollution of water and prevent or control flooding events to limit potential damage.

4.3.2 Design and Construction Principles

The following set of generic principles should be taken into consideration in the design and construction processes.

Design Principles

- Maintenance of water quality: establish impact of development on local water quality

  The key consideration is water run-off from a development which may bring with it pollutants from urban activities which may compromise the quality of the water in a river or stream. Development needs to have sufficient drainage to manage and control water run-off and appropriate interceptors to capture any potential pollutants.

- Water Management and Flood Prevention: ensure that development has been designed to reduce the risk of flooding either on the site or downstream

  Water attenuation, the provision of on-site capacity to store surface water run off, and the use of sustainable urban drainage systems (SUDS), enable better control of water during periods of peak rainfall. SUDS also allow the water table to replenish, which reduces risk of subsidence. SUDS include:

  - Pervious pavements - permeable concrete blocks, crushed stone, asphalt or other surfacing allows water to infiltrate directly into the subsoil, or be stored in an underground reservoir (e.g. crushed stone layer) before soaking into the ground.
  - Swales and basins - provide temporary storage for storm water, reduce peak flows to receiving waters and can be created as landscape features within a site.
  - Ponds and wetlands - enhance flood storage capacity, enable high levels of filtering through plants and algae and also offer the potential to recycle grey water. Ponds and wetlands can be fed by swales, filter drains or piped systems.
  - Infiltration trenches, basins and filter drains - Infiltration trenches are stone filled reservoirs where stormwater run-off is diverted. Water gradually infiltrates the ground from the trench.
  - Green roofs - the plants and their growing medium (substrate) provides temporary storage of storm water. Significantly less water will flow from the roof and more slowly due to absorption by the substrate, and through evaporation and evapotranspiration from the substrate and plant surfaces.

Construction Principles

- Good site management is essential to prevent run off during construction activities which may pollute local water courses.

4.3.3 Standards

Essential Standards

- The council expects that all new development must provide the council with information on the known flood risk potential of the planning application site according to the Environment Agency's Flood Risk Map of the UK (www.environment-agency.gov.uk/subjects/flood)
- The council expects that all new development includes SUDS. These shall only not be used where it is shown, or has been advised by the Environment Agency, that it would be detrimental to do so – for example where there is contaminated ground or local flooding risk requires reduced rainwater attenuation.
- The council expects that all Major and Large Scale developments, particularly any development which has a significant area of hard-standing, must achieve 50% attenuation of the undeveloped site's surface water run off at peak times.
- All suburban residential front gardens should have appropriate porous material or natural earth and planting wherever front forecourt parking is introduced. By preference, the loss of naturally vegetated front gardens and lawns in place of hard standings should be revisited. Where formal planning permission is required for forecourt parking, permission will be resisted where such design features are not incorporated and which give rise to unsustainable development outcomes.

4.3.4 Useful Signposts

Managing Flood Risk at www.environment-agency.gov.uk/subjects/flood

Sustainable Water Management and Land Use Planning. CIRIA.

A Toolkit for Delivering Water Management Climate Change Adaptation through the Planning System. EA/SEERA. March 2005.

Planning Policy Guidance 25: Development and Flood Risk Appendix E – Sustainable Drainage Systems. ODPM. July 2001.

Flood Risk Assessment Guidance for New Development. HR Wallingford. August 2004.

Development and Flood Risk – Guidance for the Construction Industry (C624)

Design Guidance Note No. 3, The Construction of Hard-standings and Vehicular Crossovers, LBB.

4.4 Biodiversity and Habitat Quality (UDP Policy D11 Landscaping to D14 Important Hedgerows)

The natural ecological environment is both a good indicator of a healthy environment to live in and provides natural resources to the urban system, such as shading and reducing the heat island effect. It is important to protect natural habitats and encourage more plant and animal life to blend with the built environment in ways that mutually support each other. Barnet's green areas cover a third of the geographical area of the borough and represent an important recreational resource for the Borough's growing population. Such open spaces are the 'green lungs' of Barnet as more development takes place. In line with the 'Protection' strand of the Three Strands Approach, all such open spaces will be strongly protected from development.

4.4.1 Objective

To protect and enhance the natural ecological environment, maintain biodiversity at natural levels and harness the benefits from healthy local habitats.

4.4.2 Design and Construction Principles

The following set of generic principles should be taken into consideration in the design and construction processes.

Design Principles

- Preservation or Replacement of Natural Environmental Features: ensure that the design preserves or replaces ecological resources.

  Almost all development sites will have some existing or potential value as wildlife habitat. Site design and landscaping should include an assessment of existing wildlife habitats, and seek to preserve existing habitats and features or, if not possible, to replace these with native species of plants that can evolve into a locally sustainable habitat. Existing mature trees could be incorporated into designs rather than being felled.

- Green Corridors or Green Chains: establish the site's contribution to a green corridor or chain

  Green corridors or chains create landscape networks which help protect the biodiversity of the urban environment. Green corridors can be anything from a hedge or a line of gardens through to a disused railway line or a formal park. In cases where a site connects to or contributes to any green corridors an assessment should be made at the outset. The layout of landscaping and buildings within a site should seek to preserve or enhance the existing green corridor. Design should also consider the creation of quiet undisturbed areas for wildlife.

- Green roofs and green façades: ensure that the built form of the development can contribute to the ecological environment

  Any building or built structure has the potential to be adapted to support biodiversity; in turn buildings can benefit through better environmental performance. Green roofs and façades can help to attenuate water run off, reduce the urban heat island effect and reduce solar heating of a building.

- Low maintenance indigenous landscaping: ensure that landscaping is designed with long-term estate management in mind

  Unless there are particular design criteria, it is generally better to seek to design landscapes and choose plants which require low levels of water and are low maintenance, as long as they are natural to the typical biodiversity of the area. This enables the appearance and amenity of the environment to remain high in low rainfall years and in circumstances where there are fewer resources available for active maintenance and management.

Construction Principles

- Good site management. Good site management is essential to ensure that no pollution incidents occur and to prevent harm to the surrounding environment from demolition and construction activities

- Preservation of Important Features. Where a site has existing trees, hedges, topsoil, log piles or other valuable habitat features, which can be included within the final development design, then these should be properly preserved where practical during the construction phase.

4.4.3 Standards

Essential Standards

- The council expects that every new development, even house extensions, must include proposals which will contribute to protection and improvement of the natural environment – at a level of detail appropriate to the planning application in question. All planning applications should include a statement, and if appropriate supporting plans, to show how consideration has been given to meeting this environmental design objective. In the case of house extensions and small scale development, this may simply be to show how loss of garden area will be mitigated through, for example, planting of a tree or placing new plantings around the extended building.
- The council expects that applicants for Major or Large Scale developments should undertake to have a suitably qualified ecologist to prepare an ecological appraisal of the proposals. Such appraisal should include ecological survey data, with both desk and field studies carried out at an appropriate time of year. The ecological appraisal should provide recommendations on protection, mitigation, enhancement and management of biodiversity on the site (both in the design of the buildings and the landscaping elements). Special attention should be given to assessing the impact on nearby protected species. Such appraisal should be provided to a level of detail commensurate with the scale and likely impact of the development.
- The council expects that Major and Large Scale Masterplanned developments must commit to the preparation of an Ecological Management Plan to be agreed with the council prior to the commencement of any demolition or construction activity.
- All new developments with flat roofs should include design proposals for a green roof, except where the Local Planning Authority deems them unnecessary or unachievable. Buildings which are directly bordered by landscaped areas should include proposals for green façades.

4.4.4 Useful Signposts

Green Roofs are vegetated roofs, or roofs with vegetated spaces. They are also referred to as eco-roofs and roof gardens. Green walls are essentially a living, and therefore self-regenerating, cladding system using climbing plants. See www.livingroofs.org for further information on green roofs and green facades.

Biodiversity by Design, TCPA

Planning for Biodiversity and Geological Conservation, RTPI

Design for Biodiversity, LDA

4.5 Lighting and Light Pollution (UDP Policy Env6 Light Pollution and L20 Floodlighting of Sports Facilities)

The availability of daylight and sunlight to users and occupants of buildings is strongly influenced by design and contributes significantly to the quality of life.

Artificial lighting schemes can affect amenity due to glare and light spillage, their visual impact in the daytime and increased disturbance from noise due to extending hours of activity into the evening. Developments built with lighting at night can increase their visual impact and the light may also adversely affect previously dark landscapes, and have a detrimental effect on wildlife such as the breeding habitats of certain species of birds.

Appropriate lighting can also have beneficial effects such as enabling evening activity, increasing safety and security and advertising or exhibiting particular buildings or landscape features.

4.5.1 Objective

To ensure that new development has sufficient access to daylight and sunlight and to minimise any adverse impact of lighting schemes through design or technological solutions or by controlling the hours of use.

4.5.2 Design and Construction Principles

The following set of generic principles should be taken into consideration in the design and construction processes.

Design Principles

- Sunlighting/Daylighting: ensure that the design takes into account levels of daylight and sunlight that will penetrate into occupied spaces as measured by Vertical Sky Component (VSC) and the Average Daylight Factor (ADF).

  The VSC represents the amount of light available on the outside plane of the window as a ratio of the amount of total unobstructed sky viewable following the introduction of visible barriers, such as new buildings. The ADF is a more complex measurement, which takes into account the VSC, the window size, number of windows available in a room, the room size, the room use and layout and the room surface reflectance.

- Light Pollution: ensure that the design minimises adverse impacts from the lighting of a building or external areas.

  Light pollution is defined as being any light emitting from artificial sources into spaces where this light would be unwanted, such as spillage of electric light from office buildings onto streets or into residential accommodation such as bedrooms where this would cause inconvenience to their occupants. Technological solutions to control the effect of new lighting may include the type of lighting used to control the distribution of light and minimise glare. Design solutions could include screening, shielding, reducing lantern mounting heights and minimising glare.

Construction Principles

- When it is essential for certain construction activities to take place at night, lighting needs to be sufficient for safety purposes, but should be set up in a way that any potential nuisance to nearby residential properties is minimised.

4.5.3 Standards

Essential Standards

- The council expects that all new development must be designed to accord with the BRE "Site Layout: Planning for Sunlight and Daylight: a Guide to Good Practice" and all new buildings must be designed according to the guidance in British Standard BS8206: Part II and the Applications Manual: Daylighting and Window Design – Lighting Guide LG10 (1999) of the Chartered Institute of Buildings Services Engineers.
- The council will expect, dependent upon site circumstances, the submission of a full lighting assessment of existing and new residential property to confirm that appropriate lighting standards have been achieved in both new and existing properties.
- The council expects that all external lighting is designed to minimise light pollution to the sky. New development should take into account neighbouring properties to ensure that nuisance will not be caused from lighting during the night-time hours of midnight to 6am. Wherever new non-residential premises are proposed besides new or existing residential accommodation then the council will require demonstration that design and management measures will be adopted to prevent light pollution.

- The council, when considering lighting schemes, will apply the recommendations laid down by the DETR, the Institute of Lighting Engineers (ILE) and the Chartered Institute of Building Service Engineers (CIBE).

4.5.4 Useful Signposts

Guidance Notes for the Reduction of Light Pollution. Institution of Lighting Engineers. 2000.

Guidance notes for the reduction of obtrusive light, GN01. Institution of Lighting Engineers. 2005.

Lighting in the Countryside: Towards good practice. DETR & Countryside Commission. 2001.

4.6 Microclimate - Wind and Thermal Conditions (London Plan Policy 4B.9 – Large-scale Buildings – design and impact)

This applies to the public realm and outdoor spaces. The massing and configuration of buildings can have a significant localised effect on the local climatic conditions, funnelling wind or creating sun-traps. When designed well, the outdoor spaces within the built environment can be made much more conducive to people for a greater part of the year than the natural weather patterns would normally permit. If designed poorly, external spaces can be made hostile for all but the most active of uses or benign weather conditions.

4.6.1 Objective

To improve the microclimatic conditions of the urban environment and wherever possible ensure that these meet acceptable comfort standards.

4.6.2 Design and Construction Principles

The following set of generic principles should be taken into consideration in the design process

- **Wind - ensure that** potential levels of wind strength around the base of a building and on balconies and roof gardens has been taken into consideration in the design

  The acceptability of windy conditions is subjective and depends on factors such as wind strengths of the general environment, normal clothing for the time of year, air temperature, humidity and sunshine. A person's reaction to their environment depends upon what that person is doing at the time. The Lawson Criteria for Distress and Comfort provide a set of principles to follow in terms of acceptable wind conditions for different types of activities.

0 – 4m/s	Long term sitting	Reading a newspaper, eating or drinking
4 – 6m/s	Standing or short term sitting	Appropriate for bus stops, window shopping and building entrances
6 – 8m/s	Walking and strolling	General areas of walking and sightseeing
8 – 10m/s	Business walking	Local areas around tall buildings where people are not likely to linger

A building might be expected to have adverse impacts if it is significantly taller than adjacent properties or is part of a small cluster of tall buildings or stands alone within the landscape.

- Thermal Conditions: ensure that the potential influence of buildings and their configuration on thermal conditions has been taken into consideration in the design of outdoor spaces and internal glazed spaces

  South facing enclosed or semi-enclosed areas can trap the sun and create pleasant conditions, when the ambient temperature is cool or even cold. But such locations can also be unbearably hot in mid-summer if there is no means for providing extra shading. In mid-summer locations with wide expanses of tarmac, for example, can be excessively hot and contribute to raising the urban heat island effect.

4.6.3 Essential Standards

- The council expects that all pedestrian public and communal outdoor spaces are designed using the Lawson Criteria for Distress and Comfort as a guide to the appropriate level of amenity that needs to be achieved.
- The council expects that when new public realm is proposed or where new buildings may adversely affect the comfort of existing public realm, developers must demonstrate that appropriate comfort levels can be achieved for the expected use of those areas through computer modelling or, at the council's discretion, wind tunnel testing.
- The council expects that outdoor locations which might reasonably be expected to form sun-traps due to orientation and degree of enclosure should be accompanied by proposals for appropriate shading, whether temporary or permanent.
- The council expects that all new areas of extensive hard-surface, such as car parks, must include measures for shading, which should include tree planting.

4.7 Pollution Prevention (UDP Policy Env15 Notifiable Installations , GEA Environmental Impact)

To maintain the quality of the environment within Barnet, it is essential that good standards of environmental management are maintained to prevent nuisance or the potential for harm to natural environmental systems.

4.7.1 Objective

To prevent pollution incidents and manage any emissions to the environment.

4.7.2 Design and Construction Principles

The following set of generic principles should be taken into consideration in the design and construction processes.

- Pollution prevention: Ensure that good environmental management practices are implemented.

  Construction sites and industrial activities can set up environmental management systems which can be accredited through the BS7750 or ISO14001 standards. Setting up such management systems and seeking accreditation is not complicated if done at the outset of a construction project or industrial activity. Achieving accreditation for an environmental management system does not require commitment to any particular standards, but does require a company to commit to a strategy of continuous improvement in environmental management, to have pollution prevention procedures in place and to monitor performance.

Smaller construction sites can achieve good management by preparing and implementing a site environmental plan, which does not need to be accredited. Such Plans should as a minimum address the following issues: water, waste, noise and vibration, dust, emissions and odours, ground contamination, wildlife and features and archaeology.

4.7.3 Standards

Essential Standards

- All Large Scale Masterplanned developments must prepare and implement an accredited site environmental management system prior to commencement of demolition and construction activities.
- All developments with the exception of Householder Developments should prepare and implement a Site Environmental Plan, unless they are obliged to prepare a full environmental management system.
- All new industrial activities must set up and maintain accredited environmental management systems.
- For Major and Large Scale Masterplanned developments a code of construction practice must be prepared and signed off by the council prior to commencement of any demolition or construction activities on site.

4.7.4 Useful Signposts

BS7750 is a specification for an environmental management system.

ISO14001 is an equivalent specification for an environmental management system.

Environmental Good Practice on Site, CIRIA provides guidance on preparation of Site Environmental Plans.

5 Design Guidance to achieve "prudent use of natural resources"

Given increasing concerns over climate change and the need for the planning system to achieve sustainable development as its core purpose (PPS1), it is a requirement of national planning policy that new development should contribute to reducing the level of resource consumption by our society and economy. Resource consumption may represent the direct use of a limited natural resource, such as water, or the generation of a waste, for which there is only a limited absorption capacity in the wider environment.

All the factors addressed in this Section have wider or further removed environmental impacts than just in Barnet. The implications of not meeting these objectives may not be felt within Barnet or for many years to come. But they all represent important issues to be addressed in design, where new development within Barnet must seek to be resource efficient and wherever possible enable the community and economy within Barnet to be more prudent in their use of resources.

The issues considered in this Section are:

- Energy consumption through transportation
- Energy consumption through the use and occupation of buildings
- Water consumption
- Waste generation
- Use of materials, other than water and energy.

5.1 Energy Strategy – Transport (UDP Policy GLoc Reducing the Needs to Travel, GNonCar Sustainable Transport)

A significant proportion of the energy consumption within Barnet is through transport. This can be reduced over time by making mobility of the community more efficient. This can be achieved through greater use of public transport, balanced against the use of private motor vehicles. The degree to which this will take place relates to the accessibility of public transport, the mix of communities and land uses and the density of development. Development of an appropriate mix and density ensures more viable public transport, making it easier for people to walk to public transport stops and stations.

5.1.1 Objective

To seek to improve access to public transport through encouraging appropriate location of development with a good mix of uses at appropriate densities for public transport to be viable.

5.1.2 Design and Construction Principles

The following set of generic principles should be taken into consideration in the design and construction processes

Design Principles

- Traffic generation: Ensure that any traffic generation has minimal impact

  There are a variety of measures which can be adopted in the design or development strategy to seek to minimise traffic generation. First is to consider whether the location is appropriate for the proposed development. Once the location is fixed, mitigation measures may include provision of a dedicated bus or contributions towards bus infrastructure or a committed travel plan to find ways to promote alternative means of travel.

- Public transport: ensure development promotes greater use of modes of travel other than car

  Developments which require significant daily visitations by visitors, employees, shoppers, etc, should be located in places that have good public transport access in order to enable visitors to use, by a choice of transport, means of travel in addition to private vehicles.

- Density: seek appropriate density that reflects good public transport and improves viability

  Where public transport accessibility levels are good, the density of development should reflect opportunities to achieve sustainable outcomes ,in a way appropriate to the location's urban/suburban context, to take advantage of the existing public transport infrastructure.

  Where access to public transport is poor and it is desired to maintain the level of density of development and/or economic activity, then mitigation may be required. Such mitigation may include contributions towards improving public transport or improving access to public transport, or proposals for ensuring more sustainable travel patterns and travel demand of a new development through, for example, the preparation and committed implementation of a Travel Plan.

5.1.3 Standards

Essential Standards

- Within the context of the Three Strands Approach (see Table 1), the council expects planning applicants to optimise the use of land through mixing land uses to maximise development density.
- The council expects a full Transport Assessment for all Large Scale developments which will set out the expected transport requirements associated with a new development. It will show what measures can be implemented to ensure a sustainable modal shift towards greater use of public transport, and walking and cycling
- The council expects all Major and Large Scale development proposals to be accompanied by a Travel Plan.
- The number of car parking spaces should be minimised in the context of the council requirements (the adopted UDP/relevant planning briefs/Area Action Plans etc.) and adequate cycle parking and storage should be provided.
- For the council's monitoring purposes, all new Major and Large Scale development should provide an estimate of the annual carbon dioxide emissions expected to arise from transport to and from the new development.

5.1.4 Useful Signposts

London Borough of Barnet UDP.

The Department for Transport provides guidance on the preparation of travel plans for different types of development (www.dft.gov.uk).

The London Borough of Barnet provides further guidance on contributions towards transport infrastructure in its Supplementary Planning Document on Planning Contributions.

5.2 Energy Strategy – Buildings (UDP Policy Env1 Efficient Energy Production, Env2 Energy Efficient Design)

Energy used in Barnet is derived mainly from fossil fuels (coal, oil and gas). It is used to heat homes, to power transport systems and in commercial and industrial processes. The

production of energy by the combustion of fossil fuels not only depletes finite resources but also leads to a number of environmental impacts, such as climate change.

5.2.1 Objective

To minimise the consumption of non-renewable energy sources and associated carbon dioxide emissions by buildings and from the occupation of buildings.

5.2.2 Design and Construction Principles

The following set of generic principles should be taken into consideration in the design process.

The London Plan sets out an energy hierarchy which identifies the key principles which should guide the design of new development. This should lead a planning applicant to consider the following:

- Be Lean - Using less energy: ensure that the buildings within the development are as energy efficient as technically possible and commercially feasible

  A few key considerations to achieve greater energy efficiency are:

  - » Building Orientation and Solar Shading can be used expeditiously to prevent a building from overheating during the middle of the day. Conversely, design and orientation can be used to generate passive solar gain, to reduce the need for heating.
  - » High standards of insulation are essential to reduce the amount of energy required to maintain warmth or coolness of a building to comfortable levels. It is important to consider the potential for, and prevent, thermal bridging within the building structure, which will compromise the insulation of the building.
  - » Ventilation is essential to maintain comfort for occupants and can be provided through natural or active ventilation. It should be noted that well-designed active ventilation combined with heat or cool recovery can, if managed and operated correctly, consume less energy than an equivalent natural system without any heat or cool recovery.
  - » Good building design can reduce the heating and cooling loads required and, in the UK climate, can mean that air conditioning is not necessary.
  - » Thermal mass, which represents the ability of materials to store heat or cool, is important as a means to control the building temperature and better manage day/night fluctuations.
  - » Efficient lighting and appliances will reduce energy consumption by occupants.
  - » Direct electrical generation of heating and cooling should be avoided because of its high carbon intensity.
  - » As a rule of thumb, the most commercial route to delivering the Essential Standard below on renewable energy is likely to require around a 20% efficiency saving against Part L 2006.

- Be Green - Using renewable energy: ensure that opportunities are harnessed for deriving renewable energy from the local environment around the buildings

  The principal renewable energy technologies likely to be appropriate are:

  - » Solar Water Heating is a system for heating water using energy from the sun. Solar energy is collected by a roof panel, which is connected by pipes to a hot water storage cylinder.
  - » Photovoltaics (PVs) are panels which convert solar energy into electricity. PVs can be placed on the roof of a building or incorporated into the façade.
  - » Heat Pumps are devices which transfer heat energy from one place to another and from a lower to a higher temperature. A ground sourced heat pump (or cooling

system) recovers the heat (or cool) in the ground by circulating a fluid through a long buried pipe. An open loop variation can also be used, where water in the ground is extracted and then discharged. The latter provides significantly more cooling capacity but will require an extraction licence from the Environment Agency. The degree of benefit that can be derived from such technologies depends upon the selected internal building systems for heating and cooling.

  - » Wind turbines convert wind energy into electricity. As a general rule, the larger the turbine the more effective it is.
  - » Biomass is a collective term for all plant and animal material. A number of different forms of biomass can be burned or digested to produce energy. Examples include wood and straw.

- Be Clean - Supply energy efficiently: ensure that all opportunities are taken for local generation and microgeneration of energy and recycling of heat and cool

  Some of the more efficient ways of generating energy locally are:

  - » Combined Heat and Power (CHP) and Combined Cooling, Heat and Power (CCHP) are technologies which use gas or another fuel, such as biomass, to generate electricity. This process inevitably gives off heat which is then used directly to heat buildings or produce cooling through the use of absorption chillers. CHP can be used on building by building basis (known as micro-CHP) or to power community district heating systems. CCHP is only currently viable for large district systems and is more appropriate in mixed used developments.
  - » Centralised Boilers can power heating and cooling systems within a building and are more efficient than individual boilers provided in each residential unit.
  - » If on-site generation is not practical or feasible, then consideration may be given to future-proofing the infrastructure and building systems so as to connect into a future district system located on a proximate site.

5.2.3 Standards

Essential Standards

- The council expects all detailed planning applications and reserved matters applications (of all scales) to demonstrate how Part L of the Building Regulations (2006) could be achieved for the development. The planning applicant should include with the application a schedule of design and energy efficiency measures to be implemented.
- The council expects all Major and Large Scale developments to provide a Carbon Reduction Strategy in support of planning applications. This Strategy must show how the development will deliver a minimum of 20% reduction in carbon emissions from total energy needs (heat, cooling and power) of the development through on-site generation of renewable energy. A Carbon Reduction Strategy should include the following:

  1. Provide a Building Regulations Part L 2006 Assessment to confirm minimum compliance with Part L requirements. This will provide the baseline building annual carbon emissions, relating to heating, cooling and lighting of the building.
  2. Total Carbon Emissions for occupation of the building should be estimated drawing on the Part L assessment and including any other power usage not included in Part L (for example, but not limited to, electricity usage by occupants and external lighting).
  3. Energy Efficiency Measures should be identified to further reduce the carbon emissions.
  4. Local energy generation, such as CHP or community heating, should be assessed for feasibility to enable further reductions in carbon emissions
  5. Identify renewable energy technologies that can be provided on-site which can lead to a minimum further 10% reduction in carbon emissions

6. An Appendix to the Carbon Reduction Strategy must provide a full specification of the design features and carbon reduction measures which will be included in the building(s) and to which applicants will be conditioned.

- All residential units, for all scales of development bar household extensions, to include solar water heating, unless served by CHP.
- All lighting in any development, internal and external, must be provided through low energy lighting only.
- Residential cooling to be provided from renewable energy sources only
- All multiple-unit and mixed-use schemes to use centralised heating (and where applicable cooling) systems and shall not be 'all electric', unless it can be proven by the planning applicant that their complete design will emit less carbon than an equivalent centralised scheme.

Preferred Standards

- All residential development for sale should be signed up to Green Tariffs in the first instance. Green Tariffs are now provided by most electricity providers and reflect energy supplies where a proportion of the supply notionally arises from renewable energy sources and profit is invested in more renewable energy infrastructure.
- All residential units for sale should be fitted with A rated white goods only.

5.2.4 Useful Signposts

Renewables Toolkit, GLA

Energy Efficiency Standards for New Housing. EST.

Towards Zero Carbon Developments. GLA. 2006.

Creative Environmental Networks – www.cen.org.uk/REAL/developer.asp

5.3 Water Strategy (UDP Policy Env8 Water Quality)

Water is a precious resource, which due to climate change may become less available. It is essential that new development seeks to be efficient in the use of water, seeking wherever possible to reduce consumption. The main areas of water consumption in new developments are:

- Water consumed within buildings for the purposes of drinking, washing and flushing toilets
- Water use for watering plants, irrigating landscaping and washing cars.

5.3.1 Objective

To minimise consumption of water.

5.3.2 Design and Construction Principles

- Water consumption: explore opportunities to reduce consumption of water by buildings, landscape and occupants

  Designs should seek to ensure that only as much water as is needed is used. There are a variety of techniques and technologies which include the fitting of water efficient toilets, taps, showers, dishwashers and washing machines.

  In addition to this, simple measures can be put in place which enable storage of rainwater for plant watering on site and which thereby reduce consumption of treated water from the mains system. Landscaping should be designed so that it does not need

regular watering and can survive with the local rainfall. Where any external watering is still required, then water butts, collecting water from roofs, should be installed.

Systems are also available for localised recycling of water, such as using shower water to flush toilets (these are known as grey water systems).

5.3.3 Standards

Essential Standards

- The council expects that residential developments are designed to achieve average water use in new dwellings of less than 40m^3 per bedspace per year (approx. 110 litres/head/day). This should be calculated according to the same methodology used in Ecohomes. Planning applications should provide a schedule of the measures to be included in a development to achieve this standard.
- The council requires that in development proposals where there are insufficient measures to meet the above standard, then a feasibility study should be provided on the potential to incorporate grey water recycling. If proven feasible, such a system should be committed in the designs.
- The council expects that all new development, including house extensions, must include provision of water butts or equivalent techniques for rainwater harvesting for use in gardens and landscaping, unless it can be shown that these are inappropriate. The Local Planning Authority will use controls on approved plans and planning obligations to achieve this.
- The council requires all new development to include water meters.
- The council expects that proposals for hotels and offices, should demonstrate that water consumption is 'below average' against the benchmarks provided by CIRIA (see reference). The BREEAM water calculator should be used for estimating the design performance.

5.3.4 Useful Signposts

KPIs for water use in hotels and offices, CIRIA

Conserving Water in Buildings, Fact Sheets, Environment Agency

5.4 Waste Strategy (UDP Policy GWaste Waste Disposal, Env4 Recycling Facilities)

There is an ever-increasing need to reduce waste generation and to recycle wherever possible. Waste generation through development arises on three principal accounts:

- waste during the construction process
- waste generated through occupation of buildings
- waste arising from refurbishment and/or demolition of buildings

5.4.1 Objective

To continually reduce the waste generated through construction, refurbishment and demolition activities and to reduce waste and encourage recycling during the occupation of buildings.

5.4.2 Design and Construction Principles

The council has agreed a Waste Prevention Strategy and Waste Strategy to deal with waste management in the borough up to 2020. There are policies on the control of waste through planning in the UDP, and as part of the LDF the council is engaged, with six other London

boroughs, in preparing a joint waste development plan for North London. The following requirements are consistent with these strategies:

- Reduce the amount of waste produced in Barnet;
- Make the best use of waste that is produced; and
- Choose waste management options which minimise the risk of immediate and future environmental pollution and harm to human health.

Design Principles

- Waste generated through building occupation: identify measures to help occupants to recycle waste

  As a general rule, people will recycle when it is easy for them to do so. In terms of design of buildings, this requires consideration to be given as to how people living and working in those buildings will be able to participate in council promoted recycling initiatives. Key considerations include:

  » Ensuring that sufficient space is dedicated in appropriate places including within and without residential properties for the temporary storage of material to be recycled. For example, space should be provided within kitchens in new properties to accommodate extra bins which are required for separately storing bottles, paper, cans and other materials for recycling.
  » Ensuring that It is as easy as possible for people to transfer material for recycling from their own premises, whether a residential unit, a shop or an office, to a location from which the material can be collected.

  Early consultation with the council's Environment and Transport, and Planning and Environmental Protection, departments is recommended to ascertain the waste strategy towards recycling of household waste (see references).

- Material Specification. Consideration should be given during the design process and through material specification as to what will ultimately happen to materials given their durability and recyclability. Where possible, building components should be designed for re-use, recycling and deconstruction.

Construction Principles

- Construction Waste: ensure that measures have been taken to minimise waste generated during building construction

  The following issues should be considered during design development and in preparation for construction:

  » Identify resources already on the site, such as top soil or hardcore, which can be put to useful effect in the new development.
  » Good practice in terms of waste management should be employed including monitoring of waste streams to meet the above objectives.
  » Every opportunity should be taken to recycle materials or send waste materials to waste recovery centres to meet the above objectives.
  » Modern methods of construction, where modular building components are put together off-site, should be considered
  » Many choices in the design process have downstream impacts in terms of waste generated. In particular, opportunities should be sought to use modular designs which make use of many identical building components, but at the same time avoiding blandness in external appearance and being in keeping with the character of the local area or suburban context.

» Ensuring that measures have been taken to enable more components of a building to be recycled during refurbishment or demolition.

5.4.3 Standards

Essential Standards

- The council expects developers to consult with them on the council's strategy for waste collection and material recovery (i.e. which different types of material will be collected by the council from properties and how frequently). This should then inform them on how much storage space will be required within properties and in the communal areas of new buildings.
- The council expects a minimum internal storage capacity of 60 litres per dwelling (flats and houses) should be provided which can accommodate 3 bins, where no single bin is less than 15 litres in size. (This standard is subject to change over time, so consultation with the council is essential.)
- The council expects a minimum external storage capacity of 180 litres per dwelling should be provided for recyclable household waste, which can accommodate 3 bins where no single bin is less than 40 litres in size. For flats, applicants should demonstrate that the provision of communal storage space is large enough to cater for all dwellings allocated to the bins, based on a collection timetable that has been agreed with the council or providing a total space equivalent to 180 litres per dwelling which can accommodate separate communal recycling bins. (This standard is subject to change over time, so consultation with the council is essential.)
- The council will require that applicants proposing new housing developments with more than 500 households should provide appropriate locations for public recycling facilities, if adequate facilities do not already exist within the vicinity. Such facilities should be within walking distance of homes (200 to 300 metres). Such locations should be hard surfaced, screened and landscaped areas in safe and convenient locations, appropriate for waste generated by households. The location and design of such facilities will need to be carefully considered from a residential amenity, transport and external design perspective.
- The council requires that all non-residential developments above 1,000m2 floor area should provide a minimum of 10m2 designated waste storage space for materials for recycling, including paper, cardboard, cans, bottles and plastics.
- The council expects that Large Scale development proposals or developments that employ or attract a large number of people, such as supermarkets or industrial units, provide appropriately designed facilities for the collection for recycling or reuse of the waste that they, their customers and staff generate. Applicants for such developments should submit a comprehensive waste and recycling management strategy in accordance with the BS5906:2005 Waste Management in Buildings – Code of Practice.
- The council expects that prior to commencement of construction, all construction sites must put in place a Site Waste Management Plan in accordance with the DTI Site Waste Management Plans - Guidance for Construction Contractors & Clients - Voluntary Code of Practice

5.4.4 Useful Signposts

BS5906:2005 Waste Management in Buildings – Code of Practice

Site Waste Management Plans. DTI Code of Practice.

Demolition Protocol. ICE

Waste Prevention Strategy. London Borough of Barnet. December 2005.

Waste Strategy. London Borough of Barnet. April 2006.

Flats recycling and refuse information sheet for developers. London Borough of Barnet. October 2006.

5.5 Material Specification (no direct policy hook)

Material specification affects the long-term performance and environmental impact of a building in several ways. Key considerations include:

- Mineral extraction and refinement and the associated environmental impacts
- Impact on forestry and associated local and global climatic consequences
- Energy consumption through the extraction, refinement, manufacture and transport of materials
- Pollution generated from manufacturing processes of certain materials
- Habitat destruction from material extraction, such as peat and limestone
- Waste generated from material production
- Performance and durability of the building itself and the level of comfort achieved for occupants within the building.

5.5.1 Objective

To minimise the wider impacts associated with material selection and ensure that materials are appropriately selected for the performance required of them.

5.5.2 Design and Construction Principles

The following set of generic principles should be taken into consideration in the design process

Design Principles

- Supply Chain Environmental Impact. The whole life cycle effects associated with a wide range of different building materials can be identified as manufacturers are now frequently able to provide information on the wider environmental impacts associated with such materials. The key impacts to consider are
  - » The total energy consumption associated with manufacture and transport of the materials
  - » The toxic chemicals used and emitted during the manufacturing process
  - » The level of water consumption associated with complete manufacture
  - » The level of recycled content of the materials
  - » The degree and ease to which the product is itself recyclable.

  If the manufacturer is unable to provide such information, then it is possible to determine the life cycle impacts of a range of different types of materials from the BRE's Green Guide to Specification. If a material or specific product is not present in the BRE Green Guide, then it does not necessarily mean that it has poor environmental performance and other sources of information may need to be sought to confirm actual supply chain impacts of the material or product in question. Construction Principles In order to be efficient in the use of materials and reduce wastage, the design principle to consider is to match durability and recyclability of materials to length of expected use. Where materials are required to remain in place for a considerable time period, for example foundations and superstructure, then it is durability that is most important. If a material, for example fittings and furnishings, is likely to be replaced regularly then much greater consideration should be given to recycled content and recyclability after use.

- Material Comfort in Buildings. Within a building, materials which are more natural are likely to provide better comfort. A possible cause of sick building syndrome, where occupants of a building consistently complain of headaches and other ailments, arises from residual emissions of volatile organic compounds from man-made materials.

5.5.3 Standards

Essential Standards

- The council expects in all Major and Large Scale developments that at least 10% of the total value of materials used should derive from recycled and reused content in the products and materials selected.
- The council expects all developers to commit that they will only specify materials correlating to the BRE Green Guide to Specification rating B and above. Where a developer wishes to specify materials with a higher environmental impact, or materials or products not included in the BRE Green Guide to Specification, then they must provide justification.
- The council expects that all timber used within Barnet must be certified to have been sourced from sustainably managed forests, through a recognised accreditation scheme such as the Forest Stewardship Council (FSC). Where timber will be used within construction, then the council will want to see confirmation of appropriate certification prior to the relevant stage of construction.

5.4.4 Useful Signposts

Opportunities to use recycled materials in building, Reference Guide, WRAP

Choosing Construction Products: Recycled Content of Mainstream Products, WRAP

Recycled Content Toolkit, WRAP

Green Guide to Specification, 3rd Edition 2002, BRE

Forest Stewardship Council - www.fsc.org

6 Generic Environmental Standards

In addition to the guidance and minimum standards set out in Sections 4 and 5, in order to ensure that new development within Barnet meets sufficiently high environmental standards, the council has identified certain generic, cross-cutting environmental standards, some of which can be externally verified and certified. These requirements apply only to Minor, Major and Large Scale developments as it is recognised that it would be too onerous to expect Householder Developments to meet these additional standards. However, separate Design Guidance Notes covering small householder/residential alterations and extensions will be developed where appropriate to improve the sustainability of Barnet's existing housing stock and of incrementally intensified homes.

The standards which the council has identified are as follows:

- Adapting to Climate Change: a checklist for development
- BREEAM and Ecohomes (these may evolve into the Code for Sustainable Homes during the lifespan of this SPD)
- Considerate Constructors Scheme

6.1 Adapting to Climate Change

As buildings generally have an expected lifetime of between 20 and 100 years, thinking about climate change today, when planning new developments for tomorrow, will help to ensure a lasting legacy in the building stock. Buildings and their locations could all be adversely affected by climate change, including their structural integrity, external fabric, internal environment, service infrastructure, and suitability for use in a changed climate. Adapting to climate change affects a broad cross-section of environmental design parameters. This involves designing buildings to keep to an absolute minimum their adverse impact on the climate, while also building in adaptability to changing climatic conditions.

Adapting to Climate Change: a checklist for development [4] provides detailed guidance on how to achieve urban and building designs which can adapt to the likely future climatic scenarios. The principal anticipated impacts of climate change in London are:

- Warmer, wetter winters
- Hotter, drier summers
- Extreme rainfall events may happen twice as often by the 2080s
- Rising sea levels
- Possible intensification of the urban heat island effect
- Possible higher wind speeds

Buildings and urban designs need to take these potential future scenarios into consideration in order to ensure that buildings do not become unusable. Furthermore urban designs must ensure that the consequences of potential events (such as extreme rainfall) are not exacerbated (such as leading to localised flooding).

Adapting to Climate Change sets out the key design parameters that influence the ability for a building or urban area to adapt to climate change. These are location, site layout, structure, physical envelope and ventilation of a building, drainage, water efficiency and the design of outdoor spaces.

[4] Adapting to Climate Change: a Checklist for Development: (www.london.gov.uk/climatechangepartnership/docs/adapting_to_climate_change.pdf)

The Adapting to Climate Change: a checklist for development provides a simple checklist to be completed. This Checklist must be completed and attached to all planning applications for Minor, Major and Large Scale Masterplanned developments.

Reference: Adapting to Climate Change: a checklist for development, London Climate Change Partnership.

6.2 BREEAM and Ecohomes

BREEAM (Offices), BREEAM (Retail) and Ecohomes represent the suite of environmental assessment schemes that are nationally managed by the Building Research Establishment. These schemes have now achieved widespread recognition with a substantial proportion of new development seeking accreditation. The Housing Corporation now requires that all new housing which is supported by grant funding must achieve a minimum of Ecohomes (Very Good) rating. The proposed Code for Sustainable Buildings or Homes, which is expected to be launched by the Government within the next year, is expected to be based on the existing BREEAM and Ecohomes schemes.

Barnet's minimum standard for all new development within the Borough is to achieve a Very Good rating according to the relevant assessment procedure for the development type proposed, whether residential, office, retail or hotel. However, the emerging LDF will seek Excellent ratings in all new developments. Where no formal assessment process exists for the particular development type, Barnet expects a developer to have liaised with the Building Research Establishment to identify appropriate equivalent standards for that land use.

In locations which are within 500m (via a safe walking route) of a public transport node providing a service to a local centre, town, city or a major public transport node (according to the Ecohome assessment approach), then Barnet requires developments to achieve an Excellent rating. If this is not attained, the onus will be on the planning applicant to justify why an Excellent rating is not achievable – such reasons will have to be robust in planning policy and sustainability terms.

Exceptions to these minimum standards will be allowed in cases of buildings in conservation areas and refurbishments, but only when a planning applicant can show that it is not practical or commercially viable to achieve the minimum standards, or would result in adverse effects which harm the character or appearance of the historic environment. The council will not expect those applying for minor residential extensions to seek certification under Ecohomes, although in major refurbishments and household extensions, such ratings will strongly be encouraged and supported.

When the Government launches the national Code for Sustainable Homes or Buildings, then the council will determine what level in the Code is equivalent to the existing Very Good and Excellent ratings in BREEAM and Ecohomes. An applicant will then be able to choose whether to seek accreditation under BREEAM, Ecohomes and/or the Code for Sustainable Homes/Buildings.

Reference: Code for Sustainable Homes, DCLG

6.3 Considerate Constructors Scheme

The Considerate Constructors Scheme is a national initiative to improve the management of construction sites and minimise nuisance caused to neighbours and the general public.

Barnet will require a commitment from all developers for any developments greater in size than 10 individual dwellings or 1,000m^2 to sign up to the Considerate Constructors Scheme prior to commencement of any demolition or construction activities.

Reference:

Considerate Constructors Scheme, Construction Federation

Additional useful references:

www.greenregister.org

www.sustainable-construction.org.uk

www.sustainabilityworks.org.uk

PART 3
ADDRESSING SUSTAINABILITY IN THE PLANNING PROCESS

The council considers that the design guidance and the minimum standards provided within this SPD are essential for the achievement of sustainable development within Barnet. However, the council also recognises that the design guidelines and standards that are set out within this SPD represent a step change in the level of information that is required to be submitted for all but the largest of developments. This Part therefore provides guidelines on how applicants are expected to respond to the guidance in this SPD, in particular considering what is expected for different scales of project.

7 Information requirements to support planning applications

The level of information required to support a planning application will vary depending upon the local circumstances. For example in a noisy area it will be important to demonstrate that the design and layout of the buildings helps to reduce exposure to that noise and that sufficient noise insulation has been included in designs to ensure that comfort within buildings is adequate. In contrast, in a quiet area it may be more important to demonstrate that the new development will not adversely increase local noise levels for the existing community.

Another example, when a discrete environmental investigation may be required in respect of a singular issue, is where it could be reasonably expected that a planning application site is contaminated, or existing buildings due for demolition or renovation might contain asbestos. In such instances a planning applicant will be required to set out how the site will be cleaned up safely and made safe for the future use of that land.

The level of information required to support planning applications will vary according to the scale of application. In this respect the council will only seek information as is appropriate for the application in question, to demonstrate that the new development will provide a beneficial legacy to the local environmental quality, and will have a sufficiently high environmental performance.

Where environmental impact assessments are formally required, or the council requests submission of an environmental statement in respect of a Schedule 2 development, planning applicants will be expected to demonstrate that the development proposals not only act to mitigate any environmental impacts, but that they also create a high quality environment within the boundary of the new development. When a full environmental impact assessment is not required, but a few discrete issues, such as noise and air quality, need to be assessed, the council will expect such assessments to be undertaken to the same level of detail as would be required by a formal environmental impact assessment. (UDP Policy GEA).

In relation to the wider sustainable design and construction issues addressed in this guidance, appended to this SPD are two checklists for planning applicants. The checklist in Appendix 2 applies to Householder and Minor developments, and sets out the minimum information requirements to support such developments. The checklist in Appendix 3 represents a complete summary of the expectations and standards for sustainable design that are set out in this SPD. An applicant should identify the checklist relevant to the scale of development proposed.

In the case of Major and Large scale developments the council will seek a full Sustainability Statement from a developer corresponding to the full range of issues set out in Appendix 3 together with associated local and regional planning policies.

7.1 Sustainability Statements and their role in the planning process

Sustainability Statements are becoming common place documents submitted in support of significant planning applications. There is not, however, any formal national guidance on what constitutes a Sustainability Statement when it is submitted in support of a planning application, although in the case of EIA qualifying development, Environmental Statements often incorporate sustainability considerations and impacts.

The council takes the view that Sustainability Statements are in effect Technical Planning Statements – see diagram below. A normal Planning Statement submitted with a planning application represents the advocacy statement prepared by planning consultants, setting out in their opinion why a development should gain planning permission. Sustainability

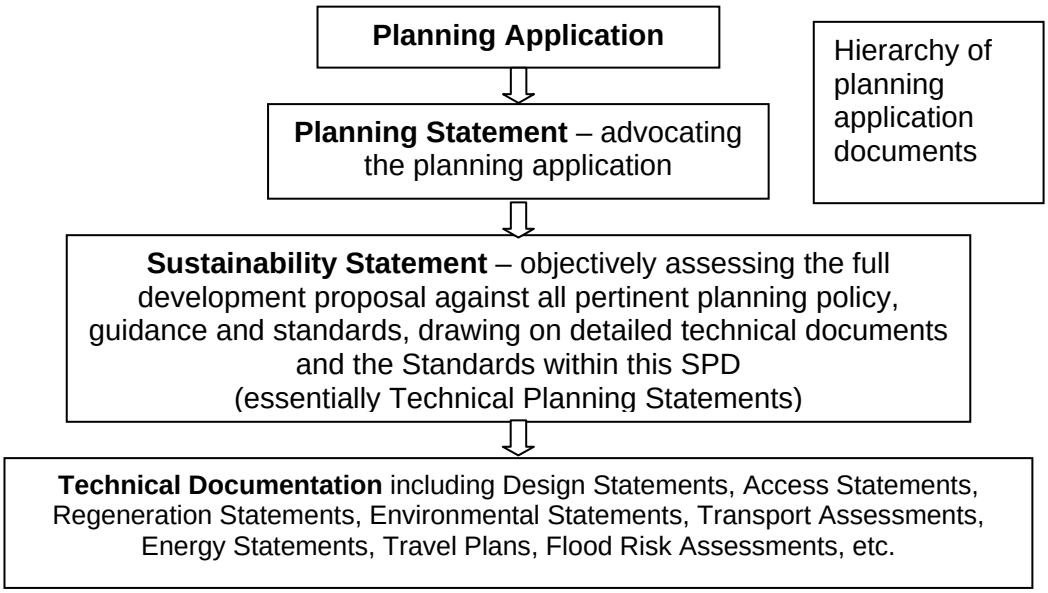
Statements, however, should represent objective (non-advocacy) reports which summarise the supporting information which is ultimately used by the Planning Statement.

In a sense Sustainability Statements can be equivalent to informal Environmental Statements (i.e. not such a formalised assessment process), but they need to cover the full breadth of design issues and planning policy and not just environmental related issues. They should seek to show how a development is designed and located to meet the interpretation of sustainable development provided in PPS1: Delivering Sustainable Development and how it will create a beneficial legacy within Barnet for future generations.

This SPD, through Sections 3, 4 and 5, provides an indication as to what the council considers to be the full remit of a Sustainability Statement. In the context of the guidance provided by the ODPM (Sustainability Appraisal of Regional Spatial Strategies and Local Development Frameworks (Nov 2005)), the council would further consider it to be good practice for a planning applicant of a Large Scale or Major development to include within the Sustainability Statement a framework and methodology for monitoring how the development will perform and achieve a set of pre-defined sustainability objectives. The applicant should then commit to putting in place the management procedures to monitor this annually through the on-going management of the subsequent estate.

When an Environmental Statement is submitted in support of an application, a Sustainability Statement should provide a summary of the conclusions in the relevant parts of the ES and seek to weigh these against the social and economic influences relevant to a particular development project. Commercial deliverability of a development is a pertinent consideration within a Sustainability Statement.

Prior to submission of a planning application, it is advisable for a planning applicant to consult with the council to agree the scope of a proposed Sustainability Statement and, importantly, agree the level of detail to which different issues within the Statement should be assessed.



7.2 Feasibility Studies and associated supporting information

In requesting feasibility studies to be undertaken, the council is asking a planning applicant to be open in his decision-making and to allow the council to understand the influences leading the applicant to make a particular proposal. Where an applicant suggests that

something is not deliverable either because of increased cost or loss of value, then justification should be provided for such claims in the context of the overall development.

The council recognises that certain design measures may have cost implications, but these are initial financial costs which offset long-term costs to the environment. However all the minimum standards set out in this SPD are considered to be design issues and are fundamental requirements of achieving more sustainable development. On this basis, costs of meeting the minimum standards will not be taken into consideration as part of total financial obligations within S106. Notwithstanding this requirement, the council still considers that because of the complexity of certain issues, such as renewable energy solutions, it may be necessary to deal with these commitments through planning obligations rather than planning conditions.

8 Consultation in the planning application process

The council encourages any person considering submitting a planning application to approach the council to discuss their development proposal informally in the first instance. It further encourages applicants to consider this guidance and use the appropriate checklists to identify what information they will be expected to provide with an application. In this respect, the checklist can be used as a means to highlight issues that may be important to the development proposal. The council's guidance notes in Pre-Application Meetings (www.barnet.gov.uk/planning-preapplication-advice) provides a summary of the other information that an applicant should bring to a pre-application meeting.

In respect of all Major and Large Scale developments, the council recommends that an applicant prepare a brief scoping paper – this should be very short and succinct. Such a scoping paper could be similar in form to the formal Environmental Scoping Report that might be presented for developments requiring a formal Environmental Statement. It should inform the council of the relevant sustainable design and construction issues, as identified throughout this SPD. The Council will consider the scoping paper and identify any additional issues that should be taken into consideration.

8.1 Community Consultation

Underpinned by the principle of proactive community involvement and resolution of potential objections the council encourages developers to undertake pre-application discussions and early community consultation. Failure to consult early may lead to objections being made which could have been avoided and be material to the determination of the application.

This principle applies to all scales of project from household extensions up to large scale complex regeneration projects. The level of consultation should be commensurate to the scale of development and anticipated level of impact that it might have on local communities and businesses. For example, a home owner might just consult with his neighbours on either side of his property, where a new Major development may need to engage with local businesses and community interests.

The council expects applicants to have financial responsibility for the costs of community involvement. Applicants are encouraged to provide the council at point of planning application with a summary of the pre-application stakeholder consultation so that it can be included as part of the decision making process. Developers who undertake pre-application community engagement are encouraged as a minimum to meet the consultation arrangements set out in the *Statement of Community Involvement*. The Council encourages the use of the Planning and Development Forum model for early discussions with local communities on larger schemes (more details of this can be obtained from the Planning and Environmental Protection Service).

A1 Minimum Residential Floor Areas

The council will encourage developers of residential development to provide floor areas in their schemes which meet or exceed the minimum sizes set out below. These guidelines arise from recent research commissioned by the GLA and supplant the original standards developed in the 1961 Parker Morris Report. Together with more recent advice contained in Department of Environment Design Bulletin Number 6, 'Space in the Home', these guidelines give planning applicants some certainty as to the council's preferred standards for new-build residential accommodation. Planning applicants will be expected to demonstrate how these standards are being met.

These standards may be up-dated from time to time, so planning applicants should confirm, with the council at time of preparing a planning application, whether the standards set out below are still valid.

The baseline residential space standards are:

1. The minimum internal dwelling area (MIDA) and the minimum floor area for the aggregate of the cooking, eating and living areas (CEL areas) should be:

	MIDA (m^2)	CEL AREAS (m^2)
1 person	37	22
2 person	44	22
3 person	57	24
4 person	67	27
5 person	81	30
6 person	92	33
7 person	105	36

(NB: cooking, eating and living (Kitchen / dining / living) areas exclude any utility area or space taken up on plan by staircases or hallways / corridors connecting these areas.)

2. The minimum floor area for bedrooms should be:
    a. Aggregate bedroom areas to be no less than $7m^2$ per single bedroom and $12m^2$ per double/twin bedroom AND
    b. Each bedroom to have a minimum internal floor area of $6.5m^2$ for a 1 person bedroom and $10m^2$ for a 2 person bedroom

    (NB1: in larger dwellings each bedroom does not have to be at least $7m^2$ or $12m^2$ floor area; the designer is free to distribute the total amount of space among the bedrooms as they see fit so long as the aggregate space equates to the minimum requirements stated AND the individual rooms meet the minimum requirement of $6.5m^2$ and $10m^2$ noted above)

    (NB2: en suite bathrooms or shower rooms do not count towards this minimum)

    (NB3: the floor space taken up by built in wardrobes in bedrooms does count towards the bedroom floor area)

3. Storage cupboards: $1m^2$ floor area for 1 person dwelling plus $0.25m^2$ per additional person.

4. Minimum room dimensions (at the narrowest / shortest point)
    a. living area: 3.2m

b. double / twin bedroom width: 2.6m
c. bedroom length: 3m
d. habitable rooms to be no longer than twice their width, or no wider than twice their depth (i.e. the ratio of 2:1 not to be exceeded)

5. "Dirty" storage, in which items such as bicycles could be kept, (internal to the dwelling or block, or external)

   a. for flats without private gardens: 1m^2
   b. for houses, bungalows and flats with private gardens for up to four people: 2.5m^2
   c. for housing, bungalows and flats with private gardens for five or more people: 3.0m^2

6. Internal play space: nothing for the first two occupants and then 2m^2 for each additional person. This is over and above the CEL.

7. External recreational space (balcony): 3m^2 for 1 person or 2 person dwellings plus 1m^2 per additional person.

A2 Checklists for Householder and Minor Developments

The following checklist identifies which minimum standards apply and which issues need to be considered for householder and minor developments.

✓ or ✗ indicates whether the issue or standard is likely to be a material consideration in determination of the planning application

	Householder Developments (house extensions and new single houses for personal occupation)	**Minor Developments** (single small office building, single small block of flats of less than 10 dwellings or one to nine houses built for sale)
Urban Design Principles (potential relevant issues)		
Character – does the development contribute to the character of the area?	✓	✓
Continuity and Enclosure – does the development clearly distinguish between public and private spaces?	✓	✓
Quality of public realm – are outdoor areas designed to sufficiently high quality?	✓	✓
Diversity – does the new development enhance the variety and choice within the local urban environment?	✓	✓
Social Influences on Design		
Is there good access to local services?	✗	✓
Is there good access to local amenity?	✗	✓
Does the development proposal address local housing need and help to foster the creation of mixed communities?	✗	✓
Does the development proposal provide for and improve the safety and inclusivity of the local urban environment? (Secured by Design principles and Lifetime Homes	✓	✓

standards must be achieved)		
Does the development respect or improve local heritage?	✓	✓
Does the development proposal itself provide a high quality environment which will promote the well-being of residents?	✓	✓
Economic Influences on Design		
Is the proposed land use genuinely appropriate for the application site?	✗	✓
Do the development proposals make efficient use of the site?	✓	✓
Is the development density appropriate?	✗	✓
Will the new development enhance the value of neighbouring properties?	✓	✓
What will be the maintenance and management costs?	✓	✓
Is an estate management strategy required?	✗	✓
Environmental Quality Design Standards		
Air Quality		
Is an air quality assessment required?	✗	At council's discretion
Has the development been designed to reduce exposure to air pollution?	✗	✓
The boiler specification must meet low emissions requirements	✓	✓
Restaurants, pubs, hotels, leisure and any building with commercial cooking facilities Where have the exhaust vents been located?	✗	✓
Noise Quality		
Is an acoustic assessment required?	✗	At council's discretion

Does the development site meet acceptable noise levels?	✓	✓
Insulation in party walls is required to meet minimum standards	✓	✓
Insulation in façade is required to ensure internal noise levels meet minimum standards	✓	✓
What measures will be taken to ensure no nuisance is caused to neighbouring properties?	✗	✓
Water Quality and Flooding		
What is the Flood Risk category of the site	✓	✓
Have SUDS been incorporated into landscaping, driveways and any hard surfacing?	✓	✓
Biodiversity		
What commitments will be made to contribute to the natural environment and biodiversity in Barnet?	✓	✓
On flat roofs, what measures have been included to make them green roofs?	✓	✓
Lighting and Light Pollution		
Is there sufficient internal daylighting and sunlighting?	✓	✓
Will the new development affect the views from any neighbouring properties?	✓	✓
Is a daylighting assessment required?	✗	at council's discretion
Will the new development overlook any other properties or gardens?	✓	✓
Is lighting provided with the new development likely to impact on any neighbouring properties?	✓	✓

Microclimate - Thermal Conditions		
Have blinds been included in the specification of any south, southeast or southwest facing conservatories of large glazed sections?	✓	✓
Will new hardsurfaced areas be sufficiently shaded?	✗	✓
Environmental Performance Standards		
Energy – transport		
Are all the parking spaces necessary?	✓	✓
Is cycle parking storage provided?	✗	✓
Energy – building		
The design must be shown to be Part L 2006 compliant	✓	✓
A Green Tariff should be selected	✗	✓
All light fittings must be low energy lighting only	✓	✓
Solar water heating must be included, unless CHP is provided	✗ for extensions ✓ for new build	✓
All white goods should be A rated	✗	✓
Is there any cooling proposed and how will this be delivered?	✓	✓
Water Efficiency		
Toilets must be dual flush (4/6 litre)	✓	✓
Showers must have nominal flow rates of less than 9 litres/minute been specified	✓	✓
Is a bath necessary?	✓	✓
Taps must be flow restricted or spray taps	✓	✓
For new build residential a water meter	✓	✓

must be included		
A rainwater collection butt (or equivalent) must be provided	✓	✓
Waste Strategy		
Has sufficient space provision been made within the property for refuse and recycling material and containers?	✓	✓
Has sufficient space provision been made outside the property for refuse and recycling material and containers?	✓	✓
Has sufficient space been provided in communal areas for refuse and recycling material and containers?	✗	✓
Materials		
All materials must be B rated or above according to the BRE Green Guide to Specification	✓	✓
All timber used must be certified to have been sourced from sustainable forests	✓	✓
Adapting to Climate Change Checklist		
Has a checklist been completed and attached to the planning application?	✗	✓
BREEAM or Ecohomes Assessment		
Has a BREEAM or Ecohomes assessment been undertaken?	✗	✓

A3 Checklist of Sustainable Design Standards for Major and Large Scale Developments

Urban Design Principles
Character – does the development contribute to or provide a place with a unique identity?
Continuity and Enclosure – does the development clearly distinguish between public and privates spaces?
Quality of the public realm – are the outdoor areas designed to a sufficiently high quality?
Ease of movement – is the development easily accessible and does it facilitate movement through the urban environment?
Legibility – does the design help to create a place that has a clear image and is easy to understand?
Adaptability – is the development adaptable to changing economic, social and environmental influences?
Diversity – does the new development enhance the variety and choice within the local urban environment?
Social Influences on Design
Is there good access to good quality services?
Is there good access to local amenity?
Does the development proposal address local housing need and help to foster the creation of mixed communities?
Does the development proposal provide for and improve the safety and inclusivity of the local urban environment? Have the standards of Secured by Design and Lifetime Homes been achieved?
Does the development respect or improve local heritage?
Does the development proposal itself provide a high quality environment which will promote the well-being of residents, workers and visitors?
Economic Influences on Design
Is the proposed land use or are the proposed mix of land uses genuinely appropriate for the planning application site?
Do the development proposals make efficient use of the site and will the new development be well integrated into the existing townscape?
Has the development density been maximised and is it appropriate for the level of public transport

accessibility to the site and can that public transport accessibility be improved?
Is a regeneration report required to address the impacts on the local economy, infrastructure and public services?
What will be the maintenance and management costs of the new development, who will be responsible and are costs appropriate to land value and economic use? Has an estate management strategy been prepared?
Environmental Quality Design Standards
Air Quality
Is an air quality assessment required?
Developments should be designed to reduce people's exposure to air pollutants
Where gas boilers are used in new buildings they must have a minimum NOx 3 rating
For restaurants or other odour emitting premises, demonstration must be provided that air extracts have been appropriately located to avoid nuisance to neighbouring buildings
Commitment is required for minimum defined standards on dust abatement and control during construction
Noise Quality
Is a noise impact assessment required?
Does the development meet the acceptable noise levels defined in PPG24 or, where relevant, BS8233?
Development proposals should demonstrate that adverse impacts of noise have been minimised
Acoustic performance of party walls and floors between dwellings must be designed to exceed the minimum requirements set out in Part E of the Building Regulations and will aim to achieve an additional noise reduction of at least 3dB for impact and airborne noise
Dwellings should be designed and built to insulate against external noise so that internal noise levels in rooms does not exceed 30dB(A) expressed as an Leq between the hours of 11pm and 7am and 35dB(A) expressed as an Leq between the hours of 7am and 11pm.
Proposed plant and machinery shall be operated so as to ensure that any noise generated is "not audible" outside the nearest residential premises (see detailed requirements in Section 4.2)
Water Quality and Flooding
All new development must provide the council with information on the known flood risk potential of the planning application site according to the Environment Agency's Flood Risk Map of the UK (www.environment-agency.gov.uk/subjects/flood)
All new development must include SUDS, unless there is a good reason supported by the Environment Agency for not doing so

All Major and Large Scale developments must achieve 50% attenuation of the undeveloped site's surface water run off at peak times
Biodiversity and Habitat Quality
Every new development must include proposals which will contribute to protection and improvement of the natural environment – at a level of detail appropriate to the planning application in question
Applicants Major or Large Scale developments should appoint a suitably qualified ecologist to prepare an ecological appraisal of the proposals
Major and Large Scale developments must commit to the preparation of an Ecological Management Plan prior to the commencement of any demolition or construction activity
All new developments with flat roofs must include design proposals for a green roof. Buildings which are directly bordered by landscaped areas should include proposals for green façades.
Lighting and Light Pollution
Sunlighting/Daylighting. All new development must be designed to accord with the BRE "Site Layout: Planning for Sunlight and Daylight: a Guide to Good Practice" and all new buildings must be designed according to the guidance in British Standard BS8206: Part II and the Applications Manual: Daylighting and Window Design – Lighting Guide LG10 (1999) of the Chartered Institute of Buildings Services Engineers.
Sunlighting/Daylighting. Depending upon the site circumstances, the council may require a full lighting assessment of existing and new residential property to confirm that appropriate lighting standards have been achieved.
External Lighting. All external lighting should be designed to minimise light pollution to the sky. New development should take into account neighbouring properties to ensure that nuisance will not be caused from lighting during the night-time hours of midnight to 6am. Wherever new non-residential premises are proposed besides new or existing residential accommodation then the council will require demonstration that design and management measures will be adopted to prevent light pollution.
Light Pollution. When considering lighting schemes the council will apply the recommendations laid down by the DETR, the Institute of Lighting Engineers (ILE) and the Chartered Institute of Building Service Engineers (CIBE).
Microclimate – Wind and Thermal Conditions
Wind. All pedestrian public and communal outdoor spaces must be designed using the Lawson Criteria for Distress and Comfort as a guide to the appropriate level of amenity that needs to be achieved.
Wind. When new areas of public realm are being proposed or where new buildings might be expected to adversely affect the comfort of existing areas of public realm, then developers must demonstrate that appropriate comfort levels can be achieved for the expected use of those areas through computer modelling or, at the council's discretion, wind tunnel testing.
Thermal Conditions. Outdoor locations which might reasonably be expected to form sun-traps due to orientation and degree of enclosure should be accompanied by proposals for appropriate shading, whether temporary or permanent.

Thermal Conditions. All new areas of extensive hard-surface, such as car parks, must include measures for shading, which should include tree planting.
Pollution Prevention
All Large Scale developments must prepare and implement an accredited site environmental management systems prior to commencement of demolition and construction activities.
All developments with the exception of Householder Developments should prepare and implement a Site Environmental Plan, unless they are obliged to prepare a full environmental management system.
All new industrial activities must set up and maintain accredited environmental management systems.
Environmental Performance Design Standards
Energy- Transport
For all Large Scale developments, a full Transport Assessment will be expected.
All Major and Large Scale development proposals should be accompanied by a Green Travel Plan.
The number of car parking spaces should be minimised and appropriate levels of cycle parking and storage should be provided.
Al new Major and Large Scale development should provide an estimate of the annual carbon dioxide emissions expected to arise from transport to and from the new development.
Energy - Buildings
All detailed planning applications and reserved matters applications must include information to demonstrate how Part L 2006 will be achieved for the buildings within the development. The planning applicant should include with the application a schedule of design and energy efficiency measures to be implemented.
The council requires all Major and Large Scale developments to provide a Carbon Reduction Strategy in support of planning applications. This Strategy must show how the development will deliver a minimum of 10% reduction in carbon emissions from total energy needs (heat, cooling and power) of the development through on-site generation of renewable energy.
All residential units to include solar water heating, unless served by CHP.
All lighting in any development, internal and external, must be provided through low energy lighting only.
Residential cooling to be provided from renewable energy sources only.
All multiple-unit and mixed-use schemes to use centralised heating (and where applicable cooling) systems, unless it can be proven by the planning applicant that their complete design will emit less carbon than an equivalent centralised scheme.
All residential development for sale should be signed up to Green Tariffs in the first instance.

All residential units for sale should be fitted with A rated white goods only.
Water Efficiency
Residential developments must be designed to achieve average water use in new dwellings of less than 40m3 per bedspace per year (approx. 110 litres/head/day).
Feasibility study should be provided on the potential to incorporate grey water recycling.
Rainwater harvesting must be provided.
100% water metering of all newly built property.
For hotels and offices, a planning application should demonstrate that water consumption is 'below average' against the benchmarks provided by CIRIA (see reference).
Waste Strategy
Developers should consult with the council on the Borough's strategy for waste collection and material recovery.
A minimum internal storage capacity of 60 litres per dwelling (flats and houses) should be provided (see 5.4.3 for detailed requirements).
A minimum external storage capacity of 180 litres per dwelling should be provided for recyclable household waste. For flats, applicants should demonstrate that the provision of communal storage is large enough to cater for all dwellings allocated to the bins, based on a collection timetable that has been agreed with the council (see 5.4.3 for detailed requirements).
The council will require that applicants proposing new housing developments with more than 500 households should provide appropriate locations for public recycling facilities, if adequate facilities do not already exist within the vicinity.
The council requires that all non-residential Major and Large Scale developments above 1,000m2 floor area should provide a minimum of 10m2 designated recyclable waste storage space.
Applicants proposing Large Scale developments or developments that employ or attract a large number of people, such as supermarkets or industrial units, should provide appropriately designed facilities for the collection for recycling or reuse of the waste that they, their customers and staff generate. Applicants for such developments should submit a comprehensive waste and recycling management strategy in accordance with the BS5906:2005 Waste Management in Buildings – Code of Practice.
Prior to commencement of construction, all construction sites must put in place a Site Waste Management Plan in accordance with the DTI Site Waste Management Plans - Guidance for Construction Contractors & Clients - Voluntary Code of Practice
Material Specification
In all Major and Large Scale developments, the council will require that at least 10% of the total value of materials used should derive from recycled and reused content in the products and materials selected.
The council will expect all developers to commit that they will only specify materials correlating to the

BRE Green Guide to Specification rating B and above. Where a developer wishes to specify materials with a higher environmental impact then they should provide justification.
All timber used within Barnet must be certified to have been sourced from sustainably managed forests. Where timber will be used within construction, then the council will want to see confirmation of appropriate certification prior to the relevant stage of construction.
Generic Environmental Standards
Adapting to Climate Change – has a checklist been completed and appended to the planning application
BREEAM / Ecohomes – what ratings will the various components of the development achieve?
Considerate Constructors Scheme – sites must be registered prior to commencement of construction activities

A4 List of UDP Policies

Policy GEA	Environmental Impact
Policy GWaste	Waste Disposal
Policy GLoc	Reducing the Need to Travel
Policy GNon Cart	Sustainable Transport
Policy Env1	Efficient Energy Production
Policy Env2	Energy Efficient Design
Policy Env4	Recycling Facilities
Policy Env6	Light Pollution
Policy Env7	Air Pollution
Policy Env7a	Air Quality Management
Policy Env8	Water Quality
Policy Env9	Flood Risk Areas
Policy Env10	Increased Flood Risk
Policy Env11	Drainage Infrastructure
Policy Env12	Noise Generating Development
Policy Env13	Minimising Noise Disturbance
Policy Env15	Notifiable Installations
Policy D11	Landscaping
Policy D14	Other Hedgerows
Policy L20	Floodlighting of Sports Facilities

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Haddii aad la tashigaan ku rabtid luuqaddaada, fadlan u soo qor Planning Policy Team, Planning Department, 7th Floor , Barnet House, Whetstone, London, N20 OEJ.. Mahadsanid.

Bu görüşmenin kendi dilinizde yapılmasını istiyorsanız, lütfen şu adrese yazınız:
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اگر آپ کو یہ مشورہ اپنی زبان میں درکار ہو تو، براہِ مہربانی اس پتے پر خط لکھیں۔ شکریہ
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