West Southall Masterplan

Sustainability Strategy
October 2008

On behalf of:
National Grid Property Limited

West Southall

Sustainability Strategy

8 October 2008

Contents

1 Foreword

1.1 Planning application

This Report is one of a series of documents that have been prepared on behalf of National Grid Property Limited (NGPL), to support an outline planning application with details of all proposed accesses submitted in full for the comprehensive redevelopment of 44.7 hectares of land known as the Southall Gas Works site ('the Application Site'). This Report should be read in conjunction with the drawings and other documents submitted as part of this application, as follows:

- Environmental Statement, including a Non-Technical Summary
- Design and Access Statement (including Landscape and Accessibility Strategy)
- Development Specification
- Planning Statement
- Transport Assessment
- Framework Travel Plan
- Retail Assessment
- Energy Strategy including Renewables
- Regeneration Strategy
- Housing Strategy
- Health Impact Assessment
- Remediation Strategy
- PADHI Report
- General Management Strategy
- Statement of Community Involvement

1.2 Local Planning Authority

The application is submitted to both the London Borough of Ealing (LBE) and the London Borough of Hillingdon (LBH) as the Application Site straddles the borough boundaries.

1.3 Application Proposals

The proposals are for a high quality residential-led mixed use development comprising the following:

> An outline application for the demolition of the following properties: 16-32 (even) The Crescent; 1-11 (odd) Randolph Road; 137-143 (odd), 249 and 283 Beaconsfield Road; 30 The Grange; the remediation of the land and the redevelopment of the site to deliver a mixed use development for up to: 320,000sqm of residential, up to 14,200sqm for non-food retail, up to 5,850sqm of food retail, up to 1,750sqm of Class A3-A5 uses, up to 9,650sqm of hotel, up to 3,000 sqm of conference and banqueting, up to 4,700sqm of leisure forming a cinema, up to 2,550sqm of health care facilities, up to 3,450sqm of education facilities, up to 3,500sqm of office/studio units, up to 390sqm of sports pavilion, up to 600sqm of energy centre, up to 24,450sqm of multi-storey car park and associated car and cycle parking, landscaping, public realm, open space and children's playspace; and
>
> Details are submitted for full approval (layout, scale, appearance and landscaping) of the following accesses:
>
> - Pump Lane Link Road – New access road from the Hayes bypass to the Application Site for vehicle, cycle and pedestrian access, including drainage and a flood relief pond.
> - Eastern Access – New access road from Southall centre to the site, including land currently occupied by properties on The Crescent.
> - Minet Country Park Footbridge – Central pedestrian and cycle access to the Minet Country Park, bridging over the Canal and Yeading Brook.
> - Springfield Road Footbridge – Northern pedestrian and cycle access to Minet County Park and Springfield Road.
> - Widening of South Road across the railway line - Widening of south road over the railway line for the creation of a bus lane.
> - Accesses (3no.) onto Beaconsfield Road.

The development shall be carried out in accordance with the Development Specification and the Parameter Plans appended to that document. An illustrative Masterplan (Drawing Ref. 0317_P1017Rev 00) has been devised to demonstrate how the application proposals could be delivered. Further details of the Application Site and proposed development are set out in the Design and Access Statement and Planning Statement accompanying the outline planning application.

1.4 Application Site

The Application Site lies to the north of the Wales and Great Western Mainline Railway (with commercial uses beyond), to the south east of the Grand Union Canal (with Minet Country Park beyond) and to the south of residential developments in Southall, extending off Beaconsfield Road. A Grade II listed water tower is now in residential use, located adjacent to the south eastern corner of the Application Site. A retained operational gas works compound is located approximately mid-way along the southern boundary of the site. This comprises one working gasholders that creates the principal landmark within the Application Site. Please refer to the Design and Access Statement for further details

2 The Vision for West Southall

The challenges of developing West Southall are in many ways indicative of the challenges facing the growth and future sustainable development of London - a highly contaminated brownfield site with poor local connectivity. It has for nearly a century acted as an almost impenetrable obstacle in the urban form and flow of Southall and its surroundings, separating places and communities.

The reclamation and recycling of the site for housing, employment and recreation are a priority given the context of London's fast-growing population and increasing demand for homes. Making good use of this scarce land resource is imperative in meeting both local and city-wide needs. This suggests an intense settlement – one that can accommodate sufficient new homes to meet demand and support mixed use development, while minimising travel distances and the total land take for development, leaving enough room for public open space.

In this precise situation and with proper safeguards and policies, the greater intensity of development will be essential to achieving environmental and social sustainability – not just a low carbon development, but also one that is accessible to people on different incomes and with different needs. Given the cost of remediation and infrastructure, intensity is also essential to the overall economic viability of any development and to ensuring good standards of place-making, architecture and public realm are achieved.

National Grid Property Limited (the Applicant) is determined to achieve a quality sustainable settlement with a sense of vitality and distinctive local character. The Applicant acknowledges that new developments, enterprises and communities at West Southall must be effectively integrated with those in adjacent places in order to succeed. The scheme must be woven into the physical and cultural fabric of its host even though it offers something somewhat different and additional. This will take time to achieve but is possible given the right approach to planning, design and management.

The masterplan for West Southall has evolved with these constraints and opportunities in mind. We envisage a mixed use new neighbourhood with a wide range of new homes and a compelling new and added value retail offer – more 'western' in character than that otherwise available in the area, which is supportive not locally competitive.

Every opportunity will be made to maximise connectivity with the rest of Southall. New residents will have easy access to local services and public transport links

while the surrounding community will be able to enjoy West Southall's facilities and gain direct access to Minet Country Park. Central to this will be the provision of a high quality public realm, which will include streets that encourage people to walk and cycle and parks and squares that become a gathering place for the whole of Southall.

Our intention is that West Southall will become a cherished part of Southall; a place that ages gracefully and adapts over time to meet the changing needs of its population. West Southall will be a model of sustainable design, meeting the needs and aspirations of the community now and also for future generations. The regeneration potential of the site will be fully realised to create a vibrant and lively area, fully integrated into, and enhancing the urban fabric of Southall.

3 Encouraging a Culture of Sustainability

Encouraging changes in people's behaviour and lifestyles is a cross-cutting theme of sustainable development. The need to make it easier and more enjoyable for future residents to lead a sustainable life is a key development principle for West Southall.

In their quantified breakdown of how comprehensive reductions in carbon emissions can realistically be achieved[1], the GLA has stated that 18% of the domestic reductions necessary will be met through 'behaviour change'. Encouraging and enabling behaviour change is therefore suggested in addition to technical solutions such as improved insulation, installation of rainwater harvesting systems and limited car parking.

To achieve a culture of sustainability, people will be asked to use West Southall in a way in which they do not currently use other places, and they will be assisted in this by how West Southall is designed and managed.

At a detailed level, features such as smart meters (allowing people to monitor the energy and water usage they would otherwise take for granted) and separate thermostats in different parts of the home (allowing for more efficient heating) will be explored for homes at West Southall.

More generally, West Southall will be designed to encourage people to walk and cycle, to value public spaces and use local shops, to recycle, and so on. This is the difference between a development that aims to be truly sustainable, and one that seeks merely to mitigate some of its most serious impacts, and it is a principle that has underpinned our masterplanning approach.

The achievement of real sustainability will be aided by active estate management that ensures monitoring facilities are kept up-to-date, residents are kept in touch with the latest information, and new residents are given an appropriate induction service.

Design and management features that enable sustainable lifestyles will include:

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[1] *Action Today to Protect Tomorrow: The Mayor's Climate Change Action Plan,* February 2007

- Exploring the potential for smart meters to inform residents of their energy and water use and encourage reduced consumption.
- Providing clearly labeled bins to facilitate the easy separation and storage of recyclable waste.
- Providing secure and weather proof cycle storage.
- Developing a Travel Plan that will promote walking, cycling, public transport use and car sharing as alternatives to private car journeys.
- Installing low energy light fittings both internally and externally.
- Installing A and A+ rated appliances as standard, where provided.
- Installing low flow fittings and appliances to reduce water usage.
- Providing new residents with a user guide providing information on the operation and environmental performance of their home and information relating to the development as a whole and the surrounding area.

4 Policy Context

4.1 National Policies and Standards

Planning Policy Statement 1: Delivering Sustainable Development (PPS1) (2005)

PPS1 sets out the overarching planning policies on the delivery of sustainable development through the planning system. The PPS states that a number of key principles be applied when formulating development plans and when taking decisions on individual planning applications:

- development plans should ensure that sustainable development is pursued in an integrated manner and that plans promote outcomes in which environmental, economic and social objectives are achieved over time;
- development plans should contribute to global sustainability through policies reducing emissions and energy use, promoting the development of renewable resources and taking climate change impacts into account on location and design;
- planning policies should promote high quality and inclusive design in buildings' layout and function;
- policies should have clear, comprehensive and inclusive access policies in terms of location and external physical access; and
- authorities must ensure community involvement in the planning process.

More detail is given as to how the planning process should deliver sustainable development. Areas of particular emphasis are social cohesion and inclusion, protection and enhancement of the environment, including taking into account such issues as:

- Mitigation of the effects of climate change by reducing emissions.
- Using renewable energy.
- Air quality.
- Land contamination and pollution.

- Protection of groundwater sources and noise.
- Light pollution.
- The prudent use of natural resources is key here, e.g. reusing resources and building higher density dwellings on Brownfield sites.
- Sustainable economic development which ensures the provision of affordable homes in the right location and finally integrating sustainable development in the development plans, particularly via a sustainability appraisal.

Supplement to Planning Policy Statement 1: Planning and Climate Change (2007)

The supplement to PPS1 on planning and climate change sets out how spatial planning should contribute to reducing emissions and stabilising climate change (mitigation) and take into account the unavoidable consequences (adaptation).

Planning authorities, in their consideration of the environmental performance of proposed developments, are urged to take particular account of the climate the development is likely to experience over its expected lifetime. Planning authorities should expect new development to:

- take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption, including maximising cooling and avoiding solar gain in the summer; and, overall, be planned so as to minimise carbon dioxide emissions through giving careful consideration to how all aspects of development form, together with the proposed density and mix of development, support opportunities for decentralised and renewable or low-carbon energy supply;
- deliver a high quality local environment;
- provide public and private open space as appropriate so that it offers accessible choice of shade and shelter, recognising the opportunities for flood storage, wildlife and people;
- give priority to the use of sustainable drainage systems paying attention to the potential contribution to be gained to water harvesting from impermeable surfaces and encourage layouts that accommodate waste water recycling;
- provide for sustainable waste management; and

- create and secure opportunities for sustainable transport in line with PPG13 including:
    - the preparation and submission of Travel Plans;
    - providing for safe and attractive walking and cycling opportunities including, where appropriate, secure cycle parking and changing facilities; and
    - an appropriate approach to the provision and management of car parking.

Code for Sustainable Homes (2007)

The Code for Sustainable Homes (CSH) is the single national standard for appraising sustainable new homes to improve environmental performance in terms of of predicted CO2 emissions, energy (including embodied energy in construction materials) and water use, waste generation, and the use of low-polluting materials and processes.

A Level 3 home would be 25% more energy efficient compared to Part L of the Building Regulations (2006). This could be achieved through district heating, low carbon technologies (solar thermal panels, bio-fuel boilers, dual-flush toilets), improved surface water, waste management, etc.

Level 6 of the CSH requires ‘zero-carbon’ with the use of a wide range of on-site renewable energy generation technologies to off-set entirely the energy taken from the national grid for all houshold uses.

All homes have to be assessed against the CSH, but compliance with a particular level is not mandatory except for grant funded affordable housing, which currently has to achieve Code Level 3, rising to Level 4 for the next funding round (2010) and to Level 6 by 2016.

BREEAM

BREEAM is the Building Research Establishment Environmental Assessment Method for new and existing buildings. BREEAM assessments are available for offices, retail, schools, prisons and industrial units. Buildings outside of these categories can also be assessed under the Bespoke BREEAM scheme.

It is a voluntary scheme that rewards developers for improved environmental performance standards above regulatory requirements and is an independent, transparent and credible label widely recognised throughout the building industry for new, or refurbished 'green' developments.

BREEAM assesses and rates new non-residential units on the basis of predicted CO2 emissions, water use, materials, health and wellbeing, pollution and landscape/ecology impacts, providing a weighted average score of Pass, Good, Very Good and Excellent. BREEAM assesses locational criteria (proximity to services and amenities, greenfield/brownfield etc) as well as criteria directly related to the design of the building.

Building Regulations Part L

In the context of mandatory changes in build quality which will come into force between now and 2016 the most important of these is the proposed 3-yearly update of Building Regulations Part L (from the consultation document "Building a Greener Future: Towards Zero Carbon Development, Dec 2006), which will require all new homes to achieve the following improvements in the next 10 years:

2010: 25% Improvement (Level 3 of CSH)

2013: 44% improvement (Level 4 of CSH)

2016: Zero Carbon Housing (Level 6 of CSH)

As a consequence, any home built under 2010 Building Regulations will have to meet the energy rating set for Code for Sustainable Homes Level 3; by 2013 all new homes will have to meet the energy requirements of Code level 4 – i.e. achieving high energy performance required for the code will be mandatory, rather than an additional cost over 'standard'.

Similarly, proposals for modifications to water regulations will have a similar impact, making the performance required for Code level 4 into standard practice by 2010.

4.2 Regional Policy

The London Plan Consolidated with Alterations since 2004 (2008) (The London Plan)

The London Plan sets the spatial development strategy for and aims to deliver the Mayor's objectives:

- To accommodate London's growth within its boundaries without encroaching on open spaces.
- To make London a healthier and better city for people to live in.
- To make London a more prosperous city with strong, and diverse long term economic growth.
- To promote social inclusion and tackle deprivation and discrimination.
- To improve London's accessibility.
- To make London an exemplary world city in mitigating and adapting to climate change and a more attractive, well-designed and green city.

All policies are set within overarching policies to promote sustainable development and to tackle and adapt to climate change The sustainable development criteria set out in the London Plan are:

- Take account of the impact that development will have on London's natural resources, environmental and cultural assets and the health of local people and upon the objective of adapting to and mitigating the effect of climate change.
- Optimise the use of previously developed land and vacant or underused buildings.
- Use a design-led approach to optimise the potential of sites and improve the quality of life.
- Ensure that development occurs in locations that are currently, or will be, accessible by public transport, walking and cycling.
- Ensure that development occurs in identified Opportunity Areas that are capable of accommodating substantial new jobs or homes.

- Ensure that development takes account of the capacity of existing or planned infrastructure including public transport, utilities and community infrastructure, such as schools and hospitals.
- Take account of the physical constraints on the development of land, including, for example, flood risk, ensuring that no significant harmful impacts occur, or that such impacts are acceptably mitigated.
- Ensure that development incorporates green infrastructure that is planned, located, designed and managed as an integrated part of the wider network of open space.
- Take account of the suitability of sites for mixed use development and the contribution that development might make to strengthening local communities and economies including opportunities for local businesses and for the training of local people.
- Take account of the nature of development and locational requirements when assessing the suitability of land for development.
- Take a pro-active approach to engage the community in decisions about its future and builds capacity to enable the community to take a lead in addressing its own needs wherever possible.

Supplementary Planning Guidance: SPG: Sustainable Design and Construction (2006)

This supplementary planning guidance (SPG) lays out the principles behind what is considered to be sustainable design, and then lays out essential and preferred standards for sustainable construction (which essentially relates to how to run an actual building site).

The design guidance is set out under the main headings: re-use land and buildings; maximise use of natural systems; conserve energy, water and other resources; reduce the noise, pollution, flooding and microclimatic effects; ensure developments are comfortable and secure for users; conserve and enhance the natural environment and biodiversity; and promoting sustainable waste behaviour.

The standards set are comprehensive and wide-ranging (covering both landscape and building-scale issues) from a requirement to source at least 50%

of timber from FSC certified sources, to 50% attenuation of site run-off, to carrying out an energy demand assessment of the entire development.

The document details essential and preferred standards, and refers to other policy documents and sources of guidance.

The Mayor's Climate Change Action Plan (2007)

In line with a contraction and convergence approach to stabilising global concentrations of CO2 at 450 parts per million, the Mayor aims to reduce London's annual emissions by 60% by 2025 (90% by 2050). The action plan breaks London's emissions down into the contribution of different sectors (excluding aviation) and then identifies how each sector can achieve its 60% cut, allocating achievable targets for each point of intervention (e.g. 18% of the reduction in domestic emissions will come from 'behaviour change').

The document provides an indication of how to deliver the necessary savings. There is a significant emphasis on planning, as this is an area where the Mayor has control, in addition to his control over transport and housing. The focus is on the efficiency of buildings, renewable generation of heat and electricity, physical infrastructure and changes in behaviour patterns.

4.3 Local Policy

Ealing Unitary Development Plan (UDP) (2004)

LB Ealing's UDP aims to secure a good environment for all through sustainable development, meeting the needs of the different sections of the community, the different areas of the borough, and the borough's role in wider planning issues, now and in the future by:

- Securing a pattern and form of land use consistent with the efficient use of land, water and energy, which safeguards air quality, minimises waste and forms the basis for sustainable local communities in Ealing.
- Maintaining the system of Major Open Areas linked by Green Corridors, to protect green space in Ealing, to preserve and enhance biodiversity and nature conservation, to provide new outdoor recreation opportunities in areas of need and to improve open space wherever possible.

- Promoting good urban design through planning, so that buildings and spaces are attractive, accessible, safe and consistent with the principles of sustainable development, and that there is proper protection of the borough, particularly areas and buildings that are of historic and architectural value.
- Increasing the quantity of housing in accordance with the agreed strategic minimum target of 9,750 new dwelling units by 2017, ensure its satisfactory quality, and improve choice to meet needs for all residents. Priority will be given to reusing empty properties, converting existing buildings and making best use of previously developed land.
- Promoting balanced economic development, with an emphasis on employment serving community regeneration areas, encouraging a high quality, modern, attractive working environment and local enterprise. New development will also be expected to be consistent with the principles of continuous environmental improvement.
- Encouraging the convenient siting of shops and services throughout the borough, by recognising the distinctive functions of metropolitan, major, district, neighbourhood and local centres, and the importance of a good environment for the mixture of shopping, business and community activities needed to sustain these centres.
- Encouraging the provision of community facilities to meet the wide-ranging needs of people living, working, studying in and visiting the borough, and to ensure that these facilities are located where they reduce the need to travel and enhance town centres.
- Providing sustainable access from homes to jobs, shops and services, and from business to business, by integrating land use and transport planning, restraining car traffic, promoting improved public transport and facilities for pedestrians and cyclists, and making freight distribution more sustainable. In addition, the Council will have regard to the impacts of international air travel from Heathrow Airport, in respect of surface access, business and employment, environmental impacts and sustainability in general.

Local Development Framework: New Issues and Options - Strategy and Sites (2007)

The Local Development Framework (LDF) is the Council's emerging framework for spatial planning and property development in Ealing. The change in political administration in Ealing following the May 2006 local elections led to the previous Issues and Options being withdrawn. The new Issues and Options established is based on ten borough wide objectives:

- promoting exemplary design which gives proper respect to Ealing's heritage;
- maximising the benefits of Ealing's green space for people and wildlife;
- encouraging a cleaner, greener environment for Ealing through careful use of energy and resources;
- ensuring sufficient, high quality accommodation for all Ealing's residents;
- creating sustainable, safe and convenient transport networks for people and freight, to and through Ealing;
- placing Ealing at the heart of West London's cultural, sports and leisure activity;
- designing out crime and making Ealing's environment safe, attractive and accessible for all;
- encouraging a healthy and independent population in Ealing;
- achieving and sustaining prosperity for communities and businesses across Ealing; and
- making Ealing a great place for young people and children to grow up.

SPG 1: Sustainability Checklist

Ealing's Sustainability Checklist evaluates the environmental and community impacts and benefits arising from proposed development. The checklist covers ten aspects of sustainability:-

- Land Use and Location
- Transport
- Energy

- Waste
- Community Development
- Biodiversity/Open Environment
- Built Environment
- Pollution
- Human Activity
- Significance

For each of these aspects of development, a project can score between 0 - 10 points, and consequently the maximum score is 100 points. Projects which exceed 50 will be regarded as broadly sustainable. The sustainability score is not a direct indication of whether a proposal will be approved or refused, but a low score may well indicate that a project has serious shortcomings.

5 Land Use, Location and Urban Design

West Southall will be a mixed use new neighbourhood with a wide range of homes and a compelling retail offer that is effectively integrated with the surrounding community. New residents will have easy access to local services and public transport links while the surrounding community will be able to enjoy West Southall's facilities and gain direct access to Minet Country Park.

5.1 Development Targets

West Southall will be built to the highest quality of design and will aim to meet the criteria for the Building for Life Gold standard (or equivalent at time of completion).

5.2 Strategy

In order to make best use of previously developed land, West Southall will be an intensive development, with an average development density of circa. 110 dwellings per hectare.

The development's urban form will maximise connectivity and permeability. A network of streets, squares and parks will provide attractive routes through the development and every opportunity has been taken to connect with the surrounding area, ensuring easy access for pedestrians and cyclists. West Southall should become to be seen as a piece of Southall that is integrated with surrounding communities and whose facilities are easily accessible to all.

A well structured, legible plan is key to creating a distinctive place rather than a housing development. Public spaces within the development will be defined and enclosed by the buildings that front them providing natural surveillance. Taller buildings, especially on corners, will serve as landmarks to help mark out key points of entry and departure. A clear distinction between public space and private space, in particular residential dwellings will provide an essential balance between community and privacy.

A genuine mix of uses will be provided, which includes:

- A hotel with banqueting and conference facilities

- Cafes, bars and restaurants
- A multi-screen cinema
- Primary school
- Health centre
- Sports pavilion
- Accommodation for businesses
- High street retail and supermarket

A wide range of homes will be provided to meet the needs of a diverse mix of household/family types and sizes from all social, economic and ethnic backgrounds. This will include larger family homes and apartments.

A range of housing sizes, types and tenures will provide opportunities for people on different incomes and in different circumstances to have access to good quality accommodation.

A new park will serve existing and new communities. New connections over the canal and Yeading Brook (known as Town Square) will greatly improve the accessibility to the Minet Country Park. A civic square will provide a focus for the development and provide space for informal and formal events and festivals throughout the day, night and around the year.

6 Transport

Accessibility is a primary concern for West Southall. The transport strategy aims to reduce the need to travel by car and transport related CO_2 emissions and minimise the impact on already congested surrounding streets through a modal shift towards public transport, walking and cycling.

6.1 Development targets

Develop a Travel Plan covering both residential, retail and commercial elements of the scheme with the aim of achieving continued change in the modal split.

6.2 Strategy

Minimising the need to travel

Residents will be able to meet their daily needs without the need to travel by car through the provision of a range of retail and leisure uses within walking distance of all homes.

The need to travel to and from work will be reduced by providing all homes, where possible, with space and services for a home office.

Walking and cycling

Throughout the development, streets will be designed to give pedestrians and cyclists priority over the car.

Walking and cycling will be encouraged through a network of footpaths and cycleways that will provide direct links between key destinations both internally and externally.

Cycle parking will be provided at a minimum ratio of 1 space per dwelling.

Public Transport

Good access to public transport will be provided through the extension and diversion of existing bus routes; with up to 30 buses an hour anticipated during

peak periods when the scheme is fully developed. Where services are extended the number of buses will be increased to maintain existing of levels service. This will result in a net increase in capacity along the existing route.

The use of public transport will be encouraged through the provision of bus lanes and modern infrastructure at stops, including up to date information on the bus services. In addition, bus stops will be located in key positions with direct routes to reduce journey times to the stops.

Bus, cycle and pedestrian routes will provide direct and easy access to Southall station.

Travel Plans

Travel Plans will be implemented for all elements of the scheme with the aim of encouraging travel by sustainable modes and reducing the reliance on travel by car (and in particular single occupancy vehicle trips).

The Framework Travel Plan sets out the broad principles to be adopted by individual tenants and developers of individual plots. The plan will set out design parameters such as requirements to provide cycle parking.

Commercial occupiers (i.e. of the retail, leisure and office uses) will implement Travel Plans which will include information on opportunities along with measures and targets to encourage sustainable travel.

Developers of residential plots will be required to provide residents of individual dwellings with a user guide on occupation. The guide will include information on opportunities for sustainable travel, to include bus and rail timetables, contact details for operators along with maps illustrating the local footpath and cycle networks. The management company will ensure the information is updated at regular intervals.

Car Clubs

Residential parking will be provided to an average ratio of 0.7 spaces per dwelling. Car club spaces will be provided in appropriate locations throughout the site, with the intention to focus them close to plots with lower levels of parking provision.

Residents without access to a car parking space will be provided with free membership to the car club for the first year and will only have to pay for the use of the car.

All residents and businesses will be encouraged to use the car club as an alternative to car ownership.

7 Energy

A hierarchical energy efficiency and renewable energy strategy for the site is integral to the masterplan. The strategy will:

- Prioritise reducing energy demand to support national policy.
- Provide as much of the remaining demand as possible from on site renewables.

7.1 Development Targets

Carbon emissions

It is the aspiration of the Applicant that a 44% reduction in carbon emissions, in line with CSH Level 4, is targeted, which will be subject to viability. This target will be reviewed for subsequent phases to ensure it is up to date with best practice and emerging opportunities.

Energy generation

At least 20% of total building energy (electricity and heat) demand will be met by renewable sources. This target will be met from Phase 1 onwards. The percentage provision would be reviewed for subsequent phases to ensure it is up to date with best practice guidance and emerging opportunities.

7.2 Strategy

Energy efficiency

All buildings will be designed to ensure that they are as energy efficient as possible through:

- Building orientation to moderate the effects of wind and sun whilst making seasonal use of both as appropriate.
- High performance insulation/materials to reduce demand for heating and reduce summer over heating.

- High levels of air tightness and the use of passive and mechanical ventilation systems.
- High levels of daylighting to reduce the need for electrical lighting.
- High-efficiency appliances and fittings, including those fitted in communal areas.
- Greening the development through green roofs, street trees and landscaping to combat urban heat island effects.

Energy use will be further reduced through efforts to encourage behavioural change. These could include:

- Tariffs that reward lower energy use.
- Consumer information and feedback through billing and metering.
- Education programmes.

Energy generation

Two primary options are being considered as part of the Energy Strategy. The first is an on-site CHP plant which would include a proportion of generation from renewable technologies. A CHP plant with an overall capacity of 770kWe CHP unit would be required to meet demand. This could be established from the outset and expanded as each phase of development comes forward, including the renewables elements. In this instance, the 20% renewable contribution would be achieved by a biomass installation sized at 2,200kW (2.2MW).

The second option considers the use of energy provision from a gas infrastructure turbo expander scheme (generating electricity from the reduction in pressure arising from the change from high pressure to low pressure in the gas mains). This system will be partly located on the adjacent retained NGG gas holder site and is subject to a separate planning application to be submitted around the same time as the West Southall application.

The turbo expander scheme would be centred around the gas pressure reduction facility already located on the NGG site with a further installation of biodiesel engines to generate the heat necessary to counter the cooling of gas that occurs in the pressure reduction process. This option is being led by Blue-NG, a company associated with National Grid Gas.

The energy centre would be bio-diesel fuelled; and capable of providing three times the power required by the whole of the West Southall development. The excess generation could be supplied to other communities in the area, or exported to the grid.

This leads to the possibility of an all electric solution for the scheme. However, early phases of the development are likely to retain the option of gas for cooking only.

8 Water

The development will use potable water efficiently and respond positively to anticipated changes in climate and water regulations, and would manage drainage to work in harmony with the floodplain.

8.1 Development Targets

Residential

Homes designed to use no more than 105 litres/person/day in accordance with CSH Level 4 requirements will be explored, where feasible.

Retail and commercial

Retail and commercial facilities will be designed to achieve 6 out of the 9 BREEAM Retail credits available for water efficiency, where feasible.

Hotel

Potable water usage within hotels and other leisure buildings will be minimised through the use of high efficiency sanitary appliances, using CSH requirements as a guide.

Retail, commercial and hotel targets will be reviewed upon publication of the Code for Sustainable Buildings.

Run-off targets

The peak run-off rates for the proposed development will discharge at the greenfield run-off rates.

8.2 Strategy

Demand for water will be reduced through efficient fixtures and fitting, such as dual flush toilets, aerating taps and showers and water efficient washing machine

(approx 40 litres per cycle). The use of smart meters that allow residents to easily understand how much water they are using will be explored.

All homes with private outdoor space will be provided with a water butt and the harvesting of rainwater will be used, where possible, for flushing toilets and in washing machines.

Home user guides for future residents of the dwellings will include advice on minimising water use.

Run off

The primary elements of the site wide surface water drainage system include:

- Use of green and brown roofs to assist in attenuating water and reducing run-off rates, with a target of 50% of all roofs to be green or brown roofs.
- As natural infiltration through the ground will not be possible due to the retained ground conditions, all on-site drainage will be captured and stored in a series of underground tanks from where it will be slowly released at a natural run off rate into the Yeading Brook system.
- Wetlands that form part of this drainage system providing additional attenuation capacity where possible.

9 Waste

Construction materials will not be wasted, and exemplary recycling/reuse will be practiced during construction, utilising recognised Best Practice systems and tools. Site users will be able to recycle their waste.

9.1 Development Targets

Operational waste

It is intended that the amount of waste recycled from West Southall could meet LB Ealing's targets of recycling or composting 45% of household waste by 2013. Home user guides will provide residents with information on how to achieve this on site.

9.2 Strategy

Construction Waste

A Site Wide Waste Management Plan will be submitted for approval by the local planning authority prior to the implementation of the first phase of development. All waste materials will be stored in designated areas and be kept clear of the surface water drainage system.

Waste Reduction and Reuse

The generation of construction waste will, as the first priority, be avoided and any packaging used for transporting of construction materials will be sent back with the delivery vehicle wherever possible. If waste is generated on-site, it will be sent for reuse and recovery, in preference to disposal. Where practical, spoil, demolition materials, prunings and surplus construction material arising from the works on-site will be reused on-site. Any suitable brick, concrete, stone, etc found on-site will be crushed and used as base construction material.

Waste Recycling

Any waste generated on-site will be stored appropriately and waste streams will be segregated to minimise cross mixing and to enable maximum recovery of recyclable materials. Recyclable wastes and specialist packaging will be collected and sent for recycling with local recycling companies.

Non-Recyclable wastes

Transport of waste will be minimised by the selection of local licensed sites where available. The only exception to this may well be disposal of hazardous wastes, for example contaminated soil (which has already been minimised by site treatment methodologies) which is only accepted at limited locations. No disposal of waste by open burning will be permitted on-site. Clean excavation wastes arising from the development may be incorporated into the final site design by agreement with the regulatory authorities.

Operational waste

We will work alongside LB Ealing's collection arrangements to minimise waste to landfill by encouraging recycling by residents. Clearly labeled internal bins will be provided to facilitate the easy separation and storage of waste. Space will be provided externally or in service areas to allow the storage of waste awaiting collection.

Compost bins will be provided for all homes with gardens in accordance with recommendations of the CSH. Space will be provided for the storage of garden waste bins.

New residents will be provided with a user guide providing information on their new home. This will include details of collection arrangements and community recycling facilities, as well as tips on waste minimisation and composting.

Where appropriate, public realm recycling infrastructure will be provided, with details of design and quantities to be developed through consultation with LB Ealing.

It is intended that the management company would seek to encourage sustainable waste management practices by residents, businesses and visitors.

10 An Inclusive and Safe Development

West Southall will provide a range of community facilities to meet the needs of future residents. The development will be open, safe and accessible. It will be actively managed to ensure the development is maintained to a high quality and to encourage sustainable lifestyles.

10.1 Target

To mitigate the impacts of the development in terms of community facilities through on-site provision or via financial obligations.

10.2 Strategy

Health

A GP surgery of up to 2,550 m^2 will be provided. This facility would be capable of accommodating 8 GP's and would be sufficient to meet the needs of the new population as well as providing for the wider area.

Education

A two form of entry primary school which could accommodate up to 440 children will be provided. It has been sized to be sufficient to accommodate the demand arising from the development.

A nursery for 0-5 year olds will be provided within the primary school. Again, this will be sized to be sufficient to meet the needs of the proposed development.

Designing out crime

Spaces throughout the development will be designed and managed to provide a clear distinction between public, private and semi-private spaces to foster appropriate levels of ownership and encourage acceptable use.

Public spaces will be overlooked by active building elevations, with buildings fronting onto public open space. Where possible communal or courtyard parking will be faced by at least two active building elevations.

The Applicant will commence discussions relating to 'Secured by Design' standards at an early stage of the detailed design.

Accessibility

An inclusive environment will be provided throughout the development, based on the principle of accessibility for everyone. The term 'disability' will be considered in its broadest sense and will be accessible to those with impaired mobility, sight comprehension or hearing.

Access to all buildings will be step-free and the upper and lower levels of all buildings will be accessible by both lifts and stairs with the exception of town houses and duplex accommodation that will have stairs only from the access level, although will be capable of accommodating a chair lift.

Management

The development will be managed by a dedicated on Site Manager employed by a professional managing agent and funded through the service charge to the tenants.

The Manager's primary responsibilities will be for the common estate elements of the scheme. They will also provide an interface and co-ordinate with the managers of the individual residential/commercial elements of the scheme.

Management's responsibilities will include:

- A professional landscape contractor to be employed to maintain the public gardens and provide the seasonal rotation of plant species.
- Ongoing building management and maintenance to ensure the appearance of the development is maintained.
- A full programme of cleaning of the public areas on a daily basis.
- Central management of the communal energy system and coordinated management of the deliveries and servicing to ensure sustainable objectives are delivered and local residents' amenity protected.

- Providing sustainability advice and support to residents and businesses.

11 Natural Environment and Biodiversity

West Southall will protect and maximise the value of existing biodiversity on site and in the surrounding area and promote a net gain in biodiversity through the creation of high quality, well maintained open spaces, habitat areas and wildlife corridors as integral elements of the urban fabric.

11.1 Target

The design, development and management of West Southall will aim to maximise the range and variety of opportunities for biodiversity value in open spaces.

11.2 Strategy

Site wide

Green spaces within the development will be planted with locally sourced, native trees, shrubs and grasses to maintain and enhance their overall ecological value. Landscape management will encourage structural diversity and varied density to compensate for any loss of habitats that currently support feeding and breeding birds.

Provision of suitable bat and bird boxes will contribute to enhancing habitats in the area.

Wetland features will be created to provide habitat enhancement and ecological value to the development.

Any external lighting close to watercourses will be directional and focused with cowlings where possible to minimise any disturbance to bats using the river corridor, and the invertebrates upon which they feed.

During the construction phase of the development, measures will be adopted to protect wildlife and prevent unnecessary damage to retained habitats. These are detailed in the Ecological Mitigation Strategy (Appendix 14.8 to the ES) and include installation of fencing to protect sensitive areas and the provision of access tracks through areas of less ecological value. Details of these measures

will be provided within a method statement and agreed prior to the commencement of works.

Bridge crossings

Storm water relief channel diversion works will produce a channel with greater ecological value than at present by providing a river bed suitable for plants and invertebrates, vegetated banks with ledges for mammals to use as runs and a monitoring program to ensure features develop correctly and are protected in the long term.

Bridge crossings and their associated bank side habitats along the Grand Union Canal and Yeading brook will be subject to mitigation measure during construction and enhanced post construction where practical. At Pump Lane wide abutment passage spaces and tunnels will be provided to allow migratory animals to move through the area and into the Minet Country Park. Bat roosts will be incorporated into the bridge structures, where possible, to increase the usage of the area by bats.

Shading on the water courses will be reduced by carefully designed footbridges and by raising the height of the bridges as much as practical to break up the shadow they cast. Buildings will not reach the waterfront of the canal but will have intermittent structures to avoid excessive shading.

12 Building Specification and Construction

Construction resources for West Southall will be procured in a sustainable manner, wherever possible, using local providers and recycled, low impact materials. The Applicant will endeavour that building and construction practices are in line with Good Practice Guidance.

12.1 Development Targets

The Applicant will endeavour for all dwellings to achieve Level 4 of the Code for Sustainable Homes, where feasible.

Performance against the Code will increase over time in line with changes to the Building Regulations.

Non residential buildings will achieve BREEAM Excellent or equivalent rating, where feasible.

12.2 Strategy

Design and specifications for achieving the necessary level of the Code will be addressed during the detailed design stage for each plot.

Indicative strategies as to how Code Level 4 could be achieved are set out below.

Code 4

Credit Title	Actions to achieve Code Level 6	Credits
Ene 1	A minimum of a 44% improvement in carbon emissions over Building Regulations Part L requirements will be achieved as outlined in the energy strategy.	**8**
Ene 2	Heat Loss Parameter (taken from SAP calculations) will be less than or equal to 1.10.	**2**
Ene 3	No less than 75% of internal lighting will be provided by low energy fittings capable of only accepting lamps with a luminous efficacy greater than 40 lumens per circuit watt.	**2**
Ene 4	Every dwelling will have a drying space, either internally or externally, depending on number of bedrooms and access to private/communal space. If internal, the drying space is likely to be provided in the bathroom and will be moisture regulated by a humidistat. An internal drying line of 4m+ for 1-2 bedroom dwellings and 6m+ for 3+ bedroom dwellings will be provided. If external, a space will be provided with posts and footings or fixings capable of holding a 4m+ drying line for 1-2 bed dwellings and 6m+ of drying line for 3+ bed dwellings.	**1**
Ene 5	Where washing machines and dishwashers are provided these will be A rated; and where fridge/freezers are provided these will be A+ rated. If provided, washer-dryers will be B-rated as a minimum.	**2**

Ene 6	Space lighting will be provided by dedicated energy efficient fittings such as fluorescents or compact fluorescent tubes. Security lighting will have a maximum wattage of 150W and have PIR Movement sensors detecting control and daylight cut-off sensors. All other security lighting will have dedicated energy efficient fittings, fitted with daylight cut off sensors or timers and be more than 40 lumens per circuit watt.	**2**
Ene 7	SAP calculations will show at least a 15% reduction in carbon emissions due to on-site renewables.	**2**
Ene 8	Studios or 1 bedroom dwellings will have storage for 1 cycle per dwelling. 2 and 3 bedroom dwellings will have storage for 2 cycles per dwelling. 4 bedrooms and above will have storage for 4 cycles per dwelling. All cycle storage will be adequately sized, convenient to access, set in concrete and have at least a roof and 3 walls. Secure fixings for the cycles will allow locking of the wheel and frame. Houses with an adequately sized garage will be provided with secure wall fixings. Cycle storage will be accessible without the need for cycles to be brought through the dwelling in order to be stored.	**2**
Ene 9	Each dwelling will have adequately ventilated space for a home office with 2x double sockets, a broadband and telephone point, in a location no smaller than 1.8m to allow for a desk, chair, filing cabinet or bookshelf to be installed. Dwellings with 3 or more bedrooms will not have the home office located in the kitchen, living room or master bedroom.	**1**

Wat 1	Where Level 4 ratings are achieved, each dwelling will achieve the mandatory usage requirement of under 105 litres per person per day (l/p/d). An indicative specification for meeting Code Level 4 requirements is: • WC - dual flush 4/2.6 litres • Basin tap - 3 litres/min aerated • Shower - 8 litres/min • Bath - 116 litres • Sink - 5 litres/min • Washing machine - 42 litres • Dishwasher - 13 litres Total = 103.67 l/p/d	**3**
Wat 2	For 1-2 bedroom dwellings with private outdoor space, a waterbutt of 150 litres will be provided. For 3+ bedroom dwellings with private outdoor space, a 200 litre water but will be provided.	**1**
Mat 1	All construction build-ups will receive the following ratings from the 2008 Green Guide: Roof - B rated External Walls - A rated Internal Walls - A rated Upper Floors - A rated Ground Floors - B rated Windows - A rated	**8**

Mat 2	100% of timber will be responsibly sourced with documentation demonstrating that the building's basic elements have been accredited by a compliant scheme such as FSC. The following elements will be assessed: Frame Upper Floors Roof Internal Walls Staircase	**4**
Mat 3	100% of timber used for finishing elements will be responsibly sourced with documentation demonstrating that the building's finishing elements have been accredited by a compliant scheme such as FSC or ISO 14001 The following elements will be assessed: Stairs External and Internal Door Skirting Furniture Facias Any other significant use	**2**
Sur 1	Peak run-off rates into water courses will be no greater for the developed site than for the pre developed site.	**2**
Sur 2	With the exception of the three bridge crossings the site is defined as being in a location that is at low risk of flooding.	**2**

Was 1	Each dwelling will meet mandatory BS59006 requirements by providing 100 litres waste storage for a single bedroom dwelling with a further 70 litres volume for each additional bedroom. All waste containers will be accessible to disabled people. Depending on LB Ealing's collection arrangements at time of construction, either of the following will be provided: A single 30 litre bin in an adequate internal space, such as a kitchen cupboard, if household waste is to be sorted post-collection. Or: At least 3 separate bins with at least 30 litres total capacity if materials are to be sorted pre-collection. Every bin will have at least 7 litres capacity.	**4**
Was 2	A Site Waste Management Plan (SWMP) will be developed and implemented. This will require monitoring and reporting of waste generated on-site in defined waste groups and compliant with legal requirements as set out in SWMP 2008 . The SWMP will include procedures and commitments to sort and divert waste from landfill, according to the defined waste groups. This will be performed either on-site or through a licensed external contractor in accordance with best practice guidance.	**2**
Was 3	Individual home composting facilities will be provided if LB Ealing are not providing a communal composting service at time of construction. Composting facilities will be in a dedicated position, be accessible to disabled people and an information leaflet will be delivered to each dwelling upon occupation.	**1**

Pol 1	All insulants will have a global warming potential of less than 5. This includes pipe lagging and water cylinder insulation.	**1**
Pol 2	NOx emissions of each dwelling will be less than or equal to 70mg/kwh.	**2**
Hea 1	Daylighting not included.	**0**
Hea 2	Sound insulation will be increased to achieve 3 dB above Building Regulations Part E for airborne tests and impact testing results will be 3 dB below Building Regulations Part E requirements.	**1**
Hea 3	All dwellings will be provided with an outdoor space that is at least partially private, allows access to all occupants including wheelchair users and is only accessible to occupants of designated dwellings Private spaces will be at least 1.5m2 per bedroom. Shared spaces will be at least 1m2 per bedroom.	**1**
Hea 4	Dwellings will comply with all 16 principles of Lifetime Homes standards to ensure that they are accessible to a wide range of occupants and are able to be easily adapted to meet the changing needs of a household.	**4**
Man 1	A Home User Guide will be provided to each dwelling with the following information included: • Environmental strategy/design and features • Energy use • Water use • Recycling and waste facilities • Sustainable DIY tips • Emergency information - i.e. local police, doctor etc • Links, references and further information	**3**

	Provision of information in alternative formats if needed - to ensure that the Home User Guide is usable by all. Information regarding the site and its surroundings will also be provided including: • Public transport links • Local amenities - including locations • Responsible purchasing - Information on EU energy rating schemes and environmental responsibility • Emergency information - i.e. local police and doctors details including locations and telephone numbers • Links, references and further information	
Man 2	All contractors will register with the Considerate Constructors Scheme (CCS) and aim to go significantly beyond best practice to score a total of between 32 and 40 with no individual sections scoring less than 3/5.	**2**
Man 3	Contractors will commit to achieving 4 or more of the following: a. monitor and report CO2 for energy arising from site activities; b. monitor and report on water consumption from site activities; c. adopt best practice policies in respect of air (dust) pollution arising from the site; d. adopt best practice policies in respect of water (ground and surface) pollution occurring on the site; e. 80% of site timber reclaimed, reused or responsibly sourced	**2**

Man 4	Secured by design principles will be incorporated as recommended by an Architectural Liaison Officer who will be consulted early in the detailed design stage of each plot.	**2**
Eco 1	The development is built on a brownfield site of low ecological value.	**1**
Eco 2	An ecologist has been appointed to recommend appropriate ecological features to positively enhance the ecology of the site. All key recommendations from the ecology report will be adopted along with 30% of any additional recommendations.	**1**
Eco 3	All existing features of ecological value on the development site that could potentially be affected by the works, including clearance, preparation and construction stages will be maintained and protected.	**1**
Eco 4	A major enhancement of ecological value of the site will be achieved by implementing all recommendations of the ecologist. The ecological value before and after the development will be measured and the overall positive species change per hectare will be greater than +9.	**4**
Eco 5	Apartments blocks will have a net internal floor area : net internal ground floor area ratio that is greater than 4:1 Houses will have a net internal floor area : net internal ground floor area ratio that is greater than 3:1	**2**

13 Resilient and Adaptable Development

West Southall will be designed, constructed and managed to cope with the results of inevitable climate change, including hotter dryer summers, warmer wetter winters and more frequent extreme weather events. The high quality of design and construction will result in buildings that are resilient and adaptable to multiple uses and the changing demands of occupiers.

13.1 Strategy

Climate change adaptation

The design, construction and management of West Southall will prepare for inevitable climate by using street trees, manmade structures, green spaces and water features which would help to combat high temperatures. Buildings will be designed with a high thermal mass and, where possible, have been orientated to moderate the effects of wind and sun whilst taking advantage of seasonal opportunities to maximise solar gain and natural ventilation.

A sustainable drainage system will control surface water run-off. Options for capturing rainwater for reuse will be explored, to include building/neighbourhood solutions as well as providing facilities for individual homes such as water butts.

The detailed design of buildings, open spaces, services and utilities will take account of the latest climate change scenarios (currently UKCIP08).

Adaptable development

High quality of design and construction will result in buildings that will be built to last. They will be able to accommodate many changes over their long life. The high quality of design and construction will create a place in which residents are willing to invest their time and money in maintaining.

Retail unit size and configuration meets multiple retailers' requirements in terms of proportion and servicing. Their configuration is such that units may be combined or sub-divided to meet the individual needs of a retailer. The units are

7.5m from ground to first floor levels which offers the flexibility to incorporate a mezzanine without disruption to the elevation of the high street.

Buildings will be designed to allow the easy retrofit of specific technologies such as grey water recycling or micro-renewables where they have not already been incorporated.

All dwellings will be designed to Lifetime Homes standards as is practicable and appropriate. Where the nature and/or density of the development means compliance with any of the standards is not practicable or appropriate a statement of reasons why not will be submitted to the Council, as part of the reserved matters submission.

14 Delivery and Management of Sustainability

Too many times the aspirations set out in a development proposal fail to be delivered in practice. To avoid this problem at West Southall, a transparent management process will be put in place to ensure that the sustainable design commitments remain intact throughout the detailed design and construction phases. This process will include:

- Internal management and review of sustainable design features throughout the detailed design and construction to identify gaps and forthcoming issues and ensure timely consideration of sustainability targets.
- Compliance with the provisions in the Construction Environmental Management Plan
- Confirmation and demonstration of sustainable design performance through Code for Sustainable Homes and BREEAM (or equivalent) accreditation.

Appendix A: LB Ealing Sustainability Checklist

1 Land Use and Location		0	1	2	
1.1	**Shops, offices, restaurants etc**	none provided, less than before, or not in right place*	provision no less than before, and located in the right place	as score 1 and <200m from complementary uses and public transport	2
1.2	**Industry, warehousing, transport**	none provided, less than before, or not in right place*	provision no less than before, and located in the right place	as score 1, & <200m from complementary uses and public transport	2
1.3	**hotels, places of assembly and leisure, & non-residential institutions**	none provided, less than before, or not in right place*	provision no less than before, and located in the right place	as score 1, & <200m from complementary uses and public transport	2
1.4	**Leisure and sports associated with open space**	none provided, less than before, or not in right place*	provision no less than before, and located in the right place	as 1 and <400m from complementary uses and public transport	2
1.5	**Residential, including hospitals and hostels etc**	none provided, less than before, or not in right place*	no less than before, and in the right place	as 1, and <400m from public transport	2
2 Transport					
2.1	**Public transport**	No improvement	better facilities & links within site	plus improved network	2
2.2	**Walking**	No improvement	better facilities & links within site	plus improved footpath network	2

2.3	**Cycling**	No improvement	better facilities & links within site	plus improved cycle network	2
2.4	**Car parking provision**	Provision higher than max standards	no more than max/green travel plan prepared	provision below max. standards/green travel plan	2
2.5	**Other**	Problem	not applicable	benefit	1
3 Energy					
3.1	**Energy efficient building systems and appliances**	None	insulation and double glazing provided	plus heating and lighting systems	2
3.2	**Layout: minimise wind chill**	No	no additional energy use	wind chill minimised	1
3.3	**Layout: maximise sunlight**	No	no additional energy use	sunlight maximised	1
3.4	**Renewable Energy provision**	None	renewable energy generated on site	greater than 10% of energy consumed produced on site	2
3.5	**Other:**	Problem	not applicable	benefit	1
4 Waste					
4.1	**Recycling facilities**	None	provided on site	provided and managed	2
4.2	**Water efficiency**	None	preventative measures to minimise all aspects of water consumption	plus provision for reuse of ground water and/or grey water	2
4.3	**Composting facilities**	None	provided on site	provided and managed	2
4.4	**Recycled/reused building materials used in project**	None	use of recycled or reused materials	with >30% of these materials originating on site.	1

4.5	**Other:**	Problem	not applicable	benefit	1
5 Community Development					
5.1	**Community safety**	not considered	proposal referred to CPDA	plus complies with'Safer Ealing'	1
5.2	**Access for all**	not considered	proposal referred to Access Committee	plus complies with'Accessible Ealing'	1
5.3	**Inclusive consultation**	not considered	action taken	responses reflect borough's diverse community	1
5.4	**Community support**	no consultation or significant opposition on planning grounds	development favourably viewed by majority	plus support from at least one 'target' community	1
5.5	**Other:**	Problem	not applicable	benefit	1
6 Biodiversity and Open Environment					
6.1	**Biodiversity**	harmful effect	no loss of biodiversity/No change	biodiversity improved	2
6.2	**Designated green space***	none/reduced	Retained	created/increased	2
6.3	**Non-designated green space**	none/existing area reduced	Retained	created/increased	2
6.4	**Tree protection & planting**	None	Complies with SPG	Best practice achieved	1
6.5	**Other:**	Problem	not applicable	benefit	1

7 Built Environment					
7.1	**Previously Developed Land (PDL)**	Not PDL	PDL	PDL comprising vacant & dilapidated buildings	1
7.2	**Existing building(s)**	<75% retained	>75% retained	>75% retained and renovated	0
7.3	**Heritage value**	Value reduced	not applicable or, heritage protected	value enhanced	1
7.4	**Relationship to neighbouring properties**	Incompatible	compatible	positive Improvement	2
7.5	**Other:**	Problem	not applicable	benefit	2
8 Pollution					
8.1	**Air**	Increased	No change	Reduced	0
8.2	**Water**	Increased	No change	Reduced	1
8.3	**Land**	Contamination, but not yet investigated	No contamination problem, or planned remediation	Land to be remediated on site.	2
8.4	**Noise**	Noise problem but no action taken	no noise problem, or measures taken to eliminate the problem	Improvements in noise quality in the area.	2
8.5	**other:**	Problem	not applicable	Benefit	1
9 Human Activity					
9.1	**Paid Employment**	none or less than before	no less than before	More than before	2

9.2	**Commercial goods/services**	none or less than before	no less than before	More than before	2
9.3	**Social goods and services**	none or less than before	no less than before	More than before	2
9.4	**Management of activity by local people**	none or less than before	no less than before	More than before	0
9.5	**other:**	Problem	not applicable	Benefit	1
10 Significance				Culture of sustainability	10
Total					**73**

Appendix B: GLA Sustainability checklist

1. Re use

1.1 How much of the development site will be on previously developed or Brownfield land, which will be brought back into use by this development?

100% of the development is on previously developed land

1.2 What is the development density of the scheme? (Both in dwellings per hectare and habitable rooms per hectare)

West Southall will be an intensive development, with an average development density of circa. 110 dwellings per hectare. The density in terms of habitable rooms per hectare cannot be calculated until detailed discussions relating to the mix and tenure split are had between the parties.

1.3 What percentage of the existing buildings on site will be re-used/refurbished?

There are no buildings on site that are suitable for re-use or refurbishment.

1.4 Where an existing building is reused, what percentage of the total roof area in the development is designed to allow for new outdoor space/green roofs and the integration of renewable energy?

N/A

2 Natural Systems

2.1 Has a London Plan compliant design statement been prepared?

A Design and Access Statement is submitted as part of the planning application.

2.2: How will ventilation and cooling be provided?

The provision of ventilation and cooling will be addressed during the detailed design of individual buildings. However, we would expect that wherever possible, ventilation and cooling will be undertaken through passive building design. Where active cooling is required, the potential for low carbon technology such as heat recovery ventilation will be investigated.

2.3 For developments with a commercial element: Will flexibility be designed into the development to provide adaptability to changing market needs?

There is no significant commercial element to this development. However, ground floor retail units will be designed to be adaptable to future uses as either office or residential space depending on future market demand.

2.4: Will the development seek to reduce the likelihood of contributing to the heat island effect through using the following measures?

A. Provision of appropriate shaded green space and tree cover.

All public spaces will be provided with shaded areas, either through tree planting or structures. Trees will provide shade on streets and footpaths.

B. Green roofs and vegetated walls;

50% of buildings in the development will have green or brown roofs. The landscape strategy also includes options for vegetated walls. Detailed proposals for the green and brown roofs and vegetated walls will be considered during the detailed design stage of individual buildings.

C. Design to enable air-flow throughout the development

The size and location of Central Park will create a convection effect with air rising over the park and drawing air through the surrounding streets.

D. Passive solar design:

Where possible buildings have been orientated to moderate the effects of the sun whilst making seasonal use of both as appropriate.

E. Open water and fountains in public spaces;

There will be a variety of water features within the public squares. The design of these elements will be flexible to allow for the multi-use requirements throughout the year.

F. Shaded public spaces and footpaths

All public spaces will be provided with shaded areas, either through tree planting or structures. Trees will provide shade on streets and footpaths.

2.5 What provision will be made for secure bicycle storage and facilities for electric vehicles? (For example: bicycle racks or charging points).

- *Cycle parking will be provided in public areas and commercial buildings. Private, secure cycle storage will be provided for every dwelling at a minimum ratio of 1 space per dwelling.*

The provision of public and private charging points for electric cars has not been considered at this stage. This would be addressed during detailed design of the development.

3 Energy

3.1 Has an Energy Statement (incorporating a Energy Demand Assessment) for the proposed development been prepared?

An Energy Statement has been prepared and is submitted as part of the planning application.

3.2 To what extent will the development take into account the hierarchy for feasible heating systems?

A hierarchical energy efficiency and renewable energy strategy is integral to the masterplan. High performance insulation/materials will be used to reduce demand for winter heating and summer cooling. Remaining demand for heating and hot water will be met through CHP, with at least 20% of energy being from renewable sources.

3.3 How much of the street lighting will be energy efficient with limited upward light transmission?

It is intended that all street and other public lighting will be energy efficient and designed to limit upward light transmission. Consideration will be given to this when designing the public realm.

3.4 What percentage of total site energy demand will be produced from an on-site renewable scheme (e.g. wind, solar, hydro photovoltaic bank, CHP operating on biomass or waste)?

The Energy Strategy for the development considers two primary options for renewable energy provision.

The first is the inclusion of large scale CHP including a proportion of generation from renewable technologies (biomass). The biomass boiler will be sized to meet at least 20% of development's demand for energy.

The second considers energy provision from a gas infrastructure turbo expander scheme. The energy centre is bio-diesel fuelled and is capable of providing three times the power required by the whole of the West Southall development.

Please refer to the Energy Strategy for details.

3.5 Will lighting/heating/cooling controls operate efficiently under different loadings and be adaptable and accessible?

Good quality controls are essential in ensuring good part load efficiencies. Throughout the development, heating/cooling/lighting controls will be designed to enable the systems to operate efficiently under part load.

3.6 To what extent will the development contribute to London's hydrogen economy?

The development makes no direct contribution to London's hydrogen economy.

4. Materials

4.1 What proportion of the timber used in construction will be from an independently verified sustainable source?

It is the Applicant's intention that 100% of the timber used in construction will be from an independently verified sustainable source.

4.2 What proportion (by mass) of the building materials used in construction will be specified as low environmental impact?

As a minimum, all materials will receive at least a B rating in the 2008 Green Guide to Specification.

4.3 Has a strategy been prepared to reduce the amount of land won aggregates used in the development?

A strategy for land won aggregates is detailed in the Environmental Statement (Chapter 6: Construction and Phasing; and Chapter 12: Ground Conditions) and the CEMP. Submitted with the outline planning application.

4.4 Does the developer have a strategy to use locally sourced materials in the development (we would generally expect this to be within 35 miles of the site)

A strategy will be developed during the detailed design of the first phase of the development. This will be reviewed and updated for each phase.

4.5 How much local reclaimed or recycled materials will be used in construction?

The Applicant would seek to maximise the use of local reclaimed and recycled materials.

4.6 Will recycled materials be maximised and used?

The Application would seek recycled materials.

5 Water

5.1 How will the development meet the required water demands placed upon the site?

The Applicant will endeavour to achieve water usage levels of under 105 litres per person per day (l/p/d) in each of the residential dwellings. The specification will be developed as part of the detailed design of individual building, but could include:

- *WC - dual flush 4/2.6 litres*
- *Basin tap - 3 litres/min aerated*
- *Shower - 8 litres/min*
- *Bath - 116 litres*
- *Sink - 5 litres/min*
- *Washing machine - 42 litres*
- *Dishwasher - 13 litres*

5.2 Does the development have 100% metering of water provision?

It is intended that the development will have 100% metering for water provision across each of the proposed land uses.

5.3 What percentage of household baths, showers, hand basins and washing machines are connected to grey water recycling systems to enable water re-use within the home or wider development?

The Applicant will endeavour to use grey water or harvested rainwater in washing machines and for flushing of toilets in the residential dwellings. This will be explored further prior to commencing the detailed design stage for the first residential plot, and will be reviewed periodically going forward.

6. Pollution and flooding

6.1 Will the site be designed to minimise the impact of noise from external sources?

The primary source of external noise is the railway line that runs along the southern edge of the site. A noise barrier, in the form of a vegetative wall, is proposed, in order to minimise the impact on properties proposed along the southern boundary of the site.

6.2 What is the BREEAM/ EcoHomes rating sought for the proposed building(s)?

The Applicant will endeavour to achieve a Code for Sustainable Homes level 4 for residential buildings with performance against the Code increasing in line with required changes under Building Regulations: and BREEAM Excellent (or equivalent) for all non-residential buildings.

6.3 How much NOX will be produced by the boiler(s) proposed for the development?

The Applicant will endeavour to design as a minimum NOX emissions for each dwelling less than or equal to 70mg/kwh.

6.4 What measures have been taken to protect internal air quality (i.e. from pollutants arising from internal plant and machinery, and/or traffic)?

This will be addressed during the detailed design of individual plots.

6.5 Following a comprehensive Flood Risk Assessment, what measures have been taken to reduce the contribution the development may make to flash flooding?

The primary elements of the site wide surface water drainage system include:

- *Use of green and brown roofs to assist in attenuating water and reduce run-off rates.*
- *Surface water runs will be exposed, where possible, both for ease of access and maintenance and also to provide visual interest within the public realm.*
- *As natural infiltration through the ground will not be possible due to the remediation clay capping, all on-site drainage will be taken across the site through a series of underground tanks where it can be linked to the existing drainage network.*

Wetlands that form part of this drainage system provide additional attenuation capacity.

6.6 How effective are the Sustainable Drainage System (SDS) measures to be used on site?

The peak run-off rates for the proposed development will discharge at the greenfield run-off rate.

6.7 In wind testing, will the proposed building meet the Lawson Standard criteria for each of the following features: Roads and Car Parks, Business Walking, Leisure Walking, Standing, Entrances, Sitting Areas (if relevant)?

This is addressed in Chapter 17: Mircroclimate of the Environmental Statement.

7 Comfort and security

7.1 What percentage of all buildings designed, constructed and finished will be low-allergy / environmentally-friendly?

All fixtures and fittings, and finishings, where provided, will be specified to reduce the impact of allergens.

7.2 Will site heating / cooling / power / water / sewage and communications infrastructure be designed for easy access (and allow for future expansion of services)?

Utilities and drainage infrastructure will be designed and constructed in a primary dedicated corridor branching off into individual development plots as required. Wherever practical, a single service trench containing all of the utilities together will be used for both ease of access and to meet the development strategy for site contamination remediation. In addition, as the overall site will be developed in phases, and it is accepted that subsequent phases may need to be modified to address changing market demand, a progressive and flexible system will be adopted for the infrastructure.

7.3 Does the development meet the principles of inclusive design outlined below?

A. Developments can be used easily by as many people as possible without undue effort, separation, or special treatment.

The masterplan has been designed to maximise connectivity with the rest of Southall; providing new residents with easy access to local services and

public transport links and ensuring that the surrounding community will be able to enjoy the developments facilities and gain direct access to Minet Country Park.

B. Developments offer the freedom to choose and the ability to participate equally in the development's mainstream activities.

There is no intention for this to be a gated development. The public realm as identified on Parameter Plan and the services and activities available will be open to all.

C. Developments value diversity and difference

The development proposals aim to integrate with surrounding communities. This will be a mixed use new neighbourhood with a wide range of new homes and a new and added value retail offer – more 'western' in character than that otherwise available in the area but, therefore, supportive not locally competitive

7.4 What percentage of homes are designed to meet the needs of wheelchair users, and to be adaptable across the lifetime of their occupiers?

An inclusive environment will be provided throughout the development, based on accessibility for everyone. The access to all buildings will be step-free and the upper and lower levels of all buildings accessed by both lift and stairs. The town houses and duplex accommodation will have provision to allow for a chair lift to be provided. 10% of all social rent dwellings will be designed capable of adaption for use by wheelchair users, in accordance with the relevant guidance. Market research will be commissioned to identify demand for wheelchair housing units in respect of market and intermediate dwellings, after which a fair and reasonable proportion (up to 10%) respectively will be constructed.

7.5 Will the developer install infrastructure in homes and commercial / industrial buildings which will allow the use of virtual communications?

This issue will be addressed during the detailed design of the first phase of the development.

7.6 Will development be designed to "Secure By Design" or equivalent standards?

The detailed design of each phase of the development will consider the need to meet 'Secure by Design' or equivalent standards in the design stage for each plot.

8. Natural environment

8.1 What impact will the development have upon access to public open space?

A new park will be created as part of the development and direct access across the canal will improve access for the existing communities to the Minet Country Park.

8.2 Will there be provision of new public open space (in particular, accessible play space)?

A wide range of new public spaces will be created as part of the development, including a new park with playing fields, a town square and children's play areas for various ages children.

8.3 What will be the impact of the development on biodiversity and access to nature? (A full ecological survey should be carried out, by a qualified ecologist, to examine habitats in and around the site and migration routes across the site)

The design, development and management of West Southall will aim to maximise the range and variety of opportunities for biodiversity value in open spaces.

A full ecological survey has been conducted and is detailed as part of the Environmental Statement.

Access to nature (Minet Country Park) for new residents and the existing community will be improved through the provision of the bridge links direct access to the Minet Country Park.

8.4 In areas where there is a deficiency in access to nature, will there be the creation of accessible natural green space? (Will any new wildlife corridors be created or will links to habitats within or outside the site be created?)

N/A

9 Waste

9.1 What principles of the waste hierarchy will be used if demolition is required?

There will be no significant demolition as part of this development.

9.2 Will reused or recycled construction materials be specified in the design?

The Applicant would seek to maximise the use of reclaimed and recycled materials. This will be detailed further as part of the reserved matters submission for each plot.

9.3 What facilities will be provided to encourage building occupiers to recycle and/or compost kitchen and garden waste?

Depending on LB Ealing's collection arrangements at time of construction either of the following would be provided:

A single 30 litre bin if household waste is to be sorted post collection or at least 3 separate bins with at least 30 litres total capacity if materials are to be sorted pre collection. The Applicant will provide individual home composting facilities if LB Ealing do not provide a communal composting service at time of construction.

9.4 If recycling facilities are provided will they be easy to access?

Space will be provided externally or in service areas to allow for the storage of waste awaiting collection, and will be designed to be easily accessible by residents.

9.5 Will prefabricated and standardised modulation components be used?

This issue will be addressed during the detailed design of individual buildings.

9.6 Will waste recovery facilities be incorporated into the design of the development?

There are no proposals to incorporate waste recovery facilities into the development.

10 Sustainable construction

10.1 Will a waste management/minimisation scheme be implemented by the developer when undertaking construction of the development?

A site waste management plan will be developed and implemented. All waste materials will be stored in designated areas and be kept clear of the surface water drainage system.

10.2 Will a site management plan be drawn up to ensure construction has a limited impact on the surrounding environment?

A Construction Environmental Management Plan has been developed to ensure that any impact during the construction phase is minimised. This will be reviewed as the development progresses.

10.3 Has the London Best Practice Guide on the control of dust and emissions during demolition and construction been considered?

London Best Practice Guide on the control of dust and emissions during demolition and construction will be considered during the detailed design of the first phase of the development. This will be reviewed and updated for each phase.

10.4 During the construction of the development will the developer have recognition to the protected species legislation?

It is our intention to comply with protected species legislation. During construction, measures will be adopted to protect wildlife and prevent unnecessary damage to retained habitats. Details of these measures will be provided within a method statement and agreed prior to the commencement of works.

10.5 Has a Considerate Constructors Scheme (or in the City of London the Considerate Contractor scheme) been considered?

All contractors will be required to sign up to the Considerate Contractors Scheme.

National Grid Property Limited

Beyond Green

Capita Lovejoy

Cyril Sweett

Hakes Associates

Hunt Dobson Stringer

Make

Marks Barfield Architects

PPS Group

RPS

Savell Bird & Axon

Savills

White Young Green