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waldegrave arms , teddington

sustainability report & checklist

LONDON BOROUGH OF
RICHMOND UPON THAMES
05 OCT 2007
PLANNING

MTT/SUSTAIN

executive summary...

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PREAMBLE

This report has been prepared on behalf of Dukelease Properties to provide a commentary on sustainability issues for the development at the Waldegrave Arms in Teddington, demonstrating how principles incorporated in the design contribute to ensuring sustainability throughout construction and use. The report is intended to demonstrate that the London Borough of Richmond upon Thames' Sustainability Construction Checklist and Unitary Development Plan (UDP) policies relevant to sustainability issues have been addressed in a structured and comprehensive manner by the proposals within the Planning Application.

SUMMARY STATEMENT

The building fabric and glazing required shall be designed to exceed the requirements of Part L of the Building Regulations, and accordingly will incorporate good insulation, air leakage and plant control efficiency measures. A balance has been struck between the need for effective day lighting and the desire to minimise excessive solar gains into the dwellings.

A range of measures are detailed in the report relating to waste reduction and the encouragement of recycling during the building's construction and operation based on the adoption of best practice construction site policies. Water consumption of the development will be mitigated by the specification of low-use water fittings throughout.

A 'Be Lean, Be Green, Be Clean' strategy (i.e. reduce energy demand, use renewable energy, supply energy efficiently) is applied to energy use on site through a consideration of applicable energy efficiency measures followed by a structured review of possible low carbon and renewable energy options.

In order to provide an overall assessment of the performance of the development against a recognised third party benchmark an EcoHomes 2006 pre-assessment has been undertaken for the site by a licensed assessor which demonstrates that an 'Excellent' rating is likely to be achieved by the design proposals. Within the Sustainability Construction Checklist, the individual EcoHomes Credit areas have also been used to identify sustainability performance criteria for particular measures on site to demonstrate that these meet qualitative best-practice targets.

The 10% target for on-site production and use of renewable energy has been exceeded and the supplementary measures proposed for the site are shown to address all other elements of the checklist - a performance verified by the predicted EcoHomes 2006 'Excellent' rating.

LAYOUT OF THIS REPORT

Following the **Executive Summary**, an initial description of the development proposals are given in **Section 1.0 Site Background** to introduce the various issues of relevance on the site. A review of the relevant national, regional and local policy is then presented in **Section 2.0 Policy Background** with the completed Sustainability Construction Checklist in matrix form in **Section 3.0**.

In **Section 4.0 Sustainability Statement** the commentary presented demonstrates how the measures proposed for the site address the various subject areas in the Sustainability Construction Checklist and the London Borough of Richmond upon Thames UDP policies.

Appendix a provides a detailed version of the EcoHomes pre-assessment to demonstrate compliance with the Sustainability Construction Checklist, policy requirements and adoption of up to date best practice design standards.

A review of energy issues on site is then provided in **Section 5.0 Energy issues overview** and an assessment made of suitable renewable energy technologies for incorporation on the site in **Section 6.0 Renewable Energy Measures**.



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1.0 site background...

INTRODUCTION

The Waldegrave Arms, is a proposed mixed-use residential, and restaurant/pub development on the site of the former Waldegrave Arms Pub on Waldegrave Road, Teddington, TW11 8LX. The existing public house is proposed to undergo refurbishment and to be extended with 22 residential apartments.



Location of the Site

LOCATION

The proposed development will occupy a site on the Waldegrave Road, Teddington, TW11 8LX. This site is located on the T-junction where Shacklegate Lane meets Waldegrave Road (A309), approximately 730m south of Strawberry Hill Station and within walking distance of Strawberry Hill golf course.

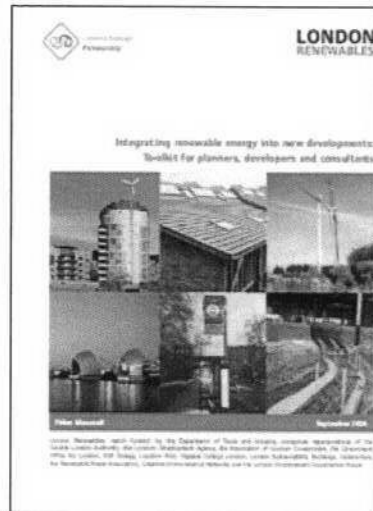


View of the Existing Site

2.0 policy background...

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THE MAYOR'S ENERGY STRATEGY, GREEN LIGHT TO CLEAN POWER (FEBRUARY 2004)



The Mayor's Energy Strategy seeks to address the following specific aims:

Reducing London's contribution to climate change by minimising the emissions of Carbon Dioxide from all sectors (commercial, domestic, industrial and transport) through energy efficiency, combined heat and power, renewable energy and hydrogen fuel cells

Helping to eradicate fuel poverty by giving Londoners, particularly the most vulnerable groups, access to affordable warmth, contributing to London's economy by increasing job opportunities and innovation in delivering sustainable energy, and improving London's housing and other building stock

In delivering the Mayor's Energy strategy an Energy hierarchy has been developed to provide a guide to the approach that should be adopted by individuals and organisations in making London a leading city for sustainable energy.

The Energy hierarchy is as follows:

- Use Less Energy ('Be Lean') - This will minimise the demand for energy;
- Use Renewable Energy ('Be Green') - As much energy as possible should come from zero carbon sources, so climate change impact is reduced, and natural resources conserved;
- Supply Energy Efficiently ('Be Clean') - Where it is not practical to use renewable energy, the energy should be supplied as efficiently as possible (for example from Combined Heat and Power) so that the use of fossil fuels is minimised, further reducing overall carbon dioxide emissions

Use less energy "Be Lean"	Reduce energy consumption through behavior change Improve insulation Incorporate passive heating and cooling Install Energy Efficient lighting and appliances
Use renewable energy "Be Green"	Install renewables on site Import renewable energy
Supply energy efficiently "Be Clean"	CHP and community heating Cut transmission losses through local generation

The SPG sets out a process to enable sustainable energy matters to be addressed. The steps are:

1. Carry out an energy demand assessment (London Plan Policy 4A.8)
2. Maximise energy efficiency
3. Demonstrate that consideration has been given to heating and where necessary, to cooling systems, passive design, solar water heating, CHP (or Trigeneration) preferably fuelled by renewables, community heating and cooling, heat pumps and gas condensing boilers

Achieving low energy consumption in use requires action on four main fronts:

1. Promotion and encouragement of sustainable lifestyles
2. Design and construction of building fabric and building services
3. Use, operation and management of buildings and building services
4. Selection and use of other energy consuming equipment

Energy Conservation Measures

The site's layout has been carefully orientated and optimised in order to maintain good access to both solar energy and daylight through the arrangement of the remaining blocks around courtyards and other external spaces.

REFERENCES

1. Energy White Paper: Our Energy Future - Creating a Low Carbon Economy
2. The Energy Challenge Energy Review Report 2006 - DTI July 2006
3. Recommendation 5 of the Royal Commission on Environmental Pollution's 22nd report: Energy - The Changing Climate



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2.0 policy background...

2.0 policy background...

LOCAL POLICIES

London Borough of Richmond upon Thames – Unitary Development Plan

The key statutory document governing development on the site is the Unitary Development Plan of Richmond Council Adopted in 2005.

The Unitary Development Plan (UDP) sets out planning policies for developing land, improving transport and protecting the environment. It also describes some of the more significant development proposals likely to take place over the next few years. The new Adopted UDP plan supersedes all other plans covering Richmond.

Richmond's UDP sets out a clear and well-established planning framework for development in and around Richmond. It is in general in conformity with national planning policy and the London Plan.

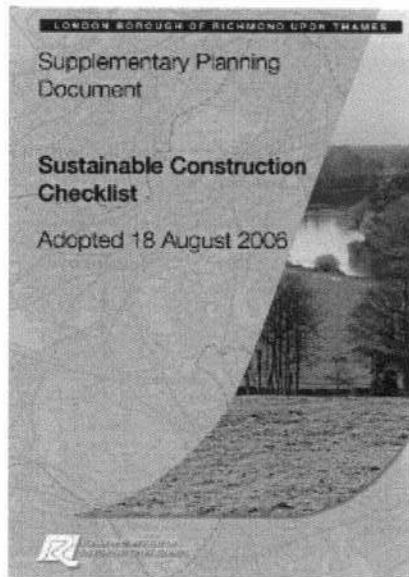
Part 1 of the UDP sets out the broad development and land use strategy for the Borough, taking account of London-wide planning issues. It contains major land use policies and provides the framework for the more detailed policies and proposals in Part 2. By law this section contains policies on development, traffic management and environmental improvement.

Part 2 contains the more detailed planning policies, under different chapter headings such as housing, transport, the built environment, etc. There are additional chapters on local strategies and plan proposals for different areas within the borough. The Waldegrave Arms development is located within the Teddington and Hampton Wick area. These look in greater depth at areas with complex planning issues relating to the UDP.

3.0 sustainability construction checklist...

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Sustainable Construction Checklist



INTRODUCTION

In addition to the UDP Richmond Council has a Sustainable Construction Checklist as a practical way of testing the sustainability of proposals, by assessing them against key sustainability objectives and criteria, which aim to ascertain a proposal's positive or negative effects.

The checklist applies when building proposals meet or exceed thresholds of; 1000 sq.m. floorspace, and/or for developments of five or more residential units.

The checklist has been developed from the Mayor of London's Supplementary Planning Guidance on Sustainable Design and Construction, national planning guidance including Planning Policy Statement (PPS) 1: Delivering Sustainable Development, PPS23: Planning and Pollution Control, PPS25: Renewable

Energy, and Planning Policy Guidance (PPG) 25: Development and flood risk (reference is made to the draft PPS 25)

The checklist is split into 18 checklist items which describe the key principles of sustainable design and construction.

BACKGROUND

Introduction

The following Issues Matrix is intended to summarise the extent to which proposals for the site currently meet the aspirations of the SPD, Sustainable Construction Checklist of the London Borough of Richmond upon Thames.

These issues are discussed in more detail in the Sustainability Commentary in Section 4, however, the matrix provides the opportunity to cross reference the policy issues and proposed measures to third party benchmarks and hence to demonstrate achievement in meeting current best practice in sustainability.

EcoHomes 2006 is used as a benchmarking tool and covers a wide range of sustainability issues and as well as providing a means of assessing the development in general. It provides qualitative targets for comparing the measures proposed for Waldegrave Arms, Teddington to qualitative targets for these issues.

Legend

A tick (✓) indicates where it is considered the policy criteria has been met, a double tick (✓✓) indicates where it is considered that the criteria has been exceeded.

A cross (X) indicates where the measures proposed falls short of the policy supporting text requirements.

A dash (-) indicates where the criteria is indeterminate prior to detailed design proposals for the building being finalised, or is not applicable to the site.



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UDP POLICIES	SUSTAINABLE CHECKLIST TEXT	MEASURES PROPOSED	ATTAINMENT	BENCHMARK	BENCHMARK DETAIL
1. ENVIRONMENTAL RATING					
	<p><u>Achieve EcoHomes/BREEAM 'Excellent' Rating For Design</u></p> <p>An EcoHomes/ BREEAM assessor should be appointed to the project at the earliest stages. The assessor should prepare a Preliminary Assessment, which illustrates that the 'Excellent' rating will be achieved. This assessment should then be provided to the relevant case officer.</p> <p>On completion of the construction works, the developer will be required to commission a Post Construction Review and provide this to Richmond Planning Authority. This review will confirm that the criteria specified at the design stage have been implemented during construction and that the 'Excellent' rating is still valid.</p>	EcoHomes rating 'Excellent' achieved	✓	ecohomes	EcoHomes pre-assessment is contained in appendix A of this document. An approved assessor has been appointed to provide the full assessment and post construction revisions.
2 SITE CONTAMINATION					
ENV 7 Contaminated Land	<p><u>Investigate Potential Contamination Of Site</u></p> <p>Proposers of development on potentially contaminated sites should arrange pre-application discussions with the local planning authority (LPA) and other regulators, including the Environmental Health and Building Control departments of the local authority, the LPA's archaeological and nature conservation advisers and the Environment Agency (where pollution of controlled water and the waste management implications of land contamination are likely to be issues).</p>	The site is not thought to be contaminated, but an assessment to confirm this is to be carried out.	✓		
3. SITE ECOLOGY					
ENV 9: Trees in town and Landscape	<p><u>Undertake Ecological Assessment</u></p> <p>1. Secure ecological data through a scoping study, ecological survey and impact assessment (Refer London Development Agency (LDA) Design for Biodiversity guide)</p> <p>2. Ensure no net loss of biodiversity on the site but aim to achieve a net gain of biodiversity through:</p> <ul style="list-style-type: none"> - Creating, restoring or balancing wildlife habitat on site - Incorporating vegetation into built structures, such as green roofs, green walls, balconies terraces - Incorporating appropriate nesting boxes and roosting structures <p>3. Describe how ongoing ecological management of the wildlife habitat will be achieved</p> <p>4. Where net loss of biodiversity cannot be avoided, describe how loss will be fully mitigated</p>	<p>An ecologist is to be appointed for the development with a commitment to ensure a gain in biodiversity.</p> <p>All the Ecologists key recommendations and 30% of additional recommendations are to be achieved.</p> <p>An arboriculture impact assessment has been carried out.</p> <p>There is a commitment to comply with the Arboriculturalist's recommendations.</p>	✓	ecohomes	<p>Credit Eco 1 – Ecological Value of Site</p> <p>Credit Eco 2 – Ecological Enhancement</p> <p>Credit Eco 3 – Protection of Ecological Features</p> <p>Credit Eco 4 – Change in Ecological value of site</p> <p>Credit Eco 5 – Building Footprint</p>
ENV 24: Species Protection					
BLT 14: Landscape and Development					

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UDP POLICIES	SUSTAINABLE CHECKLIST TEXT	MEASURES PROPOSED	ATTAINMENT	BENCHMARK	BENCHMARK DETAIL
4. ENERGY SAVING					
BLT 15: Daylighting and Sunlighting	<p><u>Design Building And Its Services For Minimum Energy Use</u></p> <p>An energy assessment should be submitted to the planning authority, which shows the predicted energy demand and carbon dioxide emissions for the site and subsequently how these have been reduced by:</p> <ol style="list-style-type: none"> Using less energy (being lean) <ol style="list-style-type: none"> 1.1 Illustrate how energy demand for the development has been reduced by: <ul style="list-style-type: none"> -Applying passive solar design principles -Installing energy efficient measures and technologies Using renewable energy (being green) <ol style="list-style-type: none"> 2.1 See checklist item on Renewable Energy Supplying energy efficiently (being clean) <ol style="list-style-type: none"> 3.1 Illustrate in the proposal how the use of Combined Heat and Power (CHP) technology or a community/ district heating scheme has been explored (where applicable) 	<p>Large windows have been incorporated into habitable rooms, especially living areas. A report on daylight/sunlight has been carried out by Tryglyph.</p> <p>U-values will be significantly above minimum Building Regulations.</p> <p>Internal drying space shall be provided in bathrooms. A 4m retractable drying line over the bath with the extractor fan fitted with a humidistat.</p> <p>Fridges/fridge freezers specified will be A++ rated, dishwashers and Washing machines A rating and washer/tumble dryers provided will be B rated</p> <p>70% of internal lighting will be defined as luminaires with an efficacy of 40 lumens/watt or better.</p> <p>External space lighting will be dedicated compact florescent fittings or will only accept lighting of min 40 lumens/Watt</p> <p>Internal communal lighting will be low energy fittings. Common lobbies and external entrances controlled by dawn to dusk sensors and timers.</p> <p>Communal hallways, landings, stairwells controlled by push button time switches or PIR sensors.</p> <p>Security lighting with over 150W with dawn to dusk sensors are specified.</p>	✓	ecohomes	<p>Credit Ene 1 – Dwelling Emission Rate</p> <p>Credit Ene 2 – Building Envelope performance</p> <p>Credit Ene 3 – Provision of drying space</p> <p>Credit Ene 5 – Internal Lighting</p> <p>Credit Ene 6 – External Lighting</p> <p>Credit Hea 1 - Daylighting</p>
5. RENEWABLE ENERGY					
BLT 31: Energy Resource & Conservation	<p><u>Reduce Predicted Site CO₂ Emissions By At Least 10% Through The Use Of On Site Renewable Energy</u></p> <ol style="list-style-type: none"> Carbon emissions from the total energy needs (heat and power) of the development should be reduced by at least 10% by the on site generation of renewable energy. The following approach should be adopted: <ul style="list-style-type: none"> • Calculate predicted electricity and heat demand for the site (kWh) • Convert energy demand (kWh) to carbon dioxide emissions (CO₂) • Identify renewable energy technologies that are suitable for the site • Calculate level of carbon dioxide emissions offset through use of renewable energy technology (should be at least 10% to comply with policy) All external lighting is to be solar-powered, wherever possible 	<p>At least 10% of total energy demand for the site will be supplied from renewable sources. A choice of PV or Biomass has been found to be most feasible.</p> <p>A feasibility study into the renewable energy will be carried out and results implemented.</p>	✓✓	ecohomes	<p>Credit Pol 4 – Zero Emission Energy Source</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>LONDON BOROUGH OF RICHMOND UPON THAMES</p> <p>05 OCT 2007</p> <p>PLANNING</p> </div>

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UDP POLICIES	SUSTAINABLE CHECKLIST TEXT	MEASURES PROPOSED	ATTAINMENT	BENCHMARK	BENCHMARK DETAIL
6. CONSTRUCTION MATERIALS					
	<p><u>Specify Environmentally-Friendly Construction Materials</u></p> <ol style="list-style-type: none"> Wherever possible, existing buildings or their building materials should be reused, providing that this allows policy on energy, materials and water conservation to be complied with The majority of timber products should be obtained from sustainable sources (CSA, FSC, MTCC, PEFC, SFI) and balance from a temperate source (i.e. non tropical wood) Insulation materials must not contain substances known to contribute to stratospheric ozone depletion or have the potential to contribute to global warming PVC windows should not be used Low emission finishes, construction materials, carpets and furnishings should be used wherever practical Recycled aggregates should be used wherever possible for road sub surface and parking areas Materials used in the development should be sourced locally wherever possible 	<p>Building materials will be reused where possible</p> <p>Timber will be obtained from Sustainable sources – CSA, FSC, MTCC, PERC, SFI.</p> <p>Other Basic building elements will be responsibly sourced where possible.</p> <p>Insulating materials will have a GWP of < 5 and an ODP of zero.</p> <p>Window frames will be made of wood.</p> <p>Where possible elements construction will be specified as 'A' rated from the Green Guide to Housing Specification.</p> <p>Use of recycled aggregates will be used where possible for sub surfaces and parking areas.</p> <p>Local sourcing of materials will be used where possible.</p>	✓	ecohomes	<p>Credit Mat 1 – Environmental Impact of Materials</p> <p>Credit Mat 2 – Responsible Sourcing of Materials: Basic Building Elements</p> <p>Credit Mat 3 – Responsible Sourcing of Materials: Finishing Elements</p> <p>Credit Pol1 – Insulant GWP</p>
7. WATER SAVING/RECYCLING					
	<p><u>Use Of Water Saving Devices And Recycling Techniques</u></p> <ol style="list-style-type: none"> Water saving devices to be installed wherever possible in the development, e.g. low flush toilets and spray taps Use rainwater harvesting in gardens and soft landscaping where appropriate (e.g. water butts, central rainwater collection systems) Use of greywater and rainwater for all non potable purposes should be explored 	<p>Water saving devices specified including:</p> <ul style="list-style-type: none"> 6/4 l flush dual flush toilets will be specified. Flow regulators on taps will be specified. < 9l/s showers will be specified. A standard size bath will be specified A low water use dishwasher of 12l/s max A low water washing machine of 40 l/cycle max. <p>Water butts will be specified.</p> <p>50% of surface water run-off is to be attenuated by the use of permeable paving and rainwater collection from the roof.</p>	✓✓	ecohomes	<p>Credit Wat 1 – Internal Potable Water Use</p> <p>Credit Wat 2 – External Potable Water Use</p> <p>Credit Pol 3 – Reduction of Surface Runoff</p>
8. RECYCLING					
	<p><u>Provide Internal/External Recycling Facilities</u></p> <ol style="list-style-type: none"> All development of buildings should provide internal and external recycling facilities 	<p>Internal storage of 3 bins, with min total capacity of 30L and no individual bin less than 7 L. All bins in a dedicated positions.</p> <p>External recycling facilities are to be provided in line with Richmond Councils requirements</p> <p>A local Authority Collection scheme is in operation for recyclable material.</p>	✓✓	ecohomes	<p>Credit Mat 4 – Recycling Facilities</p>

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UDP POLICIES	SUSTAINABLE CHECKLIST TEXT	MEASURES PROPOSED	ATTAINMENT	BENCHMARK	BENCHMARK DETAIL
9. SURFACE WATER RUN OFF					
ENV 39: Clean water, foul sewers & Sewage treatment	<p><u>Prevent Water Pollution And Overburdening Of Drainage Systems</u></p> <ol style="list-style-type: none"> 1. Estimate waste water and surface water run-off impact on drainage system 2. Wherever practicable, use sustainable urban drainage systems (SUDS) to provide attenuation of water run-off to either natural water-courses and/ or municipal drainage systems. Ensure multiple benefits of SUDS are sought, such as wildlife improvements. 3. Describe how ongoing maintenance of SUDS will be ensured 4. Need to consider provision of water and sewage utilities infrastructure to service proposed development 	50% of rainwater will be attenuated by the use of water butts and permeable paving.	✓	ecohomes	Credit Pol 3 – Reduction of Surface Runoff Credit Pol 5 – Flood Risk Mitigation
10. MICROCLIMATE					
	<p><u>Design Out Microclimatic Effects</u></p> <p>Prove how negative impact on the microclimate of existing surrounding public realm and buildings has been mitigated:</p> <ul style="list-style-type: none"> • Deep shadows (particularly over water) and loss of solar gain • Increased wind speeds (e.g. wind tunnel effect) 	There should be no microclimatic effects around the development or on neighbouring buildings.	✓		
11. PUBLIC TRANSPORT					
	<p><u>Facilitate The Use Of Public Transport</u></p> <ol style="list-style-type: none"> 1. Ensure that the development provides short direct safe links to public transport and / or enhancement of the public transport network 	<p>Two bus stops are within 50m of the development with regular services to Twickenham, Richmond and Hammersmith.</p> <p>Strawberry Hill and Teddington overground stations are also within walking distances.</p>	✓✓	ecohomes	Credit Tra 1 – Public Transport
12 CYCLING AND WALKING					
	<p><u>Ensure Development Design Encourages Cycling And Walking</u></p> <ol style="list-style-type: none"> 1. Illustrate on the plans how the development has included a network of safe pedestrian and cycle routes where applicable) 2. Provide secure cycle storage for residential and office developments. Workspaces with showers should also be considered to allow cycling to work. 	<p>24 cycle spaces are to be provided around the development with easy access from the flats.</p> <p>Disabled access has been provided for around the development including a disable parking space and ramps.</p>	✓	ecohomes	<p>Credit Tra 2 – Cycle Storage</p> <p>Credit Tra 3 – Local Amenities</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>LONDON BOROUGH OF RICHMOND UPON THAMES</p> <p>05 OCT 2007</p> <p>PLANNING</p> </div>

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UDP POLICIES	SUSTAINABLE CHECKLIST TEXT	MEASURES PROPOSED	ATTAINMENT	BENCHMARK	BENCHMARK DETAIL
13 GREEN AND OPEN SPACES					
ENV 1: Metropolitan open land	<p><u>Enable easy access to the natural environment/open spaces and provide new and enhanced green spaces to serve the community</u></p> <ol style="list-style-type: none"> Ensure no net loss of publicly accessible open space but aim to achieve a net gain of publicly accessible open space and protect and encourage biodiversity where possible Aim to create open space that meets the need of biodiversity and people through provision of: <ul style="list-style-type: none"> Allotments Areas of wildlife habitat Access to green space for those without gardens Green roofs The proposal should provide additional links in Green Chains wherever possible Climate change over the next 50 years should be considered when choosing species for landscape design 	<p>A communal garden is provided for all occupiers of the flats.</p> <p>The garden will be provided with a lock and only then available to the flats occupants.</p> <p>The planting within the garden will be on the advice of the ecologist.</p> <p>Climate change will be considered when choosing species for landscape design.</p>	✓	ecohomes	Credit Hea 3 – Private Space
14. SECURE DESIGN					
BLT 17: Crime and Public safety	<p><u>Adopt best practice in the secure design of the development</u></p> <ol style="list-style-type: none"> Developments should incorporate principles of 'secure by design' and proposers of development should consult the Community Safety Partnership to design public space. 	<p>An architectural Liaison officer will be appointed.</p> <p>A Secured by Design award will be achieved with advice from the Architectural Liaison Officer.</p> <p>LPS1175 SR1 or PAS24-1 and BS7950 will set the security standards of all external doors and windows.</p>	✓✓	ecohomes	Credit Man 4 – Security
15 LIGHT POLLUTION					
ENV 13: Lighting including Flood Lighting	<p><u>Mitigate light pollution</u></p> <ol style="list-style-type: none"> Describe how light pollution (which can cause significant adverse impact on residential amenity or biodiversity) has been avoided through using lighting only where and when necessary, using an appropriate strength of light and adjusting light fittings to direct the light to where it is required. External lighting should be energy efficient and solar powered wherever possible 	<p>Light pollution is to be mitigated in line with the Institute of Lighting Engineers guidance notes for the reduction of obtrusive light 2005</p>	✓		
16 FLOOD RESISTANT DESIGN					
	<p><u>Apply the principles of flood resistant design (where applicable)</u></p> <ol style="list-style-type: none"> Consider the flood risks (current and future) associated with the development and apply the principles of flood resistant design where necessary Where flood risk potential exists, developer to prove in writing that principles have been applied and that buildings will be 'insurable' (see Strategic Planning for Flood Risk. Association of British Insurers, July 2004) 	<p>N/A as the site lies in an area defined by the Environment Agency as having a low (0.1% or more) chance of flooding.</p>	✓	ecohomes	Credit Pol 5 – Flood Risk

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UDP POLICIES	SUSTAINABLE CHECKLIST TEXT	MEASURES PROPOSED	ATTAINMENT	BENCHMARK	BENCHMARK DETAIL
17 ACCESS					
BLT 12: Accessible Environment	<p>Ensure that the building is accessible to all</p> <p>1. All developments will need to include a Design and Access Statement. This will need to show how the development is accessible to all.</p>	A Design and Access Statement has been provided to show the development is accessible to all.	✓		
18 CONSTRUCTION PROCESS					
<p>ENV 40: Quality of Groundwater</p> <p>BLT 31: Energy & Resource Conservation</p>	<p><u>Reduce adverse impact of construction process on quality of site and its surroundings</u></p> <p>1. Waste Management: Reduce waste during construction and demolition phases and sort stream waste on site. Proposal to include a waste management plan, which should demonstrate how the waste hierarchy will be applied during the construction process</p> <p>2. Air Quality: Ensure adequate air pollution monitoring is carried out within and/ or around the construction site to monitor the effect of activities on site. Agree monitoring with local authority</p> <p>3. Equipment: Ensure equipment, including vehicles used to transport materials and people, is efficient and well-maintained to minimise emissions</p> <p>4. Building Green: Aim to disturb as little topsoil as possible and compost organic waste on site to supplement existing topsoil</p> <p>5. Biodiversity: Give physical protection to existing trees and waterside zones during construction. Where construction activities require temporary access over, or removal and replacement of, habitat these operations should be supervised by trained staff, or a qualified ecologist.</p> <p>6. Considerate Contracting: Proposers of major developments should sign up to the Considerate Constructors Scheme, which addresses the noise and pollution impacts of the construction process</p>	<p>A waste management plan will be produced, and will demonstrate how the waste hierarchy will be applied through the construction process.</p> <p>The Considerate Constructors Scheme will be signed up to and a CS score of 32 will be achieved.</p> <p>During construction air quality, resource use, energy consumption, waste management and pollution will be monitored and managed in an environmentally sound manner.</p> <p>Organic waste will be composted and minimal disturbance of top soil will be aimed at.</p>	✓✓	ecohomes	<p>Credit Man 2 – Considerate Constructors</p> <p>Credit Man 3 – Construction Site Impacts</p>

