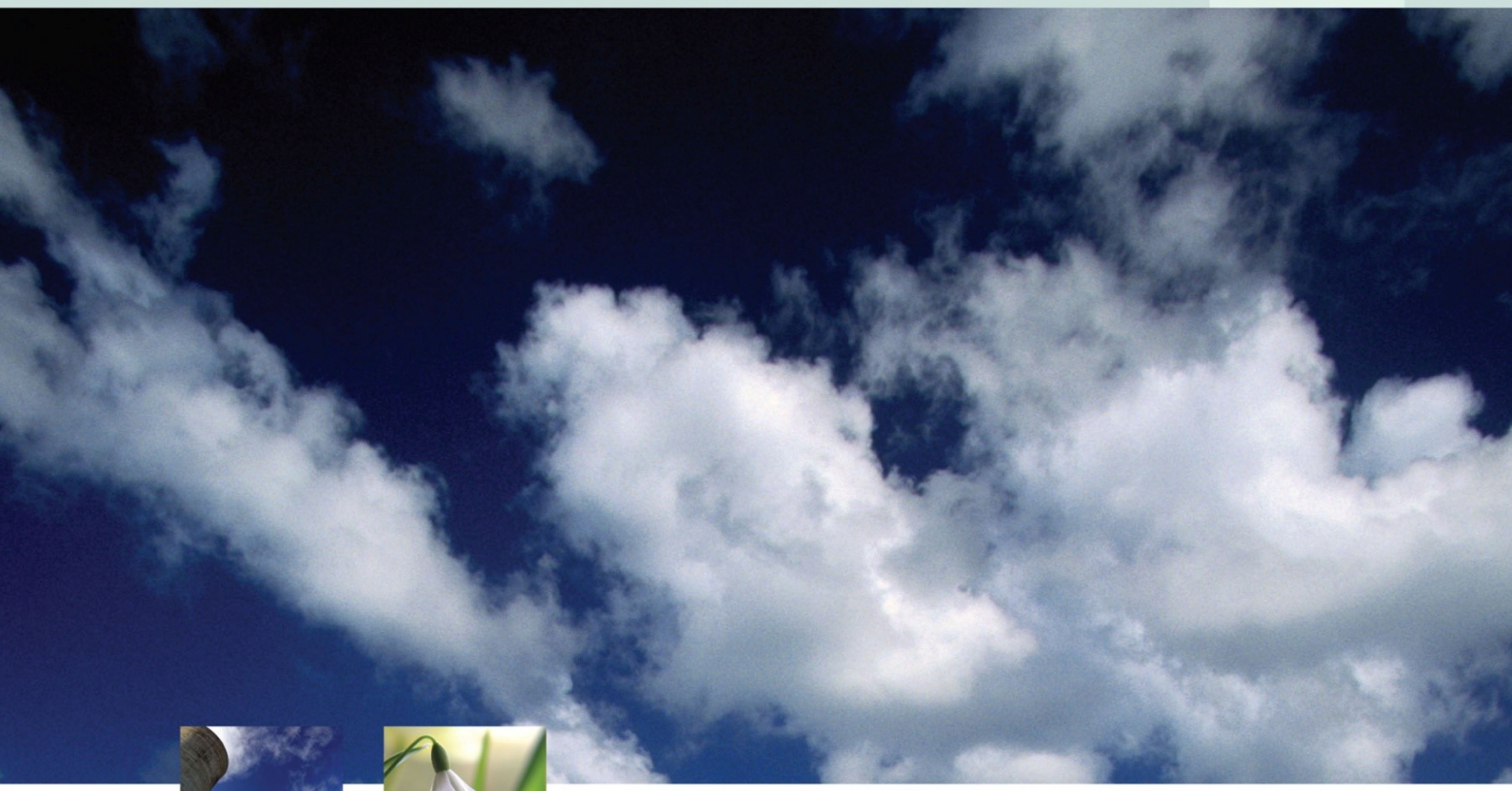

# SUSTAINABILITY STATEMENT

## Mixed Use Development

## Former Shredded Wheat Factory

## WELWYN GARDEN CITY

Prepared for:
**Plutus Estates (WGC) Limited**

Date:
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Project Issue Number:
**SOL1710PEL01**

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**Appendix C** – BREEAM Pre-Assessment *[ref SOL1710PEL01_BREEAM Pre-Assessment December 2017]*

# 1. INTRODUCTION

## 1.1 Background

Sol Environment Ltd ('Sol' hereafter) were engaged by Entran Ltd on behalf of Plutus Estates (WGC) Limited *('the applicant'* hereafter) to undertake a sustainability assessment and produce a Sustainability Statement for the proposed mixed used development on the site of the former Shredded Wheat Factory in Welwyn Garden City.

This report has been prepared by Sol Environment Ltd in cooperation with the applicant and in accordance with the following policies and guidance published by the Welwyn Hatfield Borough Council.

- Welwyn Hatfield District Plan (2005);
- Welwyn Hatfield Borough Council Draft Local Plan (Submission dated August 2016); and
- Broadwater Road West Supplementary Planning Document (December 2008)

This report has been prepared in association with a new planning application for the development.

## 1.2 Proposed Development

A new planning application will be made for the proposed new mixed used development on the site of the former Shredded Wheat Factory in Welwyn Garden City.

The overall site will include around 1,500 new dwellings and approx. 12,000m$^2$ of non-residential space (including commercial, gym, retail, arts centre, community centre, restaurant/bar and creche).

All will be housed in two existing listed buildings from the original Shredded Wheat Factory and 11 new purpose-built blocks.

A site plan showing the proposed development is provided overleaf.

Fig 1.1: Proposed Site Plan prepared by Collado Collins Architects

A schedule of the overall site information use and associated gross internal areas is provided in Table 1.1 overleaf.

| Table 1.1: Proposed Areas | | |
|---|---|---|
| **Block** | **No. of Dwellings / Units** | **Total Area ($m^2$)** |
| **North Site (Residential)** | | |
| Block 2 | 143 | 7,191 |
| Block 3 | 108 | 11,909 |
| Block 6 | 273 | 15,915 |
| Block 7 | 280 | 16,006 |
| North Site Total (Residential) | 804 | 51,021 |
| **South Site (Residential)** | | |
| Block 8 | 131 | 8,119 |
| Block 9 | 105 | 6,675 |
| Block 10 | 107 | 7,099 |
| Block 11 | 101 | 6,721 |
| Block 12 | 101 | 6,721 |
| Block 13 | 98 | 6,228 |
| North Site Total (Residential) | 643 | 41,563 |
| **Total (Residential)** | **1,447** | **92,584** |
| **North Site (Non-residential)** | | |
| Retail | | 1,540 |
| General non-residential | | 10,808 |
| **Total (Non-Residential)** | | **12,348** |
| **GRAND TOTAL** | | **104,932** |

In accordance with the Welwyn Hatfield District Plan (2005) and the Welwyn Hatfield Draft Local Plan (Submission August 2016) this Sustainability Statement has been set out to show how the site addresses the relevant environmental and sustainability issues outlined in Welwyn Hatfield Sustainable Checklist. Please refer to completed checklist in Appendix A: Sustainability Checklist (ref: *Shredded Wheat, WGC - Sustainability Checklist*).

With >10 dwellings and more than 1000m2 of non-residential floor space, the development is considered a *major development* in accordance with the Local Plan; therefore, the application must include an assessment of the opportunities for renewable and low carbon sources and show that the non-residential components are assessed against the BREEAM assessment methodology. Consequently, an Energy Strategy and BREEAM Pre-Assessment are included as Appendices to this report, please refer to Appendix B: Energy Assessment (ref: *SOL1710PEL01-Shredded Wheat_ES_Energy Statement*) and Appendix C: (ref: *SOL1710PEL01-Shredded Wheat_BREEAM Pre-Assessment*).

# 2. PLANNING POLICY & LEGISLATIVE REVIEW

There are a number of international and national policy drivers for sustainability, increased energy efficiency and reduced Carbon Dioxide ($CO_2$) emissions, which have been introduced to address the issue of global warming and the implications of climate change. On an international level this includes the Kyoto Protocol, to which the UK government has made a commitment and developed national policies such as the Energy White Paper and the NPPF.

At the local level, the current Local Plan in particular remains a material consideration. These policies and documents are described in further detail within the section below.

## 2.1 National Planning Policy

### *2.1.1 The Energy White Paper; Our Energy Future – Creating a Low Carbon Economy*

The Energy White Paper was published in February 2003 and demonstrates a step change in energy policy in response to the increasing challenges faced by the UK, including climate change, decreasing domestic supplies of fossil fuel and escalating energy prices.

The Energy White Paper focuses on four key areas:

- Reduction in national carbon dioxide emissions, setting a target of 60% reduction by 2050 and notable progress (c. 20%) by 2020;
- Security of supply;
- A competitive market for the benefit of businesses, industries and households; and
- Alleviating fuel poverty.

### 2.1.2 *Meeting the Challenge* – A White Paper on Energy

Published in 2007, this White Paper establishes the Government's international and domestic energy strategy regarding response to changing circumstances, addressing long-term energy challenges and delivering on the four energy policy goals set in the Energy White Paper 2003.

### *2.1.3 Climate Change Act 2008*

The Climate Change Act came into force on 26th November 2008, and was the world's first long-term legally binding framework to mitigate against climate change. Within this framework, the Act sets legally binding targets to increase greenhouse gas emission reductions through action in the UK and abroad from the 60% target to 80% by 2050. In addition, there is an interim target stating the carbon budget (i.e. the $CO_2$ emissions) must be at least 26% lower than the 1990 baseline.

### *2.1.4 National Planning Policy Framework (March 2012)*

The National Planning Policy Framework ('NPPF') was implemented by Communities and Local Government ('CLG') on 27th March 2012 with immediate effect. The NPPF forms a key part of

the reforms within the planning system and supersedes many of the former Planning Policy Statements, including those pertaining to energy and climate change many of the former Planning Policy Statements, including those pertaining to energy and climate change (i.e. PPS 22 – Renewable Energy and; PPS: Planning and Climate Change Supplement to Planning Policy Statement 1).

The NPPF provides significant emphasis on the encouragement of decentralised and renewal energy provision. Section 10 of the NPPF states that;

- To help increase the use and supply of renewable and low carbon energy, local planning authorities should recognise the responsibility on all communities to contribute to energy generation from renewable or low carbon sources. They should have a positive strategy to promote energy from renewable and low carbon sources.
- When determining planning applications, local authorities should:
    i. not require applications for energy development to demonstrate the overall need for renewable or low carbon energy and also recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and
    ii. approve the application if its impact are (or can be made) acceptable. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should also expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.

## 2.2 Local Planning Policy

Welwyn Hatfield District Plan 2005 is the current adopted Local Plan. A new Welwyn Hatfield Draft Local Plan (Submission August 2016) has been developed to replace District Plan. All place significant emphasis on sustainable new developments in order to achieve wider sustainability targets.

### *2.2.1 Welwyn Hatfield Draft Local Plan (Submission August 2016)*

The following policies are relevant to the proposed energy and sustainability criteria of the development.

**Policy SP10: Sustainable design and construction**

Proposals that adopt sustainable design and construction principles, as set out below, within an integrated design solution will be supported. This should be demonstrated via a Sustainable Design Statement and associated plans.

- Materials and waste
    - Reuse land and buildings wherever feasible and consistent with maintaining and enhancing local character and distinctiveness.

    - Reuse and recycle materials that arise through demolition and refurbishment, including the reuse of excavated soil and hardcore within the site.
    - Prioritise the use of materials and construction techniques that have smaller ecological and carbon footprints, where appropriate.
    - Consider the lifecycle of the building and public spaces, including how they can be easily modified to meet changing social and economic needs and how materials can be recycled at the end of their lifetime.
    - Space is provided and appropriately designed to foster greater levels of recycling of domestic and commercial waste.
- Water sensitive design
    - Water sensitive design principles and practices are integrated into development proposals to sustainably address water supply, consumption and quality, extreme rainfall, drainage and flood risk in a holistic way that supports other design aims and objectives.
- Energy and climate change
    - Layout and design of the site and building(s) reflect the energy hierarchy to maximise opportunities to reduce carbon emissions.
    - The use of renewable and low carbon energy infrastructure is used where it is appropriate and consistent with other policies.
    - Proposals are responsive to how the climate will change over their lifetime and minimise their contribution to the urban heat island effect.
- Landscape and biodiversity
    - New and existing habitat and landscaping are incorporated into the layout and design of proposals in line with sound ecological principles.
    - Site and building-level landscaping and features promote biodiversity and help achieve other aims, such as climate change adaptation, flood risk and amenity.
    - Newly created habitat and soft landscaping prioritise the use of native species.
    - Non-native species are only used if they significantly help achieve other policy objectives, such as adapting to climate change.
    - Proposals seek to create space for growing food, both at a building and wider community scale.

### Policy SADM 13: Sustainable requirements

- All major development proposals must demonstrate that they have sought to maximise opportunities for renewable and low carbon sources of energy supply where consistent with other Local Plan policies.
- All non-residential development with a floorspace of 1,000 square metres or more will be required to meet at least BREEAM 'Excellent' unless it is demonstrated that it is not technically feasible or viable to do so, in which case such proposals will be required to demonstrate a 'Very Good' rating.

- All newly constructed dwellings will be required to achieve an estimated water consumption of no more than 110 litres/person/day, with water reuse and recycling and rainwater harvesting incorporated wherever feasible to reduce demand on mains water supply.

### *2.2.2 Broadwater Road West Supplementary Planning Document – December 2008*

The policy outlines the following 'Key Elements' for development of the Broadwater Road West area:

- Aim for Code Level 4;
- Maximise energy efficiency;
- Promote a site wide CHP.

**Section 7 Implementation and Monitoring**

Development is required to achieve a Site target of at least 10% of energy use to come from renewable or low carbon sources.

## 2.3 Legislation & Mandatory Standards

### *2.3.1 Building Regulations 2013*

The Building Regulations 2013 (England & Wales) set out standards and requirements that individual aspects of building design and construction must achieve. The 'functional' requirements are also considered in a series of Approved Documents that provide general guidance in common building situations.

In total, there are 14 technical areas that each Approved Document provides practical guidance on, including fire safety, ventilation, hygiene, drainage and access. Approved Document Part L (Conservation of Fuel and Power) pertains to the energy efficiency requirements and is detailed within Section 2.3.1 below.

**Approved Document Part L – The Conservation of Fuel and Power**

Part L of the Building Regulations came into force on 1st April 2002, with a view to reducing heating costs, conserving fuel and protecting the environment from the effects of climate change. However, to ensure that Part L of the Building Regulations were in line with the commitments made in the Energy White Paper (2003) of reducing $CO_2$ emissions from buildings, and to implement the Energy Performance of Buildings Directive (EPBD), amendments to the Approved Document were made in 2006.

The above amendments to Part L of the Building Regulations were implemented on 6th April 2006, introducing new energy efficiency requirements and other relevant changes, including:

- Introduction of a single calculation method (setting maximum $CO_2$ emissions for the whole building), replacing the three methods of demonstrating compliance;
- The $CO_2$ emissions standards for new buildings were raised by between 20 - 28% compared to 2002 standards (dependant on the type and size of building); and
- Standards for work on the existing buildings were generally higher than in 2002.

More recently, with the introduction of new planning policy and legislative drivers, identified above, a need to reconsider and revise the 2010 editions of the Approved Documents L was identified. The latest revision to the document, the 2013 version of Part L, has been adopted from October 2013.

Within the updated 2013 version of Part L, a number of changes have been made, including the following:

- The Target Emissions Rate (TER) is no longer based on a 2002 notional building and an improvement factor but will take an 'aggregate approach' for the non-dwellings sector. The TER will be based on a building of the same size and shape as the actual building, constructed to a concurrent specification, provided in the 2014 NCM modelling guide. This approach has been adopted, as the level of improvement that can be reasonably expected is considered to vary significantly across the building sector; a blanket improvement factor is therefore inequitable. Therefore, some buildings (e.g. those buildings that use a higher load of lighting versus, say, hot water) will be expected to exceed the 25% reductions target, while other buildings will be allowed to achieve less than 25%;
- In order to assist Building Control Officers to enforce regulations, design-stage submissions must be accompanied by a copy of the design specifications. This will also increase the emphasis on commissioning to ensure that systems perform as intended. This is also to enable the Building Controls Officer to be able to check that the relevant elements are in place. Should any changes be made to the building to the design stage list of specifications, a list of these changes must be provided to the Building Control Officers, as well as a certificate signed off by a suitably accredited energy assessor; and
- Accredited construction details that cover building elements, such as thermal bridging will no longer make assumptions. Under the 2030 Building Regulations, each of the junctions will need to be measured, multiplied by the appropriate PSI value (values supplied by the SAP 2012 document), and added up to produce an *'effective'* Y value.

In addition to the revisions that have been implemented from 2013, the Government has also announced further revisions to Part L that will be used as a catalyst of achieving the target for zero carbon dwellings by 2016 and zero carbon non-domestic buildings by 2019. It is anticipated that amendments to the Part L documents will expect a 44% improvement of the Target Emission Rate (TER) or the $CO_2$ emissions of a new building in the 2013 revision (relative

to the 2006 requirements) for domestic buildings and an aggregated 44% improvement of the TER for non-domestic buildings.

## 2.4 Summary of Policy and Legislative Requirements

Box 2.1 provides an overview of Policy and Legislative Requirements and their applicability to the proposed development.

**Box 2.1: Points of Focus – Overview of Policy / Legislative Requirements**

- *Policy SP10: Sustainable design and construction* requires proposals to demonstrated via a **Sustainable Design Statement**, that the development has adopted a sustainable design and construction principles within an integrated design solution.
- *Policy SADM 13:* all non-residential development with a floorspace of 1,000 square metres or more will be required to meet at least **BREEAM 'Excellent'** unless it is demonstrated that it is not technically feasible or viable to do so, in which case such proposals will be required to demonstrate a 'Very Good' rating.
- *Broadwater Road West Supplementary Planning Document: Section 7* requires the development to achieve a site target of at least **10% energy use from renewable or low carbon sources**

# 3. SUSTAINABILITY ASSESSMENT

This section comprises the Sustainable Design Statement for the proposed development. The Sustainability Statement outlines the measures proposed in order to ensure compliance with Welwyn Hatfield Local Plan, with a particular focus on the following parameters;

- Energy and climate change;
- Sustainable Transportation;
- Water sensitive design;
- Landscape and biodiversity;
- Materials; and
- Waste and Recycling.

## 3.1 Energy and Climate Change

In accordance with the Broadwater Road West Supplementary Planning Document: Section 7 the development includes low carbon and renewable technologies (CHP district heating and a solar PV array) to achieve a >10% reduction in energy use and $CO_2$ emissions.

For more details please refer to Appendix B: Energy Assessment (Ref: *SOL1710PEL01-Shredded Wheat_Energy Statement*)) for the detailed energy strategy.

## 3.2 Sustainable Transportation

The location of the site and proximity to local public transport facilities provides an opportunity for mitigation of carbon dioxide emissions through utilisation of sustainable transport measures.

Refer also to the Transport section of the BREEAM Pre-Assessment (Appendix C)

| Box 3.1: Green Infrastructure and Transport |
| --- |
| The site benefits from excellent public transport linkages.<br><br>The site lies adjacent to the Welwyn Garden City train station with a direct link via a footbridge. The footbridge also links the site to the main commercial centre of Welwyn Garden City.<br><br>There is also a bus stop on the northern site boundary which supports more than 10 separate bus routes than run from the town centre into the suburbs and surrounding villages.<br><br>Residents of the proposed development could therefore feasibly live without access to a car.<br><br>Cycle storage has been provided |

## 3.3 Water Sensitive Design

The conservation of water resources and maximising resource efficiency is a central theme within the Local Plan, particularly Policy SADM 13.

All newly constructed dwellings will be required to achieve an estimated water consumption of no more than 110 litres/person/day, with water reuse and recycling and rainwater harvesting incorporated wherever feasible to reduce demand on mains water supply.

The development will include low water consumption measures for sanitary ware and appliances where applicable. Some of which are detailed below.

Refer also to the Water section of the BREEAM Pre-Assessment (Appendix C)

**Box 3.2: Water Conservation**

Toilets will be dual flush and flow capacity; taps will have flow restrictors and / or dosage control or sensor control, as will urinals.

Low water consumption appliances will be specified in kitchen areas where appliances are installed (such as dishwashers).

All residential dwellings will be designed to achieve average water consumption targets of **105 litres per person per day** with a maximum limit of no more than 110 litres per person per day.

## 3.4 Landscape and Biodiversity

The proposed development is located on a brownfield site and a significant amount of new landscaping is proposed.

Box 3.3 details design measures that can be utilised to minimise the negative impact and provide benefit to the landscape and biodiversity of thee site and surrounding area. Refer also to the landscape proposal included as part of the planning application documentation.

Refer also to the Land Use and Ecology section of the BREEAM Pre-Assessment (Appendix C)

**Box 3.3: Landscape and Biodiversity**

Ensuring that any building works are conscientious to the surrounding Environment, such as timing construction to mitigate any effects on breeding birds and bats.

Where new landscaping is proposed, specifying of species rich plants and shrubs within the amenity space will enhance biodiversity within the local area.

A Landscape Masterplan has been prepared to embrace and reinterpret Ebenezer Howard and Louis de Soissons'' core Garden City principles established at Welwyn Garden City.

## 3.5 Materials

All materials associated with the development shall be sourced with consideration for the embodied construction impacts. As such the site building shall comprise a sufficiently robust construction (as designed by a suitably qualified and contracted structural engineer) and utilise sustainable building materials.

Refer also to the Materials section of the BREEAM Pre-Assessment (Appendix C)

**Box 3.4: Building Materials**

All primary building materials utilised for any new-build elements of the development shall be rated A+ to B in accordance with the BRE Green Guide.

The selection of materials appear to have:

- Preferentially selected those materials with a lesser environmental impact;
- Review alternative materials that have a lower environmental impact when developing material specification, including recycled materials; and
- Review the embodied energy within potential building materials and reduction of the embodied energy where feasible.

The design team will ensure that materials for key building elements are purchased in accordance with the following;

- All timber will be sourced from legally logged and sustainable sources (FSC / CSA / PEFC verified timber with a full chain of custody (CoC);
- Supplier environmental credentials form an essential element of the selection criteria (particularly certifications such as ISO 14001 / EMAS etc); and
- The developer will request and evaluate the environmental policies of its suppliers.

Based on the above, it is assumed that all materials utilised for the construction of the site building will be covered by certifications (such as ISO 14001 / EMAS) and achieve at least a 'Good' performance rating under British Standards BES 6001:2008.

## 3.6 Waste Minimisation, Pollution Prevention and Recycling

The development site will utilise sustainable design and construction to minimise the impact the building has on the environment. Good site practices will be employed during the construction phase in order to minimise potential impacts, such as noise and dust nuisances.

Refer also to the Waste section of the BREEAM Pre-Assessment (Appendix C)

**Box 3.5: Encourage the use of a recycled, recyclable and durable products**

Any demolition and alteration works required to facilitate the works will include the separation of demolished materials and retention of the existing materials (where appropriate).

Materials for re-use will be stored on site. Materials for disposal will be segregated into recyclable streams and waste for landfill and removed by licensed waste handling contractors for recycling or disposal.

**Box 3.6: Construction Site Waste Management Plan**

During the construction works, adequate space will be provided for the separation, storage, collection and recycling of waste.

Effective site waste management will also be implemented through the use of a Site Waste Management Plan that has been designed to comply with the WRAP guidelines. The SWMP will meet all regulatory requirements and;

- set actions to prevent, reduce and recover waste;
- identify waste reductions at the design stage;
- forecast the waste arisings;
- record waste carriers and waste management facilities;
- prepare waste management actions;
- record actual waste movements; and
- benchmark against Standard, Good and Best Practice.

**Box 3.7: Operational Waste and Recycling Management**

Waste storage areas has been provided and strategically located around the development for the residents, which will incorporate waste segregation and recycling facilities.

Provision shall be made for the users of the development to separate out recyclable waste from non-recyclable, and to store a number of waste streams close to source and within easy reach of collection and disposal arrangements.

The development will utilise recycling facilities in line with best practice.

A minimum internal storage capacity of 60 litres per dwelling shall be provided which can accommodate containers for the temporary storage of materials to be recycled. Materials will then be transferred to external containers for collection.

# 4. STATEMENT SUMMARY

Welwyn Hatfield Borough Council is committed to achieving sustainable development. As a result, the current planning policies for this area emphasise the importance of sustainable growth with particular emphasis on the encouragement of energy efficiency and green energy and industry.

It is important, therefore, that the proposed development site contributes to the Council's sustainability aims as well as meeting regional and national objectives for sustainable development. This sustainability statement demonstrates that the proposals satisfy a number of key objectives, responding to local needs and requirements and conforming to current good practice.

In addition, this strategy confirms that the development will meet the Broadwater Road West Supplementary Planning Document target to reduction in carbon dioxide requirement of >10% through the installation of low carbon and renewable technologies.

In summary, the sustainability statement has informed the design process by identifying opportunities and constraints for sustainable development, and the process has highlighted the proposals sustainability performance against national, regional and local planning policy.

# Appendix A – Sustainability Checklist

(Ref: *Welwyn Hatfield District Plan Sustainability Checklist* completed by Sol Environment)

# Appendix B – Energy Assessment

(Ref: *SOL1710PEL01-Shredded Wheat_Energy Statement* prepared by Sol Environment)

# Appendix C – BREEAM Pre-Assessment

(Ref: *SOL1710PEL01-Shredded Wheat_BREEAM Pre-Assessment* prepared by Sol Environment)