



THE LAINSTON WOODLEY ARMS LLP

SUSTAINABILITY AND ENERGY STATEMENT

THE WOODLEY ARMS, WALDECK STREET, READING

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CONTENTS

	<u>Page</u>
1. INTRODUCTION	3
2. RELEVANT PLANNING POLICY AND PUBLICATIONS	5
3. ENERGY AND CO ₂ EMISSIONS	15
4. SUSTAINABLE DEVELOPMENT PROPOSALS	20
5. CONCLUSIONS	31

1. INTRODUCTION

- 1.1 This Sustainability Statement has been prepared by Pegasus Group for the Lainston Woodley Arms LLP. It supports an application for full planning permission for the demolition of the Woodley Arms Public House and the erection of a 2.5 storey block providing 40 student studio apartments including associated parking area, amenity area and associated facilities.
- 1.2 This proposal has progressed through detailed stage 1 and 2 pre application discussions with Council Officers held between November 2013 and November 2014. The original proposal for the erection a block of 45 studio student apartments has been influenced by these pre application discussions and the proposed development responds to Officer's advice about various elements of the proposal.
- 1.3 The Statement responds to current and emerging national and local guidance on sustainable development issues and sets out an approach to ensure an environmentally friendly, energy efficient and subsequently sustainable new development is proposed. It considers the development proposals in the context of important environmental, economic and social factors and identifies how the scheme would provide a sustainable community for new residents, with benefits and enhancements for existing residents to improve the sustainability of the surrounding area.
- 1.4 The report is structured as follows:

Section 2 discusses the relevant planning policy, publications and guidance

Section 3 discusses energy and CO₂ emissions

Section 4 discusses the sustainable credentials of the proposed development

Section 5 summarises and concludes.

Site Description and Context

- 1.5 The Woodley Arms is an existing public house with an established A4 use, incorporating a 4 bedroom integral dwelling as existing on the first floor. The main built form of the pub is of two storey height with a red brick appearance. To the side and rear however a

contrasting lighter brick flat roofed element is provided. The existing pub building is set back from Waldeck Street and at ground floor level is approximately half a metre higher than the road.

- 1.6 The pub site is circulated by an access road which links to Chamden Close. This access road serves garage blocks beyond the south, east and west of the site. This access road also serves the Woodley Arms car park to the south of the pub building.



2. RELEVANT PLANNING POLICY, PUBLICATIONS AND GUIDANCE

- 2.1 This section provides an outline of the current planning policy context and guidance for sustainable development nationally and in Reading.

Understanding Sustainability

- 2.2 Sustainable development is commonly defined as ***"development that meets the needs of today without compromising the ability of future generations to meet their need"***. The concept of sustainable development therefore primarily seeks to implement development that will fulfil the 'needs' of today whilst consequently creating, and maintaining, an efficient and effective world for future generations.
- 2.3 Sustainable development consists of three general pillars;
- Economic – striving for a competitive and growing economy;
 - Social – aiming for safe, accessible communities whilst improving the quality of life for all; and
 - Environmental – protecting and enhancing the environment whilst effectively and prudently managing natural resources
- 2.4 UK policy and guidance has developed and evolved from this overarching understanding of sustainable development and there is now a range of legislation and policy which supports the implementation of measures to ensure new development is sustainable and low carbon.
- 2.5 Through the National Planning Policy Statement (March 2012) the Coalition Government has upheld the importance of 'sustainable development' by stating that 'The purpose of the planning system is to contribute to the achievement of sustainable development'.
- 2.6 The following are a small indicator to provide a form of context to what sustainable development in the UK means, and how, therefore, planning policy has evolved to take on board some of the key themes.

European Context

- 2.7 The 2009 Review of European Union (EU) Sustainable Development Strategy underlines that the EU has mainstreamed sustainable development into a broad range of policies and includes:
- **Renewable Energy Directive (2009)** – The Directive on the promotion of the use of energy from renewable sources (2009/28/EC).
 - **Energy Performance Buildings Directive (adopted 2002 and recast 2010)** – Fixed 2020 as the deadline for all new homes to be “nearly zero energy” (2010/31/EU). This target is incorporated within the UK Building Regulations Part L: Conservation of fuel and power
 - **Construction Products Regulation (2011)** – The directive (305/2011 March 2011) lays down harmonised conditions for the marketing of construction products including sustainable use of natural resources. From 1 July 2013, the CE (European conformity) Marking of construction products covered by harmonised European Standards became a legal requirement.
 - **Water Framework Directive (2000)** - The purpose of the Directive is to establish a framework for the protection of inland surface waters (rivers and lakes), transitional waters (estuaries), coastal waters and groundwater. It will ensure that all aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands, meet 'good status' by 2015.
 - **Revised Waste Framework Directive (2008)** – This directive is aimed at businesses and other organisations which take decisions on a day-to-day basis about whether something is, or is not, waste, for instance where the substance or object has a value or a potential use or where the decision is about whether waste has been fully recovered or recycled and has therefore ceased to be waste.

- **Biodiversity Framework (2012)** – This new strategy lays down the framework for EU action over the next ten years in order to meet the 2020 biodiversity target.
- **2020 Strategy for smart, sustainable and inclusive growth (2011)**
 - This is the growth strategy for the next decade, replacing the Lisbon strategy (2010). It sets three main priorities: smart growth – developing an economy based on knowledge and innovation; sustainable growth – promoting a more resource-efficient, greener and more competitive economy; and inclusive growth – fostering a high employment economy delivering social and territorial cohesion.

National Context

- 2.8 Historically there has been a raft of legislation at national and local level in relation to issues that come under the general umbrella of 'sustainable development'. These developed from the early ideas of the Rio Earth Summit in 1992 which were subsequently encapsulated within 'Local Agenda 21'. In planning terms the key documents of relevance to this application are set out below.

Building Regulations Part L

- 2.9 The Building Regulations Part L is of particular relevance to the sustainability of new development as it sets out the minimum efficiency requirements for both new and existing residential dwellings.
- 2.10 Of particular relevance to this application is Approved Document L1A relating to 'Conservation of Fuel and Power (New Dwellings)'. This document was updated with effect from 6th April 2013 to take account of a recast of the 'European Energy Performance of Buildings Directive'. It sets out key criteria in relation to the energy performance that new buildings will be expected to achieve. This in turn links closely with both the Code for Sustainable Homes and Energy Performance Ratings. The proposed development will be built to Part L1A standards.

Code for Sustainable Homes

- 2.11 The Code for Sustainable Homes is an environmental assessment rating method for new homes, which assesses environmental performance in a two stage process (design and post construction), using objective criterion and verification. Code for Sustainable Homes Level 3 is the minimum standard new homes are expected to achieve and Level 6 the highest.
- 2.12 The code covers nine categories of sustainable criteria:
- Energy and CO₂ emissions
 - Water
 - Materials
 - Surface water run – off
 - Waste
 - Pollution
 - Health and Well Being
 - Management
 - Ecology
- 2.13 Each category includes a number of environmental issues, and mandatory minimum performance standards are set for some of them.

National Planning Policy Framework (March 2012)

- 2.14 The NPPF came into effect in March 2012 and replaced the existing suite of Planning Policy Statements and Guidance that had previously been in effect. The Ministerial 'Forward' underscores the importance of sustainable development, and the role planning has in helping to reach sustainable objectives, through the presumption in favour of sustainable development.

"...sustainable development is about positive growth – making economic, environmental and social progress for this and future generations... Development that is sustainable should go ahead without delay – a presumption in favour of sustainable development that is the basis for every plan, and every decision... Planning must be a creative exercise in finding ways to enhance and improve the places in which we live our lives..."

2.15 Paragraph 8 of the NPPF notes that

"...to achieve sustainable development economic, social and environmental gains should be sought jointly and simultaneously through the planning system. The planning system should play an active role in guiding development to sustainable solutions."

2.16 Therefore development must take a holistic approach and incorporate, and balance, the three tiers of sustainable development :

- **an economic role** – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating requirements, including the provision of infrastructure;
- **a social role** – supporting strong, vibrant and healthy communities, by providing an increased supply of housing to meet the needs of the present and future generations; and by creating a good quality built environment, with accessible local services that reflect the community's needs and supports its health and well-being; and
- **an environmental role** – contributing to protect and enhance our natural, built and historic environment, and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution and mitigate and adapt to climate change, including moving to a low carbon economy.

2.17 The NPPF highlights the following headings as 'delivering sustainable development':

1. Building a strong, competitive economy;
2. Ensuring the vitality of town centres;
3. Supporting a prosperous rural economy;
4. Promoting sustainable transport– minimising vehicular usage and encouraging the use of sustainable methods of travel (walking, cycling and the use of public transport);
5. Supporting high quality communications infrastructure;
6. Delivering a wide choice of high quality homes;

7. Requiring good design - consideration of good design and layout within the proposed development;
8. Promoting healthy communities - measures to improve the quality of life including lighting, sound and access to outdoor facilities;
9. Protecting Green Belt land;
10. Meeting the challenge of climate change, flooding and coastal change – initiatives to reduce the level of energy consumption; to reduce the emissions of carbon dioxide generated from the scheme; the potential use of renewables and non fossil fuels; and, the use of sustainable construction techniques and design. Use of Sustainable Urban Drainage Schemes (SUDS);
11. Conserving and enhancing the natural environment – reducing the impact on biodiversity and providing opportunities to enhance the site; use of materials that come from sustainable sources; measures to reduce the levels of waste produced during the construction and operational stage of the development, in particular consideration is given to waste segregation and recycling facilities; and, conservation of water through reduced use;
12. Conserving and enhancing the historic environment; and
13. Facilitating the sustainable use of minerals.

2.18 These core principles set out the means by which sustainable development will be achieved through the planning system and have been considered further in Section 4, to illustrate how the proposed development achieves these goals. Due to the nature and location of the proposed development headings 2, 3, 5, 9 and 13 are not deemed relevant for this statement and have not been included.

2.19 For sustainable development, paragraph 95, bullet 4 says that

"when setting any local requirement for a buildings sustainability, do so in a way consistent with the government's zero carbon buildings policy and adopt nationally described standards".

2.20 This paragraph has been key in determining Building Regulations as the nationally described standards. Consequently, all other voluntary housing standards (Code for Sustainable Homes, Lifetime Homes, Secured by Design, the London Housing Guide and local space standards) are undergoing a rationalisation through the Housing Standards Review (2013).

Housing Standards Review

2.21 The Ministerial Statement of 13th March 2014 regarding the Housing Standards Review Consultation, states

"the Government has decided that the most sensible way forward is for any necessary technical standards as far as possible to be consolidated into Building Regulations".

The note also states clearly that the Code for Sustainable Homes will be wound down and new standards introduced with specific reference as follows:

- Water – a new tighter level of water efficiency into Building Regulations, to be set at 110l/person/day. This would be an optional higher level in addition to the current level of 125l/person/day which could only be applied in areas with specific local needs (such as water stress). This would be chosen by the local authority. Government is considering the best way to define areas of water stress to ensure this works in practice.
- Energy – we propose a "Building Regulations only" approach with no optional additional local standards in excess of the provisions set out in Part L of the Regulations. In the Budget 2013 the Government reaffirmed its commitment to implement the zero carbon homes policy for new homes from 2016. This will be achieved through a strengthening of energy performance requirements in Part L of the Building Regulations (incorporating carbon compliance, energy efficient fabric and services), and the delivery of allowable solutions.

2.22 The Ministerial statement sets out that

"the consultation made clear the Government's intention that planning authorities should only use standards emerging from the review process. The Government will issue a statement later this year when the new standards are published, which will explain how this policy will be implemented".

2.23 The Statement continues:

"this means that many of the requirements of the Code for Sustainable Homes will be consolidated into Building Regulations, which would require substantial changes to the current Code, as well as a reconsideration of its role. In the light of this, the Government thinks that the current code will need to be wound down to coincide with the changes incorporating the new standards coming into force".

Reading Borough Council Development Plan

- 2.24 The development plan for the site comprises the Core Strategy (adopted 2008), the Reading Centre Area Action Plan (2009), Sites and Detailed policy document (2012), Proposals Map, Replacement Minerals and Waste Local Plan, Saved Waste Local Plan and a number of supplementary planning documents, including the Sustainable Design and Construction Supplementary Planning Document, adopted 2011.

Reading Borough Council Core Strategy (2008)

- 2.25 In relation to Sustainable Development and Climate Change the Core Strategy says that there are four priority areas for action are identified in the Strategy which are identified as :

- Sustainable consumption and production;
- Climate change;
- Natural resource protection; and
- Sustainable communities.

- 2.26 Policy CS1 relating to 'Sustainable Construction and Design' says:

"Proposals for new development, including the construction of new buildings and the redevelopment and refurbishment of existing building stock, will be acceptable where the design of buildings and site layouts use energy, water, minerals, materials and other natural resources appropriately, efficiently and with care and take account of the effects of climate change.

To meet these requirements: -

- *All new housing is required to meet the most up to date Eco-Homes 'Very Good' as a minimum standard, and all new commercial developments are required to meet the most up to date BREEAM 'Very Good' as a minimum standard;*
- *On larger developments of more than 10 dwellings or 1,000 m2 of floorspace, ensure that 50% of the provision meets the most up to date Eco-Homes and BREEAM 'Excellent' standards;*
- *All new developments maximise the use of energy efficiency and energy conservation measures in their design, layout and orientation to reduce overall energy demand;*
- *All developments of more than 10 dwellings or 1000m2 floorspace incorporate on-site generation of energy from renewable sources and energy efficient design measures (including the use of CHP where appropriate) to off-set at least 20% of predicted carbon dioxide emissions from the estimated energy usage of the completed and occupied development;*
- *All developments reduce mains water use and demonstrate that water conservation measures are incorporated so that predicted per capita consumption does not exceed the appropriate levels set out in the Code for Sustainable Homes or BREEAM Standards*
- *Developments incorporate sustainable urban drainage facilities and techniques as part of the layout of a development as appropriate and as advised by the Environment Agency, including minimising the size of impermeable areas so that peak run-off and annual water run-off is reduced where possible and in any case is no greater than the original conditions of the site. Particular care will be needed in areas of flood risk where different solutions may be required".*

Revised Sustainable Design and Construction Supplementary Planning Document (SPD) 2011

- 2.27 This SPD indicates that due to changes to the Building Regulations at the time of writing, the aspiration within Policy CS1 to 'off-set at least 20% of predicted carbon

dioxide (CO₂) emissions' has now been superseded for both residential and non-residential developments. All other parts of policy CS1 are still relevant. The general thrust of the document is therefore aimed at the reduction of carbon emissions.

2.28 At the time policy CS1 'Sustainable Construction and Design' was written, new build residential buildings were assessed under EcoHomes, a version of BREEAM. EcoHomes standards have been superseded by the Code for Sustainable Homes, which have been referenced within the SPD.

2.29 Table 3.2 of the SPD indicates that for developments for 10 or more dwellings (including flats) 50% of the dwellings are required to be built to Code for Sustainable Homes Level 4, and the remainder at Code for Sustainable Homes level 3.

2.30 There is additional information attached to this table which says:

"Where it can be demonstrated that flats cannot easily be split into achieving a minimum of 50% at Code Level 4 and the remainder at Code Level 3, an overall score of 62.5% will be considered appropriate subject to the mandatory energy requirements also achieving a minimum of the mid-way point between Code 3 and Code 4".

2.31 The document recognises that Part L1A of the Building Regulations now focuses on the conservation of fuel and power in buildings by limiting heat gains and losses and sets out minimum energy performance requirements. It should be noted however that that the document references standards relating to the 2010 Building Regulations.

2.32 In Appendix 3 the document does recognise that future changes to the Building Regulations will in fact be taking their lead from the Code for Sustainable Homes.

2.33 Appendix 5 of the SPD includes a Sustainability Checklist, which incorporates issues that applicants need to consider within their Sustainability and Energy Statement.

3. ENERGY AND CO₂ EMISSIONS

- 3.1 Minimising the levels of CO₂ emissions through energy efficiency, energy conservation, renewable or low carbon energy generation are approaches that can help to move towards a low carbon society.
- 3.2 In recent years the average energy use within homes has been falling in response to both passive and active measures.
- 3.3 Passive measures include the design and layout of dwellings through southerly orientation, the location of open space, trees and landscaping to respond to solar gain and shading.
- 3.4 Active measures relate to improvements within the thermal efficiency of dwellings and changes in technology for electrical appliances. Thus now making fabric first the preferred option.
- 3.5 These changes also reflect the changes to Building Regulations outlined below.
- 3.6 The UK legislation for reducing the energy demand of buildings, in line with the EU Energy Performance of Buildings Directive, is set out within the Building Regulations Part L: Conservation of Fuel and Power. In relation to new dwellings, Building Regulations Part L1A, Conservation of Fuel and Power in New Dwellings (2013) applies.
- 3.7 This document requires design standards under Schedule 1 – Part L Conservation of Fuel and Power as:

"L1. Reasonable provision shall be made for the conservation of fuel and power in buildings by:

a) Limiting heat gains and losses –

i. Through thermal elements and other parts of the building fabric; and

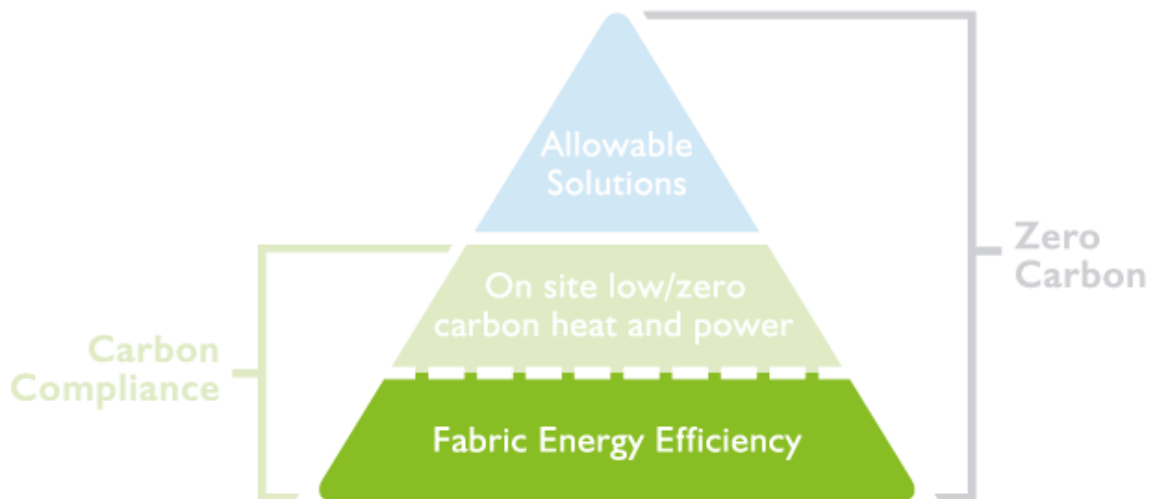
ii. From pipes, ducts and vessels used for space heating, space cooling and hot water services;

b) Providing fixed building services which –

- i. Are energy efficient;*
- ii. Have effective controls; and*
- iii. Are commissioned by testing and adjusting as necessary to ensure they use no more fuel and power than is reasonable in the circumstances”.*

- 3.8 This is of particular relevance to the sustainability of new development as it sets maximum limits for CO₂ emissions from buildings and provides minimum efficiency standards for fabric and building services.
- 3.9 In 2006 the Building Regulations Part L1A first set a maximum notional emission limit for new dwellings known as the Target Emission Rate (TER). Energy efficiencies could then be measured using the Design Emission Rate (DER), which is calculated using data relating to the actual design and specification of the new dwelling. The DER had to be lower than the TER, in order to create efficiencies, so the greater the difference, the more CO₂ would be saved.
- 3.10 In 2010 the updated Building Regulations Part L1A (2010) improved compulsory CO₂ efficiencies by 25% on the 2006 figures. Building Regulations Part L1A and L2A were again further updated in 2013, such that carbon emissions are at least an additional 6% lower than the 2010 Regulations.
- 3.11 Since 2006 therefore, statutory energy efficiency requirements have been substantially improved such that required levels of CO₂ savings for the development will, therefore, have already been achieved as a result of these tighter regulations.
- 3.12 The Adopted SPD relating to Sustainable Design and Construction refers to the need for new development to achieve Sustainable Code Level 4 for at least half of the dwellings, with the remainder being allowable at Code Level 3. It should be noted that in terms of energy efficiencies (which link to CO₂ emissions) the Building Regulations exceed the requirements of Code Level 3, and are now more akin to between Code Level 3 and 4, which has been considered as appropriate for proposals involving flats, as referenced above in paragraph 2.30.
- 3.13 The Standard Assessment Procedure (SAP) is the methodology used by the Government to assess and compare the energy and environmental performance of dwellings. Its purpose is to provide accurate and reliable assessments of building energy performances as required by the Building Regulations.

- 3.14 It is the approved methodology required under EU EPBD for dwellings and provides Energy Performance Certificates (EPC). The methodology is used to evaluate the impacts of different dwelling types, their orientation, and energy efficiency measures for the proposed development.
- 3.15 The elements used within the SAP calculations include external walls, roof, floor, windows and doors. The performance of these elements can be improved beyond the minimum requirements set within Building Regulations through:
- improved U-values (a measure of heat loss in a building element such as a wall, floor or roof) to reduce heat loss through these elements;
 - reduction of air leakage and thermal losses through cold bridging (a weak spot in the insulation surrounding a house, occurring whenever there is a break in the continuity, or a penetration of the insulation) by improved accredited construction details at junctions.
 - enhanced construction detailing to further reduce leakage and losses through thermal bridging at junctions
- 3.16 The U-values are a measure of heat loss in a building element such as a wall, floor, roof or bridging (known as thermal conductivity of each building element). The Building Regulations set elemental reference U-values for England.
- 3.17 The development will concentrate very much on the elemental U-values as this can have the biggest impact on sustainable construction. This fabric first approach, will, as already outlined, enable energy savings to be made throughout the lifetime of the whole development, and reduces the risk of 'bolt on' technologies such as solar PV from failure through lack of maintenance or removal. Instead it relies on super high insulation, absolute air tightness, and harvesting the sun's energy through appropriate orientation, thus decreasing the actual energy need of occupants.
- 3.18 Limiting a building's in-built energy demand through high quality design and material specifications, therefore, provides long term energy reduction to the site.
- 3.19 This is consistent with the principles of the Energy Hierarchy (see diagram below) towards achieving zero carbon and prioritising energy efficiency over renewable energy generation.



3.20 In addition, in relation to 'Meeting the challenge of climate change, flooding and coastal change' as set out within the National Planning Policy Framework, paragraph 95 indicates that to support the move to a low carbon future, local planning authorities should:

- plan for new development in locations and ways which reduce greenhouse gas emissions;
- actively support energy efficiency improvements to existing buildings; and
- *when setting any local requirement for a building's sustainability, do so in a way consistent with the Government's zero carbon buildings policy and adopt nationally described standards.*

3.21 As discussed above, a Ministerial Statement on 13th March 2014 which related to the outcomes of the Housing Standards Review, included the Government's intention to set out a new roadmap to deliver a radically simplified system for setting standards in the design and construction of new homes by the end of this Parliament.

3.22 A "Building Regulations only" approach has been advocated, with a new zero carbon homes standard intended to come into force from 2016, with no additional local standards in excess of the provisions set out within Part L of the Regulations.

- 3.23 The Fabric First approach adopted by this development is therefore consistent with the Government's Zero Carbon Policy and latest Government and Industry guidance, including the latest revisions in relation to Code for Sustainable Homes, and Building Regulations Part L.
- 3.24 The value of this approach is that it enables the CO₂ emissions savings to last for the duration of the dwelling rather than the life of the technology. The use of renewable technology tackles the source of energy provision rather than energy demand. Typically, domestic scale technology lasts 10-15 years before either faults occur, or replacement is required, and therefore the anticipated carbon savings cannot be guaranteed in the longer term. In addition bolt on renewables require the 'buy in' or commitment of occupiers to use the system efficiently. This includes, for instance, operating domestic appliances whilst the system is generating electricity during the day, and through signing up and paying for on line monitoring systems to ensure that the system is operating efficiently, and that panels have not been damaged or compromised.
- 3.25 The energy efficiency of the dwelling services is the next stage for energy demand reduction and includes:
- 100% lighting through energy efficient light bulbs;
 - High energy efficient domestic appliances;
 - Better heating controls for zoning and load compensation to reduce unnecessary wastage of heat; and
 - A-rated gas fired condensing boiler with high efficiency.
- 3.26 The use of condensing boilers that are 89.6% efficient and heating controls (loads compensator, delay start stat, programmer, thermostatic radiator valves and time/temperature zone controls) will be explored.
- 3.27 The accommodation at the Woodley Arms will therefore be designed to reduce overall energy and carbon dioxide emissions by reducing energy consumption through design, orientation, lighting, heating requirements and air tightness, including low energy appliances and heating systems.

4. SUSTAINABLE DEVELOPMENT PROPOSALS

- 4.1 The Lainston Woodley Arms LLP recognise and acknowledge that they have a responsibility to ensure that the environmental impacts of their development are, where they cannot be avoided, minimised and well managed. Development has an impact in relation to the construction phases (through for instance the materials used and waste disposal), and at operational stage, for example through energy usage. The Lainston Woodley Arms LLP are therefore committed to building high quality, environmentally sustainable housing which encourages the inhabitants to act in a more sustainable manner.
- 4.2 This section therefore demonstrates and discusses the sustainability credentials of the proposed development, based on the pertinent issues identified in the above relevant policy and guidance context, set out under the headings within the National Planning Policy Framework. A majority of these issues are explored in more detail within the supporting documentation and Planning Statement, this report dwells more specifically on the environmental elements of the scheme.

Building a Strong, Competitive Economy

- 4.3 The NPPF, at paragraph 19, emphasises that *"...the planning system does everything it can to support sustainable economic growth."* The Planning Statement submitted with this proposal details the potential for this development to create some employment for local people. In addition, self financing students will occupy the units, thus contributing to additional spend locally, in addition to their investment in education within Reading.

Promoting Sustainable Transport

- 4.4 The Transport Statement submitted as part of the application package demonstrates that the site is located in a very sustainable location. The site benefits from excellent accessibility and is within comfortable walking distance of Reading Train station, Reading Town Centre and a local shopping parade.
- 4.5 There are also regular bus services to good links for student destinations within close proximity.

- 4.6 As the Transport Statement details, the minimum required cycle parking space has been exceeded, such that there will be one space per apartment, creating a total of 40 spaces.

Delivering a Wide Choice of High Quality Homes

- 4.7 Delivering a wide choice of high quality homes is an important element of creating sustainable, inclusive and mixed communities. The proposed development will provide much needed accommodation for local students within Reading, thus adding to the broad mix of dwelling types and tenures.

Requiring Good Design

- 4.8 The development will provide a high quality design which responds to, and respects, the local area whilst establishing its own identity. Successful urban design is dependent upon achieving an appropriate relationship between community needs, development principles, development form and a positive response to local conditions.
- 4.9 The existing urban grain of Waldeck Street consists predominately of Victorian terrace dwellings with a strong building line. Pre application discussion with Planning Officers has led to a scheme for which the proposed architectural detail and materials are compatible with the character of the area and local context.
- 4.10 The proposed footprint is located on an existing developed part of the site and would not project beyond the side and rear footprint parameters of the existing building on site. Furthermore the plot coverage is comparable to that of other residential properties on Waldeck Street whilst being less than nearby flatted developments such as Jack Price Court on the corner of Waldeck and Southampton Street.
- 4.11 The proposal also incorporates generous scope for landscaping, outdoor amenity space, parking, refuse and cycle storage without causing conflict with neighbouring properties.

Promoting Healthy Communities

- 4.12 Helping to improve the quality of life of residents within a building is an important element of achieving sustainable development. This can be achieved primarily through good day lighting and reducing the need for artificial lighting within the home, both of which will be considered as a part of these proposals.

- 4.13 Sound can also have an effect on the health and wellbeing of residents. The layout and building design will aim to reduce the likelihood of noise complaints from neighbours as well as protect the dwellings and surrounding communities from external noise nuisances. The apartments will be constructed to meet the current requirements for sound insulation to combat any potential effects, and the development proposals will achieve standards of sound insulation in line with Building Regulation requirements.
- 4.14 Access to the outdoors generally has a positive impact on health and well being and therefore the provision of outdoor communal amenity space has been an important consideration within the design of the proposals.
- 4.15 The layout of the development proposals have also been carefully considered to ensure the safety or perceived safety of those living in or visiting the development. The aim is to ensure that the quality of life and community cohesion is enhanced. Adequate lighting will also be provided in public and semi public areas.

Meeting the Challenge of Climate Change, Flooding and Coastal Change

Climate Change and Energy

- 4.16 The Lainston Woodley Arms LLP are committed to reducing the energy needs of the development, and thus carbon reduction. As discussed above, this will be evidenced through a fabric first approach ensuring that the residential dwellings are compatible with the latest Building Regulation requirements in relation to energy criterion, thus lying between a Code for Sustainable Homes Level 3 and level 4 in relation to energy criterion, in compliance with the Reading SPD relating to Sustainable Construction. In this manner the proposals support the Government's desire to achieve new housing stock that is 70% more efficient than pre 1990 standards.
- 4.17 The Lainston Woodley Arms LLP also recognise and acknowledge their responsibility to ensure that the environmental impacts of their development, where they cannot be avoided, are minimised and well managed. This includes impact in relation to the construction phases (through for instance materials used, and waste disposal), and at operational stage, for example through energy usage. Within the proposed development the aim has been to start with the energy hierarchy (reduce – reuse (energy efficiency) – recover (renewable sources)) as a principle of the design so as to

limit carbon emission through the design of the overall development and the measures detailed below.

Site Design & Layout

- 4.18 The Design and Access Statement submitted with the application details how the site design and layout has developed as a result of pre application discussions with the Local Planning Authority.

Building Fabric & Energy Efficiency

- 4.19 As previously indicated, a key element of sustainable development over the long term is energy efficiency. New development therefore seeks to minimise energy demand and maximise energy efficiency. The apartments will incorporate construction details which will enhance their fabric efficiency in line with Building Regulations Part L1A 2013 (new dwellings).
- 4.20 Other measures to maximise energy saving of the development will comprise a combination of the following where practicable;
- Reduction on construction material embodied energy;
 - Sourcing construction material from local producers, where possible;
 - Ensuring appropriate insulations and air tight seals;
 - Use of building materials capable of being recycled; and
 - Reduction of thermal loss
- 4.21 The building fabric will be designed to create a balance between minimising heat loss, utilising passive heat from the sun, maximising daylight penetration and minimising infiltration, whilst meeting Building Regulations Part L (Conservation of Fuel and Power). Installing appropriate standards of insulation will improve the ability of the units to retain heat energy, which will in turn require less fuel for heating and also reduce the associated carbon dioxide emissions. Building fabric thermal performance into the development will ensure U-Values are equal or better than those required by current Building Regulation standards.

- 4.22 The dwellings will also be designed with appropriate ventilation so as to keep them at an ambient temperature, thus reducing the need for powered air conditioning units or fans.
- 4.23 Some insulating materials are manufactured with blowing agents that have Ozone Depletion Potential (ODP) and cause long term damage to the ozone layer, exposing the earth and living organisms to harmful radiation from the sun. Such blowing agents including CFC's and HCFC's have now been banned or being phased out. However, many replacement blowing agents (e.g. HFCs, commonly used as replacements for HCFCs) have significant global warming potential (GWP). In addition to committing to the insulation requirements of the Code, the developers have set the target for all insulation materials being used to have zero ODP and a GWP of less than 5.

Lighting, Appliances & Home Energy

- 4.24 Energy efficient lighting will be installed in all apartments, and externally where provided, to meet Building Regulations minimum standards. The design of the development has aimed to maximise use of daylight to reduce the need to utilise artificial lighting. Where outside security lighting is installed, this will incorporate on/off controls and PIR detectors where appropriate, in order to reduce energy consumption in these fixtures. All light bulbs placed within the apartments will be energy efficient.
- 4.25 Energy efficient appliances will also be incorporated within the complex. Domestic appliances currently account for approximately 1/3 of energy bills and 1/4 of household CO₂ emissions, and therefore this area presents considerable scope for energy saving. It is proposed that where white goods are provided, these will aim to have energy efficiency ratings of A+, A or B.

Flooding

- 4.26 A full drainage statement has been provided detailing how surface and foul water will be drained from the site which demonstrates that the infrastructure requirements of development of this site will be fully met in line with national and local Development Plan Policy.

Conserving and Enhancing the Natural Environment

- 4.52 The site is a brownfield site and therefore there is limited ecology and biodiversity at this time. However, the landscaping around the periphery of the proposed development could encourage additional local wildlife.
- 4.53 Policy CS36 of the Local Plan requires development to protect features of biodiversity found within the application site. Pre application guidance suggested a Bat Survey should be submitted with this application to demonstrate the impact any protected species. The current application is submitted with a Bat Survey prepared by David Leach Ecology Ltd. incorporating an Emergence and Activity Survey confirming no evidence of bats at the property.

Resources (including Materials, Waste and Water)

- 4.54 The efficient use and management of world resources is an important consideration for sustainable development, and their use should be reduced where possible. In relation to the proposed development it is therefore important to consider how this issue will be addressed.

Materials

- 4.55 It is important from a sustainability perspective that the developer seeks to minimise the environmental impact of the materials used over the lifetime of the building – from manufacture, to eventual demolition and disposal.
- 4.56 For building materials within the development, it is proposed to use, where viable and practical, “A+” or “A” rated materials using the BRE Green Guide to Housing. Such materials have lower environmental impacts when compared to “B” and “C” rated materials, and especially when sourced locally. It is intended that where practical, external walls, internal walls (party walls and internal partitions) windows and roofs for housing will meet the BRE Green Guide “A” rating, with other building elements being “B” rated.
- 4.57 The dwellings will seek to reduce thermal loss through the use of energy efficient materials and insulation.

- 4.58 The use of recycled materials (e.g. crushed concrete from waste used for hardstanding) has zero embodied energy impact, other than that expended in their processing or transport. Their use will therefore be carefully considered and incorporated where feasible.
- 4.59 All timber used for the basic building elements will be supplied from managed, sustainable forestry practices (e.g. PEFC and FSC) wherever possible.
- 4.60 The building materials within the development will seek to meet all the following criteria:
- Preference for the use of traditional and/or long established materials that do not emit pollutants and have low embodied energy;
 - Use materials that are stable, durable and appropriate;
 - Not use materials that contain heavy metals, biocides or known toxins such as lead or asbestos;
 - Make sure that mineral and other fibres are encapsulated;
 - Use low or nil-formaldehyde emitting materials;
 - Minimise the use of paints, using organic water based or mineral paints wherever practicable;
 - Avoid harmful cleaning agents, solvents and smoke from open fire;
 - Implement a waste reduction strategy; and
 - Use local suppliers where possible.
- 4.61 To avoid wasting any soils imported to site during the construction phase soil will be re-used on site where appropriate.
- 4.62 Construction companies will aim to work with their suppliers to enable the material packaging to be appropriately stored and returned to the supplier to allow them to re-use or recycle the packaging where possible. Many companies are also working with a number of suppliers to introduce degradable packaging.
- 4.63 Similarly, developers will work with their material suppliers to develop a programme of 'just in-time' deliveries, where possible, to minimise the amount of materials that are held on site at any one time. A further advantage associated with 'just in-time' is that

it reduces the amount of storage space required on site, therefore minimising ecological impact.

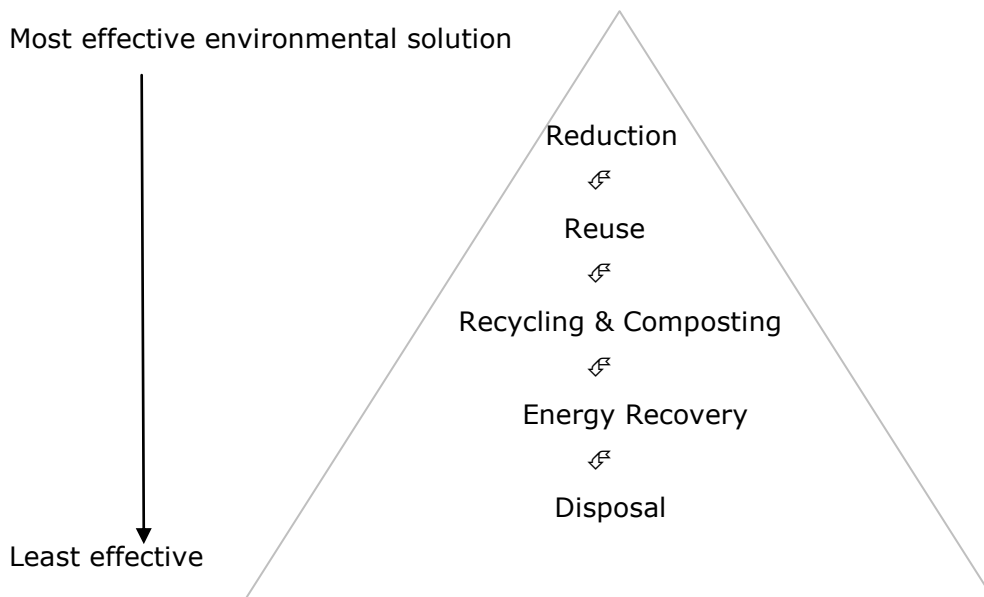
- 4.64 The construction companies will also collaborate with relevant stakeholders where possible to reduce the volume of cut-offs through simpler design; ensure that the team has the appropriate tools, allowing greater flexibility and the avoidance of over specification; and, use prefabrication units and standardised components in standard product sizes (e.g. plasterboard panels, windows, doors). As these are made in a factory-controlled environment, they tend to generate less waste and if standard product sizes are made use of this minimises the off-cut wastage on site
- Waste & Recycling

- 4.65 The Waste Strategy for England 2007 summarises the problem of waste:

"Each year, we generate about 100 million tonnes of waste from households, commerce and industry. Most of this ends up in landfill where the biodegradable part generates methane (a potent greenhouse gas) while valuable energy is used in extracting and processing new raw materials."

- 4.66 The development industry produces a variety of different waste types including soil and rubble from ground excavation and waste generated from the development process, in addition to the waste created during operation of the residential dwellings.
- 4.67 In accordance with the principles of the waste hierarchy, shown below, the proposed development will aim to minimise waste through both the construction and operational stages.

The Waste Hierarchy



- 4.68 The sustainable use of resources is key to minimising waste during construction. This concept not only minimises waste (from off-cutting etc) but can also result in financial savings as it minimises the need to over order materials through the efficient use of resources.
- 4.69 Proper storage and handling of materials to avoid damage, accurate quantity estimates and efficient purchasing arrangements to avoid over ordering, will form part of the best practice guidance and Construction Environmental Management Plan (CEMP) employed during construction.
- 4.70 Construction: It is proposed that measures will be implemented to reduce waste and encourage effective recycling. The use of reclaimed materials and recycling opportunities will be maximised where possible, and as previously indicated the use of prefabricated units and standardised components and product sizes will also help to generate less waste.
- 4.71 Operation: It is proposed that the development will be meet with the Borough's standard requirements for student accommodation.
- 4.72 It is anticipated that these measures will substantially reduce the amount of waste generated by the development which goes to landfill.

Water

- 4.73 Water is an important and precious resource which needs to be used in a sustainable manner to ensure ecosystems, populations and future generations are not affected by misuse. In this proposed development sustainable water resource management initiatives will be incorporated into the design in order to effectively manage the resource.
- 4.74 The initiatives include;
- Adoption of best practice techniques to ensure there are no impacts on water quality during construction; and
 - Proposals for water efficient appliances to be fitted in the new apartments.
- 4.75 There will also be a conscious effort to minimise any potential contamination of water sources during construction. Protective measures will be incorporated into the Construction Environment Management Plan to minimise any potential impacts on surface and ground water during construction.
- 4.76 Building Regulations Part G sanitation, hot water safety and water efficiency (2010) set compliance levels for new dwellings for energy and water consumption.
- 4.77 The requirements of G2 and Regulation 36 (1) are that reasonable provision must be made by the installation of fittings and fixed appliances that use water efficiently.
- 4.78 In order to reduce water consumption therefore, each unit will be fitted with internal demand management devices. The Lainston Woodley Arms LLP are committed to achieving a reduction in mains water consumption across the site in accordance with the Code Level at the time of implementation. Savings will be achieved through the installation of water saving appliances in all new buildings. These are likely to include:
- Water efficient taps
 - Low capacity or dual flush toilets
 - Aerated or flow regulated taps
 - Showers with low flow rates
 - A and B rated washing machines

- Flow restrictors to manage water pressure to achieve optimum levels; and
- Water meters to all premises with guidance on water consumption and savings.

4.79 All the above steps to reduce water usage and make efficient use of this resource are important in achieving a sustainable development.

Management

4.80 In order to ensure that the site is managed in an environmentally, socially considerate and accountable manner, the developer will endeavour to meet best practice criteria of nationally or locally recognised schemes. The site will also be managed in a way that mitigates environmental impacts and be guided by a Construction Environmental Management Plan (CEMP).

Conserving and Enhancing the Historic Environment

4.81 The site has been previously developed, is not in close proximity to heritage assets, and therefore there is no additional impact in relation to the historic environment.

5. CONCLUSIONS

- 5.1 This Sustainability and Energy Statement reviews the sustainability principles of the proposed development at The Woodley Arms, Waldeck Street, and is based on the pertinent issues identified in relevant national and local policy and guidance, including the following documents: the National Planning Policy Framework; the Reading Development Plan, and the Revised Sustainable Design and Construction SPD.
- 5.2 The Lainston Woodley Arms LLP recognise and acknowledge that they have a responsibility to ensure that the environmental impacts of their developments are minimised, and are well managed where they cannot be avoided. This statement has therefore reviewed the sustainability credentials of the proposed development against a variety of themes as identified in the above documentation and other general national sustainability guidance and goals. The topics covered have included:
1. Building a strong, competitive economy
 2. Promoting sustainable transport
 3. Delivering a wide choice of high quality homes
 4. Requiring good design
 5. Promoting healthy communities
 6. Meeting the challenge of climate change, flooding and coastal change
 7. Conserving and enhancing the natural environment
 8. Conserving and enhancing the historic environment
- 5.3 In accordance with Policy CS1 of the Core Strategy the proposals include specific measures to reduce CO₂ emissions. The CO₂ emissions savings will be achieved through fabric first efficient measures in accordance with Building Regulations Part L1A 2013. The emissions saved will therefore be between the standards equivalent to Sustainable Home Code Level 3 and 4 in relation to energy criterion, thus meeting with the requirements identified within the Sustainable Design and Construction SPD.
- 5.4 Construction of the dwellings will also achieve nationally recognised standards, minimising thermal loss which will result in a lower demand for energy heating. In addition, the statement has also demonstrated how careful consideration has, and will be, given to the use of materials, including waste and water, in both the construction and operational phases.

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- 5.5 The utilisation of sustainable water consumption technologies will be considered for all dwelling types. A+ or A rated materials from the recognised BRE "Green Guide to Housing Specification" will be specified wherever practicable.
- 5.6 The proposed development is considered to offer a good degree of sustainability by virtue of its location and design. The site is located with good accessibility to alternative modes of transport to the private car and the proposed development has been designed to minimise transport impact and maximise sustainable travel, there is, as outlined above, good access to a range of services and facilities within close proximity to the site.
- 5.7 This statement has therefore demonstrated how the principles of sustainable development have, and will continue, to influence the design, construction and operations of the proposed scheme, which will enable future occupants to incorporate sustainable living patterns in order to achieve reduced energy. Sustainability is at the forefront of the applicant's proposals, responding to the three pillars of sustainable development and meeting with national and local policy requirements.