Sustainability Appraisal

Coventry Stadium, Brandon

December 17

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The redevelopment of Coventry Stadium will deliver resource efficient new homes in a sustainable location by redeveloping a brownfield site.

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1. Introduction

This Sustainability Appraisal has been prepared to demonstrate how the proposed development at Coventry Stadium, Brandon will deliver sustainable new homes.

This Sustainability Appraisal has been prepared to support the application for up to 137 new dwellings at Coventry Stadium, Brandon.

Site and Surroundings

The proposed development is located in adjacent to the settlement of Binley Woods, Rugby approximately 7.5km to the east of the centre of Coventry.

The site is currently used for greyhound and stock car racing and comprises of the existing stadium and associated hardstanding and two fields used for parking.

The site is bounded by residential development and the Rugby Road to the east, woodland to the north and further residential homes to the south. To the west the site is bounded by residential dwellings, paddocks and farm land.

The centre of Binley Woods is located 1.3km to the East and provides a number of local services including convenience store and the Binley Woods Primary School accessible via footpaths along the Rugby Road.

Proposed Development

The proposed development comprises of up to 137 new dwellings including provision for pedestrian connections to local public footpaths and a formal area of play providing recreational opportunities for residents.

The full planning description includes:

"Development comprising up to 137 dwellings (Use Class C3); access from the Rugby Road (not internal roads); new open space and associated infrastructure. All other matters including means relating to appearance, landscape, scale and layout reserved."

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Further details of the proposed development are contained in the outline planning application which accompanies this report.

Sustainability Appraisal

This Sustainability Appraisal has been set out to demonstrate how the development will deliver sustainable new homes in a sustainable location providing local economic, social and environmental benefits.

The Appraisal is set out under the following section headings which demonstrate how the proposed development will deliver sustainable new homes reflecting the objectives and requirements of both local and national planning policy.

2 – Policy Context – Sets out local and national planning policy with regards to the principles and objectives relating to sustainable development in Rugby.

3 – Sustainability Appraisal Methodology – Provides details on the appraisal methodology for the following sections.

4 – Sustainable Development and Energy Statement – Includes a review of the sustainable design measures incorporated into the development and to be considered during the detailed design of the development including an Energy Statement to ensure the delivery of a sustainable development.

5 – Sustainability Appraisal – An assessment of the proposed development against the Council's emerging Sustainability Appraisal objectives to demonstrate how the development responds to key local objectives.

Figure 1: Concept Plan

2. Policy Context

This section of the report provides an overview of the relevant planning policy and guidance regarding the development of sustainable new dwellings.

UK Sustainable Development Strategy

In 2005, the Government published an updated strategy for implementing sustainable development across the UK.

This strategy acts as an overarching document from which a range of specific policies and legislation was derived. Although published in 2005, the strategy has taken a recently renewed focus in light of the government's definition of Sustainable Development in the NPPF.

One of the key aims of this strategy is to recognise the threats of climate change and ensure that the UK develops a strategy to mitigate and adapt to this phenomenon.

The document established five key principles that will underpin the national sustainable development strategy:

- Living within Environmental Limits;
- Ensuring a Strong, Healthy and Just Society;
- Achieving a Sustainable Economy;
- Promoting Good Governance; and
- Using sound science responsibly.

The strategy will be implemented at a national level through the development of more specific strategies at a government department or sector level.

With regards to planning and the built environment, this document sets the basis for the development of plans

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and Policies that promotes development that mitigates and adapts to climate change.

Climate Change Act

The Climate Change Act (2008) sets a legally binding target for reducing UK CO_2 emissions by least 80% on 1990 levels by 2050.

At the end of June 2016, the Government published the Fifth Carbon Budget. The budget sets a target for emission cuts of 57% from 1990 levels by 2030.

The House of Lords passed the Carbon Budget Order 2016 on 19 July, making the budget and its target law. A bill passed in early July 2016 to abolish the Department of Energy and Climate Change (DECC) and absorb its functions into the new Department for Business, Energy and Industrial Strategy, will not affect the implementation of the Carbon Budget.

Building Regulations

In April 2014 the Part L regulations changed and it is now a requirement for new homes to deliver a 6% reduction in carbon emissions compared to equivalent 2010 Part L standards. This change aims to strike a balance between the commitments to reducing carbon emissions and improving energy efficiency and ensuring that the overall effect of regulation upon consumers and businesses does not stifle growth.

The government has stated that developers and house builders' should have full flexibility in how they meet carbon reduction targets and that in accordance with the energy hierarchy the emphasis should be on a Fabric First approach towards the design and construction of new homes.

The Housing Standards Review (HSR)

On 27 March 2015 the previous government confirmed a new approach to the setting of technical housing standards in England and published a written Ministerial Statement which outlined the policy on the application of these technical standards.

The Statement set out that from the date the Deregulation Bill 2015 is given Royal Assent (30 March 2015) *"local planning authorities should not set any additional local technical standards or requirements relating to the construction, internal layout or performance of new dwellings".*

This includes the winding down of the Code for Sustainable Homes (CfSH).

It also set out that local planning authorities may need to review their local information requirements to ensure that technical detail that is no longer necessary is not requested such as the requirements of Lifetime Homes which are now incorporated into the new optional Technical Standards.

The National Planning Practice Guidance was also updated in March 2015 to reflect the Ministerial Statement and now highlights that planning authorities need to take account of government decisions on the Housing Standards Review when considering local sustainability requirements relating to new homes.[1]

Fixing the Foundations

Following the general election in May 2015 the government has produced a number of policy documents including "Fixing the Foundations" published in July 2015.

The document sets out the government's plan for future carbon reduction requirements in new development and outlines the government's intention to no longer continue with the Allowable Solutions scheme and postpone any increases in on-site energy efficiency standards in 2016 which were planned as part of the national zero carbon buildings policy.

It is understood that the government aims to keep energy efficiency standards under review, recognising that existing measures to increase energy efficiency of new buildings should be allowed time to become established.

National Planning Policy Framework

Following its publication in March 2012, national planning policy is now provided by the National Planning Policy Framework (NPPF) which sets out the government's planning policies for England and how these are expected to be applied. It also sets out the

[1]http://planningguidance.planningportal.gov.uk/blog/guidance/climate-change/what-are-governments-national-standards-for-a-buildings-sustainability-and-for-zero-carbon-buildings/

requirements for the planning system only to the extent that it is relevant, proportionate and necessary to do so.

The Government has made clear its expectation that the planning system should positively embrace well-conceived development to deliver the economic growth necessary and the housing we need to create inclusive and mixed communities.

The NPPF states that: '*the purpose of the planning system is to contribute to the achievement of sustainable development'.*

It states clearly that in order to deliver sustainable development, the planning system must perform three distinct roles, aligned to the three pillars of sustainability, which must not be taken in isolation and should be pursued jointly:

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 development requirements, including the provision of infrastructure;

A social role supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and

An environmental role contributing to protecting and enhancing 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.

Demonstrating Sustainable Development –
Paragraph 6 of the Framework states that:

"The purpose of the planning system is to contribute to the achievement of sustainable development. The policies in paragraphs 18 to 219, taken as a whole, constitute the Government's view of what sustainable development in England means in practice for the planning system".

The policies referred to in Paragraph 6 of the Framework have been divided into 13 themes;

1. **Building a Strong Competitive Economy**
2. **Ensuring the Vitality of Town Centres**
3. **Supporting a prosperous rural economy**
4. **Promoting sustainable transport**
5. **Supporting high quality communications infrastructure**
6. **Delivering a wide choice of high quality homes**
7. **Requiring good design**
8. **Promoting healthy communities**
9. **Protecting Green Belt Land**
10. **Meeting the challenge of climate change, flooding and coastal change**
11. **Conserving and enhancing the natural environment**
12. **Conserving and enhancing the historic environment**
13. **Facilitating the sustainable use of minerals**

Should a proposed development demonstrate that it is supporting the relevant policies of the Framework it is deemed to be 'Sustainable Development'.

Planning Policy Guidance

The revised Planning Practice Guidance (PPG) provides further advice on various planning issues associated with development, including those linked to sustainability and renewable energy and underpins the policies within the NPPF.

The PPG is an important material consideration in planning decisions and should generally be followed unless there are clear reasons not to. It sets out how local authorities should include polices that protect the local environment and strategies to mitigate and adapt to climate change and supports developments that are functional and adaptable for the future.

The PPG reiterates that local authorities should set sustainability policies for new housing that are in line with the government's Housing Standards Review.

The latest update to the PPG in April 2016 confirms Local Authorities have the option to set technical requirements exceeding the minimum requirements of the Building Regulations in respect of access, water and space where sufficient evidence is produced to justify the target.

The PPG also states that the distribution and design of new development, and the potential for servicing sites through sustainable transport solutions, are particularly important considerations.

The Development Plan

The Local Development Plan for Rugby Borough Council currently comprises of the Council's Core Strategy and supporting documents which includes the Sustainable Design and Construction SPD.

The Core Strategy was adopted in 2011 and sets out the strategic policies which guide development in the Borough up to 2026.

The Council is in the process of developing a new Local Plan 2011 – 2031; this was submitted for examination in July 2017.

Below a short review of the relevant sustainability policies from the Core Strategy and emerging Local Plan has been undertaken.

Rugby Borough Council Core Strategy

The Core Strategy sets out the Council's vision to guide the future pattern and form of development over the plan period until 2026. The Core Strategy has been prepared in the context of the Council's Sustainable Community Strategy.

Sustainable growth and climate change are identified by the Council as key issues to ensure appropriate growth which protects the natural environment and reduces carbon emissions.

The following policies are considered relevant to the delivery of sustainable development at Brandon Stadium.

Policy CS11 – Transport and New Development – States development will be permitted where sustainable modes of transport are prioritised and measures to mitigate traffic impacts which may arise from the development.

Policy CS16 – Sustainable Design – States all development should demonstrate high quality and inclusive and sustainable design. Developments should also include Sustainable Drainage Systems and consider measures to reduce the use of non-renewable resources taking into account the impacts of climate change. New developments should also meet the water conservation standards equivalent to Level 4 of the CfSH.

Policy CS17 – Sustainable Buildings – States that all developments shall comply with the published Building Regulations relevant at the time of construction. All new developments of 10 dwellings or more will incorporate decentralised and renewable or low carbon energy equipment to reduce predicted carbon dioxide emissions for the whole site by at least 10%.

Policy CS19 – Affordable Housing – States that on sites accommodating 30 dwellings or more, a target affordable housing provision of 40% will be sought.

Sustainable Design and Construction Supplementary Planning Document

The SPD serves to support the increasing requirement to create a more sustainable development. It provides guidance on sustainable design for developments, including details on achieving the required water efficiency standard and calculating the required 10% reduction in regulated and unregulated carbon emissions.

Suggests that compliance with Policies CS16 and CS17, should be demonstrated through the submission of a Sustainability Checklist report, use of a water efficiency calculator and the use of Enplanner (software that allows users to calculate energy consumption, find out about location specific renewable resource information and generate an energy statement), and the preparation of a Sustainability statement.

The supporting Sustainability Checklist requires the development to demonstrate how it has been designed to respond to key climate change impacts.

Local Plan Publication Draft

This document sets out the Council's policies and proposals to support the development of the Borough through to 2031. The Plan highlights the need for the developments to be delivered in a sustainable way, with key social, economic and environmental objectives outlined.

Policy GP1 – Securing Sustainable Development – States that when reviewing proposals, the Council will take a positive approach to those in favour of sustainable development.

Policy SDC1 – Sustainable Design - States all development should be of a high quality and consider a range of sustainable design measures as well as provision of adequate storage for waste and recycling. New developments will safeguard amenities for existing and future neighbouring occupiers.

Policy NE2 – Biodiversity – States that a development will be permitted provided that it protects, enhances and/or restores habitat biodiversity.

Policy SDC4 – Sustainable Buildings – States that all new dwellings shall meet the Building Regulations requirement of 110 litres of water/person/day unless it can be demonstrated that it is financially unviable.

Policy SDC5 – Flood Risk Management – States that the Council will undertake a sequential approach based on the Environment Agency's flood zones, steering development to areas with the lowest probability of flooding, minimising the risk to people and property.

Policy SDC6 – Sustainable Urban Drainage – States that SuDS are required in all developments. Such facilities should be provided on-site, or close to the site, where this is not possible. Where SuDS cannot be provided, it must be demonstrated that an acceptable means of surface water disposal is provided which does not increase the risk of flooding or environmental problems, and contributions will be made to off-site SuDS schemes. The re-use and recycling of surface water and domestic waste water within new development will be encouraged.

Policy SDC7 - Protection of the Water Environment and Water Supply – States that developers are expected to ensure an adequate water supply by minimising the need for new infrastructure, and ensuring development is in accordance with the Water Framework Directive Objectives.

Policy SDC8 – Supporting the provision of renewable energy and low carbon technology – States that proposals for new low carbon and renewable energy technologies and associated infrastructure will be supported in principle, with the following considerations:

- Minimising adverse impacts on land use, amenities and the local natural environment
- Maximises the opportunities to address energy needs
- Fully backed by affected local communities

Policy D1 – Transport – States that development will be permitted where sustainable modes of transport are prioritised.

Rugby Borough Sustainability Checklist

Developers should submit a completed checklist to demonstrate how proposals will minimise energy consumption and adapt to the future impacts of Climate Change, in accordance with Policies CS16 and CS17.

Summary of Policy

Both local and national policy aims to ensure the delivery of sustainable development and well-designed homes which mitigate and adapt to the potential impacts of climate change.

Latest national planning policy and guidance confirms the Government's approach to sustainable development is being driven through future iterations of the Building Regulations and new Technical Standards relating to space, access and water efficiency.

The results of the Housing Standards Review and subsequent Ministerial Letter have removed the Code for Sustainable Homes and Councils are no longer allowed to request reductions in carbon emissions beyond the building regulations. In addition developers are to be allowed flexibility in the how carbon savings are achieved.

The Council's Local Development Plan highlights good design and mitigating and adapting to the impacts of climate change as key objectives for new development encouraging the location of development in sustainable locations and the creation of resource efficient homes.

It is required that development proposals are accompanied by a completed Sustainability Appraisal highlighting how the development will minimise predicted carbon emissions.

In this context Chapter 4 and 5 of this Sustainability Appraisal include an assessment of the sustainability of the site; and sets out the design measures included and to be considered at the detailed design stage to ensure the new homes meet the latest government sustainability guidance and delivers low carbon sustainable homes.

3. Sustainability at Coventry Stadium, Brandon

The development at Coventry Stadium, Brandon will deliver residential development in a sustainable location which provides local social, economic and environmental benefits.

To demonstrate that the development proposal for up to 137 new homes at Coventry Stadium, Brandon constitutes sustainable development this report is split into the following sections.

The following paragraphs summarise the objectives and methodology of the Sustainable Development and Sustainability Appraisal chapters of this report.

Sustainable Development and Energy Statement

Local and national policy support sustainable development in line with the principles of the NPPF provided it demonstrates social, economic and environmental benefits.

The development proposals include a range of measures designed to provide economic, social and environmental benefits including key design features aimed at mitigating and adapting to the impacts of Climate Change.

Section 4 of this report presents the key measures incorporated into the design of the development and those to be considered as part of the detailed design including an Energy Statement demonstrating how the proposed development is sustainable in accordance with the themes of the NPPF and local sustainable development policies.

Sustainability Appraisal

To demonstrate how the proposed development at Coventry Stadium, Brandon supports Rugby Borough Council's latest sustainability objectives the proposal has been assessed against the Sustainability Appraisal.

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4. Sustainable Development and Energy Statement

This chapter summarises the sustainable design measures incorporated into the masterplan and measures to be considered during the detailed design to deliver sustainable, new homes.

Achieving Sustainable Development

This section of the report outlines the Sustainable Design and Energy Strategy for the proposed development at Coventry Stadium, Brandon demonstrating how the development responds to both national and local planning policy, including, the NPPF.

In this context the sustainable design measures incorporated into the development masterplan at the outline application stage and measures to be considered during the detailed design are set out under the following headings which reflect the themes of the NPPF and include the requirements of the Council's Sustainability Checklist.

5.1 Building a Strong and Competitive Economy

5.2 Promoting Sustainable Transport

5.3 Delivering a Wide Choice of High Quality Homes

5.4 Requiring Good Design

5.5 Promoting Healthy Communities

5.6 Meeting the Challenge of Climate Change – Energy Statement

5.7 Conserving and Enhancing the Natural Environment

5.8 Sustainable Waste Management

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5.1 Building a Strong and Competitive Economy

The proposed development will contribute to positive economic growth for the district, providing sustainable new homes, supporting the aims of the NPPF.

The economic benefits of construction are well known with considerable direct and indirect positive impacts resulting from new housing construction. A study by the Confederation of British Industries (CBI) demonstrates that construction projects have a significant benefit on the local and wider economy. The report concludes that for every £1 of construction expenditure £2.84 is injected into the economy.

As part of the development, Investin Brandon will be providing financial contribution to the Council to support local infrastructure projects. Further positive economic impacts of the proposed development are noted as follows;

- The construction of up to 137 new homes will create direct local employment opportunities as well as indirect benefits through demand for goods and services to support the construction phase.
- As well as the construction and increase in local spending the Council will benefit from an increase in Council Tax revenue and New Homes Bonus.

5.2 Promoting Sustainable Transport

A detailed Transport Assessment has been prepared by David Trucker Associates to assess the impact of the development on the local infrastructure network and set out measures to be incorporated into the development to encourage the use of sustainable transportation.

The site is located to the south-east of Coventry within the parish of Brandon and Bretford, approximately 1.6km to the east of the A46/ A428 signalised roundabout, and shares frontage with the A428 Rugby Road to the south-west and Speedway Lane to the south-east.

The site currently comprises a hard standing car park that was used in the past to serve Brandon Stadium and has two existing vehicle points of access onto Rugby Road. A further pedestrian access is located at the north-west corner of the site.

The area benefits from sustainable transport options which are summarised below.

Walking and Cycling – The foot/cycle access to the proposed redevelopment would be achieved through the two vehicle access points on to Rugby Road. There are three existing public rights of way that line the boundaries of the site. These connections will provide a good level of connectivity to the local area and nearby facilities including a primary school, parade of shops, post office, and community hall.

To encourage occupants to walk and cycle to and from the site, the development will have:

- A good level of street and path lighting
- Warning signs prior to junctions
- On-site roads will be designed to 20mph
- Tactile and coloured surfacing
- Safety kerbing
- Reduced junction mouth width to promote slower vehicle speed where appropriate
- Signage to direct pedestrians and cyclists to key facilities and places of interest, including distances;
- A mix of cycle parking facilities will be provided within the confines of a dwelling, or in secure, well lit, covered cycle storage facilities
- A 2m wide footway will be provided throughout the development

Bus Services – The closest bus stops to the site are located on Rugby Road, approximately 300m walking distance from the centre of the site. Two of these bus stops are located to the north-west of the proposed redevelopment and two bus stops to the south-east. As

part of the development scheme, it is proposed that the bus stops located to the south-east of the site will be upgraded to provide bus shelters, hard standing and seating.

Rail Services – The closest railway station to the proposed development is the Coventry Railway Station, which is located approximately 12km to the west of the site in Coventry City Centre. The number 86 bus service, which passes the proposed development, stops within 1km walking distance of the station - a walking time of around 12 minutes.

Overall, the development will reduce the need to travel, and encourage sustainable travel through the adoption of the following key transport and movement principles:

- An integrated network of streets and pedestrian connections and facilitate active modes of travel;
- Accessibility to public transport;
- Traffic routes within the development designed to minimise traffic speeds

More detailed information on transportation issues is contained in the Transport Assessment that accompanies the outline planning application.

5.3 Delivering a Wide Choice of High Quality Homes

The proposed development will deliver up to 137 new homes including 40% much needed affordable homes that will provide a mix of housing with broad dwelling types appropriate to the location and market demand.

The future development will seek to deliver well designed new homes which respond to specific constraints and opportunities of the site and its local context, and includes considering measures during the design stage such as;

- Homes designed to a high quality, in keeping with the local area and the existing town;
- New homes with comfortable living environments prioritising natural daylighting and ventilation;
- New homes which are well connected to the local transport network and pathway system; and
- Where possible, internal layouts adaptable to reflect changing needs of the occupants.

The future design of individual homes will aim to provide comfortable living environments which promote a sense of community.

5.4 Requiring Good Design

The development seeks to promote character and quality in its design approach and responding positively to the local area and the constraints and opportunities of the site.

The indicative masterplan for the development has been developed in response to the specific constraints and opportunities of the site and its local context. The proposals are landscape led and not of a standard design, reflecting the development's aim to respect the character of the area and ensure attractive and sustainable new homes.

The Design and Access Statement which accompanies the outline planning application sets the vision for the proposed development and key aims which include:

- Creating a well-considered development in a sustainable location;
- Providing a range of dwellings types, sizes and tenures to meet the housing needs;
- Protection of the existing site hedgerows, boundaries and habitats;
- Creation of a Green Infrastructure Framework to provide ecological enhancement, public open space and boundary enhancements; and

- Connection to the surrounding footways and PRoW.

5.5 Promoting Healthy Communities

Creating a high quality development that promotes health and wellbeing for residents and local people is a key aim of the scheme, which supports the principles of adopted policy which advocates new developments to aim to enhance human health and safety through the provision of healthier transport options and improved green infrastructure.

The design has been developed incorporating a number of features to enhance the health and wellbeing of the residents, including:

- Safe and secure accessibility supported by the development encouraging walking and cycling and design through the Secured by Design Standard;
- Joined up streets and spaces, overlooked by dwellings to reduce crime and the fear of crime;
- Connection to local the local pedestrian network to connect the development to local services and amenities including local clubs, parks and recreational areas;
- Provision of private external space for all properties.

In addition the design of new homes will consider measures to improve internal living environments to promote health and wellbeing including:

- Prioritisation of natural ventilation, contributing to good internal air quality; and
- Utilisation of materials and services that have low emission rates and pollutants.

Overall the proposals aim to deliver a development which provides a healthy community for new residents.

5.6 Meeting the Challenge of Climate Change – Energy Statement

One of the main challenges facing the UK and new residential development is the need to mitigate and adapt to a changing climate. The Government is committed to tackling climate change and has an ambitious long-term goal to reduce carbon emissions by 80% by 2050.

Climate change will cause the UK to become warmer, winters will become wetter, and summers will become drier. Adapting to this changing climate will impact on the design, construction, location, cost and operation of all new homes and other buildings in the next few decades. One of the NPPF's core planning principles is to encourage development to consider climate change adaptation and mitigation during the planning process.

In this context the following sections outlines the key climate change mitigation and adaptation measures considered appropriate for this development based on the latest national guidance under the following headings:

- Energy Strategy;
- Water Efficiency; and
- Flood Risk and Drainage.

5.6.1 Energy and Carbon Strategy

Developing energy efficient, low carbon buildings is a key objective of national policy and recent changes to the Building Regulations support the reduction of energy demand though efficient building design.

The Council's adopted Core Strategy supports the Government's objectives for sustainable development and adapting to and mitigating the effects of climate change. In this context, Policy CS17 of the Council's Core Strategy requires development to achieve a 10% reduction in predicted carbon emissions.

The results of the Housing Standards Review and subsequent guidance states developers are no longer allowed to set policies to request carbon savings beyond those set out in the Building Regulations and developers should have flexibility in how carbon savings are achieved.

In this context it is considered that the Council's requirement for consideration of unregulated emissions and reduction of emissions solely through low carbon renewable energy is now behind latest government guidance.

As a commitment to sustainable development the proposed dwellings will be developed in accordance with the energy hierarchy, which aims to reduce energy demand through passive design measures and a fabric first approach before utilising low carbon energy and the production of on-site renewable energy to achieve a 10% reduction in carbon emissions above the latest 2013 Building Regulations.

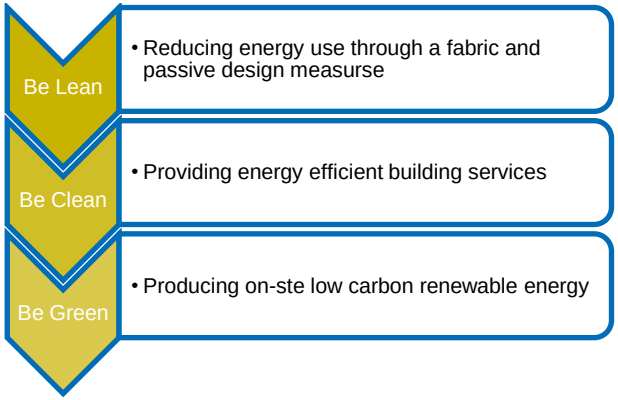

Figure 2: The Energy Hierarchy

The following sections set out the measures included to deliver an energy efficient, low carbon development.

Be Lean

Central to the delivery of low carbon and energy efficient buildings is the 'Fabric First' principle which recognises the most effective way of minimising carbon emissions is to reduce the demand for heat and power through a well-insulated, energy efficient building fabric and services.

Reducing the primary energy demand of a building through the use of an efficient fabric and services is widely regarded as best practice and is therefore the first and most important step to reducing carbon emissions.

This 'fabric first' approach has a number of distinct benefits including:

- Carbon savings delivered are 'locked-in' for the lifetime of the building (60 years or more) rather than the much shorter lifespan (around 25 years) of a renewable energy technology;
- Virtually no maintenance and/or replacement costs to maintain carbon reductions through improved fabric;
- No reliance on an occupier's behaviour to deliver carbon reductions. Achieving carbon savings from renewable energy technologies require education, awareness and often, behavioural changes from occupants.

Energy Efficiency Measures – The proposed dwellings will be designed to reduce thermal energy demand by targeting improved insulation levels and air leakage and fabric u-values in line with current Building Regulations requirements.

The following measures to reduce energy use and carbon emissions will be considered during the design of the dwellings:

- Design and layout to promote passive solar gains, maximise natural daylight, sunlight and ventilation with the majority of homes to be orientated towards the south;
- Design of new homes which aim to optimise natural daylight in all the habitable spaces with suitable window sizes relative to living spaces and bedrooms;
- Development that aims to balance minimising the direct adverse impact of shading from other buildings and landscape features and improving access to passive solar gains;
- Material selection which aims to balance the aesthetics, robustness and durability with optimal thermal benefits for each home;
- New homes which target building element u-values and air tightness in accordance with current Building Regulations requirements;

- High performance glazing with appropriate window u-values and g-values to reduce heat loss and optimise positive solar gain while reducing the potential for overheating;
- Incorporating high efficiency lighting targeting 100% of all light fittings as low energy lighting;
- Use of high efficiency condensing natural gas boilers to reduce energy consumption.

Where appropriate, specification of high energy efficient rated appliances will be provided that use less energy and water.

Through the use of lean, fabric efficiency measures the development aims to go beyond the requirements of the 2013 Building Regulations and contribute towards the Council's target of a 10% reduction in carbon emissions.

Sustainable Materials – In addition the development will aim to use a range of sustainable materials and design features and will consider:

- Specification of certain materials utilising BREs Green Guide to specification;
- Use of sustainable timber from FCS (or equivalent) sources; and
- Use of Accredited Construction Details to minimise thermal bridging.

The final design and specification of new homes will be determined during the detailed design of the development.

Be Clean

The next stage of the Energy Hierarchy is the provision of energy efficiently, i.e. from a decentralised energy system such as a Heat Network.

District Heating Networks (DHN) comprise a centralised heat generator, typically a gas fired Combined Heat and Power (CHP) engine. CHP systems generate electricity and waste heat which can be fed into a network of insulated pipes which deliver low carbon heat to buildings to provide heating and hot water via individual heat transfer units.

DHNs are suited to development with high thermal demand, typically provided by sufficient density or a large anchor load, i.e. high density flats, leisure centres and industrial process. Typically small scale housing developments of well insulated homes do not have a sufficient heating demand to warrant the installation of a network.

Figure 2 shows an extract of the UK Heat Map and the proposed site demonstrating the development is not located near to any existing large heat loads which could be used to support a local heat network.

Figure 2: UK Heat Map Extract

The development of thermally insulated, low density, high efficiency homes such as those proposed, limits the heating demand of development and therefore the feasibility and viability of the installation of CHP and district heating, making it unsuitable for this development.

Be Green

The final stage of the energy hierarchy is the generation of on-site low carbon renewable energy. Policy CS13 requires development to achieve a 10% reduction in carbon emissions through the use of low carbon renewable energy.

In this context the new homes will be designed in accordance with the energy hierarchy using a fabric first approach minimising carbon emissions through the use of improved building fabric and energy efficient measures to reduce carbon emissions beyond the Building Regulations, contributing towards a 10% reduction in emissions over the Part L 2013 requirements.

Where required any residual carbon reductions needed to meet the 10% requirement the homes will be designed to incorporate appropriate low carbon renewable energy technologies.

Generating low carbon energy onsite can reduce reliance on fossil fuels and minimises energy lost through transmission and contribute to security of supply and better connections between energy demand and generation.

Solar PV – Solar PV systems can generate electricity for use in homes and is suitable on south facing, unobstructed roof spaces. A proportion of the new homes may have south facing roof spaces suitable for the consideration of solar PV systems.

Generating low carbon energy onsite can reduce reliance on fossil fuels and minimises energy lost through transmission and contribute to security of supply and better connections between energy demand and generation.

Solar Thermal Hot Water – Solar thermal systems are used to generate hot water and similarly to Solar PV above, a proportion of new homes may have suitable roof spaces for solar thermal hot water.

Heat Pump Systems – Heat pumps provide low grade heat from the ground (Ground Source Heat Pumps, GSHP) or air (Air Source Heat Pumps, ASHP).

Air Source Heat pump systems could be technically feasible however there is evidence that systems are delivering substantially lower efficiencies than predicted and a growing number of cases where such systems are being removed post occupation on the basis of poor performance. In addition the carbon savings associated with ASHPs can be limited where development proposes the use of high efficiency gas boilers. Careful consideration is required before specifying this technology.

The feasibility of Ground Source Heat Pumps is subject to specific ground constraints and in addition their cost is very high compared to carbon savings and this technology has therefore been discounted.

Waste Water Heat Recovery (WWHR) - WWHR systems extract heat from waste water used in the home, usually from the shower or bath in residential properties and may be suitable for use in the detailed design of new homes.

At this stage if is considered that the potential low and zero carbon technology options suitable for installation at new homes at Coventry Stadium, Brandon, include Solar PV, Solar Thermal and WWHR. The residual carbon emissions reduction required and suitable technologies will be determined during the detailed design of the development and individual homes.

Energy Strategy Summary

In summary, the proposed dwellings will be designed in accordance with the principles of the energy hierarchy to include measures to reduce the primary energy use and carbon emissions which aim to deliver a 10% reduction in carbon emissions beyond the requirements of the 2013 Building Regulations.

The energy strategy for the development is based on the principles of the energy hierarchy reducing emissions through the use of enhanced fabric specification before including suitable low carbon renewable energy technologies to deliver an overall 10% reduction in carbon emissions.

The feasibility and viability of the deployment of low carbon and renewable energy technologies will be assessed during the detailed design of individual homes.

What is the carbon footprint of the proposed development?

The graph below demonstrates the estimated carbon emissions of the proposed development at Coventry Stadium, Brandon, showing how the development of new homes will reduce energy use and carbon emissions delivering a 10% reduction in carbon emissions beyond the latest 2013 Building Regulations.

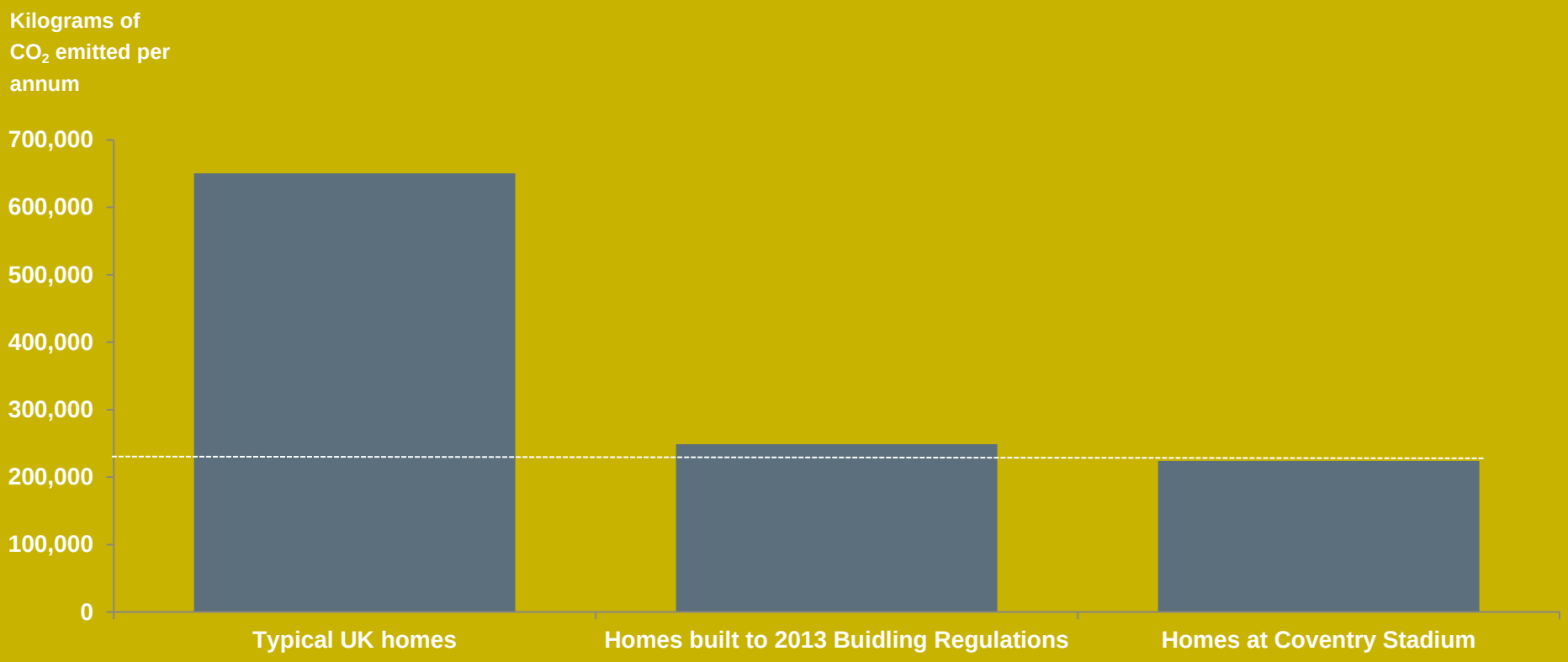

Figure 3: Estimated development carbon emissions

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5.6.2 Water Efficiency

Potable water is an increasingly important natural resource and with the majority of the UK classed as being in an area of moderate or severe water stress, the conservation of water is becoming a more significant sustainability metric.

The development at Coventry Stadium, Bardon is in an area of water stress and therefore the new development will aim to reduce water consumption during occupation the new homes through a range of water efficiency measures such as:

- Dual flush WCs;
- Water meters;
- Low flow fittings; and
- Where appropriate, water efficient appliances.

Through the use of these measures new homes will target a water consumption rate of 110l/p/d in accordance with the new higher water efficiency standard, in accordance with the Council's emerging policy which is below the standard Building Regulations rate of 125l/p/d, and significantly below the UK average of 137l/p/d.

External water use will be limited through the provision of external water butts, where appropriate to allow the capture of rainwater for garden irrigation which also contributes to reducing surface water runoff.

5.6.3 Flood Risk and Sustainable Drainage

A Flood Risk Assessment (FRA) has been carried out by RSK which demonstrates that the proposed development site is located within Flood Zone 1 and therefore considered to be at a low risk of fluvial flooding.

The FRA sets out the proposed site surface water drainage strategy which aims to maintain the post development surface water discharge rate at the existing surface water rate. The use of an attenuation based surface water strategy that offers ecological and biodiversity benefits is proposed. Sustainable Drainage Systems (SuDS) will be feasible to an extent, and it may be viable to use attenuation ponds, located in north-eastern, western and south-western boundaries of the site (as seen in Figure 1), as infiltration basins.

The proposed surface water management system has been designed to attenuate flows up to an including the 1 in 100 year plus 40% rainfall event to take into account the impacts of climate change.

The final surface water drainage strategy and SuDS will be determined during the detailed design stage. Further information on the sites flood risk and the proposed surface water management system can be viewed in the accompanying FRA.

5.7 Conserving and Enhancing the Natural Environment

The Proposed Development will incorporate measures to support and enhance the environment through consideration of the existing site ecology, including measures to mitigate the impact of the site and enhance site biodiversity, as well as incorporate measures to reduce pollution from the site.

5.7.1 Ecology

An Ecological Appraisal has been completed by Ecolation to assess the impact of the development on the existing site habitats and fauna and set out mitigation measures to minimise that impact as well as measures and considerations to enhance the sites biodiversity.

The site consists of the former Brandon Stadium, previously used for speedway and greyhound racing. The premises consist of the stadium itself, a selection of outbuildings and large car parking area. It is bound to the north-west by Binley Woods, to the north-east by Gossett Lane and residential property, to the south-east by Speedway Lane and residential property beyond and to the south-west by Rugby Road (A428) and residential property.

The majority of the site is of low ecological value. Due to use as car parking, dog and speedway racing tracks, it often is not a suitable habitat for species, instead acting as a dispersal barrier.

The survey of the site has identified potential for a limited number of species on site and the hedgerow along part of the western boundary has value as a connective corridor for local fauna. The diversity assessment has determined the hedgerow to be species rich

As part of the application a number of biodiversity mitigation and enhancement measures are made within the ecology appraisal.

Mitigation Measures

The appraisal sets out a range of mitigation measures during construction and operation phases to protect site habitats and fauna including:

Construction Phase Mitigation Measures

- The location of the builders compound must be at least 5m from vegetation and must mitigate the possibility of amphibians or mammals using this for shelter.
- Ensuring species are appropriately safeguarded during the construction and operation phases of development.
- Measures to mitigate lighting and dust to minimise impact of construction and the development on neighbouring habitats and species.

Habitat Loss Mitigation Measures

- The retention and enhancement of the existing site boundaries and habitats.
- Provision of a buffer along the north-western boundary to protect the sites valuable habitats.
- Undertaking detailed reptile surveys, establishing presence, population size and an appropriate further mitigation strategy.
- The retention of the north-western mosaic of habitat including the semi-natural, broad-leaved woodland, for sheltering and foraging species.
- Where possible the tree lines and scattered trees will be retained and protected.
- Habitat loss within the stadium will be replaced with species specific hibernation features within woodland to the north, grasslands and ponds.
- Grassland and compost heaps to be created to benefit habitats and manage species loss.

Enhancement Measures

There are a number of opportunities to enhance the sites biodiversity and the points below demonstrate how the proposed development aims to enhance biodiversity and maximise the provision of new habitats where possible including consideration of:

- Provision of new native species rich hedgerow and tree planting to strengthen the existing habitat corridors.
- Grassland to be created and managed to benefit bats and reptiles.
- New landscape planting using native trees and shrubs suitable to the local area.
- Management of the site attenuation basin;
- Provision of bird and bat boxes.
- Measures to encourage reptiles and invertebrates.
- Creation of new site habitats including the provision of a SuDS attenuation basin designed to provide biodiversity benefits.

It is as such anticipated that the proposed development will therefore have a positive impact, enhancing the sites biodiversity and ecology.

5.7.2 Pollution

The proposed development will aim to minimise any negative impacts on the natural environment considering the impacts of water use, materials, and air quality.

Water – Throughout construction and operation water quality will be maintained by the following measures;

- Reduce erosion and run-off by minimising land disturbance and leaving vegetation cover where possible;
- Cover skips and trucks loaded with construction materials and continually damp down with low levels of water;
- Use non-toxic paints, solvents and other hazardous materials wherever possible; and
- Segregate, tightly cover and monitor toxic substances to prevent spills and possible site contamination.

The construction works will be carried out in such a manner as to avoid adverse effects on the ponds, streams and downstream habitats in accordance with Environment Agency Pollution Prevention Guidance (PPG).

Sustainable Materials – Insulation materials containing substances known to contribute to stratospheric ozone depletion or with the potential to contribute to global warming will not be used. Natural insulation materials such as mineral wool, rock wool or cork board will be considered as they are amongst the lowest Global Warming Potential (GWP) rating.

Air Quality – To further enhance the development a number of additional measures will be considered during the detailed design of new homes to minimise pollution, including:

- The use of key internal finishes and fittings which comply with best practice emissions levels of Volatile Organic Compounds (VOCs) and other substances;
- Where appropriate, the use of low NOx emission boilers, further reducing the impact of the development on the Ashdown Forest; and
- Specification of low Global Warming Potential (GWP) and zero Ozone Depleting Potential (ODP) insulation materials.

5.8 Waste Management

The proposed development will ensure the minimisation of waste and maximisation of recycling of any waste generated during demolition, construction and operation of the new dwellings.

Construction Waste Management

Prior to the construction phase a Construction Environmental Management Plan (CEMP) will be developed to ensure the use of measures to minimise waste during the construction phases of the development, including the use of a scheme for recycling/disposing of waste arising from demolition and construction works.

The reduction, reuse and recycling of construction waste is to be prioritised through measures such as avoidance of over-ordering, supervision of deliveries, use of secure materials storage facilities and reuse of materials onsite where feasible.

In addition the development will be registered with the Considerate Constructors Scheme and achieve certification against the Code of Considerate Practice.

Operational Waste Management

In accordance with the principles of the waste hierarchy the development will make provision for the storage of non-recyclable waste and recyclable waste including dedicated storage for waste in new homes to encourage residents to recycle waste materials.

Full consideration will be given to the Council's waste management infrastructure and services to ensure that the occupiers have the necessary infrastructure to participate in any kerbside recycling services.

5. Sustainability Appraisal Review

The proposed site is considered to be a sustainable location for new housing which supports the Council's sustainability objectives of the emerging Local Plan.

The Council is currently preparing a new Local Plan, submitted for Examination in 2017. Accompanying the Plan is the Council's Sustainability Appraisal (SA) of the strategy and proposed policy options with sustainability objectives used for assessment of the Plan.

The SA includes a review of the proposed development site (as two sites) and shows the site scores well against the Council's objectives.

To demonstrate how the proposed development at Coventry Stadium, Brandon supports the Council's latest sustainability objectives the proposals have been assessed against the emerging plan SA Objectives to demonstrate where the plans aim to improve on the sites score. Table 2 sets out how the development responds to the Council's SA Objectives and the development is scored based on the following criteria.

Table 1: SA Scoring Criteria

Scoring symbol	Impact
++	The option or policy is likely to have a **significant positive** effect on the SA objective(s).
+	The option or policy is likely to have a **minor positive** effect on the SA objective(s).
0	The option or policy is likely to have a **negligible or no effect** on the SA objective(s).
-	The option or policy is likely to have a **minor negative** effect on the SA objective(s)
--	The option or policy is likely to have a **significant negative** effect on the SA objective(s).
?	It is **uncertain** what effect the option or policy will have on the SA objective(s).
+/-	The option or policy is likely to have a **mixture of positive and negative effects** on the SA objective(s).

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The assessment of the development against the Council's SA Objectives demonstrates that the proposed development responds positively to the Council's Objectives for new development, scoring higher than the Council's assessment of the proposed sites (S14/050 and S14/051) when taking into account the measures included in the development, providing a range of environmental, social and economic benefits, demonstrated below.

Table 2: SA Review

SA Objective		Council Site Score (S14/050 / S14/051)	Score	Note
1	Reduce / eliminate poverty, disadvantage and social exclusion	0	0	The location of new housing development does not have a direct effect on this SA objective; all residential site options have a negligible effect.
2	Provide good quality local services, leisure and cultural opportunities with good access for all sections of the community	++	++	The site is located within a Main Rural Settlement, which has been identified on the basis of the range of services located there, as well as the availability of public transport.
3	Promote/improve health of the population and reduce health inequalities	+	+	Although the site is not located within walking distance of any health facilities, open spaces lie adjacent to the west and south of the site providing opportunities for recreation, thus a small positive effect is likely.
4	Provide affordable and decent housing, which meets the needs of the Borough	+	++	The development will deliver a mix of house sizes, types and tenures appropriate to the area including 40% affordable homes.
5	Reduce crime, fear of crime and anti-social behaviour	0	+	The development will be designed to incorporate natural surveillance of open spaces and footpaths to reduce the risk of crime in line with the Secured by Design standards.
6	Promote/enable a strong, stable and sustainable local economy	+	++	The development will result in a number of local economic benefits through construction and into the occupation of new homes with the introduction of new residents which will support local services and amenities and contribute to local employment supporting local businesses. In addition, the employment area to the west of the site is 2km away, and accessible by bus.
7	Promote the vitality and viability of the town centre	0	0	This development will not have any direct effects on this SA objective.
8	Promote the regeneration of urban areas	++	++	The development site lies on predominantly brownfield land. The development itself will contain affordable housing, and the sustainable design and construction will foster an attractive, high quality environment.
9	Use and manage land, energy, soil, mineral and water resources prudently and efficiently, and increase energy generated from renewables	0	+	The site lies predominantly on brownfield land which is the most sustainable location for development., Mitigation measures will be included to secure a 10% reduction in carbon emissions (CS17) and meeting 110l/person/day of water (SDC4).

10	Minimise waste and manage it sustainably	+?	+	Prior to construction, a Construction Environmental Management Plan (CEMP) will be developed to ensure the use of measures to minimise waste during the construction phases. During the operational phase, waste will be managed in accordance with the principles of the waste hierarchy.
11	Reduce the Borough's contribution to climate change	+	+	Section 2 of this statement indicates the energy and water requirements for new developments. Additionally the site, as a Main Rural Settlement, lies within walking distance of six bus stops, reducing the need for private vehicle use. The fabric efficient approach to design and reduction in carbon emissions in addition to the climate change allowance included in the Flood Risk Assessment and SuDS highlight the reduced contribution to climate change the development will take.
12	Avoid, reduce and manage flood risk	0	+	The proposed development site is located in Flood Zone 1 and is at a low risk of fluvial flooding,. As part of the development surface water will be directed to an on-site attenuation pond to restrict run-off to below the greenfield rate, taking into account a 1 in 100 year storm event and including a 40% allowance for climate change.
13	Conserve and enhance the historic environment, heritage assets and their settings	0?	0	There is considered to be no impact upon the historic environment and heritage assets.
14	Promote a sustainable and accessible transport network	++	++	As a Main Rural Settlement, the site lies within walking distance of six bus stops, reducing the need for private vehicle use, and is surrounded by three existing public right of way
15	Reduce all forms of pollution	0/-- 0	0	The site is not within or directly related to an AQMA. The south boundary of the site is adjacent to the A428 which could impact all forms of pollution but a buffer zone should dissipate this effect.
16	Conserve and where possible enhance the Borough's biodiversity, flora and fauna	--?	+	The site itself has been assessed as having low current ecological value, and will create species-specific habitat zones, buffer zones and have green space to conserve and enhance current wildlife populations.
17	Maintain and where possible enhance the quality of landscapes	-?	+	The development will incorporate mitigation measures, to maintain and enhance the quality of the landscape, as above.
18	Maintain and where possible enhance the quality of townscapes	+	+	The development will take place on brownfield land, reducing the number of derelict sites and buildings, replacing it with a high quality new development with sustainable measures.

The proposed development at Coventry Stadium, Brandon will deliver high quality, resource efficient new homes with comfortable, adaptable living environments.

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6. Conclusion

The development at Coventry Stadium, Brandon is in a sustainable location and will deliver sustainable new homes in accordance with national and local planning policy and objectives.

This report demonstrates that the development of new homes at Coventry Stadium, Brandon is in a sustainable location, will deliver sustainable new homes in accordance with local planning policy and the NPPF and also positively responds to the Council's latest Sustainability Objectives.

Sustainable Development – The development has been designed to respond to key local sustainability policies and the sustainability objectives of the NPPF and includes a range of measures to deliver sustainable development which also adapts to and mitigates the impacts of climate change. The key design measures included at this stage and to be considered during the detailed design of the development include:

- A range of local economic benefits through the construction of the development including the use of local materials and labour, as well as during the occupation of the development through the support of local businesses. In addition the Council will benefit through increases in Council Tax revenue and New Homes Bonus;
- The proposed development site is in a sustainable location with access to some local services and amenities within walking and cycling distance and accessible via public transport;
- Provision of a mix of house types and sizes including 40% much needed affordable homes all designed to a high quality to provide residents with comfortable living environments which prioritise natural daylight and ventilation and are adaptable for the future;
- The development will promote the health and wellbeing of residents ; there are a number of

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local PRoWs which border the development providing access to nearby woodlands and green spaces;

- The new homes will be designed to be resource efficient, utilising a fabric first approach to design and construction to deliver homes which reduce energy use and achieve a 10% reduction in carbon reductions beyond the latest Building Regulations, Part L 2013;
- New homes designed to be resource efficient including water efficient fixtures and fittings targeting a water consumption rate of 110l/p/d;
- Development which is in Flood Zone 1 at a low risk of flooding including the management of surface water through the use of SuDS and attenuation ponds and taking into account a 1 in 100 year storm including a 40% allowance for climate change;
- Development designed to minimise the impact of the development of the site habitats and wildlife including retention of the woodland, as well as a range of mitigation and enhancement measures to improve the sites biodiversity such as the creation of compost heaps and habitat zones;
- A commitment to managing waste through design, construction and operation of the development including storage in new homes for recycling to minimise waste.

Sustainability Appraisal – The assessment of the development against the Council's Sustainability Objectives associated with the new emerging Local Plan demonstrates that the design of the development responds positively to the Council's sustainability objectives.

In several areas the design and mitigation included within the development including ecological enhancements, resource efficiency and climate change will enhance the development and improve on the score of the sites as set out in the Council's SA.

In this context it is considered the development at Coventry Stadium will deliver resource efficient, climate resistant, low carbon homes in a sustainable location, responding positively to the Council's local sustainability policies and latest sustainability appraisal objectives.

7. Appendix 1: Sustainability Checklist

Appendix 1 below indicates the completed the Rugby Borough Sustainability Checklist, demonstrate how the proposal at Coventry Stadium, Brandon, will minimise energy consumption and adapt to the future impacts of climate change.

1. Climate Change		
1.1 Flooding	1.1.1 Is the development sited and designed in accordance with the sequential test set out in PPS 25?	N/A as the site is located within Flood Zone 1.
	1.1.2 What measures have been taken to reduce the contribution the development may make to flash flooding?	Section 5.6.3 outlines measures taken to deal with surface water flooding.
	1.1.3 Will the development have provision for community management of facilities, open space, Sustainable urban Drainage Systems (SuDS), grey water schemes etc.	Sections 5.6.2 and 5.6.3 outline all provisions for surface water management.
	1.1.4 If a SuD is required, has approval been gained from the appropriate SuDS Approval Body (SAB)? (applicable post April 2012)	Section 5.6.3 indicates that SuDS are a viable option for the site. Approval will be sought at a later date.

1.2 Cooling	1.2.1 Will ventilation and cooling be provided? If so how?	Section 5.3 indicates that natural ventilation will be prioritised within the development. New homes will be designed in accordance with the Building Regulations to mitigate the need for cooling.
	1.2.2 Will the development seek to reduce the likelihood of contributing to a heat island effect through: A. Provision of appropriate shaded green space and tree cover B. Green roofs and vegetated walls C. Design to enable air-flow throughout the development D. Passive solar design E. Open water and fountains in public spaces F. Shaded public spaces and footpaths	The proposed development includes a significant area of green open space designed to provide local amenity, protect habitats and will contribute to minimising the urban heat effect. This will include new habitat planting and creation e.g. management of the new SuDS features which can further minimise the impact of the development, In addition Section 5.6 sets out the energy strategy and design considerations for the development which includes maximising opportunities for passive solar design.
1.3 Water Efficiency	1.3.1 What percentage of domestic water use in operation will be provided for by rain water collection and / or grey water recycling systems?	Section 5.6.2 states that where possible rainwater collection vie water butts will be provided to supply garden irrigation.
	1.3.2 Average water consumption for the development?	Section 5.6.2 indicates that water consumption will be 110l/person/day in line with the Government's new higher water efficiency standard,
1.4 Water Resource Planning	1.4.1 How will the development meet the required water demands placed upon the site?	A range of water efficiency measures will be included in new homes to achieve a consumption target of 110l/p/d. See Section 5.6.2 for more detail.
1.5 Sustainable Energy	1.5.1 What steps will the developer take to prepare an energy strategy for the proposed development to optimise the energy consumption of the site? A. Minimising energy demand for the site through orientation and passive solar design, B. Maximising the thermal efficiency of individual buildings through thermal mass and insulation C. Minimising demand for water heating, space heating and cooling, lighting and power in individual dwellings through efficient equipment and controls	Section 5.6.1 sets out the energy strategy for the development prepared in accordance with the principles of the energy hierarchy to minimise energy demand through improved fabric and passive solar design and considering options for low carbon renewable energy to deliver an overall 10% reduction in carbon emissions over the 2013 Building Regulations.

	D. Calculating the residual energy demand for the site E. Maximising the amount of the residual demand which can be provided through on-site generated renewable energy (either collective or on individual dwellings) F. Meeting the remaining demand efficiently, e.g. CHP (non-biomass or waste powered), district heating and cooling, ground source heating and cooling	
	1.5.2 What % of total site energy demand will be produced from an on-site renewable scheme?	Section 5.6 outlines that a fabric first approach will be taken to achieve a 10% reduction in carbon emissions beyond the requirements of the 2013 Building Regulations using a range of fabric, energy efficiency and renewable energy technologies as required.
	1.5.3 What percentage of buildings will be designed for and equipped with renewable energy technologies?	See above.
	1.5.4 What percentage of the development not intended to be initially fitted with renewable energy technologies will be designed to allow future installation of these technologies by occupiers?	All homes have the potential to be later fitted with renewable energy infrastructure e.g. Solar PV at the discretion of individual residents.
1.6 Site Infrastructure	1.6.1 Will the developer make site wide provision for an energy infrastructure that allows renewable energy to be sustained on site?	See above
1.7 Form of Development	1.7.1 Where relevant does the Design and Access Statement demonstrate that the development meets the design and amenity requirements of CS16?	See section 3.4 of the accompanying application Design and Access Statement,
1.8 Crime	1.8.1 Will the development be designed to 'Secure By Design' or equivalent standards?	Section 5.5 confirms the development will be designed in accordance with the Secured by Design standard to provide safe and secure access and recreation opportunities.
2. Transport		
2.1 General Policy	2.1.1 Does the Travel Plan demonstrate that the proposal will meet the requirements of CS16 in relation to the following points: -Public Transport	Section 5.2 summarises the benefits from sustainable transport including the connection of the development to existing footpaths and cycle ways, proximity to bus services and commitment to providing secure cycle storage space.

	-Parking -Pedestrians and cyclists	
3. Resources		
3.1 Appropriate use of land resources	3.1.1 What will happen to heritage/archaeologically important features and their settings which could be affected by the development?	N/A
3.2 Environmental Impact	3.2.1 What proportion (by mass) of building materials used in the construction of the site as a whole and infrastructure will be specified as having a low environmental impact or be sourced from sustainable and replenishable sources?	Section 5.6.1 sets out the design and construction of new homes will include the sue of sustainable materials including the use of FSC certified timber and materials sourced using the BRE Green Guide.
3.3 Construction Waste	3.3.1 Does the design and phasing arrangements enable a site waste management plan to be enacted during the construction of the development?	Section 5.8 shows that a Construction Environmental Management Plan will be completed, to minimise waste during construction.
4. Buildings		
4.1 BREEAM/CfSH	4.1.1 What is the BREEAM/ EcoHomes or Code for Sustainable Homes rating sought for the proposed buildings?	With the withdrawal of the CfSHs this requirement is no longer applicable.

Turley Birmingham

9 Colmore Row,
Birmingham
B3 2BJ

T 0121 233 0902

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