

## Heyford Park

### Sustainability Statement

October 2010

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# Heyford Park

## Sustainability Statement

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### Quality Assurance – Approval Status

This document has been prepared and checked in accordance with Waterman Group's Integrated Management System (BS EN ISO 9001: 2008 and BS EN ISO 14001: 2004)

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### Comments

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### Comments

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### Our Markets



Property & Buildings



Transport & Infrastructure



Energy & Utilities



Environment



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## 1. Introduction

This Sustainability Statement was prepared by Waterman Energy, Environment & Design Ltd (Waterman EED) on behalf of the Dorchester Group (hereafter referred to as the 'Applicant') to accompany the 'hybrid' planning application for the redevelopment of an approximately 76 hectare (ha) site (the 'Site'), located approximately 7 kilometres (km) north-west of Bicester. The proposed redevelopment (the 'Development') would create a new mixed use settlement comprising residential, employment, retail, education and community uses.

The Government is committed to a planning system that creates sustainable communities and delivers sustainable development. Many definitions of sustainable development exist, although the common objective for all is the integration of economic, social and environmental issues, to ensure a better quality of life for people today, without compromising the needs of future generations.

This Sustainability Statement describes the approach the design team has taken to integrate and consider sustainability during the design process. It presents the findings of a sustainability appraisal undertaken for the proposed Development to assess the extent to which the proposals accord with the principles of sustainable development and planning policy requirements. A summary of the sustainability features incorporated into the proposed Development is presented within this report. This report also sets out the proposed energy strategy for the Development.

## 2. Description of the Site and Surrounding Area

### 2.1 The Site

The Site is located on the former RAF Upper Heyford airfield, adjacent to the village of Upper Heyford, approximately 7km north-west of Bicester in Oxfordshire. The Site is located within the administrative boundaries of Oxfordshire County Council and Cherwell District Council. The Site is 76 hectares (ha) in area and comprises predominately brownfield land. A plan showing the layout of the Site and its boundaries are presented in Figure 1 and Figure 2 respectively.

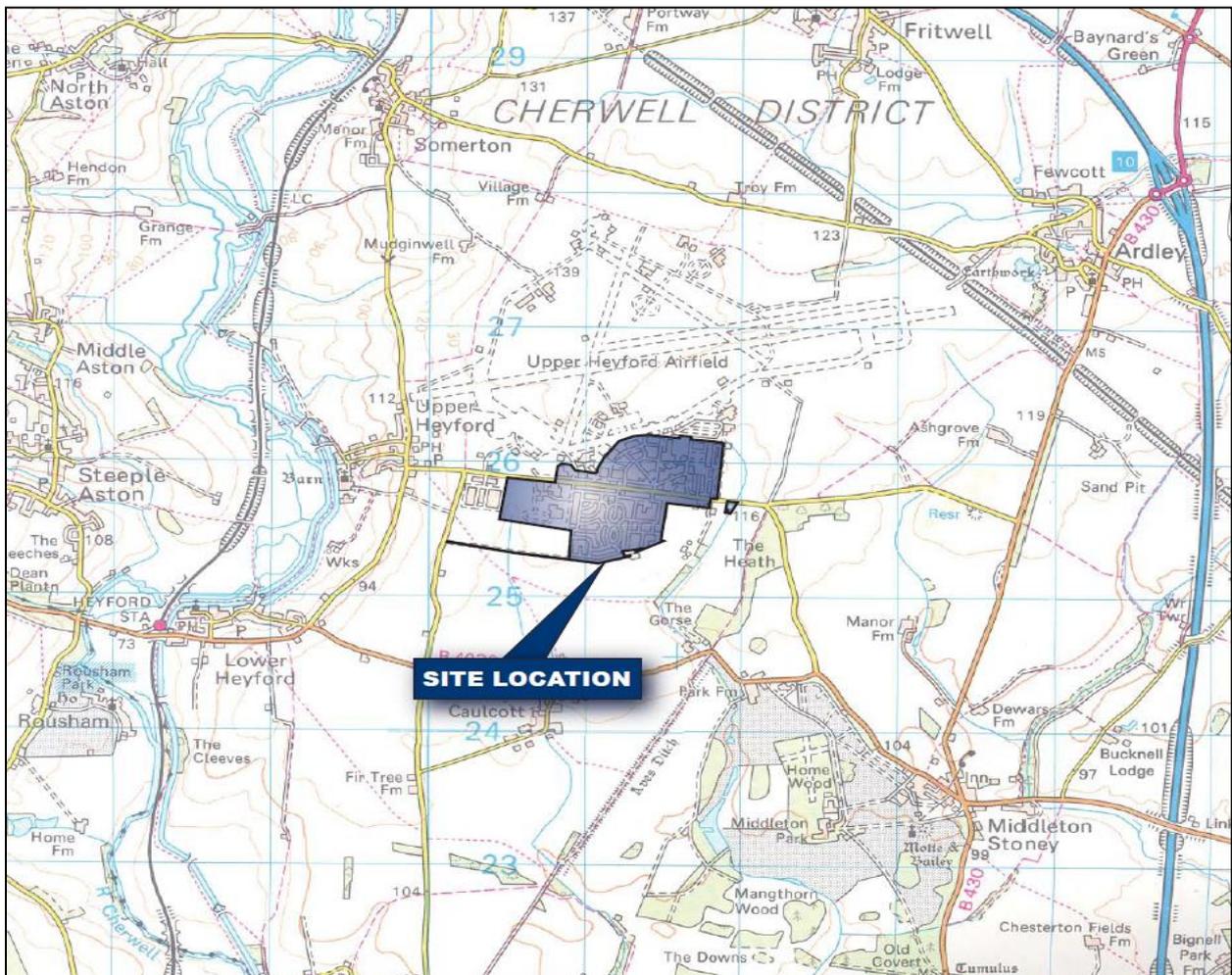


Figure 1: Site Location Plan

Camp Road, a public road, bisects the Site and extends in an east-west direction separating the primarily commercial area to the north from the more residential area to the south. Camp Road also acts as the main vehicular route into the Site and links Upper Heyford village in the west with the B430 in the east, which then connects with Junction 10 of the M40 motorway at Ardley.

The principal entrance to the Airbase is located to the west of the Site via Camp Road. Within the Site, Camp Road has two roundabouts which provide access to the areas to the north and south of the Site. Three partially tree-lined avenues (known as the 'Trident') radiate into the Site from the eastern and main roundabout. Heyford Park House and the guardhouse, which are 1920s buildings, are located to either side of the access road to the Trident area.

Public transport is also accessible from the Site, with a bus route running through the Site along Camp Road providing a service between Bicester and Oxford. There are two existing bus stops located along Camp Road.

The land north of Camp Road comprises occupied office and commercial units, together with disused buildings associated with the former airfield. Former officer housing is located off Soden Road, Trenchard Circle and Larsen Road to the north-east of Camp Road. To the west, is a substantial disused 1920s RAF officers' mess, largely in its original setting. Two important Cold War buildings are located in the western part of the Trident: the Battle Command Centre (referred to as Building 126) and the Hardened Telephone Exchange (referred to as Building 129). These two buildings were designated Scheduled Monuments in 2006.

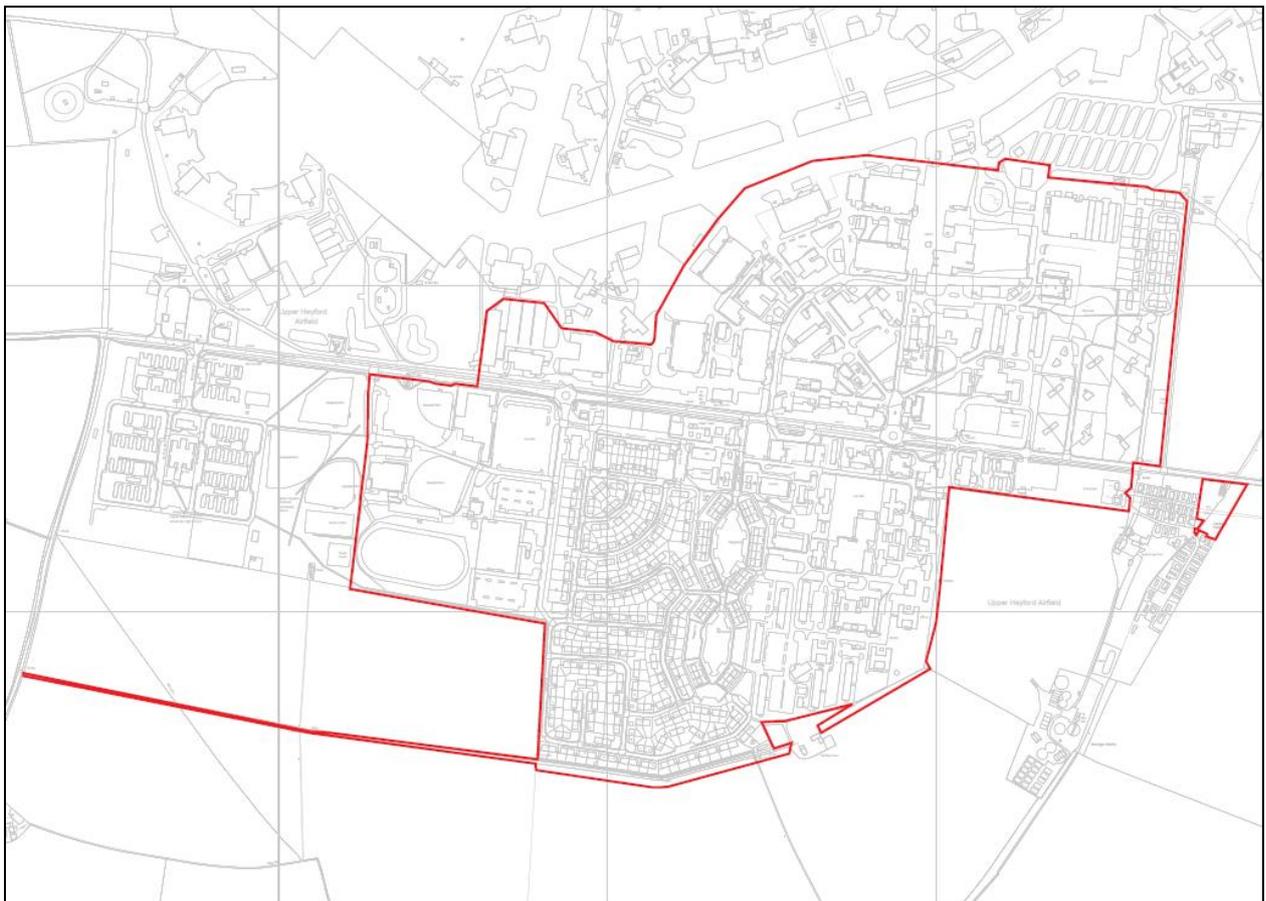


Figure 2: Site Boundary Plan

The majority of the existing residential quarters and support facilities are located to the south of Camp Road. The majority of the houses that served the Airbase in this area have been brought back into use. The residential quarters consist of bungalows on the western side and two-storey semi-detached or short terraces of 1950s houses to the north and east. To the west there are sports fields around a gymnasium and, beyond this, a disused store and hospital. East of the bungalows are 1920s two-storey houses around Carswell Circle with more recent houses around a similar close to the south. A small supermarket has been brought back into use and there is a disused petrol station adjacent to the supermarket. Further east is a complex of former single airmen's accommodation, offices and car parks, all now disused.

At present there are just over 300 dwellings available for residential occupation, the majority of which are currently let. As a result, the Site is now home for around 800 residents. Facilities such as the former Airbase's convenience store and the chapel serve the community living on the Site. A number of clubs currently use the chapel for their meetings and other community interests.

The Site is not covered by any statutory or non-statutory nature conservation designations. However, the Site was designated as a Conservation Area in April 2006. A number of the structures have also been recognised as being of international and national importance, including the aforementioned Scheduled Monuments. Other landmark structures exist on the Site, including the two water towers, which are located within the central area to the north of the Camp Road and in the western part of the Site to the south of Camp Road.

An extended Phase I Habitat Survey for the Site was carried out in 2010. The survey found that the Site largely comprised scattered scrub; tall ruderal vegetation; scattered broadleaved and coniferous trees; standing water; amenity and coarse grassland; buildings and hard-standing. The ecology assessment concluded that the most of the habitats on the Site have little value to nature conservation.

Many parts of the commercial and residential areas appear run-down, dilapidated and are in need of renewal. Parts of the Site are fenced off and are not accessible to the general public. The Flying Field area of the former RAF Airbase to the north and west is a secured site.

## **2.2 Site Surroundings**

The Site is situated on high ground to the east of the River Cherwell and is located within the Character Area 107: Cotswold (Ref.1), which is characterised by rolling open high world plateaux with arable and large blocks of woodland divided up by small narrow valleys. The River Cherwell and Oxford Canal extend through the valley approximately 1.2km west of the Site.

The Site is bound by the 'Flying Field' area of the former RAF Airbase to the north and west, and agricultural land to the south and east. Former sports pitches and derelict military hutments associated with the Airbase are located immediately to the west of the Site. The surrounding area is dominated by network of villages and hamlets, with the settlement of Upper Heyford being located approximately 700m west of the Site.

The Flying Field area to the north of the Site comprises the former runway and taxiway, together with associated infrastructure including bomb stores and hardened aircraft shelters. The open Cold War landscape of the Flying Field is largely unaltered from its original form and contains three Scheduled Monuments and four listed buildings. The Flying Field forms part of the RAF Upper Heyford Conservation Area, which also encompasses the Site.

Whilst the Site is not covered by any statutory or non-statutory nature conservation designations, RAF Upper Heyford Ecologically Important Landscape and RAF Upper Heyford County Wildlife Site are located to the north of the Site within the Flying Field area. Two Sites of Special Scientific Interest (Ardley

Trackways and Ardley Quarry and Cutting) are located further afield, approximately 2km east and 2.2km north-east of the Site respectively.

A number of Conservation Areas have also been designated in the locality of the Site including at Ardley, Fritwell, Kartlington, North Aston, Rousham, Somerton and Steeple Aston. In addition, a number of scheduled monuments, listed buildings and historical parks are located within the vicinity of the Site.

Although the Site is surrounded by a network of minor roads, the M40 motorway connecting London to Birmingham is accessible approximately 3.5km north-east of the Site via the B430 Ardley Road.

Owing to the rural location of the Site, key facilities within the vicinity of the Site are limited. The Site is currently located within the catchment area of Tackley Primary School and Marlborough School, which are located approximately 5.3km and 10km from the Site respectively. The nearest General Practitioners are located at Kartlington and Bicester, all of which are located over 1.5km from the Site.

The Birmingham to Oxford railway line extends approximately 1.7km west of the Site. The nearest train station, Heyford Station, is located in the village of Lower Heyford some 2.5km south-west of the Site. Bicester North train station is located further afield near the centre of Bicester, approximately 7km south-east of the Site.

### **3. Background to the Development**

The Site is identified by Oxfordshire County Council and Cherwell District Council as a strategic site for development and growth. Saved Policy H2 of the Oxfordshire Structure Plan 2016, 2005 (Ref.2) and Policy UH1 of the Non Statutory Cherwell Local Plan 2011 (Ref.3) stipulate that the Site should provide for a new settlement comprising approximately 1,000 dwellings, together with supporting community infrastructure, education and recreational space. The policies specify that opportunities should be created for improving public transport, walking and cycling facilities. Development of the Site should also allow for the conservation of heritage assets and landscape, along with the enhancement of biodiversity and other environmental improvements.

Cherwell District Council subsequently adopted the 'RAF Upper Heyford Revised Comprehensive Planning Brief 2007' Supplementary Planning Document (SPD) (Ref.4). The SPD, which applies to the Site and the former Flying Field to the north, seeks to achieve a balance between providing a quality new settlement and improving the environment, whilst conserving the heritage of the Site and surrounding area. The SPD provides supplementary guidance to achieve the requirements of Policy H2 of the Oxfordshire Structure Plan 2016.

Since the RAF Airbase closed in 1994, temporary planning permissions have been granted for the re-use of a number of the buildings on the Site. An outline planning application for the entire former Airbase (i.e. the Site and the Flying Field to the north) was submitted in 2007 and was granted permission in January 2010. The proposals described in this application would therefore replace those already consented for the Site, although the consented development for the remainder of the Airbase will remain extant.

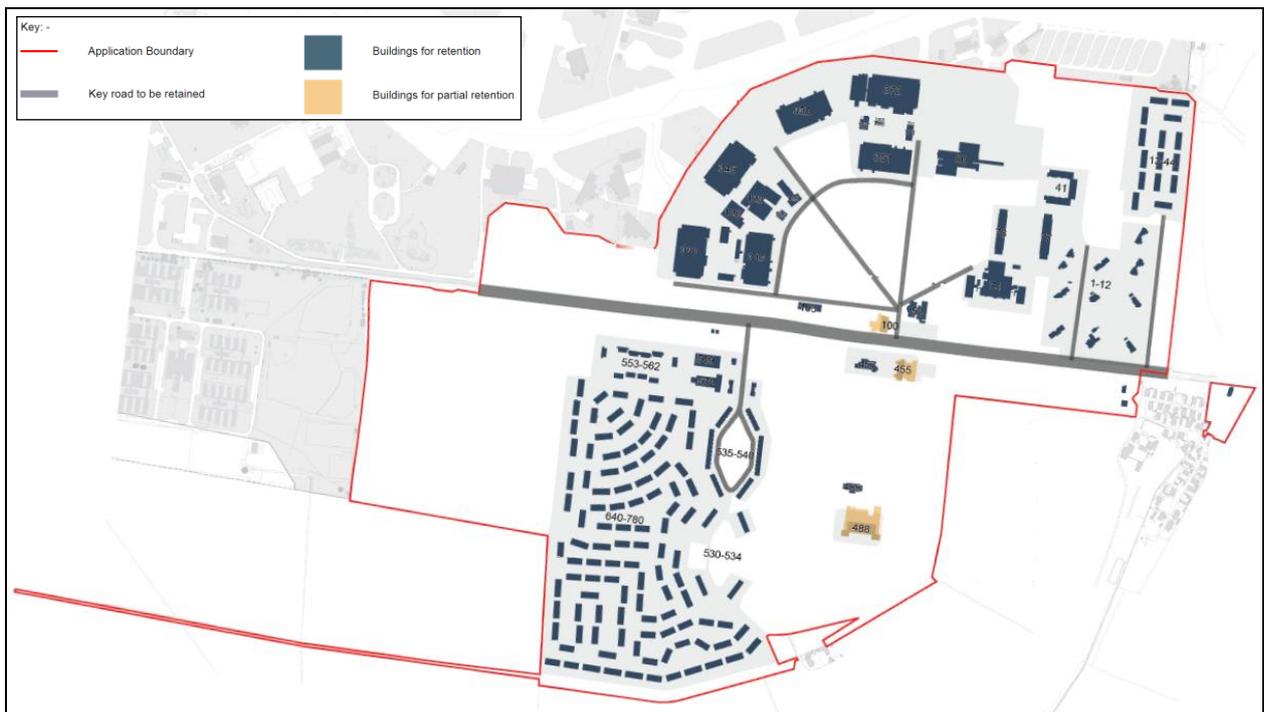
## 4. Description of Development Proposals

The planning application takes the form of a 'hybrid' application incorporating both an outline application in respect of the erection of new buildings and the change of use of specified buildings across the Site.

The Development would create a mixed use settlement comprising residential, employment, retail, education and community uses. This includes a local centre, community hall and chapel provided in the centre of the Site, either side of Camp Road with the new school located to the south of the local centre and associated existing and new sports fields located to the south and west of the school.

The proposals include the retention and refurbishment of a number of buildings (refer to Figure 3). However, to facilitate the proposed Development, a number of existing buildings would require demolition. Buildings to be demolished include the disused store and hospital in the western part of the Site, the disused barrack buildings towards the south-western part of the Site and commercial buildings to the north of the Site. Key heritage buildings and structures of historical importance, together with historic road patterns and open spaces would be retained and integrated into the Development. The inclusion of a heritage centre within the Development will bring significant benefits through increasing understanding and awareness of the Site's history.

The demolition and construction programme for the proposed Development is expected to take five years to complete. It is anticipated that demolition and construction works would commence in 2012.



Source: Scott Brownrigg

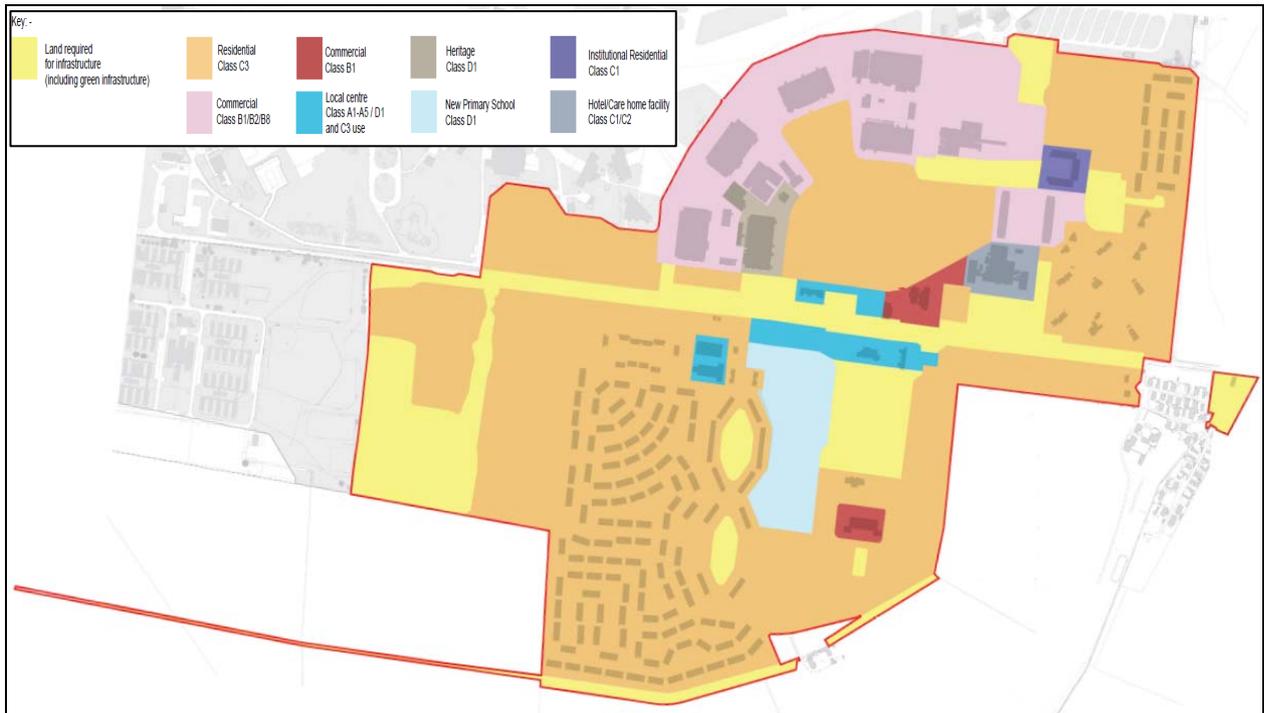
Figure 3: Buildings and Roads to be Retained

The Development would incorporate and integrate new residential dwellings and employment buildings with existing key buildings and structures that are to be retained, many of which are of local historical importance. The retained buildings would be refurbished to bring them up to current building standards and a change of use of would be sought for specific retained buildings across the Site, as described below.

The key components of the proposed Development are summarised below:

- Up to 1,075 dwellings (C3 use), of which 762 dwellings would be new build and the remaining 313 are existing dwellings on the Site;
- Hotel and / or care facility and student accommodation (C1/C2 use);
- Employment uses comprising new build and change of use to accommodate businesses (B1 use), general industry (B2 use), storage and distribution (B8 use);
- Retail uses (A1, A3, A4, A5) comprising new build and change of use of existing buildings;
- Community uses (D1 use) comprising church, community hall, crèche which currently exist on the Site together with a new heritage centre;
- A primary school;
- Petrol pumps;
- Provision of playing pitches and courts, sports pavilion as well as neighbourhood equipped areas for play (NEAPS) and local equipped areas for play (LEAPS);
- Provision of all infrastructure to serve the above development, including the provision of the requisite access roads and car parking to District Council standards;
- Removal of boundary fence to the south of Camp Road;
- Removal of some structures of poor quality, including clusters of buildings within the south-eastern part of the Site, central area to the north of Camp Road, and within the western part of the Site. Two residential dwellings on Portal Drive South would be demolished to accommodate the new main circular route; and
- Landscaping alterations including the removal of identified trees within the Conservation Area and planting of new trees and off-site hedgerows to provide screening to the Development (referred to as 'Structural Planting').

The proposed layout of land uses across the Site is shown in Figure 4.



Source: Scott Brownrigg

Figure 4: Development Uses

The Development would also provide green infrastructure across the Site including public open space, neighbourhood recreational facilities, key pedestrian and cycle routes with enhanced amenity, sports grounds, sustainable drainage features and natural open space areas for biodiversity enhancement. The historically important Old Parade Ground, adjacent to the proposed local centre, would be restored to create an area of public open space, together with a sports ground.

Existing trees and mature vegetation would be retained across the Site, where possible. Extensive structural tree and hedgerow planting would also be incorporated into the Development, including planting a line of trees along the southern boundary of the Site to screen the Site from views to the south.

Strategically located sustainable urban drainage systems (SuDS) would be created across the Site. Surface water runoff would be attenuated on-Site through a combination of attenuation ponds, permeable paving and oversized pipes, together with underground storage tanks.

New streets would be created to link the proposed new residential and commercial areas to Camp Road, including a main circular route. The main circular route to the south of Camp Road would provide a one-way bus route, whilst to the north of Camp Road a dedicated Heavy Goods Vehicle (HGVs) route would be created to provide access to the existing businesses located on land to the north of the Site. HGVs and commercial vehicles would be directed from Camp Road in the east of the Site around the periphery of the proposed commercial area in the northern part of the Site, connecting to the Flying Field to the north. However, historically important street layouts such as the 'Trident' street pattern would be retained and integrated into the Development. Carswell Circle to the south of Camp Road would also be completely retained to preserve the character of this part of the Site. The bus route would be extended to provide a circular route to the south of Camp Road.

The proposed new buildings would range from one-storey to a maximum of three-storeys in height to reflect the existing character and form of the Site. The proposed new primary school would be a one-storey structure. However, new residential dwellings would be largely two-storeys in height, rising to

three-storeys around the Old Parade Ground, Camp Road and the 'Trident' area in the northern part of the Site. The local centre and the new commercial buildings would also be a maximum of three-storeys.

The masterplan proposals could provide for a variety of house types, sizes, tenures and the ability of existing residents to remain at the Site for the long-term. The Applicant is committed to achieving 30% of the housing to be affordable. This would be provided as shared ownership, equity arrangements and full rental.

The energy strategy proposed for the Development comprises the refurbishment of existing dwellings to meet current Building Regulations which would include the provision of new double glazing, improved insulation and low energy lighting. The existing heating systems would be replaced with either condensing boilers or domestic micro-CHP units. New dwellings would be designed to accord with the Building Regulations prevalent at the time. At this stage of the design, the proposed measures to reduce energy demands and carbon emissions are not fixed; however it is anticipated that the Development could adopt technologies such as district heating systems, community heating, and / or CHP system in order to use and distribute energy efficiently. The feasibility of implementing these technologies and other renewable technologies would be reviewed at the detailed design stage and as part of the Reserved Matters submissions. With regard to renewable energy, it is anticipated that a combination of technologies could be potentially used and integrated into the Development. These include biomass, small scale wind generation, photovoltaics and solar thermal.

The illustrative masterplan of the proposals is provided in Figure 5.



Source: Scott Brownrigg

Figure 5: Illustrative Masterplan

## 5. Approach to Sustainability

The importance of sustainable development is highlighted by a number of Government strategies, with a growing acceptance of an imminent need to consider and tackle climate change. Many definitions of sustainable development exist, although the common objective for all is the integration of economic, social and environmental issues to ensure a better quality of life for people today, without compromising the needs of future generations. A key mechanism for delivering the principles of sustainable development within the UK lies within the national and local planning system.

Sustainable development was considered throughout the design evolution. Specifically, the following five key stages of work were undertaken in parallel with the design process:

- 1) Desktop policy review;
- 2) Creation of the sustainability framework;
- 3) Design team meetings, sustainability workshops and technical studies; and
- 4) Sustainability appraisal of the Development.

The following section summarises the activities and outcomes undertaken during each of the above stages to ensure the delivery of sustainable development.

### 5.1 Stage 1 – Policy Review

In order to ensure the delivery of a sustainable development, it was important to gain a clear understanding of any potential issues affecting the Site and any opportunities for improving sustainability. It was also important to identify any current and emerging policy requirements that may relate to sustainability and the Site's location within Cherwell District.

Planning policy and guidance is produced at national, county and district level. Strategic guidance at regional level was provided in the South East Plan '*Regional Spatial Strategy for the South East of England*' (Ref.5). However, the South East Plan was revoked by the Secretary of State for Communities and Local Government on 6 July 2010 and is currently under review by HM Government. As a result, material consideration is given to policies and guidance at national, county and local level only.

To gain a detailed understanding of the guiding sustainability policy framework relevant to the Site, a desk-based review of all relevant national, county and local planning policy was undertaken. The desk-based policy review enabled a checklist of key sustainability objectives and requirements to be identified against which the proposals could be appraised. A brief summary of the key documents that were reviewed as part of this process is included below.

#### 5.1.1 National Policy Objectives

The Government is committed to a planning system that creates sustainable communities and delivers sustainable development. Consequently, planning has a critical role in supporting the Government's objectives for sustainable development. Sustainability issues are addressed within various different national policies, namely in Planning Policy Guidance Notes (PPGs) and Planning Policy Statements (PPSs).

PPS1: Delivering Sustainable Development, 2005 (Ref. 6) sets out the key overarching objectives for the delivery of sustainable and inclusive patterns of development. Planning should facilitate and promote sustainable development through high quality design, protecting and enhancing the natural and historic environment, together with the quality and character of the countryside. Land should be available for development in line with economic, social and environmental objectives to improve people's quality of life.

Recent and emerging planning policy and guidance places a strong emphasis on sustainability, particularly in relation to issues of climate change. This relates both to reducing emissions and stabilising climate change (mitigation) as well as taking into account the unavoidable consequences (adaptation). In particular, PPS1: Planning and Climate Change, 2007 (Ref.7) which supplements PPS1: Delivering Sustainable Development provides guidance on how climate change needs to be addressed at all levels of planning including spatially in all Local Development Frameworks (LDF). This includes setting specific policies for the provision of low carbon and renewable sources of energy and requiring high standards of environmental performance of new dwellings using the new 'Code for Sustainable Homes' assessment method. The policy encourages new developments to:

- Comply with local requirements for decentralised energy supply and for sustainable buildings, unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable;
- Use landform, layout, building orientation and landscaping to minimise energy consumption;
- Provide appropriate public and private open space so that the new development offers an accessible choice of shade and shelter;
- Incorporate sustainable drainage measures, including potential contributions from water harvesting from impermeable surfaces and layouts that accommodate waste water recycling;
- Provide for sustainable waste management; and
- Create and secure opportunities for sustainable transport in line with PPG 13 (Ref.8).

A consultation paper on 'Planning for a Low Carbon Future in Climate Change' was published in March 2010 (Ref.9). The paper draws together Planning and Climate Change (Ref.7) supplement to PPS1 and PPS22 Renewable Energy, 2004 (Ref.10) and sets out a framework for reducing greenhouse emissions through the use of renewable energy and low carbon energy.

There are a number of other PPGs and PPSs which support PPS 1 in order to deliver sustainable development. These include the following:

- PPS 3: Housing, 2010 (Ref.11);
- PPS 4: Planning for Sustainable Economic Growth, 2009 (Ref.12);
- PPS 5: Planning for the Historic Environment, 2010 (Ref.13);
- PPS7: Sustainable Development in Rural Areas 2004 (Ref.14)
- PPS 9: Biodiversity and Geological Conservation, 2005 (Ref.15);
- PPS 10: Planning for Sustainable Waste Management, 2005 (Ref.16);
- PPG 13: Transport, 2001 (Ref.8);
- PPG 24: Planning and Noise, 1994 (Ref.17); and
- PPS 25: Development and Flood Risk, 2010 (Ref.18).

The key national policies set out in the aforementioned PPGs and PPSs promote the following principles:

- Reusing previously developed land to reduce the amount of undeveloped land required for new development;
- Promoting mixed-use developments;
- Encouraging high density urban development;
- Reducing car dependence by facilitating walking, cycling and public transport use;
- Providing access by public transport to work, education, health facilities, shopping, leisure and social services;

- Providing a range of employment, leisure and community facilities;
- Providing a range of dwelling types and tenures including affordable housing;
- Protecting and enhancing biodiversity;
- Using passive design and efficient technologies to reduce energy use;
- Incorporating low and zero carbon energy technologies;
- Ensuring that spatial development make a full contribution to delivering the government's climate change programme and energy policies, and in doing so contribute to global sustainability;
- Ensuring access to open spaces; and
- Ensuring development is appropriately sited with regards to flood risk.

PPS 3: 'Housing' (Ref.11) also promotes sustainable design and recommends using appraisals as well as design codes to improve the quality of new developments. In addition, 'Building a Greener Future Policy Statement' (Ref.18) sets key targets for moving towards zero carbon housing developments which include the following:

- 2010: 25% improvement in the energy/carbon performance set in Part L of 2006 Building Regulations;
- 2013: 44% improvement over Part L; and
- 2016: Zero carbon development.

Planning Policy Guidance (PPG) 13: '*Transport*' (Ref.8) seeks to link planning and transport strategies to encourage new development that promotes sustainable transport choices and reduces car dependence and the guide emphasises the need to maximise the use of the most accessible Sites.

## 5.1.2 Local Policy Objectives

### Oxfordshire Structure Plan 2016

Three policies within the Oxfordshire Structure Plan 2016 (Ref.2) have been saved and remain in effect. One of the saved policies, Policy H2 'Upper Heyford' pertains to the Site and Flying Field to the north. Policy H2 stipulates that the new settlement would provide for approximately 1,000 dwellings together with supporting infrastructure, including primary school, community, recreation and employment opportunities. The development should be designed to encourage walking, cycling and the use of public transport. The proposals should also ensure environmental improvements and the preservation of the heritage assets. The proposals for the Development should be in accordance with the Revised Comprehensive Planning Brief SPD (Ref.4).

### Adopted Cherwell Local Plan 2001

The Cherwell Local Plan (Ref.20), which was adopted in November 1996, provides the current statutory development planning policies for the District. A number of policies have been 'saved' beyond 2007, and remain in effect until the Local Development Framework (LDF) is adopted and implemented.

The adopted Local Plan does not contain specific policies relating to sustainable construction or development. There are however a number of policies that encompass and address general issues that together, contribute to sustainable communities and development. These policies seek to improve public transport, encourage economic activity in rural areas, and provide readily accessible community facilities, together with housing which meets the long-term need of local people.

### Non-Statutory Cherwell Local Plan 2011

The Non-Statutory Cherwell Local Plan (Ref.3) was intended to update the adopted Cherwell Local Plan, although the Plan was not adopted and work discontinued in 2004. However, Cherwell District Council approved the draft 'Non-Statutory Cherwell Local Plan' as an interim policy until the LDF is implemented.

The Non-Statutory Cherwell Local Plan contains four policies specific to the redevelopment of the Site and the Flying Field to the north. These policies seek to achieve the following:

- Provide landscaping and environmental improvements;
- Make an appropriate provision for employment opportunities and housing mix;
- Encourage walking, cycling and public transport, including links with the train station at Lower Heyford;
- Incorporate energy efficient design and technology; and
- Maximise the recycling of the arisings from demolition and construction activities.

In addition, there are a number of other policies contained in the Non-Statutory Cherwell Local Plan that cover a range of issues, including making efficient use of land, providing open space and a variety of dwellings. In particular, Policy D9 seeks to ensure that the following energy efficient design principles are taken into consideration:

- Minimising energy loss through urban form, siting of buildings and soft landscaping;
- Maximising natural solar heating, natural lighting and ventilation by means of appropriate layout and orientation;
- Minimising energy consumption by means of building design;
- Ensuring that all residential development, including flats, have access to some private or semi private outdoor space; and
- Providing adequate accommodation for waste separation and recycling facilities.

### Cherwell Local Development Framework: Draft Core Strategy, 2010

The emerging Core Strategy for Cherwell District (Ref.21) recognises the Site as strategic location for growth. The Site has been identified as the single major location for development away from the urban centres of Banbury and Bicester. Policy H3 'Efficient and Sustainable Use of Brownfield Land' identifies the redevelopment of the Site as central to Cherwell's brownfield land strategy.

The emerging Core Strategy also contains more general policies for supporting sustainable development, which are based upon the mitigation of, and adapting to, the impacts of climate change. These policies aim to increase renewable energy, reduce carbon emissions and use resources, including land, more efficiently. The Strategy also contains a policy specific to sustainable construction. Policy SD5 requires all new homes to meet Code Level 3 of the Code for Sustainable Homes with immediate effect, Code Level 4 from 2012 and Code Level 6 from 2016. Where non-residential development is over 1,000m<sup>2</sup>, BREEAM 'Very Good' is required with immediate effect. Policy SD5 also stipulates that consideration should be given to sustainable construction methods, including the following:

- Minimising both energy demands and energy loss;
- Maximising passive solar heating, lighting and natural ventilation;
- Use of recycled and energy efficient materials;
- Making adequate provision for the recycling of waste; and
- Making use of sustainable drainage methods.

### The Upper Heyford Revised Comprehensive Planning Brief, 2007

The Upper Heyford Revised Comprehensive Planning Brief (Ref.4) was adopted by Cherwell District Council in March 2007. The SPD, which applies to the Site and the Flying Field to the north, seeks to achieve a balance between providing a quality new settlement and improving the environment, whilst conserving the heritage of the Site and surrounding area. The SPD sets out the vision for the Site and Flying Field, together with a number of objectives to facilitate the creation of a sustainable community. Sustainability principles and objectives outlined in the SPD for the new settlement include:

- Materials arising from demolition should be recycled and reused where possible to minimise waste production and disposal to landfill;
- Minimise the effects of climate change through reducing waste production, pollution, water consumption and flooding through providing and encouraging recycling and alternatives to energy use and consumption;
- Design should follow current best practice but should allow for the introduction of future sustainable technologies;
- Energy efficient building design and make full use of new technology and other passive means to raise their energy efficiency;
- Efficient use of car parking spaces should be encouraged compatible with achieving a high quality public realm;
- Accessible housing including diverse and affordable housing that offers opportunities and choices to meet housing needs;
- Services and facilities accessible to those living in a rural area to support the changing rural economy;
- Have an attractive vital and viable centre that is accessible by means other than the private car;
- Create a sense of community identity, place, belonging and a distinctive environment that reduces incidences of social exclusion; and
- Compliance with Secured by Design standards and be fully accessible to people with disabilities to create a safe place to live with low crime rates.

## 5.2 Stage 2 – Sustainability Framework

### 5.2.1 South East Sustainability Checklist

The South East Sustainability Checklist is a tool that has been developed by the South East England Development Agency (SEEDA) and BRE (Ref.22). The checklist covers regionally specific sustainability and planning issues, emphasising those of higher priority. It complements building assessment method tools such as BREEAM and the Code for Sustainable Homes and looks at issues relevant to the overall development scale, helping developers, local authorities and other interested parties to deliver sustainable communities.

The checklist identifies a range of sustainability issues and is intended for use at the design and planning application stages of a new development. The checklist focuses on the sustainability issues pertinent to spatial planning, although it does address those construction and “in-use” issues that can be anticipated or influenced at the design phase.

The checklist covers the following key topic areas:

- Climate Change and Energy;
- Community;
- Place Making;
- Transport and Movement;

- Ecology;
- Resources;
- Business; and
- Buildings.

Following the policy review, a sustainability appraisal framework was developed (referred to as 'SA Framework'). The SA Framework was based on the key sustainability themes given South East Sustainability Checklist. In addition, adopted and emerging local planning policy requirements for each theme were identified and incorporated into the SA Framework to provide a benchmark for best practice. This framework enabled the scheme design to be assessed for compliance with relevant policy. The full SA Framework is presented in Appendix A.

### **5.3 Stage 3 – Design Team Meetings, Sustainability Workshops and Technical Studies**

#### **5.3.1 Design Team Meetings and Workshops**

A sustainability workshop was held with the design team between on the 26 August 2010 to discuss the sustainability options and initiatives for the Development. The workshop was attended by:

- Scott Brownrigg (master planners/architects);
- Waterman Building Services (building services engineers);
- Macgregor-Smith Limited (landscape consultants);
- Waterman EED (environmental and sustainability consultants); and
- Dorchester Group (client/applicant).

The objectives of the workshop were to explore potential design options to maximise the scheme's contribution to sustainable development within the constraints of the Site. The requirements identified by the policy review were also explained to the design team.

In addition to this sustainability workshop, sustainable design issues were discussed frequently at the design team meetings and design workshops.

#### **5.3.2 Technical Studies**

A number of technical studies have also been undertaken to support the masterplan and assess the feasibility sustainable design solutions. This has included the following:

- Energy Demand Assessment and Feasibility Study for Low and Zero Carbon Technology – an energy strategy has been prepared for Upper Heyford to reduce the existing (potential) energy consumption/carbon emissions and set out a framework design requirements for the new buildings and infrastructure to achieve carbon and energy reduction targets (climate change mitigation);
- Flood Risk Assessment – Waterman prepared a Flood Risk Assessment (FRA) and preliminary drainage strategy specific to the Site in accordance with the requirements of PPS25. This demonstrates that surface water runoff rates would be improved to better the existing Brownfield runoff rates and proposes a range of sustainable drainage measure which would attenuate surface water runoff but also improve water quality and biodiversity. The preliminary drainage strategy takes account the effects of climate change (climate change adaptation); and
- Transport Assessment – The planning application is supported by a Transport Assessment which assessment the proposals impact on public transport and includes a measures to promoting sustainable transportation (climate change mitigation).

#### **5.4 Stage 4 - Sustainability Appraisal of the Development**

Following the finalisation of the scheme design an appraisal of the proposals was undertaken against the SA Framework. The findings of this appraisal are presented within Appendix A. A summary of the key sustainability features and commitments of the proposals is set out below.

## 6. Key Sustainability Features of the Development

### 6.1.1 Carbon and Energy Strategy

Waterman Building Services has developed an Energy Strategy for the Development which is outlined below. The Strategy has been based on an estimated of energy consumptions of the Development, broken down for each proposed land use followed by options to minimise energy consumption and carbon emissions.

These options to minimise energy consumption and carbon emissions have been on an ‘energy hierarchy’ shown below.

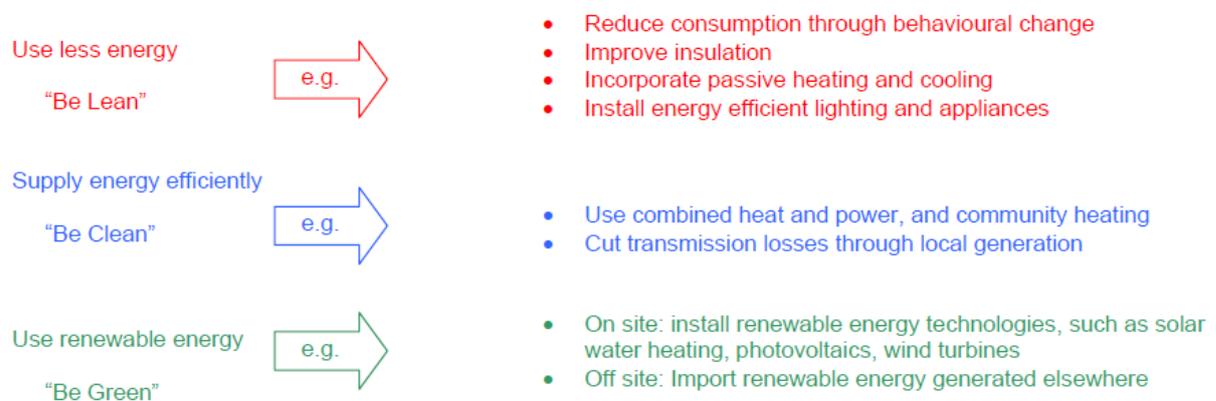


Figure 6: Energy Hierarchy

The Energy Strategy for the Site proposes a combination of passive design measures (such as high insulation and glazing specification) and highly efficient plant and equipment to reduce the energy demands from the buildings. Further information on the options to deliver the above are provided in Appendix B.

The table below indicates the potential Carbon Emissions of the fully developed Upper Heyford Benchmark scheme according to CIBSE TM 46 – Energy Benchmarks, based on the schedule of areas for the Development.

Essentially, 3,400 tonnes of CO<sub>2</sub> are generated by the regulated energy use of the Development. This is increased to 7,791 tonnes when considering the total energy use of regulated and non-regulated consumption.

CATEGORY	GROSS AREA	ESTIMATED EMISSIONS/ENERGY CONSUMPTION BASED ON BENCHMARKS									
		All Emissions					Regulated Emissions				
		Electricity	Heat	Electricity	Gas	TOTAL	Electricity	Heat	Electricity	Gas	TOTAL
		KWhrs	KWhrs	kgCO <sub>2</sub> /m <sub>2</sub>	kgCO <sub>2</sub> /m <sub>2</sub>	kgCO <sub>2</sub> /m <sub>2</sub>	KWhrs	KWhrs	kgCO <sub>2</sub> /m <sub>2</sub>	kgCO <sub>2</sub> /m <sub>2</sub>	kgCO <sub>2</sub> /m <sub>2</sub>
OFFICES	5821	442,396	558,816	186,691	108,410	295,101	349,260	449,381	147,388	87,180	234,568
HOME/STUDENT ACCOMMODATION	5682	272,736	1,363,680	115,095	264,554	379,649	113,640	1,045,488	47,956	202,825	250,781
RETAIL	3113	1,121,925	287,641	473,452	55,802	529,255	946,352	82,183	399,361	15,944	415,304
INDUSTRIAL	20833	583,324	2,999,952	246,163	581,991	828,153	333,328	2,166,632	140,664	420,327	560,991
MISC SUPPORT	5880	103,488	531,552	43,672	103,121	146,793	84,672	385,728	35,732	74,831	110,563
RESIDENTIAL	139750	5,590,000	16,770,000	2,358,980	3,253,380	5,612,360	1,453,400	6,260,800	613,335	1,214,595	1,827,930
<b>TOTALS</b>		<b>8,113,869</b>	<b>22,511,641</b>	<b>3,424,053</b>	<b>4,367,258</b>	<b>7,791,311</b>			<b>1,384,435</b>	<b>2,015,701</b>	<b>3,400,136</b>

The ratio of Gross External to Net Internal areas has been taken as 0.8.  
 Primary School energy use has not been assessed in the above.  
 The residential element of this has been based on a typical dwelling having an internal area of 104m<sup>2</sup> (nett).

Figure 7: Energy Demand Assessment

The pattern of existing built development at Heyford Park lies close to the optimum east-west axis to benefit from solar energy, and the design of new areas in the street network intentionally retains and exploits this attribute thereby maximising opportunities for natural daylight, solar gain by the orientation of buildings, dwelling type and internal layout design.

Building orientation and façade design would aim to maximise natural daylight whilst controlling solar gain as well as minimising the effect of overshadowing on gardens and to principal living rooms.

To use less energy, refurbishment of residential dwellings would include the provision of new double glazing, insulation and low energy lighting. The existing hot water and central heating systems would be replaced with either condensing boilers or domestic micro CHP units. Refurbishment would be carried out in accordance with the prevalent Building Regulations. It is estimated that this could represent an improvement in energy efficiency by at least 25% for the retained building stock.

In relation to new build elements, a range of energy efficiently measures would be implemented to comply with the prevailing Building Regulations at the time of construction. The Building Regulations will be reviewed in the future in line with the Governments targets to reduce carbon emissions. These targets are as follows:

- 2010: 25% reduction over Part L 2006;
- 2013: 44% reduction over Part L 2006; and
- 2016: Net zero carbon emissions.

Overall it is considered that energy saving measures from the new build elements would reduce the carbon emissions by at least 25% reduction over Part L 2006.

It is important that energy is generated and distributed as efficiently as possible across the Site. Three options that could be adopted within the Development, including: District Systems (or Decentralised networks); Community Heating and Combined Heat and Power (CHP). It is estimated that overall, the implementation of a combination of District Heating and Community Heating systems could contribute to energy savings exceeding 10%.

For the new build phases of development, it is proposed that the feasibility for incorporating CHP and renewable would be reviewed as part of the detailed design and Reserved Matters applications to ensure the most efficient systems are employed to maximise the reduction in carbon emissions. It is envisaged that the later stages of the Development would employ CHP on a phase or plot basis as well as micro-generation through photovoltaic (PV), wind and ground source heat pumps. At this stage, gas fired CHP is considered to be the most economical and feasible solution. However, as the Development progresses alternative renewable fuels such as biomass, biofuels and hydrogen would also be investigated. It is also considered feasible to provide community heating systems for apartment blocks. Further information is provided in Appendix B.

The aspiration is to design and implement a system that would be future proofed to allow flexibility for future connection between plots/phases of Heyford Park, the wider masterplan area and also to other developments or renewable projects in the area. There are two sustainable energy projects currently proposed in the vicinity of the site including a wind farm and a energy from waste facility. Opportunities to obtain heat and power from these facilities would also be investigated in due course.

With regard to renewable energy, it is anticipated that a combination of technologies could be potentially used and integrated into the Development. These include biomass, small scale wind generation, PV's and solar thermal. It is proposed that these are reviewed as part of the detailed design and Reserved Matters applications.

The Energy Strategy (Appendix B) is flexible to ensure that new technologies and sustainable solutions can be adopted as the build out programme progresses. The Energy Strategy would be reviewed at the detailed design and Reserved Matters stage of the project.

### 6.1.2 Community and Place Making

Heyford Park is an existing settlement and proposals include for the provision of mixed uses including employment, housing and community facilities, with the Local Centre providing the heart of the Development. The masterplan proposals provide for a variety of house types, sizes, tenures and the ability of existing residents to remain at the site for the long-term. This would create a mixed and balanced community, encouraging community cohesion.

The masterplan retains and enhances existing facilities including the chapel and community hall. In addition, a number of new facilities are proposed including a new school, a care facility, Local Centre, retail uses, a hotel and a heritage centre which could be accommodated in the retained hanger (building 315) to provide permanent space to exhibit material from the Airbase and provide education on the history of the area.

The Masterplan illustrates that the Development could accommodate two Neighbourhood Equipped Areas of Play (NEAP) and five Local Equipped Areas of Play (LEAP) across the Site. The NEAP and LEAP are strategically located within, or adjacent to the principal residential areas to provide accessible recreational facilities.

All facilities are within a five to ten minute walk from the outermost areas of the housing development. Communal recreational space would be provided in residential areas to provide circulation areas for social interaction, with the aim of enhancing community cohesion.

The layout of the masterplan encourages walking and cycling as there is easy access to key facilities and the Development is interspersed with areas of multi-use public open space. The masterplan would be relatively compact with neighbourhood facilities and public transport within 400m of most housing. Improvements are proposed to the local footpath and bridleway network would encourage people to access the countryside.

### 6.1.3 Transport and Movement Strategy

A primary objective of the masterplan layout is to create as “legible” a street plan as possible. Street junctions are frequent and intervisible. All residential areas are design on “Home Zone” principles thereby providing priority to pedestrians overall street space and vehicle speeds are kept below 20mph and as close to walking pace as possible.

The masterplan provides a good range of neighbourhood facilities, so that most of the needs of people living and working in the settlement can be met locally without unnecessary travel.

The employment area north of Camp Road is served by a new street designed to separate the heaviest employment traffic from residential traffic before it passes through the main part of the settlement.

The masterplan has been designed around a series of walkable neighbourhoods with the provision of green routes to encourage walking and cycling. The proposed layout allows for an acceptable walking time to key facilities of five to ten minutes, which seeks to discourage the unnecessary use of vehicles for short journeys. There is a pedestrian ‘spine’ in the centre of the settlement is intended as a safe route to school and local facilities. The flat nature of the Site enables walking and cycling around the Site. Pedestrian linkages and Public Rights of Way surrounding the Site would be reinstated to encourage recreational walking and cycling.

Cycle parking would be provided for all residential dwellings. For commercial operators cycling parking would also be provided, along with change and locker facilities to encourage people to cycle to work.

The Site is currently serviced by a single bus route (25/25A/25B) between Oxford and Bicester, via local villages. There are two existing bus stops on Camp Road. A further two bus stops are proposed in the residential area to the south of Camp Road. The masterplan provides for a route through the main residential area suitable for buses. The proposals ensure that most residential dwellings are within 400m of a bus stop.

Further discussions have been held with Chiltern Railways related to the investigation of a shuttle mini-bus service to serve Bicester North Station from Heyford Park. A shuttle mini-bus is also proposed from Heyford Park to the Flying Field area.

### 6.1.4 Ecology, Landscape and Biodiversity Strategy

The proposals provide a network of multifunction green space providing; biodiversity enhancements, sustainable drainage, recreation and sport facilities, neighbourhood parks and play space, visual screening, both private and communal gardens and informal open space.

The existing Heyford Park site has a distinctive formal character with tree lined avenues, lawns and areas of green space. Based on the existing character of the site, the key green infrastructure and landscaping principles of the proposals are:

- Retention and enhancement of significant areas of green space within the masterplan, together with the creation of new public open space, which acts as a focus for recreation.
- Provide a green network which links open spaces within the residential areas, creating an attractive and readily accessible green framework;

- Reinforce the existing boundaries where these are vegetated to maintain a visual screen to the Site and wooded character within and beyond the Site to integrate the Development into the wider landscape;
- Retention of trees throughout the Site, where possible; and
- To preserve and enhance the visual character and public realm within the Site through the creation of formal and informal green spaces and a network of green corridors.

Green spaces would be created within each neighbourhood area and would comprise areas of natural open space, open space and sports grounds. The Old Parade Ground, adjacent to the proposed Local Centre, would be restored to create an area of open space, together with a sports ground. This would form a multi-use village green and a focus point for the community. Further areas of open green space, together with sports grounds would be provided principally to the west and north-east of the Site. A corridor of green space would be created along the entire length of Camp Road to encourage pedestrian movement. Areas of green spaces would be connected through a number of green links, which would act as wildlife corridors.

The Site is dominated by semi-mature and mature trees, particularly to the north of Camp Road in the 'Trident' area, in the eastern part of the site currently occupied by housing and along Camp Road. Where possible, trees would be retained to preserve the setting and character of the site. Formal structural planting would extend the entire length of the southern boundary to screen the site from views from the south. Further tree planting would frame roads and green spaces to enhance the setting of the Conservation Area. Streets would incorporate tree planting to provide shading and attractive environments, without excessive shading of windows. The mix and location of trees would have regard to high and low level protection from winds. Native species would be priorities wherever possible.

Landscape design and management would seek the minimum level of energy and water use and to re-use resources. In particular:

- Trees would be grown on locally, using locally indigenous materials;
- Trees with low water demand would be selected wherever possible;
- Mulches and soils would be created using recycled materials from trees to be removed, appropriately composted on-site for a minimum of two years;
- Planting would be indigenous and low maintenance;
- Care would be taken not to use inappropriate or unnecessary chemicals; and
- Minimising hard surfaces and the integration of sustainable drainage features into the landscape including permeable paving, filter drains, swales and balancing ponds.

There are existing allotments in Upper Heyford village to the west of the Site and it is envisaged that these could be extended to accommodate the new population. This would allow for local food production, community interaction and education.

### 6.1.5 Sustainable Drainage Strategy and Water Conservation

The Site is located within a low flood risk area (flood zone 1) and therefore is in a sustainable location in terms of flood risk.

While the majority of the Site's catchment would remain unchanged, the Development would result in changes to the surface water runoff characteristics. A surface water management strategy has therefore been developed to facilitate the implementation of sustainable drainage measures. The surface water management strategy aims to:

- Maximise natural runoff losses through infiltration techniques;
- Maximise surface water runoff quality improvements through natural techniques such as swales; and
- Reduce the total volume of surface water runoff discharged, taking account of the effects of climate change.

In agreement with the Environment Agency, surface water runoff rates would be improved to better the existing Brownfield runoff rates. To manage flood risk, sustainable drainage systems would be incorporated into the Development to attenuate surface water runoff from the Site. Sustainable drainage would be in the form of balancing ponds strategically located in green spaces and permeable paving in areas of hard-standing, car parks and roads. These measures would also help to improve water quality. The design allows for the provision of surface water attenuation ponds in open areas across the Site. These features would slow down surface water runoff and release it into the natural water cycle, restricting flows to the nearby watercourses, thereby reducing the risk of fluvial flooding. The attenuation ponds would also improve biodiversity. Oversized pipes and underground attenuation tanks are proposed to manage surface water runoff in areas which are constrained by existing buildings.

A Flood Risk Assessment has been prepared which showed that, provided the above measures are in place, the proposed Development would not adversely affect on-Site, neighbouring or downstream developments and their flood risk.

Water conservation measures would be employed to ensure that, as a minimum, the mandatory standards in the Code for Sustainable Homes and BREEAM can be achieved. This would include water efficient fittings and fixtures and rainwater harvesting for gardens (rainwater butts). The use of rainwater harvesting / grey water recycling would also be investigated at detailed design and Reserved Matters stage. These measures would reduce potable water demand.

### 6.1.6 Resource Management – Waste and Materials

The Development would adopt a range of sustainable construction measures to encourage the efficient use of materials including waste reduction, re-use and recycling.

Environmental impacts of the construction process would be minimised through the Development and implementation of an Environmental Management Plan and requiring the contractor to sign up to the Considerate Constructors Scheme and ICE's Demolition Protocol. A Site Waste Management Plan would be developed and implemented as part of the construction process to identify measure to reduce waste and maximise opportunities to re-use and recycle waste arisings.

Buildings would be designed to minimise waste generation during the construction phase. The refurbishment of existing properties would result in a reduction of overall waste generated in comparison to a 100% demolition and new-build development. Demolition materials would be reused on the Site wherever possible including for road base. A minimum of 30% of demolition materials would be re-used on-Site, with materials not used on the Site being recycled offsite were possible. It is envisaged that modern methods of construction such as prefabrication would be used to minimise waste generation.

The Development is delivered entirely on previously developed land in a more compact form and therefore represents efficient use of land. The majority of existing residential dwellings, together with historically important buildings and structures would be retained and integrated into the Development. Density of existing housing is low in comparison to current standards, at less than 20 dwellings per hectare. The Development would provide a mix of housing densities to reflect the character and built form of the site and surrounding area. The masterplan illustrates that the Development could achieve an average density of 36 dwellings per hectare, which would make more efficient use of available land.

The aspiration of the Applicant is for the buildings to be designed to encourage the use of fewer materials during construction, and materials that are more efficient to heat and cool. Low impact environmental materials would be specified wherever possible. The Applicant has an aspiration for 100% of construction timber sourced from sustainably managed sources.

Opportunities for a reduction in the generation of household waste would be optimised, and recycling and composting by the end users would be encouraged. The Development would comply with Cherwell District Council's recycling policies. Within each building waste storage would meet the British Standard and with Code for Sustainable Homes requirements. This would include space for two wheelie bin (one for general waste and one for green and kitchen waste) as well as two recycling boxes. As present the Council recycle plastic bottles and containers, newspaper and magazines, paper and card and aerosol cans. All dwelling with gardens would also be provided with a compost bin. For flats, communal waste storage areas would be provided including a bulky goods store. In addition, bring sites would be provided to increase the proportion of the waste stream which can be recycled thereby encouraging sustainable waste behaviour. This would include recycling containers for glass, textiles, drink cartons, food tins, drink cans and small electrical items.

The street layout has been design to allow a waste collection vehicle to manoeuvrability and to ensure kerb side collection is achievable throughout the Development.

### 6.1.7 Business and Employment Opportunities

A range of commercial businesses, including laboratories, storage, logistics and information technology businesses currently operate on the Site and immediately to the north of the Site on the Flying Field area. In addition, a range of commercial unit sizes would be provided within the masterplan in response to market demand. The type of end users is not known at this stage but it is envisaged that the plots would be especially attractive to: research and development; science based businesses; and storage and distribution type of business. The masterplan would therefore provide a range of business and employment opportunities.

### 6.1.8 Buildings and Sustainable Design

A large proportion of the Development comprises retention and refurbishment of existing building stock. As such, buildings and materials would be reused resulting in considerable carbon savings and reduction in waste when compared to demolition and new build.

The aim of the proposals is to deliver Code for Sustainable Homes levels 4, 5 and 6 housing in accordance with the Governments requirements and the prevailing Building Regulations at the time of construction. For new build non-residential buildings a minimum of BREEAM 'very good' would be targeted.

Build for Life Standards have been taken into consideration during the masterplan design and Secure by Design standards are also aspired to. The proposals aim of at least 10% of the units which are wheelchair accessible, with the majority of the new build units complying with Lifetime Homes standards.

The scheme provides dwellings with a high level of internal amenity, for example, space standards, views from rooms, flexibility of rooms to accommodate different layouts, maximising internal daylighting and sunlight penetration, and minimising noise nuisance particularly between attached dwellings and apartments and also between internal rooms.

The design of buildings aims to encourage the use of efficient forms that use fewer materials during construction and are more efficient to heat and cool allowing buildings to adapt to changing circumstances – both uses and users.

The existing B8 units comprise the hangers which are inherently flexible spaces which can be easily refurbished to accommodate a range of uses. The fit out for these building would ensure easy of refurbishment and adaptation in the future.

Residential dwellings are to be designed to allow greater lifestyle flexibility including live/work homes, life-long homes and Lifetime Home standards.

## **7. Summary and Implementation**

As set out in Section 6 and in Appendix A, the proposed Development incorporates a number of design features to deliver sustainable development and accords with the key sustainability planning policy requirements.

In order to deliver a sustainable development, the key initiatives and commitments highlighted in this statement would need to be implemented. Implementation needs to be monitored and reviewed during the detailed design, demolition and construction and eventually in the operational phases of the Development. The measures that would support the delivery of sustainability during these phases and during the built out of the scheme are outlined in summary below.

### **7.1 Reserved Matters Applications**

The sustainability and energy strategy would be reviewed at the Reserved Matters stage to identify any opportunities to improve the sustainability performance of the scheme and to ensure that the current requirements would be met. It is envisaged that the Reserved Matters applications would be accompanied by a supplemental sustainability report.

### **7.2 Detailed Design**

The sustainability and energy strategy would be reviewed at the detailed design stage to identify any opportunities to improve the sustainability performance of the scheme and to ensure that the current requirements would be met.

The Applicant has made a commitment to achieve a minimum BREEAM rating of 'Very Good' and Code for Sustainable Homes 4, 5 and 6 in accordance with the Government requirements. During the design stage a formal BREEAM and Code for Sustainable Homes assessments would be undertaken. During the detailed design the Design Team would also review the SA Framework to identify any opportunities for improving the sustainability performance of the proposals.

### **7.3 Demolition and Construction**

Initiatives that would be delivered in order to promote sustainability throughout the demolition and construction phase include:

- Preparation and implementation of an Environmental Management Plan (EMP) including monitoring and reporting requirements;
- Preparation and implementation of a Site Waste Management Plan (SWMP);
- Registration and accordance with the Considerate Constructors Scheme (CCS);
- Adhering to the Institution of Civil Engineers (ICE) Demolition Protocol; and
- Tender specification documents requiring compliance with the EMP, SWMP and BREEAM requirements as well as including material sourcing commitments.

These mechanisms would provide an opportunity to review the demolition and construction related sustainability standards that could be achieved.

## 7.4 Operational Management

On completion of construction of the Development, a post construction review would be undertaken as part of the BREEAM and Code for Sustainable Homes requirements. The post construction review would ensure that the BREEAM and Code commitments have been implemented. The full BREEAM and Code certificates would only be awarded once the post construction review is completed.

The Development would be managed by a management company. As part of their responsibilities, the management company would work to raise awareness of sustainability issues and also promote sustainable lifestyles. This would include:

- Inform and advise the new community of the low-energy and water conservation measures applied to their dwelling;
- Provide clear requirements for small extensions to the dwelling, particularly conservatories to ensure that the location and design of the extension does not compromise the low energy measures of the original dwelling design;
- Include information on the design principles of Heyford Park;
- Provide information to the residents and tenants on waste minimisation and recycling;
- The main energy and water supply would be metered and monitored;
- Information would be provided to residents and occupiers on energy and water use;
- Provision of information on sustainable transportation including bus and rail timetables and cycle routes; and
- New residents would be provided with information pack would address issues such as water conservation, public transport, cycling and other ideas to promote sustainable living.

## 8. References

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4. Cherwell District Council (2007); '*RAF Upper Heyford Revised Comprehensive Planning Brief 2007*' Supplementary Planning Document;
5. South East England Development Agency (2006); '*Regional Economic Strategy for South East England 2006 to 2016*';
6. Office of the Deputy Prime Minister (ODPM) (2005); '*Planning Policy Statement 1: Delivering Sustainable Development*', ODPM, London;
7. Communities and Local Government (2007); '*Planning Policy Statement 1 Planning and Climate Change – Supplement to Planning Policy Statement 1*', ODPM, London;
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18. Department for Communities Local Government (2010); '*Planning Policy Statement 25: Development and Flood Risk*', TSO, London;
19. Communities and Local Government (2006); '*Building A Greener Future, Towards Zero Carbon Development*', HMSO, Norwich;
20. Cherwell District Council (1996); '*Cherwell Local Plan 2011*';
21. Cherwell District Council (2010); '*Draft Core Strategy*'; and
22. South East England Development Agency (SEEDA); '*South East Sustainability Checklist*'. Last accessed September 2010.





## Appendices



## Appendix A Sustainability Appraisal Framework

The following compliance criteria have been used when appraising the Development against the SA Framework.

### Compliance Criteria Used in Sustainability Appraisal

Criteria	
✓	Meets or exceeds the requirements of the South East Checklist
✓✓	Meets adopted local, county and non-statutory policy requirements
✓✓✓	Meets emerging local policy requirements
X	Does not meet or exceed the requirements of the South East Sustainability Checklist
XX	Does not meet or exceed adopted local, county and non-statutory policy requirements
XXX	Does not meet or exceed emerging local policy requirements
?	Compliance is unknown due to outline nature of application
-	No policy available





## Climate Change and Energy

Relevant Planning Policies						
Sustainability Objective	Current Local Policies		Emerging Local Policies (emerging Core Strategy)	Non-Statutory Policies Non-Statutory Cherwell Local Plan 2011	Commentary	Compliance
	Oxfordshire Structure Plan	Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]				
<b>Flooding</b>						
To ensure that sites and developments take due account of flood risk, and where it is present, take appropriate measures.	The SPD aims to minimise the effects of climate change through flooding.	<b>Policy SD1 Mitigating and Adapting to Climate Change:</b> Measures should be taken to reduce the impact of development in the district on climate change. Development would be expected to consider design approaches resilient to climate change impacts including, but not limited to, minimising the risk of flooding and making use of sustainable drainage methods, (by the provision of open space and water, planting, and green roofs, for example).	<b>Policy EN14 Flood Defence:</b> In areas at risk of flooding, new development will not be permitted if the proposals would: <ul style="list-style-type: none"> <li>i). Result in a net loss of flood plain storage;</li> <li>ii). Impede the flow of water; or</li> <li>iii). Increase the risk of flooding elsewhere.</li> </ul> Flood Risk Assessments, appropriate to the scale and nature of the development proposed, should be submitted to accompany planning. Where there is a risk that (re)development may increase the risk of flooding elsewhere,	Waterman prepared a Flood Risk Assessment (FRA) and preliminary drainage strategy specific to the Site in accordance with the requirements of PPS25. Since the Site is located within Flood Zone 1, an area which is considered to be at low risk of fluvial or tidal flooding, the FRA focuses on the surface water drainage of the Site.	✓ ✓✓ ✓✓✓	
To reduce the risk of flooding on proposed development sites and adjacent areas of land		<b>Policy SD6 Sustainable Drainage Systems:</b> The use of SuDS for the management of surface water runoff generated		In agreement with the Environment Agency, surface water runoff rates would be improved to better the existing Brownfield runoff rates. The Development would include a combination of permeable pavements, oversized pipes, attenuation ponds and underground storage tanks.	✓ ✓✓ ✓✓✓	
				The design allows for the provision of surface water attenuation ponds in open areas across the Site. These features would slow down surface water runoff and release it into the natural water cycle, restricting flows to the nearby watercourses, thereby reducing the risk of fluvial flooding. The attenuation ponds would also improve water quality and		

Relevant Planning Policies					
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	Commentary	Compliance
		Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging Core Strategy)		
		<p>by developments would be encouraged.</p> <p>Site specific Flood Risk Assessments should be used to determine how SuDS can be used on particular sites and to design appropriate systems.</p> <p><b>Policy I1 Infrastructure:</b> This policy allows for a Planning Obligations SPD setting out the approach for essential infrastructure including flood defences.</p> <p><b>Policy I2 Green Infrastructure Network:</b> Requires the district's green infrastructure network to be maintained and enhanced through a number of measures, including enhancing existing sites and features to adapt to climate change and encouraging the use of SuDS in new development in accordance with Policy SD6.</p>	<p>the Council, in consultation with the Environment Agency, must be satisfied that the developer will provide appropriate mitigation measures, including flood protection.</p> <p><b>Policy EN15 Surface Water Runoff and Source Control:</b> New development generating increased surface water runoff likely to result in adverse impact to surface drains and watercourses, such as an increased risk of flooding, river instability or damage to habitats would not be permitted unless the proposals include appropriate attenuation measures. New developments would only be permitted where the Council is satisfied that suitable measures designed to mitigate the adverse impact of surface water runoff are included as an integral part of the development.</p>	<p>biodiversity.</p> <p>The preliminary drainage strategy also takes account the effects of climate change.</p>	

Relevant Planning Policies					
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	Commentary	Compliance
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging Core Strategy)	Non-Statutory Cherwell Local Plan 2011		
<b>Heat Islands</b>					
To reduce the heat island effect inherent to urban areas through passive design measures	The SPD recommends that heat loss from buildings should be reduced through the provision of shelter, tree planting and building orientation.	<p><b>Policy SD1 Mitigating and Adapting to Climate Change:</b> Developments should be designed to reduce urban heat island effects (for example, by provision of open space and water, planting, and green roofs).</p> <p><b>Policy SD5 Sustainable Construction:</b> Consideration should be given to sustainable construction methods, including, but not limited to reducing urban heat island effects.</p>		<p>The Development includes for the provision of open space, tree planting and surface water attenuation ponds across the Site. These measures help to reduce the heat island effect.</p> <p>Existing buildings to be retained would be refurbished, which would include the provision of new double glazing and insulation, which would help to reduce heat loss and solar gain.</p> <p>The masterplan illustrates that houses could be orientated east to west, as far as possible, to maximise solar gain, whilst reducing the peak solar gains to the southern aspect of the buildings thereby reducing the risk of solar overheating.</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p>

Relevant Planning Policies						
Sustainability Objective	Current Local Policies		Emerging Local Policies (emerging Core Strategy)	Non-Statutory Policies Non-Statutory Cherwell Local Plan 2011	Commentary	Compliance
	Oxfordshire Structure Plan	Cherwell Local Plan 1996 [CLP]				
	RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]					
<b>Sustainable Energy</b>						
To increase the overall efficiency of the development through energy efficient design and management	The SPD encourages the following measures to be incorporated into the design of the development:	<b>Policy SD1 Mitigating and Adapting to Climate Change:</b> Promotes the use of decentralised and renewable or low carbon energy, where appropriate. Consideration should also be given to passive solar design.	<b>Policy D9 Energy Efficient Design:</b> Seeks to ensure energy efficient design principles are incorporated into developments by means of:	An Energy Strategy was undertaken by Waterman and is presented in Appendix B of this Statement. The study provides an assessment of options for different low carbon and energy systems.	✓ ✓✓ ✓✓✓	
To promote the increased use of renewable energy sources to reduce dependence on fossils fuels producing CO <sub>2</sub> emissions	i). Energy efficient technology;		i). Minimising energy loss through appropriate urban form, siting of buildings and soft landscaping;	The Strategy has based on the following three principles: use less energy; supply energy efficiently; and use renewable energy.		
	ii). Orientation of buildings should take into account principles of passive solar design in accordance with best practice; and	<b>Policy SPD 2 Energy Hierarchy:</b> Promotes the following energy hierarchy:	ii). Maximising natural (passive) solar heating, natural lighting, and natural ventilation by means of appropriate layout and orientation;	The masterplan illustrates that many of the existing built form lies close to the optimum east-west axis to benefit from solar energy. The masterplan shows that new built development can also be orientated to maximise solar gain whilst minimising the effect of overshadowing on gardens and principal living rooms.	✓✓ ✓✓✓	
	iii). Renewable energy sources.	i). Use less energy during construction;	iii). Minimising energy consumption by means of building design;	Building orientation and façade design would aim to maximise natural daylight whilst controlling solar gain as well as minimising the effect of overshadowing on gardens and to principal living rooms.		
To encourage the future use of active solar technologies where they are not initially supplied		ii). Give priority to decentralised energy supply; and	iv). Ensuring that the aesthetic implications of the green technology proposed are appropriate to the particular context of the			?
		iii). Use renewable energy.				
		<b>Policy SD5 Sustainable Construction:</b> The policy stipulates that:				
		i). All new homes will be required to meet Code for Sustainable Homes Level 3				

Sustainability Objective	Relevant Planning Policies			Commentary	Compliance
	Current Local Policies	Emerging Local Policies	Non-Statutory Policies		
To encourage the integration of solar/PV technologies during the design stage.	<p>Oxfordshire Structure Plan</p> <p>Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p>	<p>(emerging Core Strategy)</p> <p>ii). On larger sites where Combined Heat and Power/District Heating schemes are feasible, Code Level 4 is required with immediate effect; and</p> <p>iii). All new non residential development over 1,000m<sup>2</sup> is required to meet BREEAM 'Very Good'.</p> <p>The Council expects all development proposals in the district to show how sustainable construction methods have been considered, including, but not limited to:</p> <p>i). Minimising both energy demands and energy loss;</p> <p>ii). Maximising passive solar heating, lighting and natural ventilation; and</p>	<p>with immediate effect, Code Level 4 from 2012 and Code Level 6 from 2016;</p> <p>vi). Providing adequate accommodation for waste separation and recycling facilities.</p> <p><b>Policy UH1 Former RAF Upper Heyford:</b> Proposals for a new village at the former RAF Upper Heyford site would only be permitted if they incorporate energy efficient designs and technology throughout the development.</p>	<p>proposals;</p> <p>v). Ensuring that all residential development, including flats, has access to some private or semi private outdoor space; and</p> <p>demands from the buildings.</p> <p>To use less energy, refurbishment of residential dwellings would include the provision of new double glazing, insulation and low energy lighting. The existing hot water and central heating systems would be replaced with either condensing boilers or domestic micro CHP units. Refurbishment would be carried out in accordance with the prevalent Building Regulations. It is estimated that this could represent in an improvement in energy efficiency by at least 25% for the retained building stock.</p> <p>For the new build phases of the Development, it is proposed that the feasibility for incorporating CHP and renewable would be reviewed as part of the Reserved Matters applications to ensure the most efficient systems are employed to maximise the reduction in carbon emissions. It is envisaged that the later stages of the Development would employ CHP on a phase or plot basis as well as micro-generation through PV, wind and ground source heat pumps.</p> <p>At this stage, gas fired CHP is considered to be the most economical and feasible solution, however, as the Development progresses alternative renewable fuels such as biomass, biofuels and hydrogen would be investigated. It is estimated that overall, the implementation of a combination of District heating</p>	?

Sustainability Objective	Relevant Planning Policies			Compliance
	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging Core Strategy)	Non-Statutory Cherwell Local Plan 2011	<p>and Community Heating systems could contribute to energy savings exceeding 10%.</p> <p>It is anticipated that renewable energy sources could potentially be integrated into the Development, including biomass, small scale wind generation, photovoltaics and solar thermal.</p> <p>The aspiration is that the system would be future proofed to allow flexibility for future connection between plots/phases of Heyford Park, the wider masterplan area and also to other developments and projects in the area. There are two sustainable energy projects currently proposed in the vicinity of the Site including a wind farm and a energy from waste facility. Opportunities to obtain heat and power from these facilities would also be investigated in due course.</p> <p>New dwellings would be constructed to the prevalent Building Regulation Standards at the time and to achieve the required Code for Sustainable Home level. Buildings would be designed and constructed with low energy loss.</p>

Sustainability Objective	Relevant Planning Policies			Compliance	
	Current Local Policies Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	Emerging Local Policies (emerging Core Strategy)	Non-Statutory Policies Non-Statutory Cherwell Local Plan 2011		Commentary
To increase the use of sustainable heating techniques		<b>Policy SPD 4: Combined Heat and Power and District Heating:</b> Recognises the importance of Combined Heat and Power (CHP) and District Heating (DH). The policy requires all non domestic developments above 1000m <sup>2</sup> floor space to have a feasibility assessment for CHP and DH.		Options of energy efficient heating measures given in the Energy Strategy that could be implemented as part of the Development include: district heating systems, community heating and CHP system. These measures would improve energy efficiency and distribution.  It is anticipated that a combination of district heating and community heating could contribute to energy savings exceeding 10%.	✓✓
<b>Site Infrastructure</b>					
To evolve an energy management scheme and provide the public with easy access to renewable energy information				As of May 2010 Home Information Packs are no longer a mandatory requirement for new residential developments. However, new residents would be informed of the low energy measures applied to their dwelling.  It is anticipated that the Development would be managed by a management company. As part of the responsibilities, the management company would provide advice on low energy measures.	?

Sustainability Objective	Relevant Planning Policies			Compliance
	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging Core Strategy)	Non-Statutory Cherwell Local Plan 2011	
<b>Water Efficiency</b>				
<p>To reduce the overall consumption of clean water for non-potable uses.</p> <p>To ensure that roof space is used productively to minimise water demand and manage water runoff on the site.</p>	<p><b>Policy SD5 Sustainable Construction:</b> The Council expects all development proposals to show demonstrate consideration of resource efficiency, including the use of potable water and green roofs.</p>		<p>The Applicant is committed to minimising water consumption through the use of efficient fittings and fixtures and rainwater butts for dwelling with gardens. In addition they would review the feasibility of installing rainwater harvesting and potentially grey water systems in order achieve the prevalent Code for Sustainable Homes. It is therefore envisaged that these systems would be applied to the new build properties in the later phases (i.e. Code Level 5 and 6).</p>	<p>✓✓✓</p>



## Community

Relevant Planning Policies					Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	Commentary	
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-statutory Cherwell Local Plan 2011		

### Involvement in Decision Making

To promote community involvement in the design of the development to ensure their needs ideas and knowledge are taken into account to improve the quality and acceptability of the development

A Statement of Community Involvement (SCI) has been prepared to accompany the planning application. This Statement sets out the detail of pre-application consultation undertaken in conjunction with the community and other stakeholders. Public consultation took place in order to table and explain the revised concepts and proposals. The statement sets out the comments received and also indicates responses to the issues raised and how the application has evolved to take account of responses. ✓

Consultation has also been carried out with key stakeholders, including officers at Cherwell District Council and English Heritage throughout the design process.

The community and stakeholder consultation feedback has been used to inform the masterplan and the Design and Access Statement.

Relevant Planning Policies					Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	Commentary	
	<p>Oxfordshire Structure Plan</p> <p>Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p>	<p>(emerging LDF)</p> <p>Draft Core Strategy</p>	<p>Non-statutory Cherwell Local Plan 2011</p>		
Supporting Public Services, Social Economy and Community Structure					
<p>To encourage sustainable lifestyles and help integration into the local community</p>	<p>The SPD sets out the vision for the future development of the Site. The vision includes for a sustainable community in terms of balancing community facilities with housing and employment opportunities. The provision of recreational and community facilities should be integrated into the Development to encourage healthy lifestyles and social well being.</p> <p>The Development should incorporate a Neighbourhood Centre at the heart of the settlement in a location that is accessible to the Site residents and also benefit from passing trade.</p>	<p><b>Policy I1 Infrastructure:</b> Seeks the provision of physical, community and green infrastructure.</p> <p><b>Policy I3 Open Space, Sport and Recreational Provision:</b> Seeks the provision of quality of open space, together with sports and recreational facilities through the following measures:</p> <ol style="list-style-type: none"> <li>i). Protecting existing sites of value;</li> <li>ii). Addressing existing deficiencies in provision through qualitative enhancement of existing provision;</li> <li>iii). Improving access to existing facilities or securing new provision; and</li> <li>iv). Ensuring that proposals for new development contribute to open space, sport and recreation provision commensurate to the need</li> </ol>	<p><b>Policy UH1 Former Upper Heyford:</b> The proposals for the development of the Site should include the provision for a primary school, including a nursery, a village hall, recreation and leisure facilities, and that the opportunity is provided for medical facilities in accordance with NHS requirements and a range of retail facilities.</p> <p><b>Policy R6:</b> Proposals for new or extended sporting and recreation facilities will be permitted if the following criteria are met:</p> <ol style="list-style-type: none"> <li>i). Facilities attracting a significant number of people are in readily accessible locations;</li> <li>ii). The development would not lead to a significant loss of amenity to residents or neighbouring</li> </ol>	<p>The masterplan is focused around the Local Centre, which would be at the heart of the Development. The Development has the potential to improve community interaction through the centralising of meeting places and communal areas to facilitate social interaction and enhancing community cohesion. All facilities within the Local Centre would be within a five to ten minute walk from the residential areas. The provision of neighbourhood facilities would support and meet most of the needs of people living and working on-site, thereby reducing unnecessary travel.</p> <p>The masterplan retains and enhances existing facilities including the chapel and community hall. In addition, a number of new facilities are proposed including a new school, a care facility, Local Centre, retail uses, a hotel and a heritage centre which would be accommodated in the retained hanger (building 315) to provide permanent space to exhibit material from the Airbase.</p> <p>Two Neighbourhood Equipped Areas of Play (NEAP) and five Local Equipped Areas of Play (LEAP) would be created across the Site. The NEAP and LEAP are strategically located within, or adjacent to the principal residential areas to provide</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p>

Relevant Planning Policies					Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	Commentary	
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-statutory Cherwell Local Plan 2011		
		<p>generated by the proposals. The provision of open space should meet local needs.</p> <p><b>Policy I4 Local Standards of Provision:</b> Provision should usually be made on-site in accordance with the minimum standards set out in the draft Core Strategy. Where this is not possible, a financial contribution towards suitable new provision or enhancement of existing facilities offsite would be sought.</p>	<p>uses; and</p> <p>iii). The development would not be visually intrusive. Particular regard will also be had to accessibility by means other than the private car.</p> <p><b>Policy R8:</b> New residential developments should include for the minimum provision of 2.43 hectares of public outdoor recreation spaces per 1,000 population.</p> <p><b>Policy R9 Amenity Areas:</b> Seeks the provision of amenity areas, which are integrated into the development, and where possible enhance neighbouring land.</p> <p><b>Policy R11 Community Facilities:</b> Community centres, village halls, allotments and other local facilities will be permitted, providing the development:</p>	<p>accessible recreational facilities.</p> <p>The layout of the masterplan promotes cycling and walking, as facilities would be centrally located. Designated cycle and pedestrian routes would be created allowing permeability across the Site.</p> <p>Bus stops and services to the Site are currently limited. The Development includes the provision for a designated bus route through the proposed residential areas to the south of Camp Road. This route would continue along Camp Road. The masterplan is based on the principle of the majority of residential dwellings being located within 400m of a bus stop. As part of the Development, improvements would be made to the frequency of the current bus service.</p> <p>Formal and informal recreation spaces would be integrated throughout the Development to encourage social interaction and active lifestyles. Publicly accessible green space between the community centre and residential areas would provide attractive routes. Play and sport areas would be readily available within each neighbourhood and be designed to meet the standards of Cherwell District Council.</p> <p>A key feature of the masterplan is to create a green network, which links open spaces across the Site. The network would provide easy pedestrian and</p>	

Sustainability Objective	Relevant Planning Policies			Commentary	Compliance	
	Current Local Policies	Emerging Local Policies	Non-Statutory Policies			
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-statutory Cherwell Local Plan 2011	<p>i). Is conveniently located for the population it is intended to serve;</p> <p>ii). Is appropriate in terms of scale, siting and design;</p> <p>iii). Would not lead to a significant loss of amenity; and</p> <p>iv). Would not be visually intrusive.</p>	<p>cycle access to all areas, including connecting to the landscape and public rights of way. Open space, which includes formal spaces such as children's play areas and pitches, together with informal spaces, would be accessible within each neighbourhood area.</p> <p>It is anticipated that the Development would be managed by a management company. The management company would provided information on water conservation, waste minimisation, public transport, cycling facilities to promote sustainable living.</p>	



## Place Making and Use of Land

Relevant Planning Policies					Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-Statutory Cherwell Local Plan 2011		
<b>Efficient Use of Land</b>					
To ensure the most effective and efficient use of land, applying a sequential approach	The SPD encourages redevelopment of areas in need of renewal and promotes the use of previously developed land over greenfields.	<b>Policy H3 Efficient and Sustainable Use of Land:</b> Housing development in Cherwell would be expected to make efficient and sustainable use of land. At least 40% of new homes will be constructed on previously developed land. The redevelopment of former RAF Upper Heyford Airbase would be central to Cherwell's 'brownfield' land strategy.	<b>Policy H3 Making Efficient Use of Land:</b> Seeks to make efficient use of land through building at an average net density of not less than 30 dwellings per hectare.	The Development would be entirely on previously developed land of the former RAF Airbase. The majority of existing residential dwellings, together with historically important buildings and structures would be retained and integrated into the Development.  Density of existing housing is low in comparison to current standards, at less than 20 dwellings per hectare. The Development would provide a mix of housing densities to reflect the character and built form of the Site and surrounding area. The masterplan illustrates that the Development could achieve an average density of 36 dwellings per hectare, which would make more efficient use of available land.	✓ ✓✓ ✓✓✓

Relevant Planning Policies					Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	
	<p>Oxfordshire Structure Plan</p> <p>Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p>	<p>Emerging Local Policies (emerging LDF)</p> <p>Draft Core Strategy</p>	<p>Non-Statutory policies</p> <p>Non-Statutory Cherwell Local Plan 2011</p>		
To ensure effective re-use of buildings	<p><b>Policy EMP4 Employment Generating Development in Rural Areas:</b> This policy relates to the reuse, adaptation, and conversion of buildings.</p> <p>Employment generating development in rural areas would be allowed in existing acceptable employment sites, including redevelopment and conversion of buildings.</p> <p>The SPD seeks to retain and reuse as many of the original building as practical.</p>	<p><b>Policy H3 Efficient and Sustainable Use of Land:</b> Housing development in Cherwell would be expected to make efficient and sustainable use of land.</p> <p>This policy includes, but is not limited to, ensuring that the most of vacant and derelict land and buildings are reused. RAF Upper Heyford Airbase will be central to Cherwell's 'brownfield' land strategy.</p> <p><b>Policy E1 Employment Development:</b> Seeks to protect existing employment land and buildings for employment (B class) uses, including, but not limited to making efficient use of existing and underused sites.</p>	<p>The Site currently contains a number of buildings which are disused and in disrepair. The proposals include for the retention of many buildings, including the majority of residential dwellings and buildings with historical importance.</p> <p>Development of the Site would allow disused buildings to be brought back into use. Existing buildings would be adapted to accommodate a range of new uses, including supporting a pub/restaurant, nursery and heritage centre. The former RAF Officer's Mess which is currently disused, would be reused as a hotel or care facility. The Development would also retain the existing community hall and chapel, which were originally brought back into use to serve the existing residents.</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p>	

Relevant Planning Policies					Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-Statutory Cherwell Local Plan 2011		

### Design Process

<p>To ensure that the preparation of a statement of design intent, that is informed by studies of the site and its surroundings, is discussed with appropriate parties prior to finalisation</p>	<p>The SPD stipulates that the development should be informed through spatial analysis of the Site, which should be set out in the Design and Access Statement.</p>	<p><b>Policy SD13 The Built Environment:</b> New development should be informed by an analysis of the context and principles. This should be demonstrated in a Design and Access Statement.</p>	<p><b>Policy D2 Planning Application Design Statements:</b> Applications should be accompanied by a Planning Application Design Statement.</p> <p>For larger scale proposals it would be necessary to demonstrate that the proposal is related to its context. Information on aspects such as design, siting, landscaping, massing and appearance will normally be required as a minimum in order to fully assess proposed developments.</p>	<p>A Design and Access Statement has been prepared and submitted as part of the planning application. The Design and Access Statement sets out the design principles and concepts that have informed the Development.</p> <p>The Design and Access Statement was informed by a number of documents, including the Transport Assessment, Environmental Statement and Statement of Community Involvement, which also accompany the planning application.</p> <p>The masterplan, which is explained in the Design and Access Statement, has evolved from the masterplan of the consented scheme for the Site. The evolution of the masterplan has been informed by individual technical assessments, such as the Flood Risk Assessment, together views from English Heritage, Cherwell District Council and the Environment Agency.</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p>
<p>To ensure the landscaping scheme is attractive and appropriate to the</p>	<p><b>Policy C7 Landscape Conservation:</b> Development would not be permitted if it would cause harm to the character of the local</p>	<p><b>Policy SD11 Local Landscape Protection and Enhancement:</b> Development should respect and enhance the local landscape character.</p>	<p><b>Policy EN34 Landscape Character:</b> Seeks to conserve and enhance the character and appearance of the landscape. Development</p>	<p>A Landscape Strategy has been developed for the Site, which sets out the principles for green infrastructure across the site including open space and landscaping proposals. The Landscape Strategy seeks to achieve a network of green multi-functional open space between the residential</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p>

Sustainability Objective	Relevant Planning Policies			Commentary	Compliance
	Current Local Policies	Emerging Local Policies	Non-Statutory policies		
local environment	<p>Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p> <p>landscape.</p> <p><b>Policy C14 Trees and Landscaping:</b> Seeks to retain important trees, woodland and hedgerows. New tree and hedgerow planting should include native species.</p> <p>As part of the vision set out in the SPD, planting of indigenous species compatible with the surrounding landscape character should be provided to assist in integrating the settlement into the landscape.</p>	<p>Development should not cause:</p> <ul style="list-style-type: none"> <li>i). Undue visual intrusion into the countryside;</li> <li>ii). Harm to important landscape features and topography;</li> <li>iii). Harm the setting of settlements, buildings, structures or other landmark features; and</li> <li>iv). Harm the historic value of the landscape.</li> </ul> <p><b>Policy SD13 The Built Environment:</b> Reiterates that new development should respect local topography and landscape features including significant trees, landmarks and designated landscapes.</p>	<p>should not cause:</p> <ul style="list-style-type: none"> <li>i). Undue visual intrusion into the countryside;</li> <li>ii). Harm to important landscape features and topography;</li> <li>iii). Harm the setting of settlements, buildings, structures or other landmark features: and</li> <li>iv). Harm the historic value of the landscape.</li> </ul> <p><b>Policy EN35:</b> Seeks to retain woodlands, trees and hedgerows that are important to the landscape. Loss of such features should be justified by mitigation and/or compensation to the satisfaction of the Local Authority.</p> <p><b>Policy UH2 Former RAF Upper Heyford:</b> An aspect of the policy seeks the implementation of an integral</p>	<p>areas.</p> <p>Central to the Strategy would be the retention and enhancement of key historic buildings, trees and green open space. The existing boundaries of the Site would be reinforced with tree and hedgerow planting to visually screen the Site and integrate the Site with the surrounding area. In particular, new low hedgerows would be provided along the western boundary of the Site, together with native tree planting to replicate traditional rural settlements.</p> <p>A landscape and visual amenity assessment was carried out for the Development and is presented in the Environmental Statement. In terms of visual amenity, overall the Development, once completed, is considered to improve the amenity of views, reducing the intrusion of built form and creating a more natural transition between the Site and surrounding countryside. The retention of mature trees would add maturity to the Development and preserve the character of the Site.</p> <p>The built heritage assessment concludes that the Development would result in a slight to moderate impact on the character and built heritage of the Site. However, the setting of the two Schedule Monuments would be subject to minimal change.</p>	

Relevant Planning Policies					
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	Compliance
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-Statutory Cherwell Local Plan 2011		
			scheme of landscaping and environmental improvements.		
Form of Development					
To achieve visual and physical connectivity, making it easy to find the development and to navigate around	The vision set out in the SPD includes for new linkages, particularly in relation to the west of the Site and new public spaces.		<p><b>Policy D1 Urban Design Objectives:</b> Development should be designed demonstrate:</p> <ul style="list-style-type: none"> <li>i). Local distinctiveness in the built environment and landscape;</li> <li>ii). Continuity and enclosure, consistent with local character;</li> <li>i). Public spaces and routes that are attractive;</li> <li>ii). Permeability through ease of movement for pedestrians, particularly disabled people, and cyclists in preference to vehicles;</li> <li>iii). Legibility through recognisable routes, junctions and landmarks to help people find their way</li> </ul>	<p>The layout of the masterplan has been driven by the existing street layout. The masterplan illustrates the lattice street structure of the Site. This layout would create a large number of street intersections which would create memorable places and aid legibility. The street layout would also create permeable movement through the Development without having to travel up and down arbitrary road hierarchies. The network of streets, green spaces and public realm areas aim to create a sense of place, which helps with orientation around the Site.</p> <p>To aid orientation, landmark buildings would be retained and / or created at the end of long vistas or gateways to character areas.</p>	<p>✓</p> <p>✓✓</p>
To make pedestrian movement attractive and safe, reducing reliance upon private cars for local journeys.	The SPD promotes an integrated new community that is accessible to the surrounding villages through encouraging travel by means other than the private car. The			<p>The masterplan has been designed around a series of walkable neighbourhoods with the provision of 'green routes' to encourage walking and cycling by providing attractive environments along these routes. The proposed layout allows for an acceptable walking time to key facilities of five to ten minutes, which seeks to discourage the unnecessary use of vehicles for short journeys. The</p>	<p>✓</p> <p>✓✓</p>

		Relevant Planning Policies			Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	
	<p>Oxfordshire Structure Plan</p> <p>Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p>	<p>(emerging LDF)</p> <p>Draft Core Strategy</p>	<p>Non-Statutory Cherwell Local Plan 2011</p>		
	<p>layout and connection of linkages should be designed to encourage local journeys to be made by foot or bicycle.</p>		<p>around;</p> <p>iv). Adaptability through building types that enables their use for different purposes over time; and</p> <p>v). Diversity through inclusion of a mix of compatible land uses.</p>	<p>flat nature of the Site enables walking and cycling around the Site. Pedestrian linkages and Public Rights of Way surrounding the Site would be reinstated to encourage recreational walking and cycling.</p> <p>The masterplan has also been designed so that the majority of residential neighbourhoods would be within 400m of a bus stop. This would ensure that residents are within walking distance of a bus stop.</p>	
<p>To create a place with a clear identity, which is easy to understand and navigate.</p>	<p>The SPD promotes a development with an accessible centre that contains high quality user friendly public spaces. The unique character of the Site should be retained to promote a sense of community identity and pride.</p>		<p><b>Policy D5 The Design of the Public Realm:</b> Public realm should be accessible to all, putting the needs of pedestrians above those of car users. Public realm should provide attractive, comfortable and safe places where people can congregate and activities can take place to add vitality. Open space should be included in the design concept from inception. The aim is to create public realm that is co-ordinated and legible. Footpath linkages, for example, should be direct and continuous.</p> <p>Proposals should provide</p>	<p>The proposals seek to reflect the existing character and built form of the Site. The street layout would be largely retained and therefore the existing grid street pattern provides direct links and interconnections between all parts of the Site. Green routes and networks would also be provided through out the Development, allowing for easy pedestrian and cycle access to all parts of the Site.</p> <p>Key buildings, landmark structures and open space would be retained and integrated into the Development to create a distinctive and unique sense of place for the local community.</p>	<p>✓</p> <p>✓✓</p>
<p>To ensure that building frontages encourage pedestrian usage of streets,</p>	<p>The SPD encourages a development with an attractive vital and viable centre that is accessible by means other than the</p>			<p>The Local Centre comprising retail and community uses is central to the Development and community. The masterplan creates urban blocks, with frontages graded to create a strong sense of place.</p>	<p>✓</p> <p>✓✓</p>

Relevant Planning Policies					Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	
contributing to vitality	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-Statutory Cherwell Local Plan 2011		
To create defensible spaces that clearly define public and private spaces	<b>Policy C30 Design of New Residential Development:</b> Development should provide amenity and privacy spaces acceptable to the Local Planning Authority.		ground floor uses that contribute to creating activity, interest and natural surveillance <b>Policy UH1: Former RAF Upper Heyford:</b> Stipulates that the new development should incorporate measures to encourage walking, cycling or public transport as the preferred mode of transport rather than the private car. <b>Policy UH4 Former RAF Upper Heyford:</b> The design of the development should seek to successfully integrate the development with the countryside by reflecting the local distinctive character.	The masterplan shows a clear distinction between public open spaces and private garden areas. Where possible, individual buildings would have a 'public' front providing natural surveillance to the street and private gardens or semi-private gardens at the rear. Areas of public / private green spaces within each neighbourhood are clearly defined.	✓ ✓✓
To ensure that the development responds to local character whilst reinforcing its own identity	<b>Policy C7 Landscape Conservation:</b> Development would not be permitted if it would cause harm to the character of the local landscape. <b>Policy C28 Layout, Design and External Appearance of New Development:</b> In	<b>Policy SD13 The Built Environment:</b> Stipulates that new development should respect and enhance the local character, including historic assets, views and building form through sensitive setting, layout and high quality design. Green space provision should meet local needs. Social infrastructure should grow at the		A landscape and visual amenity assessment of the Site was carried out. It was concluded that the overall 'demilitarisation' of the Site, whilst retaining links to its important historical past, is considered beneficial. Over time the currently declining areas would be regenerated and a more welcoming and community sense of place is established.  Key buildings and structures, including layout of the 'Trident' area and the Old Parade Ground, which are considered historically important assets would be retained. These buildings and street patterns	✓ ✓✓ ✓✓✓

Sustainability Objective	Relevant Planning Policies			Compliance
	Current Local Policies	Emerging Local Policies	Non-Statutory policies	
	<p>Oxfordshire Structure Plan</p> <p>Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p>	<p>(emerging LDF)</p> <p>Draft Core Strategy</p>	<p>Non-Statutory policies</p> <p>Non-Statutory Cherwell Local Plan 2011</p>	<p><b>Commentary</b></p>
	<p>Conservation Areas development would require to be of a high standard and sympathetic to the character of the area.</p> <p>The SPD seeks the retention and integration of buildings in the Conservation Area to provide strong landmark focal points.</p>	<p>same rate as the population and communities and existing deficiencies in provision must be addressed.</p>		<p>contribute to the unique character of the Site and the wider Conservation Area. The retention of bungalows and the majority of housing would retain an established character with a residential community already in place. As shown on the masterplan, the formal military character of the Site would be preserved and integrated into the Development whilst also changing the character to a more residential area. Development would introduce new uses into the central area, creating a Local Centre, a providing a focus for businesses and residents.</p> <p>A built heritage assessment was carried out for the Site. The assessment concluded that overall, the Development would result in a slight to moderate impact on the Site's built heritage. However, the Schedule Monuments, together with the adjacent hangers would be retained, resulting in the Development having an insignificant impact on the Battle Command Centre and a beneficial impact on the Hardened Telephone Exchange. As part of the Development, the historically important Old Parade Ground would be restored and brought back into use, forming the heart of the community and positively contributing to the character of the Site.</p> <p>Green space provision has been designed to provide a range of formal and informal open space</p>

Relevant Planning Policies					Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies (emerging LDF)	Non-Statutory policies	Commentary	
	<p>Oxfordshire Structure Plan</p> <p>Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p>	<p>Draft Core Strategy</p>	<p>Non-Statutory Cherwell Local Plan 2011</p>	<p>areas to meet the needs of the community.</p> <p>The Development includes for informal and formal open space, together with the provision of sport facilities, which provides for a focus for recreation. The masterplan includes for 6.70ha of outdoor recreational facilities including children play areas (LEAP and NEAP) and sports pitches.</p> <p>Social and green infrastructure would be delivered in phases in line with the delivery of residential dwellings.</p>	
<b>Open Space</b>					
To ensure access to high quality public green space for all	The design of the development should include new links and green open spaces to integrate the existing and new development, as set out in the SPD.	<p><b>Policy I2 Green Infrastructure Network:</b> Seeks to retain and enhance green infrastructure through a number of measures, including, but not limited to:</p> <ul style="list-style-type: none"> <li>i). Protecting and enhancing existing sites and features of value to the green infrastructure network;</li> <li>ii). Improving connectivity between sites;</li> <li>iii). Providing new areas of multi-functional open space; and</li> </ul>	<p><b>Policy D1 Urban Design Objectives:</b> Seeks to provide public spaces and routes that are attractive, safe and uncluttered.</p> <p><b>Policy D5 The Design of Public Realm: Development:</b> Should provide hard and soft landscaping that is appropriate for the use and location, together with being accessible to all.</p>	<p>A Landscape Strategy has been developed for the Site, which is presented in the Design and Access Statement.</p> <p>A particular aim of the design of the masterplan has been to use the openness of the existing setting to create a spacious layout where people have direct contact with green space. The Development includes for a network of green open spaces and areas of public realm. The principal areas of public open space would be provided in the west and centre of the Site.</p> <p>The Green Infrastructure would be accessible to all, including pedestrians and cyclists. The Green Infrastructure proposals include a network of multifunction green space providing: biodiversity</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p> <p>✓✓✓</p>

		Relevant Planning Policies			Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-Statutory Cherwell Local Plan 2011		
		iv). Ensuring that green infrastructure network considerations are integral to the planning of new development.  Green infrastructure masterplans should be developed for strategic development sites and proposals should maximise the opportunity to maintain and extend green spaces.  <b>Policy SD13 The Built Environment:</b> The design of new development should demonstrate a holistic approach to public realm following the principles set out in The Manual For Streets.		enhancements; sustainable drainage; recreation and sport facilities; neighbourhood parks and play space; visual screening; both private and communal gardens and informal open space.  The proposed green routes connect the different areas of the Development into a coherent and unified development. Green routes would also connect to the wider landscape and Public Rights of Way.	
To promote outdoor recreation, health and community interaction	Key to the SPD is that the development should provide for informal and formal amenity areas, including children's play area, sports facilities to	<b>Policy I3 Open Space, Sport and Recreational Provision:</b> The quantity and quality of open space, sport and recreation provision should be provided through:	<b>Policy R9 Amenity Areas:</b> Provision of new amenity areas should be integrated into the development.	The Development includes for informal and formal open space, together with the provision of sport facilities, which provides for a focus for recreation. The masterplan includes for 6.70ha of outdoor recreational facilities including children play areas (LEAP and NEAP) and sports pitches.	✓ ✓✓ ✓✓✓

		Relevant Planning Policies			Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	
	<p>Oxfordshire Structure Plan</p> <p>Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p>	<p>(emerging LDF)</p> <p>Draft Core Strategy</p>	<p>Non-Statutory Cherwell Local Plan 2011</p>		
	<p>serve the needs of the settlement. The provision of recreation and community facilities aims to promoted healthy lifestyles and social well being.</p>	<p>i). Protecting existing sites of value;</p> <p>ii). Addressing existing deficiencies in provision through qualitative enhancement of existing provision; and</p> <p>iii). Improving access to existing facilities.</p>		<p>Each play area to be developed would provide a range of play opportunities/needs whilst, reflecting the landscape character to create a sense of identity. Provision and hierarchy of play and activity spaces would be in accordance with Cherwell District Council Standards.</p>	
Adaptability					
<p>To ensure that buildings can be adapted to the demands of new uses</p>	<p>The SPD encourages the provision of properties that are capable of adaptation to meet the changing needs of the household and changing life circumstances such as disablement of the occupier.</p>		<p><b>Policy D1 Urban Design Objectives:</b> The proposals for a development should demonstrate the adaptability through building types that enables their use for different purposes over time.</p>	<p>It is anticipated that most buildings should be capable of adaptation over time to ensure that change and flexibility of occupancy is achieved. The existing air hangers which would be retained contain large flexible spaces, which can be refurbished to accommodate a range of uses.</p> <p>The Development would provide a range of house types, size and tenures. A mix can encourage a broad social mix and enable people to remain in the community throughout the changing circumstances of their lives.</p> <p>Consideration has been given to Build for Life Standards during the design of the masterplan. The proposals seek for the majority of new building units to comply with Lifetime Home Standards, which sets out design criteria to help support the changing</p>	<p>✓</p> <p>✓✓</p>

Relevant Planning Policies					Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	
	<p>Oxfordshire Structure Plan</p> <p>Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p>	<p>(emerging LDF)</p> <p>Draft Core Strategy</p>	<p>Non-Statutory Cherwell Local Plan 2011</p>	<p>needs of individuals and families at different stages of life.</p> <p>Residential dwellings would also be designed to allow for greater flexibility, including live/work homes.</p>	
Inclusive Communities					
<p>To prevent social inequalities and foster a socially inclusive community</p>	<p>The SPD promotes a development that creates a distinctive Cherwell environment that reduces incidences of social exclusion. Access should be provided to affordable public, community, voluntary and private services.</p>	<p><b>Policy H6 Mixed Housing:</b> A mix of housing should be provided to meet current and expected future requirements in the interests of creating socially mixed and inclusive communities.</p>	<p><b>Policy D1 Urban Design Objectives:</b> Development should demonstrate diversity through an inclusion of compatible land uses.</p>	<p>The proposals include for the provision of mixed uses including employment, housing and community facilities, with the Local Centre providing the heart of the Development. The Development would be relatively compact with neighbourhood facilities and public transport within walking distance of most housing. The masterplan includes open space areas and community facilities to encourage community interaction. This would create a mixed and balanced community, encouraging community cohesion.</p> <p>The masterplan proposals could provide for a variety of house types, sizes, tenures and the ability of existing residents to remain at the Site for the long-term. The Applicant is committed to achieving 30% of the housing to be affordable. This would be provided as shared ownership, equity arrangements and full rental.</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p>

Relevant Planning Policies					Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	
	<p>Oxfordshire Structure Plan</p> <p>Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p>	<p>(emerging LDF)</p> <p>Draft Core Strategy</p>	<p>Non-Statutory Cherwell Local Plan 2011</p>		
To attract a diverse new community that reflects the surrounding demographic trends				The socio-economic assessment identifies that the composition of housing stock in Cherwell District is largely owner occupied and privately rented. As mentioned above, the Development would provide a mix of housing sizes, types and tenures to meet local needs. A proportion (30%) of the proposed housing would be affordable, which would contribute to the affordable housing requirements.	✓
<b>Crime</b>					
To apply design principles to increase the security of the development	<p>The SPD specifies that the new development should be a safe place to live with low crime rates through:</p> <p>i). Ensuring compliance with <i>Secured by Design</i>; and</p> <p>ii). Natural surveillance of public spaces and property entrances should be provided.</p>	<p><b>Policy SD 13 The Built Environment:</b> Seeks new development to be compatible with up to date urban design and <i>Secure By Design</i> principles.</p>	<p><b>Policy D5 Design of the Public Realm:</b> Development should incorporate measures to minimise potential for crime and anti-social behaviour, including by maximising natural surveillance, allowing for social contact and provision of adequate lighting.</p>	<p>The masterplan illustrates a clear distinction between public open spaces and private areas. The building layout is broadly planned around the perimeter/urban block principle where buildings are placed close to the street and private spaces are enclosed within the block. This would promote through a greater sense of ownership and natural surveillance, and would help reduce the risk of crime</p> <p>The buildings and street layout of the masterplan have been designed to encourage passive surveillance.</p> <p>It is the aspiration of the Applicant to comply with the principles of '<i>Secure by Design</i>'.</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p>

		Relevant Planning Policies			Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	
	<p>Oxfordshire Structure Plan</p> <p>Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p>	<p>Emerging Local Policies (emerging LDF)</p> <p>Draft Core Strategy</p>	<p>Non-Statutory policies</p> <p>Non-Statutory Cherwell Local Plan 2011</p>		
<p>To ensure that street lighting is as energy efficient as possible and to minimise light spillage</p>	<p>The SPD stipulates that the lighting design should seek to minimise energy use. Lighting should also be designed to reduce light pollution and avoid lanterns that emit light upwards.</p>		<p><b>Policy EN6 Light Pollution:</b> Seeks to minimise unnecessary light pollution and to avoid adverse impacts on residential amenity, the landscape and nature conservation.</p>	<p>Lighting would be considered at the detailed design stage and reserved matters stage. Consideration would be given to the security issues, the use of energy efficient lighting and solar lighting for external areas and the prevention of light pollution. All external lighting would be specified as energy efficient and designed in accordance with Institute Lighting Engineers Guidance notes for the reduction of obtrusive light, 2005.</p>	?
<p><b>Security Lighting</b></p> <p>To ensure that security lighting is a carefully designed element, installed with due consideration of its suitability for the task and its effect on neighbours and the environment.</p>	<p>The SPD seeks the replacement of lighting on Camp Road, together with new lighting designs that take into account existing roads and views.</p>		<p><b>Policy D5 Design of the Public Realm:</b> Developments are required to meet a number of key objectives, including, but not limited to the provision of adequate (street) lighting to minimise the potential for crime and anti-social behaviour.</p>	<p>Lighting would be considered at the detailed design stage and reserved matters stage. Lighting design would take account of security issues and planning policy requirements.</p>	?



## Transport and Movement

Relevant Planning Policy					
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	Compliance
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-Statutory Cherwell Local Plan 2011		
General Policy:					
To encourage and enable the use of public transport	<p><b>Policy H2 Upper Heyford:</b> Stipulates that the development should be designed to encourage the use of public transport.</p> <p>The SPD requires measures to encourage the use of public transport to access facilities within the Site and in other centres.</p>	<p><b>Policy SD1 Mitigating and Adapting to Climate Change:</b> Developments should seek to reduce the need to travel and encourage walking, cycling and public transport.</p>	<p><b>Policy TR6 Public Transport:</b> Seeks the provision and operation of effective public transport by means of giving priority to public transport, providing interchange facilities and encouraging integration between different modes of transport.</p>	<p>The Site is served by a single bus service that runs between Oxford and Bicester. There are two existing bus stops on Camp Road. A new circular bus route would be provided to the south of Camp Road through the main residential area. The masterplan has been design so that the majority of housing is within 400m of a bus route.</p> <p>The introduction of a new route would provide enhanced access to bus services to existing residents and employees, thereby aiding social inclusion and providing an alternative choice of transport to help reduce car-based traffic.</p>	<p>✓ ✓✓ ✓✓✓</p>
To promote the use of virtual communications as an alternative to transport, where possible	<p>The SPD encourages the provision of communication networks that would reduce the dependency on the car.</p>			<p>It is likely that the Development would include access to high speed fibre optic internet connections.</p> <p>The Applicant would review opportunities for provision of home offices and other means to reduce the need to travel.</p>	<p>?</p>

		Relevant Planning Policy			Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-Statutory Cherwell Local Plan 2011		
<b>Public Transport</b>					
To ensure the availability of frequent and convenient transport links to trains, trams or tube	The SPD requires measures to be implemented to enhance public transport to the Site, and in particular to Lower Heyford Railway Station.		i) <b>Policy UH1 Former RAF Upper Heyford:</b> Requires measures to improve facilities at Lower Heyford Station and to provide integrated public transport links between the Site and station.	The introduction of a new bus route would provide enhanced access to bus services. The bus route would ensure that the residents and workers of the Site would have access to Bicester and Oxford.  Improvements are being planned as part of a package of measures to improve accessibility to Lower Heyford Station.	✓ ?
To allow for easy access to public transport	<b>Policy H2 Upper Heyford:</b> Stipulates that the development should be designed to encourage the use of public transport. Improvements to bus and rail facilities would be sought.		ii) <b>Policy UH1 Former RAF Upper Heyford:</b> Requires measures to be incorporated into the Development to encourage public transport as the preferred mode of transport.  iii) <b>Policy TR6 Public Transport</b> (see above).	Bus stops are proposed within 400m of most residential dwellings, which would ensure accessibility to key services.  Discussions have been held with Chiltern Railways related to the investigation of a shuttle mini-bus service to serve Bicester North Station from Heyford Park. A shuttle mini-bus is also proposed from Heyford Park to the Flying Field area.	
To encourage more frequent use of public transport during the entire year, by having waiting areas which are				A new bus shelter would be located in the local centre adjacent to the proposed retail uses. The shelter, which would be easily accessible to people using the local centre, would provide a safe environment whilst waiting for a bus.	?

Relevant Planning Policy					Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-Statutory Cherwell Local Plan 2011		
considered safe and out of the weather					
<b>Parking</b>					
To reduce levels of car parking available, as an incentive to use public transport and other methods of mobility and communication				A new bus route would be created on-Site, which would extend through the existing residential area to the south of Camp Road. The masterplan has been designed so that the majority of residential dwellings are located within 400m of a bus stop. Easy access to bus services would encourage residents and site workers to use public transport.	✓
To provide flexible space which can accommodate other uses outside the areas of peak parking demand	The SPD encourages the efficient use of car parking spaces which should be compatible with high quality open realm.			Cherwell District has a higher car ownership rate than average, particularly in rural wards such as Upper Heyford. Consequently, there is the potential for greater pressure on street space for car parking. The masterplan illustrates that street and plot layouts would be flexible in the way they accommodate parking.	✓
To reduce the impact of heavy goods vehicles loading on public highways	<b>Policy T7 Development Attracting Traffic on Minor Roads:</b> Developments that attract large commercial		<b>Policy TR16 Accommodating Large Vehicles:</b> Development that would generate HGV movements through residential	A designated HGV route would be created to reduce the impact on the residential areas. The proposed route includes a new junction off Camp Road in the eastern part of the Site to divert HGV's directly onto the Flying Field. This would direct	✓ ✓✓

Sustainability Objective	Relevant Planning Policy			Commentary	Compliance
	Current Local Policies	Emerging Local Policies	Non-Statutory policies		
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-Statutory Cherwell Local Plan 2011		
	vehicles on minor roads is not usually permitted.		areas would not be permitted.	HGV's away from the principal residential areas, school and Local centre.	
<b>Pedestrians and Cyclists</b>					
To promote cycling as a real alternative to the use of private cars for shorter journeys, whilst reducing the fear of crime	<b>Policy H2 Upper Heyford:</b> Stipulates that the development should be designed to encourage walking and cycling.  The SPD requires measures to encourage walking and cycling. Priority should be given to pedestrians and cyclists over cars within the highway design.	<b>Policy SD1 Mitigating and Adapting to Climate Change:</b> Developments should seek to reduce the need to travel and encourage walking, cycling and public transport.	<b>Policy UH1 Former RAF Upper Heyford:</b> Requires measures to be incorporated to encourage walking, and cycling as the preferred mode of transport.  <b>Policy R8 Cycling and Walking:</b> Development that would prejudice pedestrian and cycle routes would not be permitted.  <b>Policy TR9 Cycling and Walking:</b> Development should include the provision of cycle parking to Oxfordshire County Council Standards.	The design of the masterplan encourages pedestrian and cycle movement through a permeable and connected street structure. The masterplan includes retaining existing footpaths and creating additional footpaths and cycle ways. This would encourage people to walk and cycle the short distances across the Site and support environmentally friendly transportation options.	✓ ✓✓ ✓✓✓

		Relevant Planning Policy			Compliance
Sustainability Objective	Current Local Policies Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	Emerging Local Policies (emerging LDF) Draft Core Strategy	Non-Statutory policies Non-Statutory Cherwell Local Plan 2011	Commentary	
To ensure vehicle speeds are appropriate to all road users	The SPD encourages the impact of rat running through local roads to be minimised.		<p><b>Policy TR5 Road Safety:</b> Seeks to minimise conflict between vehicles and pedestrians, cyclists and people with mobility impairments through segregated provision, controlled crossing and other measures deemed necessary.</p> <p><b>Policy 36:</b> Supports the implementation of traffic management schemes that reduce traffic speeds and create a safe environment for all road users.</p>	Traffic calming measures would be implemented along Camp Road to reduce the speed of vehicles and create a safer environment for other road users. Such measures would include frontage parking and bus stops, chicane features limiting the speed limit to 20mph.	✓ ?
To enable residents to use and enjoy space around homes whilst maintaining vehicular access	<p><b>Policy TR10 Heavy Goods Vehicles:</b> Development that generates frequent HGV movements through residential areas and adversely affects the amenity of residential areas would not be permitted.</p>		<p><b>Policy TR17 Accommodating Large Vehicles:</b> HGVs should not create traffic problems or adversely affect the amenity of residential areas.</p>	<p>A designated HGV route is proposed off a new junction in the eastern part of the Site to the business units on the Flying Field to the north. This would reduce the need for HGVs to pass close to the school and Local centre.</p> <p>The masterplan is based on the principle of 'Home zones'. This means that the residential areas would be designed to give priority to pedestrians though reducing speed limits to 20 mph.</p>	✓ ✓✓

Relevant Planning Policy				
<b>Sustainability Objective</b>	<b>Current Local Policies</b>	<b>Emerging Local Policies</b>	<b>Non-Statutory policies</b>	<b>Commentary</b>
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-Statutory Cherwell Local Plan 2011	
				<p>The results of the 2007 traffic noise assessment remains valid. Although noise levels from traffic are expected to increase at some locations, for most, it is considered that the change in traffic is insufficient to cause any perceptible increase in noise level. Noise levels are also expected to decrease along Camp Road and Ardley Road.</p>
				<b>Compliance</b>



## Ecology

Sustainability Objective	Relevant Planning Policies			Commentary	Compliance
	Current Local Policies	Emerging Local Policies	Non-Statutory Policies		
	<p>Oxfordshire Structure Plan</p> <p>Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p>	<p>(emerging LDF)</p> <p>Draft Core Strategy</p>	<p>Non-statutory Cherwell Local Plan 2011</p>		
<b>Conservation</b>					
<p>To determine the ecological value of the habitats in and around the site, in order to maintain and enhance biodiversity and protect natural habitats.</p>	<p><b>Policy C1 Protection of Sites of Nature Conservation Value:</b> Seek to promote the interests of nature conservation. Development which would result in damage to or loss of designated wildlife will not normally be permitted. Furthermore the Council will seek to ensure the protection of sites of local nature conservation value.</p> <p><b>Policy C2 Development of Protected Species:</b> Development which would adversely affect</p>	<p><b>Policy SD 8 Protection and Enhancement of Biodiversity and the Natural Environment:</b> Development should seek the protection and enhancement of biodiversity through:</p> <ol style="list-style-type: none"> <li>i). Providing a net gain in biodiversity by protecting, and enhancing existing resources, and by creating new resources.</li> <li>ii). Incorporating features to encourage biodiversity, and retain and where possible enhance existing features of nature conservation value within the site.</li> <li>iii). Identifying and maintaining existing ecological networks to avoid habitat</li> </ol>	<p><b>Policy EN23 Ecological Surveys:</b> Requires ecological surveys to be carried out to establish the likely impact on the nature conservation resource prior to determining an application.</p>	<p>An extended Phase I Habitat Survey for the Site was carried out in 2010. The survey found that the Site largely comprised scattered scrub; tall ruderal vegetation; scattered broadleaved and coniferous trees; standing water; amenity and coarse grassland; buildings and hard-standing. The ecology assessment concluded that the most of the habitats on the Site have little value to nature conservation.</p> <p>As a result of the Phase 1 habitat survey, further surveys for great crested newts, reptiles and bats were undertaken. The 2010 surveys found great crested newts and a number of buildings supported roosting bats.</p> <p>The Development would result in some immediate habitat loss during the demolition and construction phase. However, measures are recommended to mitigate the loss, including the replacement of hedgerows, tree planting and bat roosts.</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p>

		Relevant Planning Policies			Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	Commentary	
	<p>Oxfordshire Structure Plan</p> <p>Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p>	<p>Emerging Local Policies (emerging LDF)</p> <p>Draft Core Strategy</p>	<p>Non-Statutory Policies</p> <p>Non-statutory Cherwell Local Plan 2011</p>		
	<p>and species protected by Schedule 1, Schedule 5 and Schedule 8 of the Wildlife and Countryside Act, and by the EC Habitats Directive 1992 will not normally be permitted. The absence of any protected species must be confirmed as part of the planning application.</p>	<p>fragmentation. Ecological corridors should form an essential component of green infrastructure provision in association with new development to ensure habitat connectivity.</p> <p><b>Policy SD 9 Conservation Target Areas:</b> Where development is proposed within or adjacent to a Conservation Target Area, biodiversity surveys and a report will be required to identify constraints and opportunities for biodiversity enhancement.</p> <p><b>Policy I2 Green Infrastructure Network:</b> Seeks to protect and enhance existing sites and features of value and improving green connectivity between sites in accordance with policies on biodiversity (Policy SD 8) and conservation target areas (Policy SD 9).</p>			

Relevant Planning Policies						
Sustainability Objective	Current Local Policies		Emerging Local Policies (emerging LDF) Draft Core Strategy	Non-Statutory Policies Non-statutory Cherwell Local Plan 2011	Commentary	Compliance
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]					
<b>Enhancement of Ecology</b>						
To improve the ecological value of the site and existing habitats.	<p><b>Policy C4 Creation of New Habitats:</b> Seeks to promote the creation of new habitats.</p> <p><b>Policy H2 Upper Heyford:</b> Seeks environmental improvements and enhancement of biodiversity.</p>		<p><b>Policy EN22 Biodiversity:</b> Requires features of nature conservation to be incorporated into the development.</p> <p><b>Policy EN24 Protection of Sites and Species:</b> Seeks to promote the interests of nature conservation through development control. Proposals which would result in damage to or loss of a site of ecological or geological value will not be permitted.</p> <p><b>Policy UH2 Former RAF Upper Heyford:</b> Favours the retention and protection of healthy trees and hedgerows, together with the enhancement of biodiversity of open areas of the Site.</p> <p><b>Policy EN27 Protection of Sites and Species:</b> New habitats should be created within developments,</p>	<p>Where possible, mature trees and hedgerows would be retained and maintained. However, to compensate for the loss of habitats, the Development, once completed, would create new habitats, including surface water attenuation ponds, native hedgerow and tree planting. The masterplan shows that inter-linked green spaces would be created across the Site. These features would provide foraging and commuting habitats and benefit invertebrates, bats and birds.</p> <p>The ecology assessment concluded that providing the recommended measures are implemented, the Development would result in a net gain in benefits to the biodiversity, particularly with regard to protected species and other species at the Site.</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p>	

Relevant Planning Policies					Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	Commentary	
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-statutory Cherwell Local Plan 2011		
			particularly with respect to priority habitats or species.		
To improve the ecological value of the site and support the viability of species by linking populations and habitats.	<b>Policy C4 Creation of New Habitats</b> (see above).			As previously mentioned, the design of the masterplan incorporates a comprehensive network of green infrastructure across the Site. The connectivity of green spaces through trees, gardens, ponds and hedgerows would encourage and support biodiversity.	
<b>Planting</b>					
To ensure that the trees and shrubs that are specified contribute to the ecological value of the site.	<b>Policy C4 Creation of New Habitats</b> (see above)  <b>Policy C14 Countryside Management Projects:</b> New tree and hedgerow planting using species native to the area.  The SPD encourages careful planting of indigenous species.		<b>Policy EN22 Biodiversity</b> (see above).  <b>Policy 27 Protection of Sites and Species</b> (see above).	Mature healthy trees and hedgerows would be retained, where possible. The planting strategy seeks to provide a network of green corridors with new hedgerows and trees to be planted to create and enhance pockets of woodland and copses to the edges of the Development. New trees and hedgerows would comprise native species to provide foraging habitats, thereby encouraging biodiversity.	✓ ✓✓ ✓✓✓



## Resources

Sustainability Objective	Relevant Planning Policies			Commentary	Compliance
	Current Local Policies	Emerging Local Policies	Non-Statutory Policies		
	<p>Oxfordshire Structure Plan</p> <p>Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]</p>	<p>Emerging Local Policies (emerging LDF)</p> <p>Draft Core Strategy</p>	<p>Non-Statutory Policies</p> <p>Non-statutory Cherwell Local Plan 2011</p>		
<b>Appropriate Use of Land Resources</b>					
<p>To ensure that heritage or archeologically important features are conserved or preserved if present.</p>	<p><b>Policy C25 Development Affecting the Site or Setting of a Scheduled Ancient Monument:</b></p> <p>Development should have regard to the site or setting of a scheduled monument, archaeological sites and monuments of special local importance in order to maintain and enhance the historic character.</p> <p><b>Policy H2 Upper Heyford:</b> Seeks the conservation of heritage interests of the Site as a military base with Cold War associations.</p>	<p><b>Policy SD13 The Built Environment:</b> New development should preserve and enhance historic assets, features and areas, together with their setting to ensure that the development is sensitive to the surrounding environment.</p>	<p><b>UH1 Former RAF Upper Heyford:</b> Proposals should include the preservation of buildings and structures of the Cold War era and their setting.</p>	<p>Owing to the Cold War landscape associated with the former RAF Airbase, the Site has been designated as a Conservation Area. The Site also contains two Scheduled Monuments.</p> <p>The Development would be designed to preserve and enhance the character and appearance of the Conservation Area. The key buildings of historical importance would be retained and integrated into the Development. The buildings to be retained and demolished have been agreed with Cherwell District Council and English Heritage. To preserve the history of the buildings to be demolished, mitigation such as the recording of buildings has been recommended.</p> <p>In addition to key buildings, the 'Trident' area at the centre of the Development would be retained, together with the Old Parade Ground as two significant examples of military layouts typical of their era.</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p>

Relevant Planning Policies					
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	Commentary	Compliance
		Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy		
	The SPD requires protected and historically important buildings that make a positive contribution to the Conservation Area be sensitively integrated and the setting must be respected.			Potential for early archaeological deposits to be present on the Site has been assessed as low. However, there is the potential for archaeological deposits of the Iron Age and Roman period to exist. Owing to the historical development of the Site, the potential has been severely compromised. Given this, it has been agreed with the County Archaeologist that no evaluation or mitigation is required.	
Environmental Impact					
To increase the volume of low environmental impact materials used during construction of new developments	The SPD encourages the use of materials from sustainable sources wherever possible. Natural products are referred over synthetic ones.	<b>Policy SD5 Sustainable Construction:</b> Promotes sustainable construction methods including the use of recycled and energy efficient materials.		The aspiration of the Applicant is for the buildings to be designed to encourage the use of fewer materials during construction, and materials that are more efficient to heat and cool.  New buildings would be designed to minimise waste generation during the construction phase. This would be through the efficient use of building material, including actively reusing and recycling demolition material, where appropriate.  Low impact environmental materials would be specified wherever possible.	✓ ✓✓ ✓✓✓

Relevant Planning Policies						
Sustainability Objective	Current Local Policies		Emerging Local Policies (emerging LDF) Draft Core Strategy	Non-Statutory Policies Non-statutory Cherwell Local Plan 2011	Commentary	Compliance
	Oxfordshire Structure Plan	Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]				
To increase the % of construction timber sourced from sustainably managed and temperate sources.					The Applicant has an aspiration to achieve 100% of construction timber from sustainably managed sources (FSC).	?
<b>Locally Reclaimed Materials</b>						
To increase the proportion of locally claimed or recycled materials used in the construction of roads, pavements, public spaces and car parks.	The SPD stipulates that building materials, particularly brick and stone, should be obtained from local sources. Otherwise, consideration should be given in the specification to minimising the travel distance for materials.	<b>Policy SD5 Sustainable Construction:</b> Encourages the use or recycled materials, where appropriate.			A Site Waste Management Plan would be developed to identify and maximise opportunities to reuse and recycle demolition material.  It is envisaged that at least 30% of demolition material from the Site would be reused in during construction, wherever possible, including for the road base.	✓ ? ✓✓✓
To increase the proportion of locally sourced materials used in the construction process.	<b>Policy C28 Layout, Design and External Appearance of New Development:</b> New Development in Conservation Areas and areas of high landscape value requires the use of				The Applicant is committed to using locally sourced materials where possible. This would be reviewed as part of the detailed design and Reserved Matters applications. The Application would also look for opportunities to recycle and reuse demolition waste arising in the local area.	?

		Relevant Planning Policies			Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	Commentary	
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-statutory Cherwell Local Plan 2011		
	traditional local building materials.				
To increase the proportion of low environmental impact materials used in water supply and sewerage piping system construction.				The Applicant would review the feasibility of using low environmental impact materials for water supply and sewerage piping.	?
<b>Water Resource Planning</b>					
To develop a sustainable water efficiency strategy at a master-planning level for the whole site				Consideration has been given to minimising water consumption throughout the masterplanning process. There is a committed to installing systems that minimise water consumption, including water efficient appliances, rainwater harvesting (rainwater butts), and potentially rainwater harvesting and grey water systems for the later phases. Water minimisation measures would be implemented to achieve the prevalent Code for Sustainable Homes. These measures would help to reduce potable water demand. Furthermore, the landscape design would seek to select trees that have a low demand for water.	✓

Relevant Planning Policies						
Sustainability Objective	Current Local Policies		Emerging Local Policies (emerging LDF) Draft Core Strategy	Non-Statutory Policies Non-statutory Cherwell Local Plan 2011	Commentary	Compliance
	Oxfordshire Structure Plan	Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]				
To ensure that any development on-site does not adversely impact upon local public or private water supplies, through polluting aquifers or groundwaters	<b>Policy ENV7 Development Affecting Water Quality:</b> Development that would adversely affect the quality of surface water or groundwater bodies would not be permitted.		<b>Policy EN12 Water Quality:</b> Development that adversely affects underground water bodies would not be permitted.		The Development does not include land uses that are likely to result in significant contamination of soil, underlying groundwater and surface waters. However, fuel and oil leakages cannot be discounted in car parks or from any of the intended future commercial activities on the Site. Measures proposed to mitigate the risk to controlled waters include the incorporation of suitable interceptors, filters and silt traps.	✓ ✓✓
<b>Refuse Composting</b>						
To promote increased levels of kitchen and garden composting or landscaping					Opportunities for a reduction in the generation of household waste would be optimised through promoting recycling and composting by the end users. It is envisaged that composting facilities would be provided for all residential dwellings with gardens.  The design of the Development would comply with Cherwell District Council's recycling policies.	✓
<b>Noise Pollution</b>						
To reduce the impact of noise upon the development	<b>Policy ENV1 Development Likely to Cause Detrimental Levels of Pollution:</b> Development which is likely to cause	The SPD requires a strategy for the disposal of demolition arisings to maximise the salvage and reuse of material on-site to reduce disposal to landfill. Materials arising from demolition	<b>Policy SD5 Sustainable Construction:</b> Sustainable construction methods should include making adequate provision for the recycling of		Noise is predicted to temporarily adversely impact residents and workers within, and near to the Site during the demolition and construction phase. However, steps would be taken to minimise noise, which would form part of the Environmental Management Plan. This would include careful	✓ ✓✓

Sustainability Objective	Relevant Planning Policies			Commentary	Compliance
	Current Local Policies	Emerging Local Policies	Non-Statutory Policies		
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-statutory Cherwell Local Plan 2011	<p>detrimental levels of noise would not be permitted.</p> <p>should be recycled and reused where possible.</p> <p>waste.</p> <p>selection of modern and quiet plant and machinery, agreed working hours and traffic management measures.</p> <p>The majority of the Site is suitable for noise sensitive development such as residential properties. Once the Development is completed, sources of noise include traffic, service and delivery yards and plant. Measures to reduce noise impacts include locating plant, service and delivery yards away from residential areas, restricting delivery times and using designated bay areas.</p>	
<b>Construction Waste</b>					
To minimise the waste produced from the development going to landfill			<b>Policy UH2 Former RAF Upper Heyford:</b> Seeks to maximise recycling of inert materials arising from demolition of buildings and removal of infrastructure through on-site stockpiling and/or processing recycling of materials for reuse for the purpose of minimising the export of such material.	<p>A Site Waste Management Plan would be prepared prior to construction to identify measures and opportunities to minimise waste.</p> <p>Building material would be generated through the demolition of some of the existing buildings on the Site. Where appropriate building material would be reused on-site to minimise waste going to landfill. This would include reusing aggregates for road base.</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p>



## Business

Sustainability Objective	Relevant Planning Policy			Commentary	Compliance
	Current Local Policies	Emerging Local Policies	Non-Statutory Policies		
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-statutory Cherwell Local Plan 2011		
<b>Competitive Business</b>					
New business space should complement and enhance those businesses already in the area	<b>Policy EMP4 Employment Generating in Rural Areas:</b> Employment generating development would be permitted within an existing acceptable employment site provided that employment activities can be carried out without undue detriment to the landscape character and amenities of the settlement.		<b>Policy EMP4 Existing Employment Sites:</b> Employment generating development would be permitted providing that employment activities can be carried out without undue detriment to residential amenity, landscape character and the environment.	A range of commercial businesses, including laboratories, storage, logistics and information technology businesses operate on the Site and immediately to the north of the Site on the Flying Field. The Development would include the provision of mix of use, including: retail; general industry; storage and distribution; education and general businesses. The proposed employment mix would create additional opportunities for a combination of high skilled jobs together with entry level jobs, supporting the local economic structure and those people who are economically active.	✓ ✓✓
To promote business growth within regionally prioritised sectors	The SPD seeks employment opportunities that are compatible with the Regional Economic			A range of business would be developed which can come forward in response to market demand in terms of precise use and unit size. The type of end users is not known but it is envisaged that the plots would be especially attractive to:	✓ ✓✓

		Relevant Planning Policy			Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	Commentary	
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-statutory Cherwell Local Plan 2011		
	Development Strategy and Cherwell's Economic Development Strategy. These favour the following sectors: i). Science based industries and biomedical; ii). High technology; iii). Motor sport related, excepting those activities and uses unsuited to the location; iv). Business start ups and expansion of local firms; and v). Home working.			i). Research and development; ii). Science based businesses; and iii). Storage and distribution. It is envisaged that the dwellings would be designed to accommodate both living and working environments.	
To attract inward investment from businesses and organisations from outside the immediate area to increase economic	The SPD seeks to achieve a range of employment opportunities, including small businesses to aid local investment.			Business opportunities would be created which would help to create new jobs for the local residents and attract inward investment. The socio-economic assessment for the Development estimated that an additional 257 Full Time Equivalent (FTE) jobs would be created. This would be particularly important since unemployment across the District has increased since 2008.	✓ ✓✓

Sustainability Objective	Relevant Planning Policy			Commentary	Compliance
	Current Local Policies	Emerging Local Policies	Non-Statutory Policies		
wellbeing.	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-statutory Cherwell Local Plan 2011	The Development would also provide long-term security for the local economy compared to current baseline where businesses operate under temporary planning permissions.	
<b>Business Opportunities</b>					
To improve the connectivity and communication between different businesses to enhance viability				The Site already supports active businesses and would also introduce new employment uses. Development would facilitate and encourage inward investment to the local area. It is envisaged that the business. The type of end users is not known at this stage but it is envisaged that the plots would be especially attractive to: research and development; science based businesses; and storage and distribution type of business. These businesses, as well as the existing business to the north Flying Field area, are likely to be interconnected which would help to improve enhance viability	?

Relevant Planning Policy					
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	Commentary	Compliance
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-statutory Cherwell Local Plan 2011		
<b>Employment</b>					
To create additional permanent jobs within the local area	The SPD promotes employment opportunities that meet the needs of the residents and the number should remain approximately in balance with the economic population. This would maximise the opportunities for residents to work close to where they live.	<p><b>Policy E1 Employment Development:</b> Seeks to provide employment uses which are, or would be accessible to the existing and proposed labour supply.</p> <p><b>Policy RA4 Directing Employment in the Rural Areas:</b> Employment in rural areas should meet an identified local need.</p>	<p><b>Policy UH1 Former RAF Upper Heyford:</b> Seeks a range of employment opportunities to be created which are comparable to the anticipated economically active residents.</p>	<p>At present, the Site is occupied by a range of commercial businesses. Existing businesses, in total, as of July 2008, provided employment for approximately 914 FTE people. The car storage and logistics company QEK Global Solutions is the largest employer existing on the Site, which have approximately 500 employees.</p> <p>Most of the buildings in existing employment use would be retained as part of the Development. It has been estimated that a net total of 285 FTE jobs would be generated locally by the Development during the demolition and construction phase. Once completed, it has been estimated that the Development would generate a net total of 257 FTE positions at local level, which is based on direct, indirect and induced effects.</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p>
To ensure that the development contributes to regeneration initiatives				<p>Although the Site already supports active businesses, many of them operate under temporary planning permissions. There are also many buildings that are currently disused and / or in a poor state of repair. Development would facilitate the regeneration of the Site and encourage inward investment to the local area. Consequently the regeneration of the Site would improve the living and working environment, whilst ensuring the long-</p>	<p>✓</p>

		Relevant Planning Policy			Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory Policies	Commentary	
	Oxfordshire Structure Plan Cherwell Local Plan 1996 [CLP] RAF Upper Heyford Revised Comprehensive Planning Brief [SPD]	(emerging LDF) Draft Core Strategy	Non-statutory Cherwell Local Plan 2011		
					term maintenance of the historical assets on, and to the north of the Site within the Flying Field area.
Business Types					
To provide space for all business types, both start up, and expanding, to maintain a diverse and flexible business sector within the area, and provide for facilities for future growth.	The SPD encourages a range of employment opportunities, including live/work units, providing the units aid development of small businesses.	<b>Policy E1 Employment Development:</b> As a general principle, existing employment land and buildings for Land Use Class B would be protected.		A range of commercial and business space would be provided in addition to the existing businesses. The existing hangers which are used for storage and distribution are inherently flexible spaces. These hangers could be refurbished to accommodate a range of uses. The fit out for these buildings would ensure easy of refurbishment and adaptation in the future.	✓ ✓✓ ✓✓✓



## Buildings

Relevant Planning Policies					Compliance
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary	
	<p>Oxfordshire Structure Plan</p> <p>Saved policies from adopted Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [RCPB]</p>	<p>(emerging LDF)</p> <p>Draft Core Strategy (CS)</p>	<p>Non-statutory Cherwell Local Plan 2011</p>		
<b>Buildings and Sustainable Construction</b>					
<p>To ensure individual buildings underpin the sustainability of the development</p>	<p><b>Policy C28 Layout, Design and External Appearance of New Development:</b> The layout, design and appearance, including the finish of materials are sympathetic to the local environment.</p> <p><b>Policy C30 Design of New Residential Development:</b> Seeks to ensure that new housing development is compatible with the appearance, character, layout, scale and density of existing dwellings in the vicinity. The</p>	<p><b>Policy SD5 Sustainable Construction:</b> Requires new development to achieve the following:</p> <ul style="list-style-type: none"> <li>i). All new homes to meet Code for Sustainable Homes Level 3 with immediate effect, Code Level 4 from 2012 and Code Level 6 from 2016;</li> <li>i). On larger sites where Combined Heat and Power/District Heating schemes are feasible, Code Level 4 is required with immediate effect; and</li> <li>ii). All new non residential development over 1,000m<sup>2</sup> is required to meet BREEAM</li> </ul>	<p><b>Policy D9 Energy Efficient Design:</b> Seeks to ensure that energy efficient design principles are incorporated by means of:</p> <ul style="list-style-type: none"> <li>i). Minimising energy loss through appropriate urban form, siting of buildings and soft landscaping;</li> <li>ii). Maximising natural (passive) solar heating natural lighting and natural ventilation by means of appropriate layout and orientation;</li> <li>iii). Minimising energy consumption by means of building design;</li> </ul>	<p>New dwellings would be constructed to current Building Regulation Standards and to achieve the required Code for Sustainable Home level, with a minimum of Code level 4 being delivered. Where applicable, new non-residential buildings would be designed to meet BREEAM 'Very Good'.</p> <p>New buildings would be designed and constructed with low energy demands. The design of the masterplan illustrates that the Development could maximise opportunities for solar gain. Building orientation and façade design would aim to maximise natural daylight whilst controlling solar gain as well as minimising the effect of overshadowing on gardens and principal living rooms.</p> <p>Build for Life standards have been taken into consideration during the masterplan design and Secure by Design standards are also aspired to. The proposals aim of at least 10% of the units which</p>	<p>✓</p> <p>✓✓</p> <p>✓✓✓</p>

Relevant Planning Policies				
Sustainability Objective	Current Local Policies	Emerging Local Policies	Non-Statutory policies	Commentary
		<p>Oxfordshire Structure Plan</p> <p>Saved policies from adopted Cherwell Local Plan 1996 [CLP]</p> <p>RAF Upper Heyford Revised Comprehensive Planning Brief [RCPB]</p>	<p>(emerging LDF)</p> <p>Draft Core Strategy (CS)</p>	
	<p>provision should also be made within new housing development to provide for standards of amenity and privacy acceptable to the local planning authority.</p> <p>In line with the SPD, the design of buildings should follow current best practice but should allow for the introduction of future sustainable technologies.</p>	<p>'Very Good'.</p> <p>All development proposals should demonstrate consideration of resource efficiency (including water and energy) and the reduction of waste and pollution.</p>	<p>iv). Ensuring that the aesthetic implications of the green technology proposed are appropriate to the particular context of the proposals; and</p> <p>v). Ensuring that all residential development, including flats has access to some private or semi-private outdoor space.</p>	<p>are wheelchair accessible, with the majority of the new build units complying with Lifetime Homes standards.</p> <p>The scheme provides dwellings with a high level of internal amenity, for example, space standards, views from rooms, flexibility of rooms to accommodate different layouts, maximising internal daylighting and sunlight penetration, and minimising noise nuisance particularly between attached dwellings and apartments and also between internal rooms.</p>

Compliance





## Appendix B Energy Strategy Information



## Energy Strategy

### Introduction

The following sets out the strategy to be adopted at Upper Heyford to produce a development and infrastructure that will reduce the existing (potential) energy consumption/carbon emissions, as well as set out a framework for the new buildings.

The table below indicates the potential Carbon Emissions of the fully developed Upper Heyford Benchmark scheme according to CIBSE TM 46 – Energy Benchmarks, based on the development areas.

Essentially, 3,400 tonnes of CO<sub>2</sub> are generated by the regulated energy use of the development. This is increased to 7,791 tonnes when considering the total energy use of regulated and non-regulated consumption.

CATEGORY	GROSS AREA	ESTIMATED EMISSIONS/ENERGY CONSUMPTION BASED ON BENCHMARKS									
		All Emissions					Regulated Emissions				
		Electricity	Heat	Electricity	Gas	TOTAL	Electricity	Heat	Electricity	Gas	TOTAL
		KWhrs	KWhrs	kgCO <sup>2</sup> /m <sub>2</sub>	kgCO <sup>2</sup> /m <sub>2</sub>	kgCO <sup>2</sup> /m <sub>2</sub>	KWhrs	KWhrs	kgCO <sup>2</sup> /m <sub>2</sub>	kgCO <sup>2</sup> /m <sub>2</sub>	kgCO <sup>2</sup> /m <sub>2</sub>
OFFICES	5821	442,396	558,816	186,691	108,410	295,101	349,260	449,381	147,388	87,180	234,568
HOME/STUDENT ACCOMODATION	5682	272,736	1,363,680	115,095	264,554	379,649	113,640	1,045,488	47,956	202,825	250,781
RETAIL	3113	1,121,925	287,641	473,452	55,802	529,255	946,352	82,183	399,361	15,944	415,304
INDUSTRIAL	20833	583,324	2,999,952	246,163	581,991	828,153	333,328	2,166,632	140,664	420,327	560,991
MISC SUPPORT	5880	103,488	531,552	43,672	103,121	146,793	84,672	385,728	35,732	74,831	110,563
RESIDENTIAL	139750	5,590,000	16,770,000	2,358,980	3,253,380	5,612,360	1,453,400	6,260,800	613,335	1,214,595	1,827,930
<b>TOTALS</b>		8,113,869	22,511,641	3,424,053	4,367,258	7,791,311			1,384,435	2,015,701	3,400,136

The ratio of Gross External to Net Internal areas has been taken as 0.8.

Primary School energy use has not been assessed in the above.

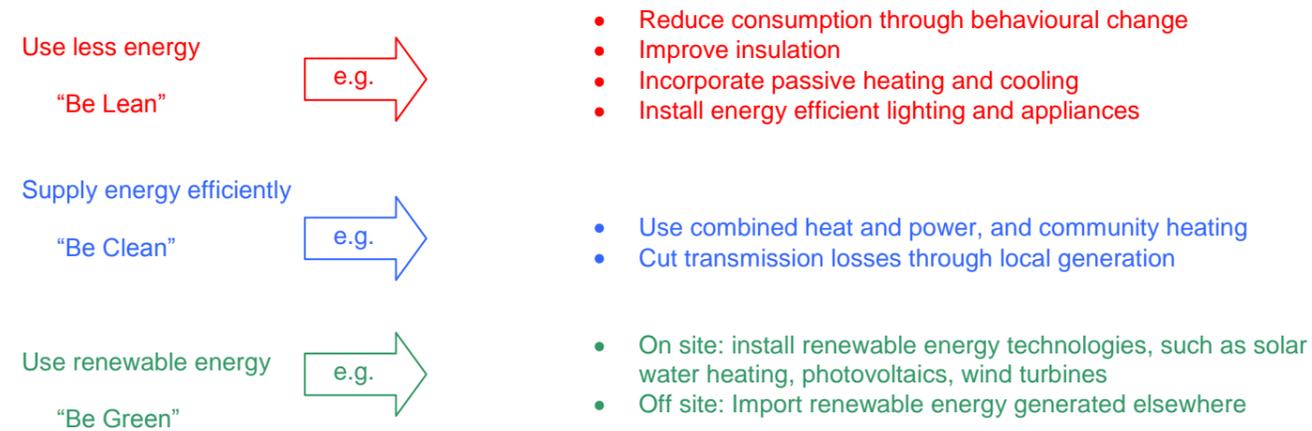
The residential element of this has been based on a typical dwelling having an internal area of 104m<sup>2</sup> (nett).

## Key Drivers and the Energy Hierarchy

Over the last 10 years a number of key legislative documents have been published that have resulted in a requirement for developments such as Upper Heyford to focus on their energy requirements. These include;

- Kyoto Protocol
- European Union Energy Performance of Buildings Directive,
- Climate Change Levy
- Planning Policy Statement 1
- Part L of the Building Regulations
- BREEAM and the Code for Sustainable Homes

The Energy Hierarchy shown below has been broadly accepted as a blueprint for the evolution of a good design;



The following key principles are anticipated to form part of the Upper Heyford project in order to assist the evolving scheme to meet these legislative drivers;

- a) The scheme shall be designed with an infrastructure that shall allow the development flexibility in how it responds to current and future alterations to energy and carbon emissions
- b) Existing buildings are to be retained, and enhanced where practical, rather than demolished and replaced
- c) A site wide “green grid” would allow all of the buildings within the scheme (and potentially those surrounding the area also) to use energy generated cleanly and efficiently at decentralized energy centres.
- d) Connections to surrounding schemes of a similar nature shall be actively promoted.
- e) A design framework shall be established for the site, based on an “Energy Matrix” which will set targets for the designers of each individual plot within the scheme. This shall be reviewed as legislation and targets evolve. This Energy Matrix shall be drawn from the following sections.

## Use Less Energy

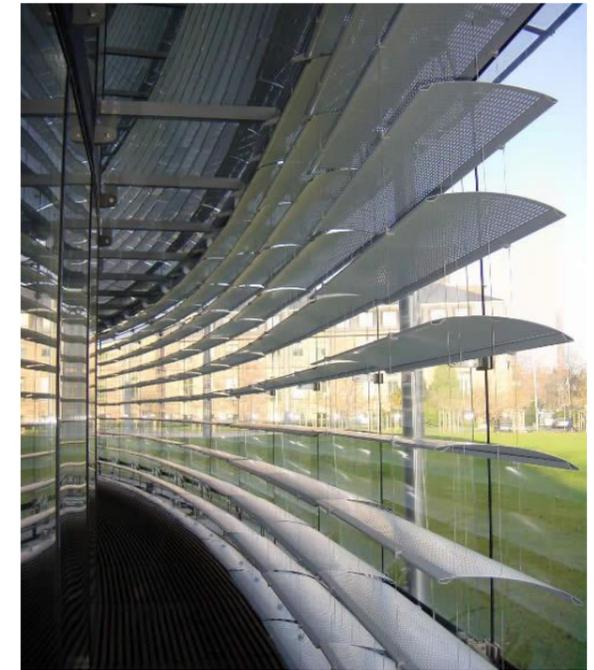
The first phase of the works to be undertaken at Upper Heyford, shall comprise of the refurbishment of 313 existing buildings for re-use as dwellings.

The buildings refurbishments shall include the provision of new double glazing, insulation and low energy lighting. Additionally, the existing hot water and central air heating systems shall be replaced with a modern system making use of either condensing boilers or domestic Micro CHP units.

Overall it is anticipated that the refurbished dwellings shall be of a standard in line with the current building regulations requirements – ie an improvement comfortably exceeding 25% in energy efficiency. This could equate to a 300,000kg CO<sub>2</sub> reduction in the current regulated emissions from this portion of Upper Heyford.

The remaining phases involve the construction of another 762 new dwellings. These will be designed to comply with the Building Standards prevalent at the time of their construction. These standards for new construction are continually being upgraded as highlighted in the table below;

Date (06 April or 01 October)	Per cent improvement over the 2006 standard	Code for Sustainable Homes level
2010	25%	3
2013	44%	4
2016	Net zero carbon emissions	6



Typical aspects of energy efficiency that will be considered when designing the new housing include;

### Building Form

- To reduce wind impact
- Minimise surface area
- Promote natural ventilation
- Passive cooling
- Daylight
- Shading

### Thermal Envelope

- Glazing properties (solar and thermal)
- Roof, Wall and floor U-Values
- Air leakage
- Thermal mass

### Building Systems

- Heat Recovery
- Condensing Boilers
- Variable speed drives
- Controls
- Low energy lighting

**It is anticipated that the designs for new dwellings shall be in line with either the CfSH levels 3 or 4. Energy saving technologies contributing in excess of 20% of the overall improvements.**

## Use Energy Efficiently

While the detail of design is yet to be established, it is recognised that in line with the above aspects of low energy design, it is important that what energy is required is generated, and distributed, in as efficient a method as possible.

Therefore it is important that the new sections of Upper Heyford adopt technologies such as;

- District Systems (or Decentralised networks)
- Community Heating
- CHP and Trigenation

**Overall, a combination of District Heating and Community Heating systems can readily contribute to energy savings of exceeding 10%.**

### District and Community Systems

Decentralised, community or district heating systems use a central boiler, Combined Heat and Power or Trigenation plant to supply energy to the surrounding area via insulated water mains and private wire networks. The advantages of modern decentralised systems are:

- Having one central boiler plant provides greater flexibility to change fuel sources in the future, e.g. if gas becomes expensive and biomass fuel sources become cheaper and more widely available.
- Central systems can reduce maintenance costs (and legal bills resulting from access problems) particularly for housing associations or local authorities who are obliged to undertake annual inspections of individual gas appliances.
- Related to the point above, the systems are safer as they avoid combustion appliances (ie gas) in the home.
- The use of central plant can allow better matching of heat generation to demand resulting in general improvements in efficiency.
- It allows bulk purchase of fuel, potentially leading to reduced running costs for occupants.
- The heat exchanger unit, which is similar to a conventional wall hung boiler in size does not have to be mounted on an external wall as there is no flue.

A Management Company (such as an Energy Services Company or ESCo) already exist at Upper Heyford who can manage and operate the scheme including billing tenants and homeowners for the energy used.

It is anticipated that the incorporation of such systems at Upper Heyford can form the basis of the energy strategy. This would be either in the establishment of an energy centre in the higher density development area to the north of Camp Road, or by connection to one of the surrounding networks.

### Adjacent Decentralised Energy Networks

Waterman have also undertaken a preliminary review of the existing utilities in the area of Upper Heyford to verify that they are appropriate for the proposed new use. While the results of this study are positive, no decentralised district energy schemes currently exist in the vicinity to which there may be a potential to link. It has been discovered however that a recent planning application is being reviewed for a site in Ardley for a waste incineration plant. A connection to this may offer the potential to generate heat and/or power that could be used at Upper Heyford.

Such a district network could connect the more densely developed areas to the North of Camp Road to the retail/shop areas off Camp Road, and the Primary School and adjacent community facilities.

Typically, a district system such as indicated above can lead to efficiencies in energy use, as well as plant requirements.

### Community Heating

Regardless of the application of the above, Community Heating systems are appropriate for of the apartment blocks, and can readily be connected to any future District Networks.



## CHP and Trigeneration

Combined Heat and Power (CHP), also known as cogeneration, is the simultaneous generation of thermal and electrical energy from a single stream of fuel. In the case of Biomass CHP, this source is a biomass fuel. More often gas is used as the fuel.

A typical CHP plant consists of a reciprocating internal combustion engine driving a generator to produce electrical power. The excess heat liberated in combustion is rejected via heat exchangers as usable heat, rather than being rejected to atmosphere. It is the ability to recover this heat, yielding efficiency gains, together with the differential in fuel price between raw fuels and processed electricity, which makes CHP schemes an attractive proposition.

Tri-generation is the term used to describe the arrangement of heat output from CHP linked to absorption chillers to produce cooling, in addition to the thermal and electrical energy.

CHP and Trigeneration offer unique benefits to consumers, in that they improve the efficiency with which energy is generated.

A preliminary review of the application of a CHP system has been undertaken. While it is not anticipated that there is likely to be a cooling demand appropriate for Trigeneration at Upper Heyford, CHP can contribute to significant energy efficiencies on a small or large scale. As the detail of the design of the new development evolves, separate more detailed studies shall be carried out into the viability of the application of CHP either;

- on a unit by unit “micro” basis within the new residential units (see image adjacent), and/or
- as part of a decentralised energy network as described above.



## Use Renewable Energy

Seven Renewables are supported by the Carbon Trust and considered to be the most likely options for developers in the UK, as they are commercially available and technically proven, the technologies are as follows:

- 1) Wind generators
- 2) Photovoltaic's
- 3) Solar water heating
- 4) Biomass heating using wood, woodchip, pellets and some industrial waste.
- 5) Biomass CHP
- 6) GSHP (Ground source heat pumps) for heating
- 7) Ground sourced cooling

In addition to the above, Waste Incineration, fuel cells and biomass CHP/CCHP are emerging technologies that are also potentially appropriate for the scheme.

The requirements of the emerging Part L improvements are such that the future legislation is likely to focus more fully on the residual CO<sub>2</sub> values, rather than the percentage of renewable energy used.

It is however anticipated that a combination of technologies, including the following can potentially be used across the Upper Heyford scheme;

- Biomass (includes Heat and Power from the Ardley Waste incineration plant)
- Wind generation (on a small scale)
- Photovoltaics
- Solar Thermal





