

Environmental Appraisal
Volume I

16. Sustainability

16. SUSTAINABILITY

16.1 Introduction

As part of the Government Estate, AWE has a commitment to adopt the principles of sustainability in all new developments. These principles are adopted from Government policy on sustainability, with the aim of achieving sustainable development, i.e. "development which meets the needs of the present, without compromising the ability of future generations to meet their own needs" (Brundtland Commission, 1987).

This chapter of the Environmental Appraisal (EA) describes how the proposed High Explosives Fabrication Facility (HEFF) project has adopted these principles of Sustainability. This chapter has been written by URS Corporation Limited.

16.2 Assessment Methodology

This Chapter identifies the measures to be adopted within the proposals to meet the principles of sustainability. The MOD Sustainability and Environmental Appraisal Tool Handbook, December 2006 (Ref 16-1) (referred to as the 'MOD Sustainability Handbook') has been used to identify the relevant sustainability themes which have been considered in this Chapter. A Sustainability Appraisal has been completed for this Proposed Development in accordance with the MOD Sustainability Handbook, the results of which have fed into the development of the scheme and this EA.

16.3 Policy Context

16.3.1 National Policies and Legislation

16.3.1.1 Government Strategies

In the UK, the concept and values of Sustainable Development have been translated into the UK Sustainable Development Strategy (*A Better Quality of Life, a Strategy for Sustainable Development in the UK* (DETR, May 1999)). This Strategy has been developed around the following four objectives:

- social progress which recognises the needs of everyone;
- prudent use of natural resources; and
- effective protection of the environment;
- maintenance of high and stable levels of economic growth and employment.

The UK Sustainable Strategy defines sustainability as the meeting of these four objectives.

The New UK Sustainable Development Strategy was released March 2005, as a result of the 5 year review of *A Better Quality of Life* 1999. The new strategy "Securing the future: delivering UK sustainable development strategy" aims to build on the 1999 Strategy but have stronger international and societal dimensions.

There are four agreed priority areas that are highlighted for immediate action. These are:

- Sustainable consumption and production;
- Climate change and energy;
- Natural Resource Protection and Environmental Enhancement; and
- Sustainable Communities.

Table 16-1: Sustainability issues raised in Draft South East Plan

Topic	Policy	Detail
Regional Economy	RE2	In the preparation of Local Development Documents, local authorities will assess the employment needs of the local economy and workforce. Policies should provide for a range of sites and premises based on the following criteria:
	I	Locations that are accessible to the existing and proposed labour supply
	II	Efficient use of existing and underused sites and premises
	III	Locations which intensify the use of existing sites
	IV	Focus on urban areas
	V	Promotion of mixed use development where appropriate and subject to replacement of land and premises lost to non-employment uses
	VI	Locations that promote the use of public transport.
Sustainable Resource Management	NRM1	Sustainable Water Resources and River Quality Management – in preparing Local Development Documents, and determining planning applications, local authorities should:... iii) Require development that would use significant quantities of water to incorporate measures to achieve high levels of water efficiency, and reflect current best practice including BREEAM 'very good' and increasingly 'excellent' standards and, where appropriate, sustainable drainage solutions where these are consistent with protection of groundwater quality.
	NRM3	Sustainable Flood Risk Management – In the preparation of Local Development Documents and considering planning applications, local authorities, in conjunction with the Environment Agency, should also:... ii) require incorporation and management of Sustainable Drainage Systems (SuDS); other water retention and flood storage measures to minimise direct surface run-off, unless there are practical or environmental reasons for not doing so.
Energy Efficiency and Renewable Energy	EN1	Development Design for Energy Efficiency and Renewable Energy - Local Development Documents should encourage the incorporation of high standards of energy efficiency in all developments, subject to economic viability considerations. This will be achieved through design, layout and orientation. Local authorities should use design briefs and/or supplementary planning documents to promote

Topic	Policy	Detail
		<ul style="list-style-type: none"> • Encouraging development design for energy efficiency and renewable energy. Local authorities should also encourage the use of energy efficient materials and technologies, by using all tools at their disposal. <p>A proactive approach towards the implementation of this policy may involve:</p> <ul style="list-style-type: none"> • Encouraging developers to submit an assessment of a development's energy demand and provide at least 10% of the development's energy demand from renewable sources for housing schemes of over 10 dwellings and commercial schemes of over 1,000 m². • Attainment of high energy efficiency ratings in all new developments, where appropriate, through the use of best practice guidance such as BREEAM and NHER • Incorporation of renewable energy sources, including, in particular, passive solar design, solar water heating, photovoltaics, ground source heat pumps, and, in larger scale developments, wind and biomass generated energy • Active promotion of energy efficiency and use of renewable energy sources where opportunities arise by virtue of the scale of new development, including the regional growth areas.

		<ul style="list-style-type: none"> • Policy EN8: Renewable Energy and Energy Conservation: <ul style="list-style-type: none"> - All forms of development will maximise the opportunity to incorporate current best practice in energy efficiency and energy conservation into their design, layout and orientation. - Generation of energy from renewable resources should be considered, and implemented wherever feasible, in all development proposals, provided that adverse impacts on landscape, biodiversity and local amenity are avoided.
		<ul style="list-style-type: none"> • Policy W4: Providing for Waste in New Development: Development proposals should include provision for the minimisation, re-use and recycling of water, minimising the pollution potential of unavoidable waste, and its safe disposal; the use of recycled material in construction where appropriate; and facilities within individual or groups of properties or premises for the source separation and storage of different types of waste for collection.

16.3.3.2 Hampshire Structure Plan

The Hampshire Structure Plan, within which Basingstoke and Deane Borough Council falls, has two specific policies relevant to Sustainability:-

- Policy E3: When considering development proposals and in preparation of local plans, local planning authorities will take into account the contribution that the relationship between land uses and transportation can make to reducing the demand for energy; and
- Policy E4: In considering the siting, design, layout and orientation of new development, local planning authorities will take account of the need to maximise energy efficiency.

Topic	Policy	Detail
Waste Management	W2	<ul style="list-style-type: none"> Sustainable Design, Construction and Demolition – Local Development Documents will require development design, construction and demolition which minimises waste production and associated impacts through the re-use of construction and demolition materials, and the promotion of layouts and design that provides adequate space to facilitate storage, re-use, recycling and composting.

16.3.3 The West Berkshire District Plan

The West Berkshire District Local Plan (adopted June 2002) is currently saved until September 2007 (it will be replaced by Development Plan Documents, that will conform with PPSs and South East Plan). There is draft Supplementary Planning Guidance (SPG) to this local plan entitled "Design and Sustainability – A Developer's Guide". This is to be re-established as a Supplementary Planning Document (SPD), under the new Local Development Framework, and will be issued for consultation. The role of this document is described as to "serve as a checklist for ensuring well designed and sustainable developments", and the following topics are included: Siting and Layout, Locality, Mixed Uses, Accessibility/Public Transport, Building Design, Amenity/Living Conditions, Green Spaces/Landscaping, and Safety and Resources.

16.3.3 Local Planning Policies

16.3.3.1 The Berkshire Structure Plan

Under the new Planning and Compulsory Purchase Act, Structure Plans will gradually be replaced by Regional Spatial Strategies (as referred to above). However, the existing Structure Plans are still relevant at this time.

The Berkshire Structure Plan, within which West Berkshire District Council falls, has three specific policies relevant to Sustainability:-

- Policy EN7: Development and Water Resources: "... Where appropriate, new development will include techniques to improve efficiency of the use of water."

16.3.3.4 The Basingstoke and Deane Local Plan

The Basingstoke and Deane Borough Local Plan (Revised Deposit Draft 1996 – 2016) has two specific policies relevant to Sustainability:

- Specific to the proposed project, it is proposed to reduce energy demand through energy efficient design. A feasibility study for renewable energy technologies is under way.

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The mitigation measures to minimise impact on local air quality are described in Chapter 10: Air Quality of this EA. This includes control of dust generation during construction, as defined in the Code of Construction Practice, which will be adopted for all construction activities associated with the Proposed Development. The transport measures for both construction and operation, as described below and in the transport chapter, would also contribute to reducing the impact on local air quality.

16.4.2 Travel and Transport

The sustainability objectives defined in the MOD Sustainability Handbook under this theme are as follows:

- To promote a transport system that provides choice, minimises environmental harm and reduces congestion;
- To reduce the need to travel, especially by road;
- To improve the fuel efficiency of vehicles and encourage opportunities for safe walking and cycling;
- To reduce noise, vibration and fumes from transport and prevent habitat loss for new transport infrastructure.

As explained in Chapter 9: Transport of this EA, the AWE Travel Plan has been produced, to address staff movements to and from work and on-site. This includes:

- Passenger transport initiatives;
- Cycling and walking initiatives;
- A car share scheme;
- Initiatives to reduce travel;
- Initiatives to communicate travel options to the operational workforce; and
- Specific construction logistics initiatives.

The Travel Plan aims to reduce the number of single occupancy vehicular trips from 82% to 65% at Aldermaston.

The AWE Construction Logistics Team will organise and control construction worker movement and construction material and plant deliveries. The main aims are to:

- Avoid congestion on the local road infrastructure;
- Reduce the impact on the local community;
- Reduce the impact on AWE's core business or staff; and
- Implement effective programme delivery.

16.4.3 Energy Consumption

The sustainability objectives defined in the MOD Sustainability Handbook under this theme are as follows:

- To improve energy efficiency;
- To promote development and use of renewable energy;
- To ensure the prolonged availability of finite fossil fuels; and
- To explore secure, diverse supplies of energy at competitive prices and generated in environmentally acceptable ways.

As described under the first sustainability theme 'Climate Change and Air Quality', AWE has prepared an Energy Strategy to support the implementation of the Site Development Context Plan. This explains the principles of energy management which will be adopted for the design, construction and operation of existing, refurbished and new buildings and infrastructure.

16.4.6 Waste

The sustainability objectives defined in the MOD Sustainability Handbook under this theme are as follows:-

- To reduce the spread of persistent or diffuse pollutants and improve the management of waste;
- To reduce waste by careful choice of raw materials and promoting reuse, recovery and recycling; and
- To reduce the production of hazardous waste and ensure that it is treated responsibly and safely.

Chapter 11: Noise and Vibration of this EA has identified mitigation measures relevant to the Proposed Development to minimise the noise impact. This includes the adoption of noise control measures during construction, as described in the AWE Code of Construction Practice.

16.4.5 Water and Drainage

The sustainability objectives defined in the MOD Sustainability Handbook under this theme are as follows:-

- To safeguard fresh water resources and water quality at a time when pressures from climate change and demand are likely to increase;
- To safeguard the health and productivity of inland waters and seas;
- To maintain and enhance marine and coastal water quality;
- To reduce the threat of persistent or diffuse pollutants to the environment and human health;
- To prevent injury, distress or property damage caused by flooding; and
- To reuse and refurbish existing land and structures before building new facilities;

The sustainability objectives defined in the MOD Sustainability Handbook under this theme are as follows:-

- To reuse and refurbish existing land and structures before building new facilities;

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- To concentrate new development in existing 'brownfield' or urban areas rather than 'greenfield' or rural sites;

To ensure land is managed effectively and efficiently and to the highest practicable environmental standards;

- To maximise efficient use of construction materials and promote recycling or reuse of demolition waste; and

- To design sustainability features into buildings from the earliest opportunity.

The opportunity for procuring materials from sustainable resources and re-using materials from other sites within AWE prior to disposal will be explored (e.g. aggregates).

16.4.8 Geology and Soils

The sustainability objectives defined in the MOD Sustainability Handbook under this theme are as follows:

- To minimise loss of our soil resource and bring damaged land back into use;
- To maintain and enhance soil quality and protect its function as a substrate for providing food and supporting ecosystems;
- To preserve ground stability and protect features of geological importance; and
- To minimise risks to health and wildlife from contaminated land.

Chapter 7: Ground Conditions of this EA includes measures to minimise the spread of contamination. This includes control measures during construction, as defined in the Code of Construction Practice.

Piling will not be used on the construction site although temporary sheet piling may be used on site. This will have little effect on the geology and soils.

Any soil removed will be re-used for landscaping. Site investigations have been carried out as a mitigation measure. No significant contamination has been discovered. Boreholes located in close proximity to the site continue to monitor groundwater.

No impact on land quality is anticipated. All hazardous substances will be stored appropriately with appropriate mitigation measures available locally in the event of a spillage.

16.4.9 Biodiversity and Nature Conservation

The sustainability objectives defined in the MOD Sustainability Handbook under this theme are as follows:

- To reverse trends of damage to species, habitats and ecosystems, avoid reductions in biodiversity and identify enhancement opportunities; and

- To work with others to combat global challenges of threats to biodiversity, oceans and forests and to educate people about the value of ecosystems.

Chapter 15: Ecology of this EA includes measures to minimise the impact on ecology. This includes control measures during construction, as defined in the EMP and CoCP.

The AWE Landscape Strategy includes an increase in native planting mix at AWE Aldermaston, both within and outside of the HEFF Project Area.

Ecology surveys have been undertaken that indicate that no species are threatened as a result of the Proposed Development.

Trees will be felled outside of the bird breeding season and, for every tree removed, at least three will be planted.

16.4.10 Archaeology and Historic Environment

The sustainability objectives defined in the MOD Sustainability Handbook under this theme are as follows:

- To protect all aspects of the historic environment for its own sake and as a central part of our cultural heritage; and
- To ensure appropriate management systems are in place to maintain and enhance important archaeological sites, historic landscapes and buildings.

Chapter 14: Archaeology and Cultural Heritage of this EA includes measures to minimise the impact of the Proposed Development on heritage features.

A desk top study and an intrusive investigation have confirmed that there are no known archaeological remains within the construction site boundary. However, a watching brief will be undertaken during construction. This includes control measures during construction, as defined in the CoCP.

A Pre-Construction Environment, Health and Safety Plan is in place outlining the AWE Health and Safety arrangements.

AWE has very stringent health, safety and security policies and procedures which will be implemented in the delivery of the proposed project. This includes the establishment of a security enclave for the duration of the construction period.

With regard to the operational phase of the Proposed Development, a Safety Case will be produced and safety procedures established. The design will improve safety conditions through the use of new technology and better procedural control. As a result of the Proposed Development, working conditions will improve overall for all of the employees.

16.4.11 Landscape

The sustainability objectives defined in the MOD Sustainability Handbook under this theme are as follows:

- To ensure that development reflects and respects the character of rural urban landscapes and avoids visual intrusion;
- To reverse trends of damage to natural landscapes and to maintain and enhance landscape character;
- To protect features of historical, archaeological and cultural value in both towns and countryside; and
- To maintain the stability of coastal landforms and features.

The construction will impact the landscape for its duration. Cranes may have a short term visual impact on the surrounding area.

The new buildings will be designed to modern standards and will be in keeping with future developments and the existing industrial character of the site. Screening in the form of additional trees will be incorporated into the landscaping where possible. Chapter 13: Landscape and Visual of this EA highlights the landscaping strategy to be employed for the Proposed Development which will lead to a number of beneficial impacts.

16.4.12 Health, Safety and Crime

The sustainability objectives defined in the MOD Sustainability Handbook under this theme are as follows:

- To reduce crime and the fear of crime;
- To promote better health and healthcare provision;
- To reduce the incidence of work days lost due to illness, injury and fatality; and

To reduce work-related stress, excessive hours and improve the work/life balance.

The new facility is within the AWE site boundary and the public will therefore be prevented from straying into the construction enclave area. Health and safety induction and regular briefings will be carried out throughout the construction phase for all workers attending the site.

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16.4.13 Communities and Social Values

The sustainability objectives defined in the MOD Sustainability Handbook under this theme are as follows:-

- To make it easier for people to become involved in their communities and be recognised as a good neighbour;
- To promote a good quality of life for all those who work and live on the site;
- To address problems of poverty and social inclusion and promote diversity and equality of opportunity across race, gender, ability, age and religion;

- To promote a collaborative approach to tackle Sustainable Development issues and strengthen their profile within the organisation and the wider community;
- To involve communities in decision-making wherever possible; and
- To minimise disruption to communities from development and training activities.

AWE has an established procedure for liaising with the local community. A local liaison committee is held every three months at which AWE updates local members of the community on its upcoming plans. This liaison will continue through the delivery of the Proposed Development.

Specifically, the potential impact of communities during the construction will be minimised through the adoption of measures defined in the Code of Construction Practice.

16.4.14 Infrastructure and Amenities

The sustainability objectives defined in the MOD Sustainability Handbook under this theme are as follows:

- To revitalise degraded infrastructure before attempting new construction and development projects;
- To meet people's social, recreational and cultural needs by providing better housing and access to services and facilities; and
- To encourage public access to the MOD estate wherever this can be integrated with safety, operational and conservation considerations.

The Proposed Facility seeks to consolidate all current fabrication facilities into one purpose built location.

There will be an increase in the number of workers during the construction period who are likely to spend a proportion of their income on local services. The Local Planning Authority will be made aware of this through the Notice Of Proposed Development (NOPD).

There will be an increase of 12 personnel travelling to AWE Aldermaston (transferred from AWE Burghfield).

16.4.15 Economy and Employment

The sustainability objectives defined in the MOD Sustainability Handbook under this theme are as follows:

- To do more with less and make efficient use of resources;
- To promote a stable, diverse and competitive economy, and fair and open trade, whilst respecting the environment;
- Producers, consumers and the supply chain to work together to tackle sustainability challenges;

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