1. INTRODUCTION

1.1 Background

The Ministry of Defence (MoD) hereafter referred to as 'the Applicant' is seeking detailed planning permission for the redevelopment of part of the Atomic Weapons Establishment (AWE) site at Aldermaston, Berkshire. Detailed planning permission is being sought for a replacement hydrodynamics research facility, hereafter referred to as the 'Proposed Development'. The Proposed Development, known as Hydrus, will provide a research facility with a Support Building and associated Electrical Substation. Included within this planning application will be a landscaping strategy, a Sustainable Drainage System (SuDS) and temporary construction related infrastructure such as construction compounds, fencing, gates and welfare facilities. This chapter has been prepared by the RPS Group and URS Corporation.

The Proposed Development is designed to modern safety case standards and will replace the extant facilities at AWE Aldermaston Site, safeguarding approximately 50 jobs. The scheme allows rationalisation of the floor space currently used by existing operations, creating an opportunity to improve working conditions for employees and the overall environmental performance on the existing facilities. No new operations will be undertaken and there will be no increase in staff numbers. The Proposed Development is required to provide suitable workspace in a secure environment for the workforce that is necessary to service the continuing work of AWE.

The Applicant is seeking planning permission for the Proposed Development under the Town and Country Planning Act 1990 (Ref. 1-1). The Secretary of State for Communities and Local Government has considered the proposals under direction of Regulation 4 (4) (a) (ii) of the Town and Country Planning (Environmental Impact Assessment) (Amendment) (England) Regulations 2008 (Ref. 1-2) and determined that the requirements of these Regulations shall not apply for this application.

However, a Defence Exempt Environmental Appraisal (DEEA) has been undertaken which includes all of the necessary information to allow an informed decision to be made on the merits of the planning application. This commitment by AWE is in line with the Secretary of State for Defence Policy Statement within JSP 418 (Ref. 1-3), which states that "*where the Ministry of Defence (MOD) has been granted specific exemptions...from legislation…it will introduce standards and management arrangements that are, so far as reasonably practicable, at least as good as those required by the legislation*".

The Application Site lies within the district of West Berkshire therefore the determining authority is West Berkshire Council (WBC). A map of the Application Site is shown in Figure 1-1 and a map of the surrounding area is shown in Figure 1-2.

1.2 The Existing Hydrodynamics Facility

The existing Hydrodynamics Facility consists of a number of buildings whose primary function is to evaluate the effects of energetic materials on a variety of media. Hydrus is part of the programme to provide the Hydrodynamics

Figure 1-1: Application Site Red Line Boundary

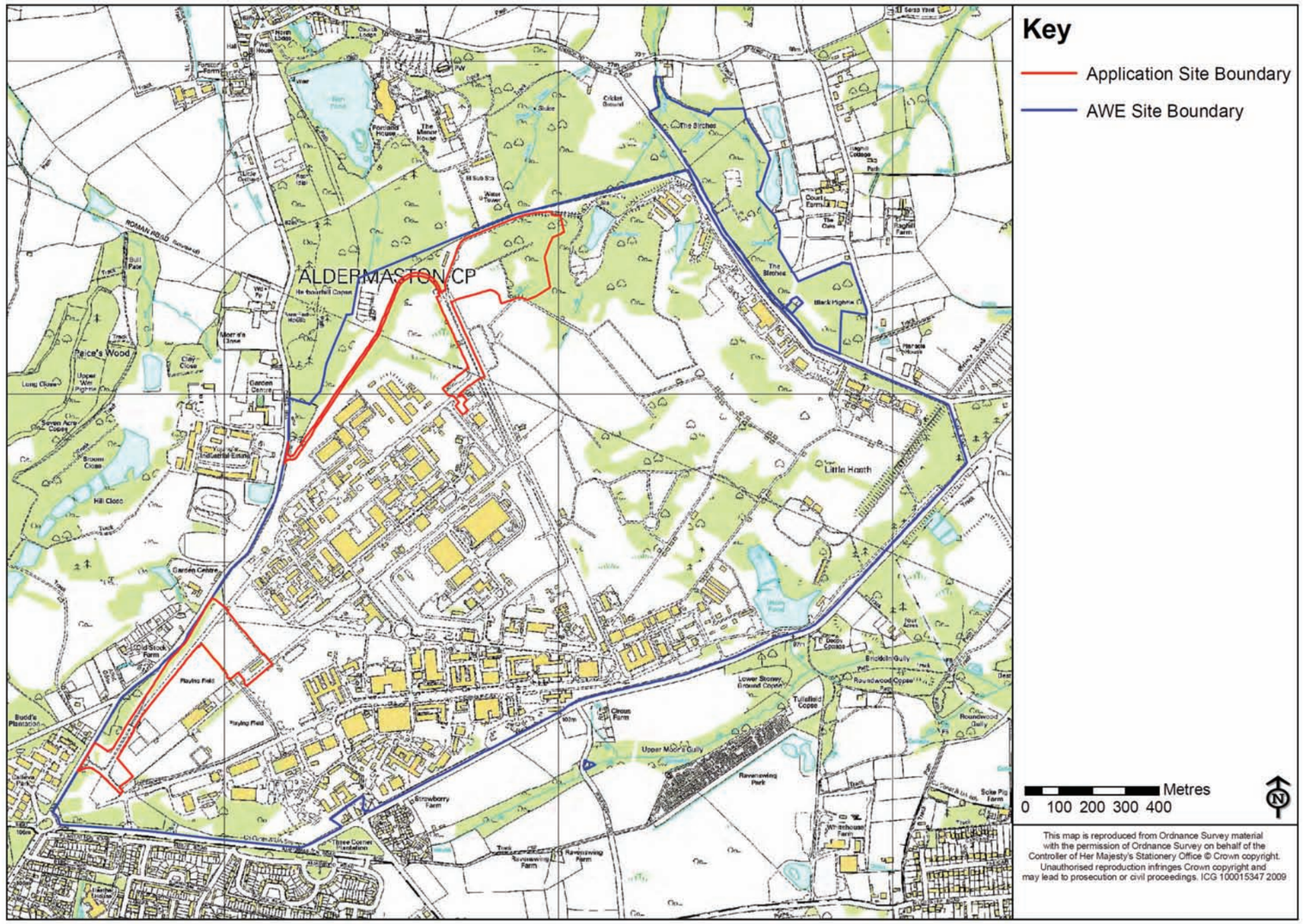
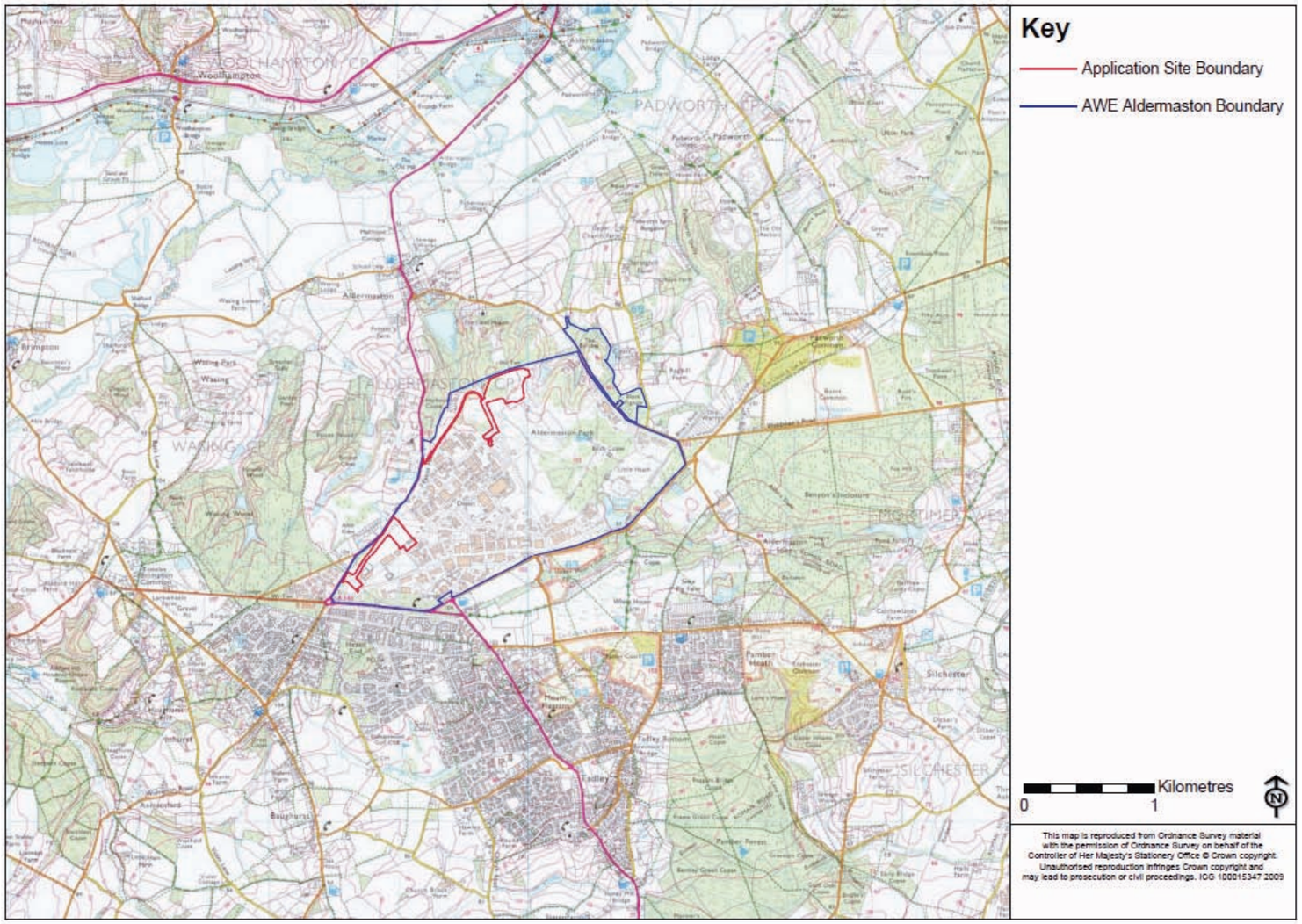


Figure 1-2: Application Site Context



Department with capabilities that are necessary to deliver the increased technical performance to meet the demands of the Comprehensive Test Ban Treaty (CTBT) era, within the framework of a challenging regulatory environment. The regulatory framework that is applied to the hydrodynamics operations at the AWE Aldermaston Site consists of the following interactions:

- Health and Safety Executive / Nuclear Installations Inspectorate (HSE/NII) - Regulates AWE under the Nuclear Installations Act against the licence conditions attached to the site licences. The Environment Agency regulates environmental discharges from the hydrodynamics operations in accordance with the Radiological Substances Act;
- HSE / Hazardous Installations Directorate (HID) - regulates the arrangements under the Control of Major Accident Hazards regulations (COMAH). It also regulates explosives licensing arrangements under the Manufacturing and Storage of Explosive Regulations (MSER);
- HSE / Field Operations Directorate (FOD) - regulates hydrodynamics operations against general Health and Safety Legislation (Health and Safety at Work Act) and the regulations that are derived from it including the Ionising Radiation Regulations aspects of x-ray generation; and
- Defence Nuclear Safety Regulator / Nuclear Weapons Regulator (DNSR/NWR) – NWR is part of DNSR. Regulates the Nuclear Weapons Programme to provide reassurance to the Secretary of State.

1.3 The Application Site Description

The Application Site comprises two parts and covers a total area of 14.03 hectares (ha). Both parts of the Application Site lie wholly within the established boundary of AWE Aldermaston Site and is shown in Figure 1-1.

The eastern part of the Application Site is located in the north-east of AWE Aldermaston Site and comprises the proposed Hydrus Development Site, a temporary construction laydown area known as the Central Area Construction Enclave (CACE) and an access road from the A340. The western part of the Application Site is currently used as temporary construction enclave, known as the West End Construction Enclave (WECE). It lies approximately 1.2 kilometres (km) to the south-west of the Hydrus Development Site. These areas are illustrated on Figure 1-3 and a description of each area follows:

1.3.1 Hydrus Development Site

The Hydrus Development Site covers an area of 6.47ha and is centred at National Grid Reference SU 150 270. It is located within an explosives area licensed by the Health and Safety Executive – this function was formerly performed by the Ministry of Defence Ordnance Safety Group (DOSG). The Hydrus Development Site lies near to the northern edge of the AWE Aldermaston Site, approximately 10 metres (m) from the northern boundary, 400m from the eastern boundary, 1300m from the southern boundary, and 300m from the western boundary.

The Hydrus Development Site comprises previously developed land that was cleared as part of an on-going demolition and clearance programme, originally set out in the Site Development Context Plan 2005 (SDCP05) (Ref. 1-4) (now superceded by Site Development Context Plan 2008 (SDCP08) (Ref. 1-5)). It is

mainly covered by grassland and sparse short vegetation. The topography of the Hydrus Development Site is generally level at approximately 100m Above Ordnance Datum (AOD), sloping slightly towards the eastern and southern boundary to approximately 97m AOD. A small surface water ditch crosses the southern part of the Hydrus Development Site and a permanent water borehole with an associated head works chamber is located in the north-west of the Hydrus Development Site. There are several individual trees scattered across the Hydrus Development Site and a small area of woodland is located in the south-east of the Hydrus Development Site.

A perimeter access road (known as Cwm Road) forms the northern and north-western boundaries of the Hydrus Development Site. Beyond this lies the AWE Aldermaston Site fence line and the historic Manor House. The Manor House is a Grade II* Listed building whilst the Aldermaston Court parkland is listed as Grade II on the Register of Parks and Gardens of Historic Interest. The Manor House is currently used as a hotel with conference facilities and is situated approximately 300m beyond the AWE Aldermaston Site boundary. The northern extent of Griffin Road (a key internal road traversing the AWE Aldermaston Site from north to south) borders the western boundary of the Hydrus Development Site, whilst existing research facilities border the eastern and southern boundaries of the Hydrus Development Site.

1.3.2 Central Area Construction Enclave (CACE)

The CACE lies about 250m to the south-west of the Hydrus Development Site, on the west side of Griffin Road. This was previously identified within the High Explosives Fabrication Facility (HEFF) planning application which was granted planning permission from West Berkshire Council in February 2008 (Planning Reference: 07/02438/COMIND). The CACE covers an area of 0.53ha and mainly comprises areas of hardstanding for open storage with temporary office and welfare accommodation units. A security fence encloses CACE to separate construction activities from the activities undertaken on the rest of the AWE Aldermaston Site.

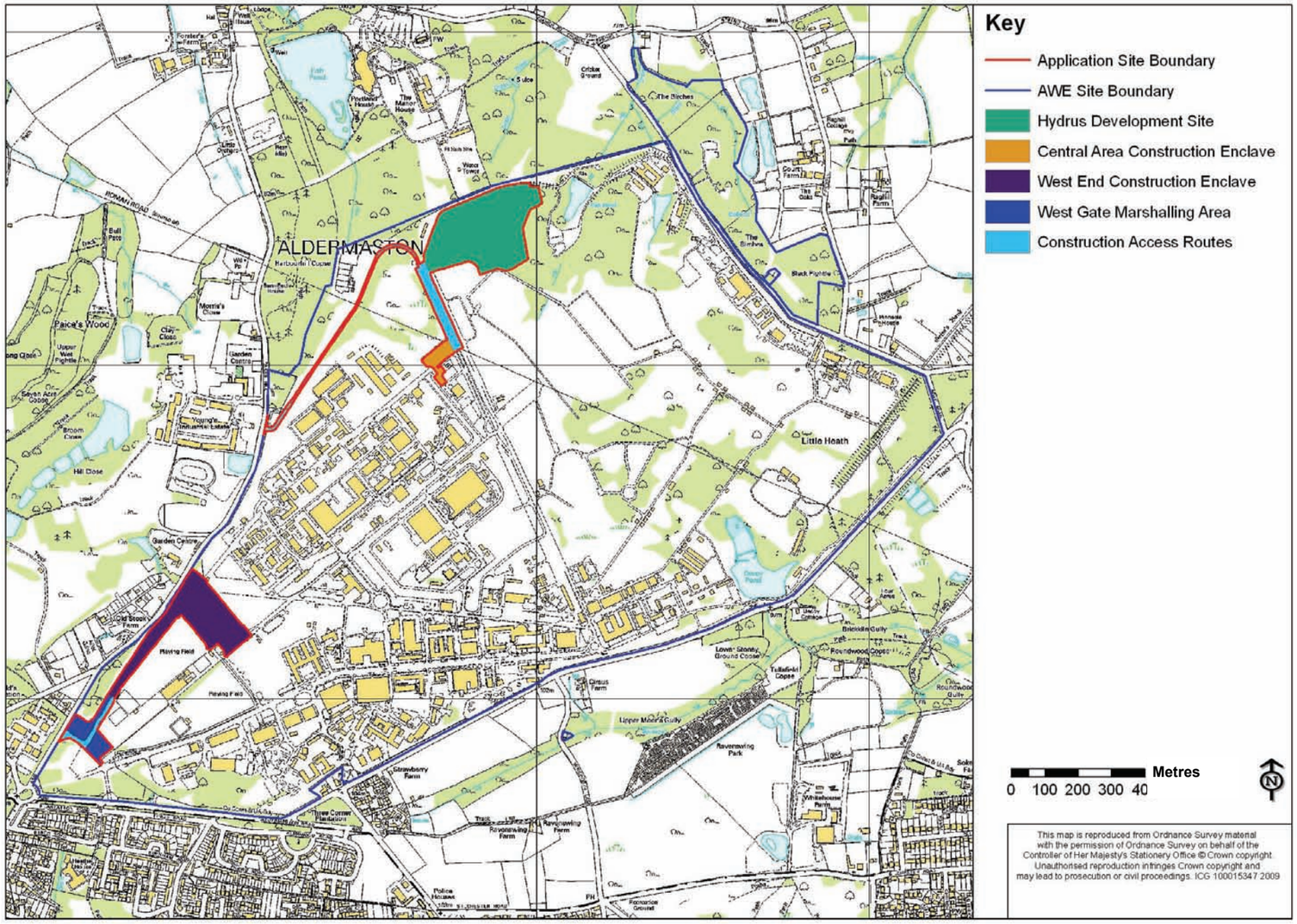
1.3.3 Access Road

The A340 Gate (Paices Hill) lies 690m to the southwest of the proposed Hydrus Development Site. The Hydrus Development Site and the CACE can be accessed from this gate via an internal road that follows the north-western boundary of the AWE Aldermaston Site before turning south to join with Griffin Road. The access road covers approximately 1.65ha in area and comprises hardstanding with narrow grass verges.

1.3.4 West End Construction Enclave (WECE)

The WECE was previously identified within the New Office Accommodation (NOA) planning application which was granted planning permission from West Berkshire Council in February 2007 (Planning Reference: 06/02326/COMIND). The WECE lies approximately 1.2 kilometres (km) to the south-west of the Hydrus Development Site. It has an established facilities management building, reception building and Work Control Centre (WCC). The WECE will provide parking for construction workers as well as search and holding areas for delivery vehicles. The WECE covers an area of 5.38 ha.

Figure 1-3: Application Site Areas



Land within the Application Site is not subject to any regional, national or international designation by virtue of landscape, ecology, archaeological or other environmental interest.

1.4 The Proposed Development

The Proposed Development will comprise three main components:

1) The permanent facilities;
2) The use of two existing construction enclaves; the CACE and WECE. Further details of the construction enclaves, can be found in *Chapter 6: Construction Phase* of this DEEA; and
3) The permanent external works which include landscaping and Sustainable Drainage System (SuDS).

Consent is sought for the Proposed Development comprising an Operations Building with Lightning Protection System (LPS), a Support Building and an Electrical Substation together with a Sustainable Drainage System (SuDS), landscaping and a circulatory access route around the Operations Building, as described within the planning application documentation.

The construction related infrastructure will be provided to facilitate the construction of the buildings and access and to maintain appropriate levels of security. Post construction, some of the laydown areas will be reinstated, as part of the landscape masterplan.

Each element of the Proposed Development is described in further detail in the following sections.

1.4.1 Permanent Features

The permanent features provided as part of the Proposed Development include: the Operations Building with LPS comprising eight catenary masts and associated suspended catenary cables; the Support Building; an Electrical Substation; SuDS; landscape scheme; and access / circulation routes.

The Operations Building will house the main functions for hydrodynamics research that are currently conducted elsewhere at the AWE Aldermaston Site. It will comprise an eight-sided structure beneath a circular shallow-domed roof with a maximum roof height of 20.0m Above Ground Level (AGL) (120.3m AOD). It will cover a gross external area (GEA) footprint of 9,621m^2 providing floor space of up to 14,176m^2. Three exhaust stacks (two of the stacks originate from local exhaust vents / fume cupboards and the other stack ventilates a hardened structure within the Operations Building) will extend through the roof to 23.5m AGL (123.8m AOD).

The LPS will comprise eight catenary masts with a maximum height of 40.0m AGL (140.3m AOD). The masts will measure 1.8m in diameter at their base and will taper to 0.5m in diameter at their apex. The catenary cable fixing height will be at 37.0m AGL (137.3m AOD) with a likely lower cable sag height of approximately 31.5m AGL (131.8m AOD).

The Support Building comprises a single storey building with a partial first floor and a stepped green roof. It will provide up to 2,515m^2 of GEA floor space over a footprint of 2,226m^2 GEA. It will provide space for a Work Control Centre (WCC), administrative office and maintenance facilities to support the Operations Building. The roof will step in height from west to east at three maximum roof level heights of 4m, 8m and 12m AGL (104.3m, 108.3m and 112.3m AOD), respectively. A fume cupboard flue will extend through the tallest (east) roof level to a maximum height of 15m AGL (115.36m AOD). Sixteen roof-mounted lightning protection system finials will extend 1m or 1.5m above the Support Building roof to a maximum height of 13.8m AGL (113.8m AOD).

The Electrical Substation covers a footprint of 216m^2 GEA with a maximum roof level of 5.49m AGL (105.79m AOD).

The operation of the Hydrus Facility will be regulated by the Environment Agency, under the Radioactive Substance Act 1993 (RSA 93) (Ref. 1-6), and the Nuclear Installations Inspectorate (NII) of the Health and Safety Executive (HSE), under the Nuclear Installations Act 1965 (Ref. 1-7).

A full description and drawings of the proposals are provided in *Chapter 5: The Proposed Development* of this DEEA. Supplementary information is presented in the Hydrus Design and Access Statement, together with drawings that accompany the planning application.

1.4.2 Construction Enclaves

Construction enclaves will be established to isolate construction activities from the main AWE Aldermaston Site. These will be in place for the start of construction phase and will encompass the Hydrus Development Site. The enclave will include construction site, material lay-down areas, temporary welfare facility buildings and office accommodation for construction management.

In addition the consented construction areas of WECE and CACE will be utilised. These areas have already been 'enclaved' in support of other consented developments.

Further details of the construction enclave are located within *Chapter 6: Construction Phase* of this DEEA.

1.4.3 Site Access

Access to the Application Site for construction staff will be via the West Gate, where parking will be provided within the WECE. Construction workers will be provided with sufficient parking spaces within the WECE. A bus service will be provided to transport construction workers from the WECE to the CACE. This will be routed via West Gate, the A340 and the A340 Gate (see *Chapter 6: Construction Phase* of this DEEA).

HGVs and other delivery vehicles will be searched at the WECE then escorted via the A340 access to the CACE and the Hydrus Development Site.

Operational staff will maintain their current access and egress routes from the AWE Aldermaston Site through the existing West Gate, Main Gate, Boiler House Gate and Falcon Gate. Given that no new operational staff will be employed for the Proposed Development, no additional parking spaces will be created on-site. Operational staff will use the existing AWE Aldermaston Site car parks and the bus service. A cycle shelter will be provided adjacent to the Support Building.

1.4.4 Landscape and SuDS Proposals

A comprehensive scheme of landscape measures will enhance the amenity, setting and biodiversity of the Hydrus Development Site. This will include grassed mounds with hedgerow planting wrapping around the Operations Building. Groups of semi-mature trees and woodland blocks and a grassland mix will be planted. A wet grassland mix will be incorporated in the detention basin and swales. Overall there will be a substantial increase in tree cover across the Hydrus Development Site.

The tiered roof sections of the Support Building and the roof of the Electrical Substation will both incorporate a living Sedum 'green' roof adding to the biodiversity interest of the site.

Further information is provided in C*hapter 5: The Proposed Development, Chapter 13: Landscape and Visual* and *Chapter 15: Ecology* of this DEEA.

1.5 Planning Policy Context

Relevant national planning policy is set out within various Planning Policy Guidance (PPG) notes and Planning Policy Statements (PPS). An assessment of the development against relevant local, regional and national planning policy is set out within the Planning Support Statement which is submitted as a supporting document to the planning application and is summarised in *Chapter 3: Planning Policy Context* of this DEEA.

Planning policy with relevance to environmental impacts has been considered in each of the technical assessment chapters of this DEEA (chapters 7-15). The following documents have also been considered in preparation of the DEEA:

- Her Majesty's Stationery Office (HMSO) The Town and Country Planning (Environmental Impact Assessment) (Amendment) (England) Regulations 1999 (as amended 2008);
- Department of Environment, Transport and the Regions (DETR) Circular 02/99 Environmental Impact Assessment 1999 (Ref. 1-8);
- Department for Communities and Local Government, Environmental Impact Assessment: A Guide to Good Practice and Procedures, A Consultation Paper (June 2006) (Ref. 1-9);
- Department for Communities and Local Government, Environmental Impact Assessment: Guide to Procedures, 5th May 2006 (Ref. 1-10);
- Institute of Environmental Management and Assessment (IEMA), Guidelines for Environmental Impact Assessment 2006 Update. (Ref. 1-11); and
- Defence Estates, Technical Bulletin 01/12 - Environmental Impact Assessment, Estates Development Unit, Defence Estates 2001 (Ref. 1-12).

1.6 Structure of the Defence Exempt Environmental Appraisal

The DEEA is divided into two volumes. Volume I comprises the main document and Volume II presents the technical appendices. An Executive Summary is provided as a stand-alone document. The Executive Summary provides information about the likely significant environmental impacts and is written to promote easy understanding of the scheme and environmental impacts.

In summary, the DEEA consists of:

- **Volume I – Defence Exempt Environmental Appraisal**. This document presents the findings of the DEEA and is divided into a number of background and technical chapters supported with figures, tabular information and a glossary.
- **Volume II – DEEA Technical Appendices.** Appendices are provided for:
  - Ground Conditions;
  - Water Resources including Flood Risk Assessment;
  - Transport Assessment;
  - Noise and Vibration;
  - Landscape & Visual;
  - Archaeology & Cultural Heritage;
  - Ecology; and
  - Sustainability.
- **Executive Summary** A separate report is presented, providing a concise summary of the development proposal, alternatives, environmental impacts and mitigation measures.

1.7 Project Team and Contributors

The DEEA has been prepared by the contributors outlined in Table 1-1.

Table 1-1: The Proposed Development DEEA

Organisation:	**Role:**
AWE plc	Client; Alternatives and Design Evolution; Client sign-off; Planning Liaison.
RPS Group plc	DEEA Co-ordination, Introduction, DEEA Methodology, Planning Policy Context, The Proposed Development, Construction Phase, Ground Conditions, Water Resources, Transport, Air Quality, Noise and Vibration, Socio Economics, Landscape and Visual, Cultural Heritage and Archaeology, Ecology, Sustainability, Cumulative Impacts, Residual Impacts and Conclusions. Landscape Design
URS Corporation Ltd	DEEA Review and Sign-off; Client Representative. Joint authorship of chapters: Introduction, Alternatives and Design Evolution, The Proposed Development, Construction Phase, Ground Conditions, Water Resources, Socio Economics and Sustainability.
Atkins	Architectural and Engineering Design

1.8 Supporting Documents

A number of other documents are submitted to WBC to accompany the Planning Application. These are summarised as:

- Planning Application; covering letter, forms and schedules;
- Ownership Certificate (Certificate A);
- Planning Application Drawings;
- Design and Access Statement;
- Planning Supporting Statement including the following:
  - Correspondence (Copy of Direction Under Regulation 4 (4)(a)(ii) of the EIA Regulations);
  - Site Development Context Plan (SDCP08);
  - Strategic Sustainability Appraisal;
  - Preliminary Evaluation of the Transportation Implications of the SDCP (PETIS);
  - Travel Plan;
  - Architectural Design Principles;
  - Defence Related Environmental Assessment Method (DREAM) Report;
  - AWE Code of Construction Practice (CoCP);
  - Energy Resource Statement;
  - AWE Aldermaston Landscape Strategy;
  - Sustainable Drainage Systems (SuDS) Report;
  - Detailed Landscape Scheme including Phasing, Tree Protection, Arboricultural Method Statement and Landscape and Biodiversity Management Plan;
  - Schedule of Redundant Buildings;
  - Details of Existing and Proposed Floor Levels;
  - Details of External Lighting;
  - Remediation Method Statement; and
  - Details of Building Materials Samples.

1.9 DEEA Availability

The DEEA is available for public viewing during normal office hours at the West Berkshire Planning Department. Comments on the planning application should be forwarded to West Berkshire Council at the address below:

Planning Department
West Berkshire Council
Council Offices
Market Street
Newbury
RG14 5LD

Copies of the Defence Exempt Environmental Appraisal can be purchased from West Berkshire Council at a cost of £10 for the Executive Summary, £100 for Volume I and £125 for Volume II.

1.10 References

Ref. 1-1 Department of the Environment, Transport and the Regions (DETR) (1990). *The Town and Country Planning Act 1990, Chapter 8*. Her Majesty's Stationery Office (HMSO). London.

Ref. 1-2 Her Majesty's Stationery Office (HMSO) (2008). *Town and Country Planning (Environmental Impact Assessment) (Amendment) (England) Regulations 2008*. HMSO. London.

Ref. 1-3 Secretary of State (2005) Policy Statement JSP 418 Volume 1. Ministry of Defence Sustainable Development and Environment Manual: *Safety, Health and Environmental Protection in the Ministry of Defence.*

Ref. 1-4 Atomic Weapons Establishment (2005) *AWE Aldermaston & Burghfield: Site Development Context Plan* 2005-2015. AWE, Aldermaston.

Ref. 1-5 Atomic Weapons Establishment (2008) AWE *Aldermaston & Burghfield: Site Development Context Plan 2008-2015.* AWE, Aldermaston

Ref. 1-6 HMSO (1993). Radioactive Substances Act 1993. HMSO. London.

Ref. 1-7 HMSO (1965). Nuclear Installations Act 1965. HMSO. London.

Ref. 1-8 DETR. (1999). *Circular 02/99 – Environmental Impact Assessment.* HMSO. London.

Ref. 1-9 Department for Communities and Local Government (CLG) (2006). *Environmental Impact Assessment: A Guide to Good Practice and Procedures, A Consultation Paper.* HMSO. London.

Ref. 1-10 CLG (2006). *Environmental Impact Assessment: Guide to Procedures*.

Ref. 1-11 Institute of Environmental Management and Assessment (IEMA) (2006). *Guidelines for Environmental Impact Assessment 2006 Update.*

Ref. 1-12 Defence Estates (2001). *Technical Bulletin 01/12 - Environmental Impact Assessment.* Estates Development Unit, Defence Estates.