Design and Access Statement

PROJECT PEGASUS

REPLACEMENT FACILITY

Application for Planning Permission for a replacement facility for the storage and handling of enriched uranium in support of the UK Nuclear Weapons Programme. The proposed facility will provide approximately 18500 square metres gross floor space and will incorporate office accommodation, storage facilities, material handling areas and ancillary support services. Construction related infrastructure is also proposed including access roads, construction compound, fencing, gates and ancillary facilities.

AWE Aldermaston, Berkshire

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APPENDICES

1. INTRODUCTION

1.1 This design and access statement supports a planning application for a replacement facility for the storage and handling of enriched uranium [EU] in support of the UK Nuclear Weapons Programme as illustrated in Figure 1 Site Location Plan. The proposed facility will provide 18,489 square metres gross floor space on a 10,496 m^2 footprint, and will incorporate office accommodation, storage facilities, material handling areas and ancillary support services. Construction related infrastructure is also proposed including access road, construction compound, fencing, gates and ancillary facilities**,** at the Atomic Weapons Establishment (AWE) site at Aldermaston, Berkshire. The proposed building is required to provide suitable workspace in a secure environment to support continued operations when existing facilities reach the end of their lives. The scheme is also referred to as project PEGASUS.

1.2 The purpose of the design and access statement is to provide a summary of the rationale for the current planning application in design terms so that the proposals may be clearly and succinctly understood in terms of the principles and concepts that have informed them.

1.3 The statement is submitted in accordance with the requirements referenced in Government Circular 01/2006 (DCLG): Guidance Changes to the Development Control System to the effect that all planning applications (with some exceptions) be supported by a synopsis of the design approach taken, and how this has been considered with regard to the objective of establishing or reinforcing an accessible and equitable public realm.

1.4 The design and access statement does not form part of the planning application, as stated in the Circular.

1.5 In accordance with national and local design guidance the following sections set out the rationale behind the development proposals in terms of the use, amount, layout, scale, landscaping, appearance and access.

Purpose of the Proposed Development

1.6 The MOD undertakes operations at AWE, which are associated with the manufacture, maintenance and eventual retirement of the United Kingdom's nuclear deterrent. Key to this capability is the safe storage, surveillance and continuing ability to handle EU components. Currently these are carried out at the Aldermaston site.

1.7 The existing facilities are housed in a number of buildings, most of which were constructed in the late 1950s or early 1960s. The current facilities operate safely and comply with all environmental requirements but it is acknowledged that safe and environmentally sustainable operations cannot continue indefinitely in the buildings as they currently exist. Various option studies have concluded that extensive refurbishment of buildings is not viable. Therefore, in order to retain long term capability, a new facility near the centre of the AWE A site, is required.

Proposed Scheme

1.8 The proposed scheme is summarised below and detailed in the attached figures:

- Figure 1: Site Location Plan
- Figure 2: Illustrative Masterplan of AWE Aldermaston
- Figure 3: PEGASUS Project Area
- Figure 4: Opportunities and Constraints Plan
- Figure 5: Cultural Heritage Plan
- Figure 6: Landscape and Ecology Plan
- Figure 7: Concept Plan
- Figure 8: Floor Plans
- Figure 9: Elevations of Proposed Facility
- Figure 10: Birds Eye View

1.9 The replacement facility will consist of five distinct areas under a common weather envelope. Three of the main areas will be the Handling / Receipt, Dispatch, and Storage which will be constructed within a seismically qualified reinforced concrete structure. The remaining facility area and the general office area are linked by a central corridor with an internal loading bay provided for material transfer. A stack will be located at the northern end of the facility as the discharge point from the main HVAC systems, the height of the Barrel Roof from the ground is 16.2m, with the top of the stack at 19.5 above the ground, and 3.3m above the roof.

1.10 The proposed facility has been designed as a two storey building, with a clad barrel roof, which will be in keeping with the AWE Site and Architectural Design Principles. The office area of the building will be a 2-storey block constructed in curtain walling with glazing to provide daylight for the occupants, separated from the main part of the building by the entrance atrium.

Development Context

1.11 The development context has been defined within the Site Development Context Plan. This was prepared in the later half of 2005 and updated in April 2008 and drawn up in relation to the operational requirements of AWE. It was supported by a Strategic Sustainability Appraisal of the predicted development programme over the next 10 years in accordance with the principles in the MOD Sustainability and Environmental Tool Kit Handbook. The Pegasus proposal has been included in the SDCP since 2005 and is identified by reference 2.

National and Local Policy Context

1.12 The design principles used in this site are based on National and Local Guidance including:

- Design and Access Statements, how to write, read and use them, CABE, 2006, reprinted 2007.
- DCLG Circular 01/2006 Guidance on changes to the Development Control System, June 2006.
- Planning Policy Statement (PPS) 1: Delivering Sustainable Development, ODPM (February 2005).
- Better Places to Live – A Companion Guide to PPS3, DTLR and CABE (2001).
- The Value of Urban Design, CABE, UCL & DETR (2001).
- Urban Design Compendium, English Partnerships (August 2000).
- South East Plan (2009).
- West Berkshire Local Plan Policies (saved).

1.13 The statement is structured on the guidance provided by CABE on DASs. However, it is important to be aware of the particular circumstances of this case, predominantly due to the very specific nature of the planned development and the heavily constrained context in which it is being proposed. These factors limit the scope for decision-making in respect of the use, amount and location of the proposed development, which are essentially predetermined by the operational requirements of such a facility and the sensitivity of its surroundings.

1.14 Notwithstanding, in addition to design guidance, any decisions about the overall scale, massing and appearance of the proposals must be carefully considered and measured against the recommendations of AWE's long-term SDCP 08 as well as potential impacts of such proposals on the wider site context.

2. SITE APPRAISAL

Site Location and Context

2.1 AWE Aldermaston is located 15km to the southwest of Reading and 13km to the east of Newbury. It is situated immediately to the north of the settlement of Tadley, within the district of West Berkshire abutting the Hampshire County border to its south. It is within Aldermaston Parish. The AWE site lies on the eastern side of the A340. The A340 links the A4 at Aldermaston Wharf (4km to the north; to the east of Woolhampton) with Basingstoke (11km to the south). It is bounded to the north by Portland House/Aldermaston Court, to the east by Red Lane and to the south by Reading Road. See Figure 1: Site Location Plan.

2.2 There are five vehicular access points into AWE Aldermaston and one pedestrian access on the northern boundary of the site. All the access points have security gates; furthermore the entire site is enclosed by a security fence and is subject to stringent security controls. See Figure 2: Illustrative Masterplan and Figure 3: PEGASUS Project Area. The site is located in the central area of AWE Aldermaston, within an area which became the location for high density buildings in the latter twentieth century. The area around the site is urban in character.

2 .3 AWE Aldermaston extends to 285ha. The red line planning application extends to 12.3 ha although the new facility will only involve re-development of about 2.8 ha the remaining land within the red line being used to manage construction activities.

Character and Built Form

2.4 The character of AWE Aldermaston can be defined as consisting of dense infrastructure, which has evolved from the runways, extensive areas of hard surfacing and buildings from World War II. The built form mainly consists of regular buildings, which are of an industrial and office character. It has a dense infrastructure of streets, which reflects the former use of the site as an air force base, with heating pipes that run above the surface adding to the general clutter of the site. There are large areas of car parking utilising parts of the runways. Generally, the heights of the buildings are consistent throughout the site, however some modern buildings are taller and larger providing higher levels of glazing, these buildings are designed to higher sustainable standards. The extensive ongoing construction work also forms part of the character, for the short term.

2.5 The PEGASUS site and its immediate surrounding areas can be defined as primarily industrial on a flat topography at the centre of the site. There are large areas of car parking between the buildings behind inner security fence and roads. The PEGASUS site has been cleared of all the buildings; there is a copse of pine trees to the south west of the site.

Access & Movement to the Proposed Site

2.6 The two access points as illustrated in Fig 4: Opportunities and Constraints Plan are the Construction Access off A340 and the West End Access off A340 Paices Hill and Aldermaston Road. These access points have recently been upgraded by constructing roundabouts as part of Project Gemini (NOA). There are gates at each access point for security checks. The West End Construction Enclave (WECE) accessed from the Aldermaston West Gate provides facilities for: HGVs and LGVs searching and document check prior to entering the site, construction worker document check, car parking and welfare, construction lay down. These areas have been used for these purposes since 2006 in support of the construction of the Gemini and Orion facilities.

2.7 Access for operations can take place at 5 gates located around the site.

Landscape Character

2.9 The landscape character of the immediate surroundings of AWE Aldermaston together with the visual assessment associated with the PEGASUS development is summarised in Chapter 13 of the PEGASUS DEEA Volume 1

2.10 The character can be summarised as:

- Aldermaston Park Pasture and Woodland Fringe - lies to the north of the site, with an area of parkland, heath associated paddocks, plantations and woodlands forming part of the Grade II Registered Park of Aldermaston Court. This area is characterised as having medium or high landscape value and as being moderately sensitive to change. Historic landscape elements such as Grim's bank and the course of the Roman Road are included within this landscape setting.

- Haughhurst Hill Heath - associated pasture and woodland - lies to the west of the site, which comprises of mixed agricultural, residential and wooded areas ranging from the local hill tops at Brimpton Common and Ashford Hill. This area is characterised as having medium value, which is moderately sensitive to change.

- Tadley Urban Area – lies to the south, where the town of Tadley has developed since the 1950s, surrounded by agricultural and heathland landscapes. The landscape quality of this area is assessed as low value and low sensitivity to change.

- Kennet Valley Gravel Beds - lies to the north, where extensive water bodies, extraction and landfill mark the river floodplain, with the edge of urban Reading to the north and east.

Cultural Heritage

2.11 Chapter 14 of the PEGASUS DEEA Volume 1 provides an assessment of the potential impacts of the proposed PEGASUS development at AWE Aldermaston on the cultural heritage of the site.

2.12 Historic characterisation was commissioned by AWE in view of the increasing recognition of the heritage value of 20th Century military installations, and the need to take their historical development into consideration when planning development. The document has been adopted by AWE and is currently being reviewed by English Heritage. The characterisation process provides the basis for assessing archaeological potential and other environmental constraints. This process has distinguished attributes of different areas of the site and identified them as Character Areas. These Character Areas are illustrated on Figure 5: Cultural Heritage Plan.

2.13 The application site is located in Character Area 2 (CT2), which is identified as being of medium heritage value. This area represents a single period of development during the late 1980s and 1990s where there are plutonium handling plant and associated offices, laboratories and evacuation buildings. The buildings here are large tall buildings with metal cladding and without any windows. There is external pipe work and other steel framed infrastructure surrounding them. Historical evidence shows that the application site comprised a weapons tower in the 1950s, followed by support buildings in the 1980s and 1990s. The site is now stripped of top soil and contains a large concrete foundation block of the former weapons tower at its centre. With the removal of the buildings the site represents an area of low heritage value. There are two archaeological sites identified close to the application site, they are:

- Surviving buildings and structures in AWE Character Area 10 (A10)
- Surviving buildings and Structures in AWE Character Area 11 (A11)

Ecology

2.14 Chapter 15 of the DEEA provides a description of the ecological character of the proposed development site. A phase 1 habitat survey identified the following areas of value:

- Two contrasting areas of calcareous semi-improved grassland are present: TN1 – an area of heavily managed dense sward and TN2 an area of very sparse and patchy within bare gravel, fairly species-rich semi improved grassland. Some anecdotal evidence has been recorded of burrowing clover and buckshorn plantain within the area largely covered with gravel – TN3
- To the south of the proposed building is found a group of semi-mature Scots pine trees [TN5] which will not be affected by the development. These trees also form a potential bat roosting habitat [TN8]. This area will be enveloped within the proposed landscaping scheme.

2.15 A breeding bird survey has also been undertaken which shows no evidence of nesting although the area has formerly provided a foraging area for Black Redstarts which nested elsewhere on the AWE Aldermaston site.

Summary

2.16 The proposed site is located close to the centre of AWE Aldermaston within the heavily industrialised inner Nuclear Storage and Processing Area [NSPA] on a brown field site which has been cleared and subject to remediation to a standard fit for the intended purpose.

2.17 Generally the proposed development site is devoid of any environmental features other than a few trees to the south of the site which will be retained and incorporated within the comprehensive and detailed landscape scheme. Established roads and gates provide opportunities for access to the site during construction and operation.

3. DESIGN PRINCIPLES

3.1 The design principles formulated for the PEGASUS development incorporate the following key requirements as set out in the SDCP05 and repeated in the SDCP08 namely:

- Creation of a working environment that facilitates business effectiveness and efficiency;
- Provision of a modern working environment for staff in order to retain and attract new staff;
- Contribution to an improved image and character of AWE towards a 'Science and Technology Park'; and
- Working towards the Government's aims to make sites and buildings more sustainable.

3.2 The application of these design principles for the PEGASUS development is discussed below.

Use

3.3 The future use of the proposed development is fixed as a facility for the storage and handling of enriched uranium in support of the UK Nuclear Weapons Programme. This use is predetermined by the operational requirements of the Site Development Strategy for AWE.

Location

3.4 The proposed development should be located in the central part of the AWE Aldermaston site. This will allow efficient integration between existing and proposed facilities and consolidate the processes currently taking place in different buildings into a single building.

3.5 Locating the proposed development to the centre of the Aldermaston site would also comply with the strategic aims of the SDCP 08; in that it will facilitate the ongoing historic characterisation, and subsequent clearance and redevelopment of the AWE estate. The proposed site was identified within the SDCP05 [reference 2] and carried forward into the SDCP08 [also reference 2].

3.6 A central location would help meet the strategic objectives outlined in the Site Development Travel Plan by making it easier for employees to coordinate travel plans and reduce single occupancy car dependency.

3.7 Locating the proposed development within the context of an existing area used for the storage and handling of nuclear materials would help offset the potential visual impact of new development, forming part of an already established view framework as opposed to an individual building located in open ground elsewhere.

Amount

3.8 The amount of new development is related to the specific operational requirements of the PEGASUS facility for storage and handling of enriched uranium. It should consider the short, medium and long-term flexibility of the proposed building, and how these could be internally altered or extended in a controlled future expansion. The amount will also be significantly influenced by regulators which licence the operations which take place within the facility.

Size, Scale and Massing

3.9 The size and scale of proposed development is limited as far as possible in the context of providing a facility for the storage, handling and dispatch of enriched uranium at the site. It is envisaged that to encompass all the facilities under one roof will require a large building; however the height of the building should be restricted in response to the wider site development strategy and in response to landscape and visual considerations and generally sit well within the wider countryside context.

3.10 A valid design approach is one in which the requirements are met with:

- Functional and practical solutions that have the benefit of ensuring proposals respond more robustly to the task of improving the facility and improving the overall quality of the area; and
- Distinctive structural/ architectural aesthetic that has the benefit of ensuring proposals respond more robustly to the task of lifting the overall quality of the public realm, and promote an increasingly distinctive and legible working environment.

3.11 As a general rule, buildings should be regularly arranged and geometrically aligned with the road network, allowing efficient access and servicing. These include the provision of adequate levels of natural light and ventilation, and the provision of emergency access to all parts of the building.

3.12 Existing buildings at AWE Aldermaston vary considerably in terms of size and scale according to the specific operational requirements. In the case of the proposed facility, thought should be given to the way in which the design of new development could be lifted beyond the purely utilitarian requirements of a functional building.

Access and Parking

3.13 The proposed development should utilise the existing accesses into the site. See Figure 4: Opportunities and Constraints Plan. There are two access points into the site, from the north end off Trident Crescent and from the south off Maralinga Crescent. Both these access points should be incorporated into the scheme to provide a facility that will function efficiently. The proposed development should incorporate the pedestrian and cycle route within these access roads.

3.15 No additional car parking should be provided as there are adequate spaces on the existing site and there will be no additional persons employed in the new facility.

Landscape

3.16 Development proposals should be set within a landscaped area and maximise existing opportunities. Appropriate low-level screen planting should also be provided within the site to provide sufficient tree cover in the area.

3.17 Landscape design proposals should be drawn up with advice from an ecologist in respect to species choice and habitat creation.

Surface Water Management

3.18 Surface water run off from the proposed development should be restricted to green field run off rates and if at all possible betterment to these rates should be achieved. This will reduce on-site and off-site risks of surface water flooding.

3.19 Any surface water management features should follow the principles of SuDs and be integrated with landscaping proposals in order to maximise biodiversity opportunities.

4. DESIGN PROPOSAL

Design Principles

4.1 The design approach for this proposal is for a sustainable and high quality development in the context of ensuring that the proposal responds robustly to the task of providing a replacement facility for the storage, handling and dispatch of enriched uranium in support of the UK Nuclear Weapons Programme at the AWE, Aldermaston site.

4.2 The new building will have a distinctive structural / architectural aesthetic that has the benefit of lifting the overall quality of the public realm, and part of a programme to gradually promote an increasingly distinctive and legible working environment. In order to deliver optimum efficiencies and benefits the new building will accommodate all the required processes within a single building, with equipment placed in a logical manner with respect to location, process, flow, juxtaposition and interaction with other functions.

4.3 The design has considered in detail all appropriate technologies for sustainability and energy efficiency to reduce energy consumption within the remit of AWE requirements. High levels of glazing are provided for all areas of the facility where practicable to maximise natural daylight.

Size, Scale and Massing

4.4 The design of the proposed replacement facility is one large structure which is predominantly rectilinear with some areas projecting north and south of the building. The facility consists of storage/ handling , receipt, and dispatch areas that are enclosed within the main seismically qualified building the walls of which are made from reinforced concrete with a clad barrel roof. The rest of the building will be mostly constructed from a steel framed structure with weatherproof cladding. The main office to the south of the building will have a flat roof with a glazed foyer linking the two.

4.5 The footprint of the proposed building is 10,496m^2 with a maximum roof height of 16.2 m. A flue stack projecting through the roof at the northern end of the facility extends to 19.5 m. The size, scale and massing of the building in the context of its site characteristics is considered to be within the site development strategy for AWE Aldermaston. Building elevations are illustrated in Figure 9: Elevations of the proposed facility and Figure 10: Birds Eye View

Sustainability and Energy Efficiency

4.6 The design of the building has achieved a BREEAM excellent rating. The development strategy incorporates energy efficiency as an integral part of the design through:

- Standards of energy efficiency that exceed current standards required by the Building Regulations and reflect best practice;
- Increased the use of natural lighting, heat and ventilation, and the provision of a proportion of energy demand from renewable sources; and
- Reduction and increased recycling of construction and demolition waste and procurement of low-impact materials

Waste

4.7 Wherever possible, materials have been selected from the Waste and Resources Action Programme building material approved list. This is primarily to take advantage of their environmental and recyclable properties, as well as their material qualities both now and when the building is eventually decommissioned in the future.

Drainage

4.8 All drainage proposals will comply with the MOD Sustainability and Environmental Tool Kit Handbook. The objectives that apply to this development are to safeguard fresh water resources and water

quality; safeguard the health and productivity of inland waters and seas; reduce the threat of persistent or diffuse pollutants to the environment and human health; prevent damage to property by flooding; and ensure that the waters are clean to sustain wildlife and communities.

4.9 The details of the measures taken to minimise pollution and control surface water run off are discussed in detail in the Surface Water Drainage Report, produced by Halcrow. These comprise a self contained attenuation solution, for storms up to and including 1 in 100 year plus climate change event within the PEGASUS site boundary.

4.10 Specific attenuation facilities have been discussed and agreed with the Environment Agency and the point at which the surface water needs to be attenuated to meet EA design criteria.

Accessibility

4.11 The design of the development has incorporated the requirements of all users as required by Part M of Building Regulations 2004, and other guidance as stated in the DEEA, where reasonable and practical. The details of all the access requirements are listed in the DEEA.

4.12 There is no car parking or disabled parking provided on site. However, there is a disabled drop off point provided at the entrance. The principle is to utilise car parking areas south of the PEGASUS facility. , The two access roads provided into the site are split for goods and personnel entering the PEGASUS site. A large hard surfaced area, known as the assembly area, is created with bays for temporary parking, drop offs and assembly in emergency.

5. CONCLUSION

5.1 This statement shows how the proposed development has been informed by the very specific operational constraints in place at the Aldermaston site, along with concern for the wider issues affecting the sustainability of the AWE sites as set out in the SDCP 08.

5.2 The proposed replacement facility will provide a facility for storage and handling of enriched uranium in support of the UK Nuclear Weapons Programme at the AWE, Aldermaston site. This new facility will replace a suite of existing ageing buildings which will be decommissioned, demolished and cleared from the site.

5.4 The current proposal calls for a significant departure from previous eras of development in which the specific function of the building was predominately the driving factor in its siting, design and external appearance.

5.5 The modern design of the building will be set within comprehensive landscaping including hard and soft landscaping features, the retention of the existing copse of pine trees and a surface water retention pond with significant biodiversity elements. This would result in a considerable improvement of the local character of the site.

5.6 The introduction of the building roofline at 16.2m and the stack at 19.5m provide additional elements on the ridgeline above the tree canopy in some short and distant views. However, this is seen in the context of the adjacent buildings, which are 28m tall and a cluster of stacks up to 48m high in the locality.

5.7 The proposed building exceeds the basic requirements of the brief to provide a manufacturing facility, and adds value in respect of its unique approach to design for the following reasons:

- The building will be distinctive in its own right.
- The building will be discrete when viewed from within the wider surrounding landscape.
- The building will be functional for visitors and staff. It will provide for all casting, handling, surveillance and storage of enriched uranium in UK Nuclear Weapons Programme.
- The building will be efficient, in modernising the facility and relocating it centrally at AWE Aldermaston, thus moving towards economic efficiency and consistent with the SDCP 08, thus meet the demands of AWE and Ministry of Defence.
- The building will be sustainable [BREEAM excellent rating], designed with its eventual decommissioning in mind and incorporating sustainable building technology such as the use of SuDs to provide storage for flows generated by 1:100 year event including climate change factors to ensure that the runoff water would not increase with the proposed development.

5.8 For these reasons it is considered that the current development proposals will provide a good benchmark for the ongoing redevelopment and rationalisation of the Aldermaston site, setting a high standard of design in the process of meeting the present and future operational requirements at AWE.