



## DESIGN & ACCESS STATEMENT

**Application for replacement High Explosives Fabrication Facility (HEFF) building, associated outbuildings and access roads, vehicle turning areas, hardstandings, blast protection structures, 8 x lightning conductor towers, security fencing, landscaping and temporary construction enclave**

**AWE Aldermaston, Berkshire**

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FIGURE 1 SITE DEVELOPMENT CONTEXT PLAN 2005 – 2015 – ALDERMASTON  
ILLUSTRATIVE FRAMEWORK PLAN

## 1. INTRODUCTION

### Background

1.1 This design & access statement accompanies a planning application for a replacement High Explosives Fabrication Facility (HEFF) building, associated Mechanical and Electrical Services building, outbuildings and access roads, turning areas, hardstandings, blast protection structures, 8 x lightning conductor towers, security fencing, landscaping and temporary construction enclave.

1.2 The purpose of the design & 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 The aim of this statement is twofold. Firstly, to ensure that decision-making is clearly documented in relation to the site-specific opportunities and constraints affecting the development and secondly to demonstrate how the final proposal has been informed by a set of principled objectives, which have stemmed from the preceding analysis and appraisal work.

1.6 In accordance with the recent best practice publication 'Design & Access Statements' CABE 2006, the following sections set out a clear justification for the proposals in terms of Use, Amount, Layout, Scale, Landscaping, Appearance and Access.

### Purpose of the Proposed Development

1.7 In considering the future operational needs of AWE at Aldermaston, a Site Development Context Plan (SDCP) was provided to the Local Planning Authority in November 2005.

1.8 In the context of an ongoing programme of development over the next 10 years, the SDCP sets out an appraisal of the Aldermaston site and provides an overall framework depicting how various broad land use requirements can be met. The illustrative framework plan for AWE Aldermaston is reproduced here for ease of reference (See Figure 1).

1.9 The context for the HEFF proposal is defined within the parameters of the SDCP. Decisions on the overall scale, massing and appearance of the proposal must be taken against the principles established in the SDCP. Also it is important to be aware of the very specific nature of the proposed development and the heavily constrained context in which it is proposed. The unique nature of the proposal limit the scope for decision making in respect of the use, amount and location of the development which are effectively predetermined by AWE's operational requirements.

1.10 The proposed development represents the only feasible option, given the operational requirement for a new facility constructed to modern standards. The 'do nothing' scenario is not a realistic option; the continuation of the current situation involving the use of a number of buildings across the Aldermaston and Burghfield sites is not viable or desirable. From an operational standpoint, the consolidation of activities onto the Aldermaston site is of overriding importance.

1.11 Having considered future operational needs and security requirements, the general approach set out in the plan relates to the need to recognise and reinforce the existing qualities and functions of the site, working within the established constraints to realise the following aims:

#### 1. Aldermaston - Business Support Zone

It is proposed to locate the bulk of new office accommodation in the western zone of the site, within a high quality campus style format.

#### 2. Aldermaston - NSPA

To locate new buildings in the southern section of this area, having regard to the ongoing decommissioning programme which does not facilitate early redevelopment.

### 3. Aldermaston - Eastern Area

To concentrate facilities with the largest potential explosive inventories in the centre of the licensed area thereby keeping Quantity Distances (QDs) contained within the licensed boundary as much as possible.

1.12 This design and access statement relates to an application in support of the third of these aims.

1.13 The rationale for this development is set out in the Planning Supporting Statement which accompanies the planning application but includes reducing the number of traffic movements between sites, reducing risk and enhancing the efficiency of current explosives fabrication processes.

1.14 The proposed development seeks to contribute to the overall profile of AWE by:

- Reinforcing the status of AWE as a world-class scientific facility.
- Assisting in continuing to attract the best people.
- Presenting a more modern, up-to-date face to the local community and beyond.

### Development Context

1.15 As indicated above the development context has been defined within the site wide development framework. This was prepared in the later half of 2005 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 Defence Estates handbook.

1.16 The current proposal for the construction of a replacement High Explosives Fabrication Facility seeks to implement part of this strategy within the eastern zone of the site.

## 2 SITE APPRAISAL

### Site Description

2.1 AWE Aldermaston lies to the south of the Kennet valley on a flat, wooded plateau between 100 to 105m AOD sloping to 85m in its far north-eastern corner. Some of the landform within the site has been modified by human intervention to create both individual and groups of mounds, particularly at its eastern end wherein lies the application site. Generally AWE Aldermaston is surrounded by gravel plateau heathland and woodland with some heathland pastures apart from residential development at Tadley beyond the southwestern boundary of the site.

2.2 The application site itself lies within the heart of the Aldermaston Explosives Area in the eastern sector of the AWE Aldermaston site. The eastern sector is characterised by extensive grassed areas and groups of trees interspersed with industrial buildings, bunkers, access ways and related infrastructure including an overground, elevated network of pipes and cables, all located within an essentially functional, urban environment. The land to be occupied by the proposed buildings is currently an area of grass with small groups of trees located between storage bunkers. It lies approx 500m from the eastern AWE site boundary, 650m from the southern boundary and 850m from the northern boundary.

### Access and Movement

2.3 Access to the application site is obtained via a network of roadways which connect into the main internal routes, several of which follow the alignment of former aircraft runways. A temporary site access road running alongside the existing elevated pipeline will be constructed from Griffin Road, which bisects the AWE Aldermaston site from north west to south east, to the HEFF site itself.

### Built Form

2.4 The Aldermaston site is characterised by the operational requirements of the various uses and activities over time. The result from the built environment point of view is that a variety of building types and architectural styles are represented on the Aldermaston site. This is particularly evident in the areas south and west of Griffin Road. The eastern area of the site, in which HEFF would be located, has a different character in terms of its built form. Buildings representing a mix of forms and styles are located along the eastern site boundary whilst most of the central part of the site consists of sporadic, mainly brick built structures, interspersed with grass-mounded storage bunkers topped with mono-pitched structures, and above ground service pipes and infrastructure including roadways and hardstandings.

## Landscape and Visual

2.5 The application site is generally well contained in the local landscape by mature vegetation and the location of low level existing buildings and other structures including the grass covered bunkers. Dotted around the area, including or the grassed application site are groups of deciduous trees, predominantly silver birch.

2.6 The Landscape and Visual impact chapter of the Defence Exempt Environmental Appraisal which accompanies the planning application deals with this in greater detail.

2.7 Although this part of the Aldermaston site may have formed part of the historic Aldermaston Park, the 'parkland' character has been significantly altered and the application site is now very much set within an urban context.

### 3 DESIGN PRINCIPLES

3.1 The proposal has been designed to comply with AWE's "Site and Architectural Design Principles for Buildings" which establishes broad design principles for all development proposals on AWE sites. The document identifies four key corporate drivers which will influence design proposals as follows:-

- Create a working environment that facilitates business effectiveness and efficiency.
- Provide a more modern working environment for staff in order to retain and attract staff.
- Contribute to an improved image and character of AWE towards a "Science and Technology Park".
- To work towards the Government's aim to make sites and buildings more sustainable.

A copy of the document is attached to the Planning Support Statement accompanying the planning application.

3.2 Since January 2007 there has been a requirement to assess the environmental performance of new buildings. This is regarded by the UK's construction and property sector as a measure of best practice in environmental design and management.

3.3 HEFF is designed in accordance with the Building Research Establishment Environmental Assessment method (BREEAM). The replacement HEFF building will achieve an "Excellent" BREEAM rating. Further information about this is contained in the Planning Support Statement.

3.4 Proposals for the construction of HEFF have been a longstanding objective for AWE. Original proposals had been for a utilitarian, functional concrete box-like industrial process building. AWE's aim to create a 'cutting edge' world class Science and Technology Park constructed to high environmental standards, has resulted in a fundamental review of the design process for this building. The current proposal is the result of that exercise.

### 4 DEVELOPMENT PROPOSAL

4.1 The proposal comprises the following key elements;

- The proposed High Explosives Fabrication Facility.
- The temporary construction enclave including the construction site, contractors compound and overflow compound
- Use of west end construction enclave car park and
- Site access road.

4.2 In accordance with guidance set out in DCLG Circular 01/2006 (Guidance on Changes to the Development Control System) and expanded upon in guidance produced by CABE (Design and Access Statements; how to write, read and use them", 2006), the proposals are examined under the following headings:

a) Design component.

- Amount.
- Layout.
- Scale
- Landscaping
- Appearance

## b) Access Component

**Design Component – Amount**

4.3 For technical and safety reasons, two separate buildings are proposed for the site. The HEFF building itself comprises two storeys with a mezzanine floor accommodating a plant room. The building is split into two distinct areas – a two storey process block for explosives processing subdivided internally into a number of cellular work units, and flanked by eight 28 metre high lightning towers (4 along each of the building's long elevations), and an attached single storey support block providing associated office space, control, welfare and messing facilities as well as stores and a workshop. Traverses, or blast protection barriers will be constructed alongside and parallel with the northern and southern walls of the building. Smaller barriers will be located in front of the north, east and south elevations of the single storey administration block. The ground floor area covered by the building will be 3087 sq m with a total floor area of 5,398 sq m.

4.4 A separate Mechanical and Electrical Services building (482 sq m) will be built 45 m to the south of the HEFF building and will house large items of equipment such as chillers, compressors and transformers.

4.5 A pedestrian footpath will link the two buildings. Separate vehicular accesses will serve each building.

4.6 A complete set of plans and elevations is provided with the planning application.

4.7 The sizes of the buildings proposed are a direct function of the uses to which they will be put and the processes which will be carried out in them. As explained in the Defence Exempt Environmental Appraisal, HEFF will replace existing operational fabrication facilities and will provide similar but generally improved processes using modern efficient equipment. The main processes to be conducted at HEFF involve shaping and manipulation of explosives material. Manufacture of the explosive material itself is not part of the process.

**Design Component – Layout**

4.8 The site layout plan no N247-00-PL00-XA1001-7D submitted with the application shows the location of buildings and associated access routes. The nature of the uses to which the buildings will be put requires that the development is located centrally within the Explosives Area in AWE's Eastern Sector. As a consequence, potential off-site effects will be minimised.

4.9 The Eastern Sector is criss-crossed by numerous access roads. The HEFF development will connect into this internal road system. There will be no direct external linkages to public highways.

4.10 The HEFF development will be surrounded by existing grassed areas to ensure maximum separation from other occupied buildings within AWE and from residential properties outside AWE's boundaries in accordance with safety standards.

**Design Component – Scale**

4.11 The replacement HEFF buildings measures 61.3 metres x 37.7 metres with a maximum height of 11.975 metres for the process block. The support block measures 27.8m x 24.64m with a maximum height at 7.3m. The dimensions for the Mechanical and Electrical Services outbuilding are 26.55 metres x 18.15 metres with a maximum height of 7.8 metres. Eight lightning towers each 28 metres high will be erected four on either side of the process block. Because of the relatively slender nature of these latticework structures, it is unlikely that they will significantly affect the overall scale on the proposed development. Because the buildings will be located within a largely open, grassed area, there are no other buildings nearby for the proposed buildings to be compared with in terms of scale.

4.12 The Landscape and Visual Assessment chapter of the Defence Exempt Environmental Appraisal evaluates the visual impact of the proposed development on the surrounding area. It is clear that because of the relatively isolated location of the buildings within the eastern sector, they would be barely visible from locations outside the AWE boundary. Where they are visible, the buildings, principally the roofs, would be seen against, and be difficult to distinguish from, existing buildings within AWE. The top parts of the lattice lightning towers may also be visible, but would be seen in the context of other tall structures within AWE.

4.13 Overall the scale of the building is related to the size and layout of the building which is driven by technical requirements rooted in the function of the structure.

**Design Component – Landscaping**

4.14 The application site is characterised by extensive grassed areas with patches of trees interspersed with concrete/grassed moundings, roads and other services. Several landscape features exist in the AWE eastern sector including ponds and their associated copses, a mature pine plantation and the remains of an ancient earthwork. These and other natural features combine to visually “contain” the application site.

4.15 The proposed development takes into consideration the location of existing groups of trees, plantations and individual mature trees. Though approximately 50 trees would be removed in order to construct the development, the retention of adjacent trees and the existing boundary vegetation and landscape features will provide an effective mature landscape framework to accommodate the proposed building.

4.16 New replacement tree and native shrub planting is proposed to reinforce this framework. The margins of the proposed ponds will also be planted.

4.17 The landscaping strategy for the site seeks to re-establish a landscape structure around the existing and proposed buildings through the reinforcement of the mixed birch, oak and pine tree groups which are characteristic of this part of the AWE site.

4.18 The Sustainable Urban Drainage (SUDs) ponds are designed to attenuate surface water drainage from the development. The opportunity is being taken to design and landscape them to provide an attractive context to the proposed development, minimising their functionality and enabling them to contribute to the biodiversity of the site as a whole.

**Design Component – Appearance**

4.19 A key purpose of AWE’s “Site and Architectural Design Principles for Buildings” document is to encourage design which will lift new development beyond the purely utilitarian requirements of an essentially functional building.

4.20 AWE’s approach is to encourage a distinctive structural and architectural aesthetic which is designed to increase the overall quality of the public realm and over time to promote an increasingly distinctive and legible working environment.

4.21 The functions and uses to which the HEFF building will be put have a direct impact on the design and the external appearance of the buildings.

4.22 In order to meet necessary safety requirements the HEFF building and the associated mechanical and electrical services outbuilding will be of reinforced concrete construction with external lightweight cladding under a curved overhanging metal roof. The principal external materials will be as follows:

Roof – mill finish aluminium sheeting with standing seams.

Walls – high level walls –high pressure smooth cladding panels in brushed navy blue. Horizontal cladding – silver metallic composite insulated panels.

The traverses or blast protection walls will be constructed with reinforced concrete panels slotted into galvanised steel columns and will incorporate grassed mounding with architectural cone features consisting of lightweight metal frames covered in black EPDM (Ethylene Propylene Diene Monomer) synthetic rubber material.

The main process building will be windowless with a series of stainless steel flues on the north and south elevations rising through the eaves to accommodate heating and ventilation requirements. Emergency doorways are also located along the north and south elevations. The single storey administration block attached to the process block contains doorways and windows. The Mechanical and Electrical Services building which will house large items of equipment is punctuated on its west elevation by three large louvred openings for ventilation purposes and on its east elevation by a combination of louvred openings and doorways.

4.23 In design terms, the objective has been to present a series of inter-related functions and activities in a building envelope which is both aesthetically pleasing and which responds to maximum safety and security standards. This is achieved in the proposed building (and mirrored in the design approach to the Mechanical and Electrical services building) by incorporating a low pitched curved aluminium roof which will create a strong shadow line designed to reduce the perceived bulkiness of the building especially from long-distance views. Composite metallic coated insulated panels are proposed for external walls which will be laid horizontally to counteract, visually, the height of the

process building in particular. Vibrant blue coloured panels to define the upper eaves on the eastern and western elevations together with blue door and window detailing are also proposed. The curved roofs of both the main process building and the mechanical and electrical services building will be in mill finish aluminium sheeting which will dull to a buffish grey colour and will blend in with the general colour tones of other buildings in the vicinity and also in the wider context particularly in relation to views from the Area of Outstanding Natural Beauty (AONB) to the south west. From the ground level much of the main process building will be masked by the traverses or blast protection walls. In order to reduce the visual impact of these whilst maintaining their functional integrity, the traverses will incorporate grassed and planted mounding and will vary in height.

4.24 For safety reasons the main HEFF building will be protected by eight steel lattice work lightning towers each 28 metres high.

4.25 The proposed buildings because of their relatively isolated location will not compete visually with other structures on the Aldermaston site although from longer distance views, at least parts of the main HEFF building including the latticework towers will be seen against the backdrop of the wider developed areas.

4.26 The main HEFF building comprises two principal functions – the manufacturing process facility and the smaller support element which will house administration/messing and stores. This latter element will be single storey in height under a shallow, curved roof which will echo the style of the larger process element to which it is physically attached.

4.27 The height change which reflects the different but related uses and activities within the building will result in a carefully modelled structure which reduces in scale along its length.

4.28 The Mechanical and Electrical Services building is similar in design concept but will be a smaller lower structure matching the larger process building in the use of materials. The two buildings, set in their new and dedicated landscaped surroundings will create a distinctive and carefully planned group of buildings when seen in the context of AWE as a whole.

### **Access Component**

4.29 The HEFF site is located in the centre of the eastern sector of AWE. The site will be accessed from the existing network of roadways and tracks which cross the eastern sector. Operational vehicles and servicing vehicles only will have direct access to HEFF and hardstandings are located adjacent to each of the HEFF and Mechanical and Electrical Services buildings. No car parking for personnel working in the buildings is provided on site. For security and health and safety reasons, all staff car parking is located on the periphery of the AWE site in designated car parks and staff will be taken to and from HEFF by regular shuttle bus services. There will be no public access to the site.

## **5. CONCLUSION**

5.1 The HEFF proposal has been informed by specific technical operational requirements which requires the development to be located within the Explosives Area at AWE Aldermaston.

5.2 At the same time, the development is required to conform to AWE's stringent design and architectural codes which caters for a building's design to exceed the basic requirements of the technical brief.

5.3 The two buildings which comprises the HEFF development will be distinctive in their own right and create a clear architectural statement through the use of modern materials and colours and design elements such as the curved overhanging aluminium roof which will weather and age minimising its impact in the landscape.

5.4 The site is self-contained. As a result the buildings will be discrete when viewed from the wider surrounding landscape.

5.5 The functionality of the building, which reflects the uses and activities to which it will be put, has been carefully interpreted and incorporated into a high quality design.

5.6 Careful attention has been given to the design of the external spaces which will be landscaped to set off the HEFF facility.

5.7 It is considered that the development proposals set a high standard of design commensurate with AWE's vision for the future of the Aldermaston site as a world class Science and Technology Park.