



Defence Infrastructure Organisation

Screening Report

Forward Operating Base, Otterburn Training Area

Defence Infrastructure Organisation
Environmental Planning & Support

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EXECUTIVE SUMMARY

Introduction

Defence Infrastructure Organisation (DIO), part of the Ministry of Defence (MOD), intends to submit a planning application to Northumberland National Park Authority (NNPA) to request that the temporary Forward Operating Base (FOB) at Otterburn Training Area (OTA) is made permanent. Two planning permissions were granted by NNPA and are due to expire in August 2015. The purpose of this report is to consider whether the proposed permanent FOB, which is a project to be undertaken on behalf of the MOD, requires an Environmental Impact Assessment (EIA). The report was prepared by the Environmental and Planning Support team of Defence Infrastructure Organisation (DIO).

Screening Process

It is considered that the FOB development does not fall within any of the descriptions listed in Schedule 1 or 2 in the Town and Country Planning (EIA Regulations) (2011) (herein referred to as “the EIA regulations”). However, the development is located within a National Park which is defined as a ‘sensitive area’ in the EIA Regulations and therefore requires screening.

Characteristics of the Project

The purpose of the project is to provide a permanent FOB to support existing and future military training at Wilkwood Battle Shooting Area (BSA), within the Danger Area of Otterburn Training Area. The principal objectives of the project are:

- To provide a facility for the effective delivery of training to fully prepare military personnel for deploying on a wide range of potential operations;
- To site the facility in a position that achieves optimal training;
- To provide a safe training environment; and
- To minimise any environmental impacts in construction and operation.

The location of the proposed development is shown on Map 1 and will include the following:

- Permanent operation of the existing temporary FOB which currently comprises:
 - Hard standing within the red line boundary shown on Map 1;
 - up to 25 No. ISO containers;
 - 2.1 m high perimeter fence made from HESCO baskets and temporary metal fencing;
 - 7 No. sangar towers;
 - 8 No. BATSIM (Battle simulation areas);
 - a vehicle hide;
 - 3 No. mortar base plates/light gun positions;
 - movable internal screening;
 - mobile water bowser;
 - portaloos; and
 - hard standing at Observation Point 4 (NT892019).

- A number of minor improvements and repairs to the existing temporary FOB are required. These will comprise:
 - where the existing HESCO wall is incomplete, the temporary fence will be replaced with additional HESCO baskets, to match the existing;
 - repairs to existing HESCO perimeter walls;
 - the perimeter wall on the eastern side will be drawn in to provide an administration and parking area;
 - 3 loading bays at entry/egress points;
 - a gate similar to that on the western side of the FOB will replace the existing five bar gate on the eastern side of the FOB to give more training realism;
 - a separate pedestrian gate is to be installed on the eastern side;
 - the existing sangars will be maintained/improved as necessary; and
 - a firing step will be installed running along the inside of the HESCO wall in order to provide a safe platform from which soldiers can engage targets.

The repairs and modifications required to the temporary FOB are expected to take six weeks to complete and will be undertaken by appointed contractor using lightweight vehicles to access the site.

Location of the Project

The FOB development site is located at Wilkwood, grid reference NT 891 027. The proposed development location is shown on Map 1.

Type and Characteristics of the Potential Impact

The proposal was evaluated to consider whether it is likely to have significant effects on the environment by taking account of the characteristics of development, location of development and characteristics of the potential impact. A combination of the themes provided in the EIA Regulations and the MOD Sustainability Appraisal were used to address the aspects of the environment likely to be affected by the development and conclude whether there is a likelihood of significant environmental effects.

Conclusions

Taking account of the characteristics of the development, location and the characteristics of any potential impacts, Defence Infrastructure Organisation is of the view that an EIA will not be required in support of this proposal.

1 INTRODUCTION

Purpose of this report

- 1.1 The purpose of this report is to screen whether infrastructure required to support military training requirements at Otterburn Training Area (OTA), which is a project to be undertaken by or on behalf of the Ministry of Defence (MOD), requires an Environmental Impact Assessment (EIA). The conclusions represent the view of Defence Infrastructure Organisation's Environmental Planning Support team. It aims to help inform the National Park Authority's EIA Screening Opinion.

Background

- 1.2 EIA is a legal requirement for certain projects which are likely to have significant effects on the environment.
- 1.3 Directive 2011/92/EU of the European Parliament and of the Council (as amended) ('the EIA Directive') apply to certain projects which are described in two separate lists in the EIA Directive:
- 'Annex I Project', for which EIA is required in every case;
 - 'Annex II Project', for which EIA is required only if the particular project is judged likely to give rise to significant environmental effects.
- 1.4 The EIA Directive has been transposed into national law in the form of a number of EIA Regulations which apply to England. The Regulations that apply to this project are Town and Country Planning (Environmental Impact Assessment) Regulations 2011 – SI No. 1824 (herein referred to as "the EIA Regulations").
- 1.5 The EIA Directive allows for the use of thresholds or criteria or, as clarified by case law other methods, to help determine whether a project falling within Annex II shall be made subject to an EIA. As a result, a number of thresholds and/or criteria have been set by the EIA Regulations which apply to England.
- 1.6 'Screening' is undertaken to determine whether a project should be made subject to an EIA. The decision that the project requires an EIA can be made by the:
- Developer;
 - Consenting Authorities (Local Planning Authorities or National Park Authorities); and
 - Secretary of State.
- Only the consenting authorities or the Secretary of State can determine that a project listed in Annex II of the EIA Directive with reference to any thresholds/criteria or other methods set by the EIA Regulations they are responsible for, shall not be made subject to an EIA.

Approach to Screening

- 1.7 The MOD has taken account of legislation, policy, guidance and best practice to complete this Screening Report. The EIA Directive has been used as the basis for this Screening Report but also the requirements of Town and Country Planning (Environmental Impact Assessment) Regulations 2011 – SI No. 1824, the transposed from the Directive, have been considered.
- 1.8 In addition the following guidance has been used: National Planning Policy Framework (Department for Communities and Local Government, 2012) and National Planning Practice Guidance: Environmental Impact Assessment (Department for Communities and Local Government, 2014).
- 1.9 In addition, in line with Article 4(4), account will be taken, where relevant, of available results of other relevant assessments of the effects on the environment carried out pursuant to Union legislation other than the EIA Directive as well as previous studies undertaken for the project. These include the following:
- Ministry of Defence (2010) Screening Report. Forward Operating Base to Support Pre Deployment Training. Otterburn Training Area. Defence Estates.
 - Ministry of Defence (2010) Otterburn Training Area. Wilkwood Forward Operating Base Ecology Report. Defence Estates.
 - Ministry of Defence (2015) Climate Effects Risk Assessment Methodology (CIRAM). Otterburn Training Area. Defence Infrastructure Organisation.
 - Ministry of Defence (2015) Habitats Regulations Assessment. Harbottle Moors Special Area of Conservation. Defence Infrastructure Organisation.
- 1.10 The screening process has been divided into four key steps:
- **Step 1:** Does the development fall within any of the descriptions listed in Annex I in the EIA Directive and/or Schedule 1 of the Town and Country Planning EIA regulations?
 - **Step 2:** Does the development fall within any of the descriptions listed in Annex II in the EIA Directive and/or Column 1 of Schedule 2 of the Town and Country Planning EIA regulations?
 - **Step 3:** Does the project listed in Column 1 of Schedule 2 of the Town and Country Planning EIA Regulations, meet or exceed any of the relevant thresholds and/or criteria in Column 2 of Schedule 2 in the Town and Country Planning EIA Regulations or will any part of that development be carried out in a sensitive area? Guidance on what constitutes a sensitive area is provided in Annex A of this Report and also by the criteria/matters provided in Box 2 below.
 - **Step 4:** Is the project listed in Annex II of the EIA Directive and/or is a Schedule 2 project within the meaning Town and Country Planning EIA Regulations following Step 3, likely to have significant effects on the environment?

Approach to identifying likely significant effects

1.11 In order to identify whether there are likely to be significant effects on the environment, it is necessary to consider the nature and purpose of the project; its location; and characteristics of the potential impact on the environment. Therefore, account will be taken of the selection criteria/ matters (where relevant) set out in Annex III of the EIA Directive and Schedule 3 of the Town and Country Planning EIA Regulations. The following boxes present the selection criteria/ matters:

◆ **Characteristics of the project**

Box 1

The characteristics of project must be considered with particular regard to:

- (a) the size and design of the whole project;
- (b) the cumulative effect with other existing and/or approved projects and the combined effect of the project and other plans and projects;
- (c) the use of natural resources in particular land, soil, water and biodiversity;
- (d) the production of waste;
- (e) pollution and nuisances;
- (f) the risk of major accidents and /or disasters which are relevant to the project concerned, including those caused by climate change, in accordance with scientific knowledge;
- (g) the risks to human health (for example due to water contamination or air pollution).

◆ **Location of the project**

Box 2

The environmental sensitivity of geographical areas likely to be affected by project must be considered, with particular regard to:

- (a) the existing and approved land use;
- (b) the relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground;
- (c) the absorption capacity of the natural environment, paying particular attention to the following areas -
 - (i) wetlands, riparian areas, river mouths;
 - (ii) coastal zones and the marine environment;
 - (iii) mountain and forest areas/zones;
 - (iv) nature reserves and parks;
 - (v) areas classified or protected under national legislation; Natura 2000 areas designated by Member States pursuant to Directive 92/43/EEC and Directive 2009/147/EC;
 - (vi) areas in which there has already been a failure to meet the environmental quality standards laid down in Union legislation and relevant to the project, or in which it is considered that there is such a failure;
 - (vii) densely populated areas;
 - (viii) landscapes and sites of historical, cultural or archaeological significance.

◆ **Type and characteristics of the potential impact**

Box 3

The likely significant effects of projects on the environment must be considered in relation to criteria/ matters set out in Boxes 1 and 2 above, with regard to the impact of the project on the factors specified in Table 1 below, taking into account:

- (a) the magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected);
- (b) the nature of the impact;

1.12 In particular, the significance of the potential effects will be assessed using the appropriate national and international quality standards limits, policy objectives and results of any consultations undertaken to date. Where no such standards exist, a description of the judgements (assumptions and value systems) that underpin the attribution of significance will be provided and any gaps or uncertainty will be identified. The assessment of significance will consider the importance or value of the affected resource or receptor, its sensitivity to change, and the magnitude of the predicted effect. The criteria for determining significance varies from topic to topic but the general principle, based on professional judgement using the available information, that has been followed is that higher magnitude effects on important resources/receptors would be regarded as significant. Lower magnitude effects on less important resources/receptors would not generally be regarded as significant. This is demonstrated in Table 1.1 below:

Table 1.1 Determining significance

		<i>Importance/sensitivity of resource or receptor</i>				
		<i>Very High</i>	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>Negligible</i>
<i>Magnitude of potential effect</i>	<i>Major</i>	Very Large	Large or Very Large	Moderate or Large	Slight or Moderate	Slight
	<i>Moderate</i>	Large or Very Large	Moderate or Large	Moderate	Slight	Neutral or Slight
	<i>Minor</i>	Moderate or Large	Slight or Moderate	Slight	Neutral or Slight	Neutral or Slight
	<i>Negligible</i>	Slight	Slight	Neutral or Slight	Neutral or Slight	Neutral
	<i>No Change</i>	Neutral	Neutral	Neutral	Neutral	Neutral

1.13 The importance/sensitivity of resource or receptor has been determined through the baseline studies and each discipline sets out their criteria for this. In general, the following criteria will be used:

- Very High – international importance, very rare, international scale and very limited potential for substitution.
- High – national importance, rare, national scale, and limited potential for substitution.
- Medium – regional/ county importance, rare in the region/ county, regional scale, limited potential for substitution.
- Low – local importance, rare in the local area, local scale.
- Negligible – limited importance, not rare, local scale.

1.14 In line with Article 4(4) of the EIA Directive, a description of any features of the project and/or measures envisaged to avoid or prevent what might otherwise have been significant adverse effects on the environment will be taken into account to determine overall significance. As a result the residual effects will then be described as either being ‘likely’ or ‘unlikely’ to be significant.

Factors of the Environment

1.15 Table 1.2 below is based on Article 3(1) and Annex IV (4) of the EIA Directive which sets out the factors of the environment which may be considered under the Directive. This Screening Report will address these factors with reference to relevant themes in the MOD Sustainability Appraisal (MOD SA) process as set out in the second column of Table 1.2.

Table 1.2 - Factors of the Environment

EIA Directive	MOD SA Themes
Population	Communities and Social Values, Economy and Employment
Human Health	Health, Safety and Wellbeing, Noise and Vibration;
Biodiversity (e.g. Flora and Fauna)	Biodiversity and Nature Conservation
Land (e.g. land take)	Sustainable Construction and the Built Environment
Soil (e.g. organic matter, erosion, compaction, sealing)	Geology and Soils
Water (e.g. hydromorphological changes, quantity, quality)	Water
Air	Air Quality
Climatic (e.g. greenhouse gas emissions, Effects relevant to adaptation)	Energy and Climate Change
Material assets	Infrastructure and Amenities
Cultural Heritage including architectural and archaeological aspects	Historic Environment
Landscape	Landscape and Townscape
Interaction between the above factors	Waste; Sustainable Construction and the Built Environment; Sustainable Procurement; Travel and Transport

2 Screening Process

- 2.1 **Step 1: Does the development fall within any of the descriptions listed in Annex 1 of the EIA Directive and/or Schedule 1 of the T&CP EIA Regulations?**

No.

- 2.2 **Step 2: Does the development fall within any of the descriptions listed in Annex II of the EIA Directive and/or Column 1 of Schedule 2 of the T&CP EIA Regulations?**

No.

- 2.3 **Step 3: Does the project listed Column 1 of Schedule 2 of the T&CP EIA Regulations, meet or exceed any of the relevant thresholds and/or criteria in Schedule 2 in the T&CP EIA Regulations or will any part of that project be carried out in a sensitive area?**

As stated above, the proposed development does not fall within Schedule 1 or 2 of the T&CP EIA Regulations and therefore the project does not meet or exceed any of the relevant thresholds and/or criteria in Schedule 2 of the T&CP Regulations. However, the proposed development is located wholly within Northumberland National Park, which is classed as a sensitive area, and upon the request of NNPA this EIA Screening Request has been prepared for their consideration.

- 2.4 **Step 4: Is the project listed in Annex II of the EIA Directive and/or is a Schedule 2 project within the meaning T&CP EIA Regulations following Step 3, likely to have significant effects on the environment?**

In order to help answer this question, the information specified in Article 4(4) and Annex IIA of the EIA Directive and Regulation 5 of the T&CP EIA Regulations, has been provided in Sections 3, 4 and 5 of this Report. Section 6 offers the informal view of the Defence Infrastructure Organisation's Environmental Planning Support Team.

3 CHARACTERISTICS OF THE PROJECT

Introduction

- 3.1 The project is to create a permanent operational FOB at OTA. A temporary FOB is currently located at OTA and was granted temporary planning permission by NNPA, in support of Pre Deployment training exercises for Operation HERRICK (UK military operations in Afghanistan).
- 3.2 There is an ongoing requirement (as outlined below) to retain the FOB, with some minor modifications and improvements to its layout, and operate it on a permanent basis.
- 3.3 The existing temporary FOB consists of an existing area of hard standing supporting up to 25 ISO containers and bounded by a 2.1m high perimeter fence including sections constructed from HESCO baskets (stone filled wire baskets) and with seven sangars (elevated watch towers).

Background to the Project

- 3.4 The temporary FOB was subject to two separate planning applications. The first planning permission, granted on 19th August 2010 (reference number 10NP0018), was for the development of a FOB consisting of the hard standing area, enclosed by a perimeter wall for housing ISO containers. The second planning permission, granted 20th April 2011 (reference number 11NP0002), was for the construction of 7 No. sangar towers, 7 No. battlefield simulation areas and associated works. These two planning permissions are due to expire on 18th August 2015.
- 3.5 In support of the two planning permissions outlined above, an EIA Screening Request was prepared by the DIO, and submitted to NNPA in October 2010, covering the following development:
- 0.21 ha of existing and 0.55ha of proposed permeable hardstanding;
 - Up to 25 No. ISO containers – to provide overnight accommodation;
 - 2.1 m high perimeter fence made from HESCO baskets (stone filled wire baskets);
 - Up to 9 sangars (watch towers);
 - Up to 8 No. BATSIMS (Battle simulation areas) (12 x 2m geotextile membrane and hard core);
 - A vehicle hide;
 - Mortar base plates (3 x 2m geotextile membrane and hard core);
 - Movable screens to subdivide areas within the FOB;
 - Mobile water bowser;
 - Portaloos;
 - Car parking at OP4;
 - 14.4 x 14.4m compound at Quickening Cote within 320m² area of hard standing;
 - Parking for up to 25 vehicles; and
 - 9.6 x 14.4m structure at Davyshiel plus 30m long external wall.

- 3.6 In response, NNPA issued an EIA Screening Opinion in November 2010 stating that an EIA was not required for the proposed development outlined above.

The Need for the Project and the Regulated Activity

- 3.7 The FOB is required to support enduring military training needs that are now focussed on unpredictable contingency operations. The British Armed Forces are required to train to the highest standards to meet operational needs and training areas need to replicate the facilities and atmosphere that will confront them in theatre. Lessons identified from the campaign in Afghanistan and historical lessons from Northern Ireland, Bosnia and Iraq have recognised the continued need for UK armed forces to project military capability from protected FOBs. Such FOBs are now an integral part of UK military doctrine and UK Armed Forces must be able to train in, from and around them. Otterburn is on one of the UK's major training areas which caters for the highest levels of UK mainland training activity up to Brigade level combined arms dry training and live firing.

- 3.8 In addition, the Strategic Defence and Security Review (SDSR), published by the Government in October 2010, laid out the commitments expected of the UK Armed Forces. The Army 2020 programme is the Army's response to this SDSR and the subsequent drawdown of Armed Forces and their families from Germany back to the UK, otherwise known as the Army Basing Programme, will result in a continued demand for training facilities in the UK.

The Project and the Regulated Activity

- 3.9 The existing FOB was built with a projected lifetime of five years and has now reached a state of some disrepair. In addition extended use of the FOB has identified some improvements that could be made. Where the existing HESCO wall is incomplete, the temporary fence will be replaced with additional HESCO baskets, to match the existing. The FOB will continue to occupy the same area of hard standing although the eastern wall will be drawn in to provide an exterior admin area for range staff and a vehicle parking area. A gate similar to that on the western side of the FOB will replace the existing five bar gate on the eastern side of the FOB to give more training realism and a pedestrian gate will also be provided.

- 3.10 The existing sangars will be retained and maintained/improved as necessary. A firing step will be installed running along the inside of the HESCO wall in order to provide a safe platform from which soldiers can engage targets. These improvements to the existing sangars and the installation of the firing step will not be externally visible.

No New Activities

- 3.11 The activities conducted at the Wilkwood FOB are not new; ranges are already used for all these activities involving differing live fire and dry training elements.

Why this training has to take place at Otterburn Ranges

3.12 The activity is focussed on a training area which provides the best opportunities for dismounted operations and provides the opportunity for Combined Arms Firing through the control of airspace. The only other military training area in UK that could provide an alternative solution is Salisbury Plain; however Salisbury Plain is the only dry training vehicle manoeuvre area in UK and is prioritised for this activity. Otterburn is principally an artillery range; but, light infantry training, attack helicopter firing, fighter ground attack (aircraft), and demolitions are also currently conducted. The impact area is the single largest within the UK. The Training Area can be used at the lowest scale, for example a pair of riflemen carrying out fire and manoeuvre training, and at the highest scale, for example an infantry battalion (300-1,000 personnel) supported by artillery, mortars, anti-tank guided weapons and fighter ground attack aircraft utilising the whole danger area.

Description of the proposed development

3.13 A FOB is a defensive position surrounded by protective walls within which troops are accommodated while they are operating in a hostile environment. The FOB, used for training, should replicate the actual FOBs used in operational theatre as closely as possible for maximum training value. The elevated sangars provide watch towers for troops to identify the enemy. Firing points and Battle Simulation Areas (BATSIMS) are used to simulate attacks to training units.

3.14 The proposed development will include the permanent operation of the existing temporary FOB (as shown at **map 1**) which currently comprises:

- An area of hard standing;
- 25 No. ISO containers;
- Movable screening within the FOB compound for internal area subdivision.
- Perimeter wall surrounding the FOB, 2.1 metres high with castellated cut-outs in the wall, 1.2m high to allow vehicle mounted weapon systems and personnel to fire from. The wall is constructed of HESCO baskets and temporary fencing, an example shown at **photo 1**. The existing wall colour of the HESCO baskets was agreed with NNPA prior to their original installation.
- 7 No. elevated sangar towers – constructed of concrete and wood (elevated watch towers) at strategic locations in the perimeter wall. (as shown in **photo 2**)
- 8 No. BATSIM (Battle simulation areas) which are located outside of the perimeter fence. These are walled pits filled with sand, which can be constantly re-used time and again. BATSIM dimensions: 12m long x 2m wide x 0.5m deep.
- A vehicle hide;
- Mortar base plates and light gun firing positions, 3 x 2m² base plates constructed of geotextile wood grilles and hard core capable of taking mortar recoil;
- Mobile water bowser and portaloos brought on to site specifically for training exercises; and
- Car parking at OP4.

- 3.15 In addition to operating the temporary FOB on a permanent basis, a number of minor modifications and repairs are required to be undertaken to ensure that the FOB is fit for military purpose. This will comprise:
- where the existing HESCO wall is incomplete, the temporary fence will be replaced with additional HESCO baskets, to match the existing;
 - repairs to existing HESCO perimeter walls;
 - the perimeter wall on the eastern side will be drawn in to provide an administration and parking area;
 - a gate similar to that on the western side of the FOB will replace the existing five bar gate on the east side to give more training realism;
 - the existing sangars will be maintained/improved as necessary; and
 - a firing step will be installed running along the inside of the HESCO wall in order to provide a safe platform from which soldiers can engage targets. This will not be externally visible .
- 3.16 The repairs and modifications required to the temporary FOB are expected to take six weeks to complete and will be undertaken by a appointed contractor using lightweight vehicles to access the site.
- 3.17 For the purposes of this EIA Screening Request report, the modification and repair works are considered as the “construction” phase of the proposed development. Where as the permanent operation of the FOB (as outlined in para 3.15) is considered as the “operational” phase of the proposed development.

4 LOCATION OF DEVELOPMENT

Introduction

- 4.1 OTA lies approximately 30 miles northwest of Newcastle and comprises 23,472 hectares of the Northumberland uplands and is almost totally within the Northumberland National Park (NNP) (see **Map 2** – location plan). The landscape encompasses rolling grass and moorlands which are bounded by the Cheviot Hills to the north, the Rede valley to the west and the Coquet valley to the east. The majority of the Training Area is occupied by 31 agricultural tenancies. There are 12 Sites of Special Scientific Interest across the site, of which four are also part of three larger Special Areas of Conservation. There are approximately 800 identified sites of archaeological interest on OTA, of which 75 are protected as Scheduled Monuments (SMs) and 5 are Listed Buildings.

Background

- 4.2 The proposed development site is located in the Wilkwood Battle Shooting Area (BSA)¹ in Redesdale Range Area B at grid reference NT 891 027. This is situated at an altitude of approximately 230m near the southern edge of the main impact danger area. It is an area of upland grassland and scattered woodland which is relatively intensively used for military training with tracks, areas of hard standing and targets. The location is shown on Map 1.

Existing Management Arrangements

- 4.3 The proposed developments are entirely within the danger area at Otterburn, an area that is heavily used for military training activities. Much of the area is also grazed by livestock owned by the farm tenants. OTA is regulated by Otterburn Training Area Byelaws (SI 919, 1971) which provide statutory powers to prevent public access when live firing is taking place. The allocation and co-ordination of all training activities both live and dry, is carried out by Range Control.
- 4.4 Activities at OTA are undertaken in accordance with the Integrated Rural Management Plan (IRMP), 2012. The IRMP was produced in conjunction with a number of statutory stakeholders, with the overarching aim of providing optimal and sustainable military training. The IRMP provides the objectives for management of the various land interests on OTA, (including military training, estate management, woodland management, nature conservation, archaeology and cultural heritage, landscape and access and recreation), providing a framework on which future decisions can be made.
- 4.5 The IRMP is supported by a number of more detailed management plans covering specific issues such as SSSI management plans, biodiversity action plans and a detailed, site specific Archaeology and Historic Environment Management Plan.

¹ A BSA is a designated area in which small arms field firing (live firing manoeuvre training) may take place.

- 4.6 The proposed developments are within OTA impact area and cannot be viewed from any settlements. There are no public rights of way and access to the danger area is only available by authorised personnel. There is limited visibility of parts of the danger area from Otterburn range roads and distant public highways.

Statutory and Non-Statutory Designations

- 4.7 OTA is mostly located within Northumberland National Park and occupies about 23% of the National Park. (see **Map 2**)
- 4.8 There are National (SSSIs) and European (SAC) nature conservation designations on OTA but not within the area of the proposed development. There are a number of scheduled ancient monuments (75) and 5 listed buildings on OTA, none of which are affected by these proposals.

5 TYPE AND CHARACTERISTICS OF THE POTENTIAL IMPACTS AND EFFECTS

Introduction

This Section provides a description and examination of the potential environmental effects of the proposed development, under the relevant themes identified in Table 1.2 and by reference to Box 3 and their links to receptors that may give rise to impacts.

5.1 Travel and Transport

Existing Conditions

5.1.1 OTA is an existing military training facility with the associated vehicle movements. The military vehicles currently access the site via the A696 and A68, in agreement with the local highways authority.

Potential Effects and Significance

5.1.2 Traffic and transport effects have been considered during the construction and operation phases of the proposed development. There will be a small number of vehicles accessing the site to undertake the modifications/repair works to the existing FOB, utilising the existing MOD roads on the OTA which are closed to public access. The construction phase of the proposed development will result in a temporary minor increase in the number vehicles entering and leaving the site. Therefore it is considered unlikely there will be any significant environmental effects.

5.1.3 Once operating on a permanent basis, it is not anticipated that the operational use of the proposed development will cause significant traffic and transport effects. While the FOB and surrounding area is in use other military training operations are displaced and so no increase in vehicular traffic is anticipated.

Table 5.1 Review of Travel and Transport Effects

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Construction			
Tenant farmers, military users and local community	Temporary minor increases in traffic accessing the existing FOB to undertaken modification/repair works.	Implementation of current best practice and controls including a Contractors Traffic Management Plan and membership of the Considerate Constructors Scheme	Unlikely to be significant.
Operation			
None	No change to the existing level of training activity on OTA.	N/A	N/A
Decommissioning			
Tenant farmers, military users and local community	Temporary minor increases in traffic accessing the permanent FOB site to dismantle and remove the FOB and associated infrastructure.	Implementation of current best practice and controls including a Contractors Traffic Management Plan and membership of the Considerate Constructors Scheme	Unlikely to be significant.

Effects Requiring Further Investigation

5.1.4 None.

5.2 Water

Existing Conditions

5.2.1 There is mains water supply to the existing FOB. Small watercourses receive drainage from the existing FOB and its environs and drain into tributaries of Smiddy Cleugh. The ditches and other small watercourses are relatively natural although there are culverts over pre-existing tracks in the area.

Potential Effects and Significance

5.2.2 Effects on water and hydrology have been considered during the construction and operation phases of the proposed development. It is not anticipated that any water will be required for mixing of concrete (or the like) for the construction phase works. There are no requirements to pipe water or modify existing water courses.

- 5.2.3 Once in permanent operation, portable water bowzers will be brought to the FOB, as required, to support the military operation. Portaloos will be brought in under contract, as required, for training exercises. It is not anticipated that the hydrology of the area will be affected by the proposed development as there is no intention to tarmac any surfaces or increase the area of impermeable surfaces.

Table 5.2 Review of Water Effects

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Construction			
Contractors and military users	Temporary demand for water will be supplied with bowser.	N/A	Unlikely to be significant.
Operation			
Contractors and military users	Temporary demand for water will be supplied with bowser..	N/A	Unlikely to be significant.
Decommissioning			
Contractors and military users	Temporary demand for water will be supplied with bowser..	N/A	Unlikely to be significant.

Effects Requiring Further Investigation

- 5.2.4 None.

5.3 Energy and Climate Change

Existing Conditions

- 5.3.1 There is no permanent on site electricity source, temporary power supply is brought to the FOB, as required, for military exercises.

Potential Effects and Significance

- 5.3.2 Energy and climate change effects have been considered during the construction and operation phases of the proposed development. During construction there will be a small increase in fuel and energy consumption due to works activity. It is considered unlikely there will be any significant environmental effects.
- 5.3.3 During operation there will be no change to existing energy usage as generators are already used in military exercises, for example to provide power for accommodation ISOs and HQ buildings.

Table 5.3 Review of Energy and Climate Change Effects

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Construction			
None	N/A	N/A	N/A
Operation			
None	N/A	N/A	N/A
Decommissioning			
None	N/A	N/A	N/A

Effects Requiring Further Investigation

5.3.4 None.

5.4 Noise and Vibration

Existing Conditions

5.4.1 OTA is an established military training area and gunfire noise is an accepted part of the military use and the baseline noise conditions in the area.

Potential Effects and Significance

5.4.2 Noise and vibration effects have been considered during the construction and operation phases of the proposed development. During the construction phase of the proposed development, noise is anticipated to be low level and works are expected to take place over a maximum of six weeks. The proposed development is in a remote location and it is not predicted that the construction noise would be heard outside of the training area. Mitigation to avoid or reduce possible impacts will be implemented using current best practice and controls will be put in place through the Considerate Constructors Scheme.

5.4.3 There will be no an ‘increase’ in military use associated with the permanent use of the FOB, so firing will not occur outside of established patterns or exceed the agreed noise limit of 130 Db.

Table 5.4 Review of Noise and Vibration Effects

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Construction			

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Tenant farmers and local community. Wildlife	Temporary, minor increase in noise resulting from construction works to undertake modification/repair works.	Mitigation to avoid or reduce possible impacts will be implemented using current best practice and controls will be put in place through the Considerate Constructors Scheme.	Unlikely to be significant.
Operation			
Tenant farmers and local community. Wildlife	There will be no 'increase' in military use associated with the permanent use of the FOB.	As currently agreed, firing will not occur outside of established patterns or exceed the agreed noise limit of 130 Db.	Unlikely to be significant.
Decommissioning			
Tenant farmers and local community. Wildlife.	Temporary minor increases in noise resulting from the dismantling and removal of the FOB and associated infrastructure.	Mitigation to avoid or reduce possible impacts will be implemented using current best practice and controls will be put in place through the Considerate Constructors Scheme.	Unlikely to be significant.

Effects Requiring Further Investigation

5.4.4 None.

5.5 Air Quality

Existing Conditions

5.5.1 The site is not located within an Air Quality Management Area.

Potential Effects and Significance

5.5.2 Air quality effects have been considered during the construction and operation phases of the proposed development. During the construction phase there is the potential for dust and emissions to be produced from the modifications/repair works. Mitigation to avoid or reduce possible impacts will be implemented in accordance with regulation, policy and best practice and controls laid out by the Considerate Constructors Scheme, such as dust dampening if required. In view of the low volume of dust and emissions likely to be produced given the size of the development, it is considered unlikely there will be any significant environmental effects.

5.5.3 During operation it is not anticipated that there will be any change in air quality.

Table 5.5 Review of Air Quality Effects

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Construction			
Construction staff. Surrounding habitats.	Potential for minor levels of dust and emissions to be produced from the modifications/repair works.	Mitigation to avoid or reduce possible impacts will be implemented in accordance with regulation, policy and best practice and controls laid out by the Considerate Constructors Scheme, such as dust dampening if required.	Unlikely to be significant.
Operation			
None	N/A	N/A	N/A
Decommissioning			
None	N/A	N/A	N/A

Effects Requiring Further Investigation

5.5.3 None.

5.6 Waste

Existing Conditions

5.6.1 The location is an existing developed site and waste generated from current operational use is managed by existing waste management systems.

Potential Effects and Significance

5.6.2 During construction there will be waste arising from undertaking the modification/repair works. Temporary metal sheeting will need to be removed from site and re-used or recycled. Mitigation to avoid or reduce waste will be implemented in accordance with regulation, policy and best practice and controls will comprise a Contractors Waste Management Plan. Given the small amount of works required and the modular construction of the FOB it is considered unlikely there will be any significant environmental effects. During operation existing waste management systems will continue to be employed. Military Standing Orders give clear instruction on how waste is to be dealt with during and following training exercises. OTA has its own recycling centre based at Otterburn camp. All waste from the training area is taken to the camp to be sorted prior to disposal.

Table 5.6 Review of Waste Effects

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Construction			
Local community	Disposal involving re-use or recycling of metal sheeting will be needed.	Implement Contractors Waste Management Plan and optimise opportunities for recycling.	Unlikely to be significant.
Operation			
Military users, local community	Generation of small-scale waste from military training activities, e.g. training sundries, catering etc.	Existing waste management processes given in Range Standing Orders to be followed.	Unlikely to be significant.
Decommissioning			
Local community	Disposal of FOB infrastructure.	Implement Waste Management Plan and optimise opportunities for re-use/recycling.	Unlikely to be significant.

Effects Requiring Further Investigation

5.6.3 None.

5.7 Geology and Soils

Existing Conditions

5.7.1 Investigations were carried out at the site prior to the construction of the existing temporary FOB and no areas required further investigation. The ground conditions currently consist of areas of concrete and gravel-based hard standing. Underlying geology is sedimentary rocks of the Scremenston Coal Group of the Yoredale Series overlain by cambic stagnohumic gley soils.

Potential Effects and Significance

5.7.2 During construction there is the potential for spills which may affect adjacent soil and vegetation. Mitigation to avoid or reduce possible impacts will be implemented in accordance with regulation, policy and best practice and controls will comprise Contractors Construction Procedure Plan and spill kits on site. It is considered unlikely there will be any significant environmental effects. During operation existing management systems will continue to be employed.

Table 5.7 Review of Geology and Soils Effects

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Construction			
Soils/ substrates	Low risk of spills including fuel from vehicles	Mitigation to avoid possible impacts will be implemented in accordance with regulation, policy and best practice and controls laid out by the Considerate Constructors Scheme. Spill kit to be kept on site.	Unlikely to be significant.
Operation			
Soils/ substrates	Low risk of spills including fuel from vehicles	Mitigation to avoid or reduce possible impacts will be implemented in accordance with regulation, policy and best practice. Spill kit to be kept on site.	Unlikely to be significant.
Decommissioning			
Soils/ substrates	Low risk of spills including fuel from vehicles	Mitigation to avoid or reduce possible impacts will be implemented in accordance with regulation, policy and best practice. Spill kit to be kept on site.	Unlikely to be significant.

Effects Requiring Further Investigation

5.7.3 None

5.8 Biodiversity and Nature Conservation**Existing Conditions**

5.8.1 The location is a currently developed site supporting areas of concrete and hard standing with ISO containers and other military training infrastructure. The immediately surrounding area is predominantly upland acid and marshy grassland, with scattered woodland and some areas of blanket bog and upland heathland also present in the wider area. No designated nature

conservation sites will be directly affected. The Wilkwood FOB is within 2 km from Harbottle Moors Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI), Ramsey's Burn Wood SSSI and Yardhope Flow, part of Otterburn Mires SSSI. There are no records for legally protected species in the vicinity. Further information on the ecology of the area around the FOB is given in the Defence Estates ecology report (2010) Since then monitoring of the vicinity of the FOB has taken place and there has been no change in the surrounding vegetation, including the integrity of the marshy grassland and flushes associated with water courses.

Potential Effects and Significance

5.8.3 No designated sites or species or habitats of principal importance listed under section 41 of the Natural Environment and Rural Communities (NERC) Act (2006) will be affected by the proposed development. There has been and will continue to be a small-scale reduction in the area of species-poor acid and marshy grassland but these habitats are widespread in the surrounding area.

5.8.4 During modification and repair of the FOB there is the possibility of short-term disturbance to fauna. It is recommended that a site inspection takes place immediately before commencing works to check for the presence of any protected or other species of conservation concern in the working area and mitigate if necessary. Once in permanent operation of the FOB there may be some intermittent disturbance depending on training activity but resident fauna are already accustomed to military activities in the general area. The potential for disturbance and the continued presence of a hardcore surface will have a minor effect due to the small scale of the development relative to the overall resource at OTA. There is the possibility of restoration to enhanced habitat when the facilities are no longer required.

Effects Requiring Further Investigation

5.8.5 None

Table 5.8 Review of Biodiversity and Nature Conservation Effects

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Construction			
Wildlife	Potential small-scale and temporary disturbance to fauna	Site check by ecologist prior to commencing works	Once mitigation measures have been implemented, effects from construction works are unlikely to be significant

Operation			
Wildlife species & habitats	Ongoing small-scale and temporary disturbance to fauna and longer term loss of 0.76 ha of species-poor grassland to the development.	Continuation of in-house ecological monitoring.	Slight significance
Decommissioning			
Wildlife	Potential small-scale and temporary disturbance to fauna	Site check by ecologist prior to commencing works. Site restoration to moorland vegetation when FOB no longer required.	Unlikely to be significant.

5.9 Historic Environment

Existing Conditions

5.9.1 The existing temporary FOB is situated on relatively open moorland at 270m AOD. Three scheduled monuments (SMs) - two 20th century observation posts (SM32795, SM32796) and a Bronze Age cairn (SM28545) - are situated on high ground 600m to the south of the FOB. Four buildings, a stack stand and four bell pits are situated within 1 km of the site.

Potential Effects and Significance

5.9.2 Historic environment effects have been considered during the construction and operation phases of the proposed development. The two observation posts and the Bronze Age cairn are scheduled monuments and are nationally important heritage assets of high significance. The remaining sites identified above are of local significance. The FOB does not have a direct effect on the significance of any of the sites. However, the effect of the FOB on the setting of the scheduled monuments has been considered. Two of the SMs are 20th century observation posts and are former military structures. The effect of the FOB on the setting of these two sites is considered to be negligible. The appreciation of the Bronze Age cairn is not greatly affected by the presence of the FOB and the impact on its setting is thus considered to be minor.

Table 5.9 Review of Historic Environment Effects

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Construction			
None	N/A	N/A	N/A
Operation			

Scheduled Monuments	Potential impact on setting	None	Unlikely to be significant. The impact on the setting is considered to be negligible/minor
Decommissioning			
None	N/A	N/A	N/A

Effects Requiring Further Investigation

5.9.3 None

5.10 Landscape

Existing Conditions

5.10.1 The proposed development is within Northumberland National Park and is therefore in a ‘sensitive location’ as defined in Regulation 2 (1) of the EIA Regulations. The proposed development is in a remote location and cannot be viewed from any residential properties or rights of way. However, this is a well established military training area (since 1911) and infrastructure developments that support the military training requirement are a component of the landscape character. Military use of the area has taken place since Roman times and landscape features reflecting this date from this time to the present day.

5.10.2 A Landscape Character Assessment of Tynedale District and Northumberland National Park was produced in 2007 by Julie Martin Associates for Northumberland National Park Authority. This informed NNP’s Local Development Framework-Landscape Supplementary Planning Document (2011). This document acknowledges the Military Training use over a significant part of the area characterised as ‘Rolling Uplands’, within which the proposed development site is located. Other key characteristics are the “broad, open large-scale rolling moorland” and extensive areas of semi-natural vegetation”. In terms of guidelines for future Military development there should be “sensitive management of areas used for military training and avoid or minimise any widening of existing tracks and roads or erection of new buildings and signage.”

Potential Effects and Significance

5.10.3 The FOB is in a remote location and not widely visible from the general area. It is located in one of the more intensively used parts of the Training Area in a BSA within the impact area, where there is already some other military infrastructure including range huts and hard standings.. The location has been selected to avoid more sensitive areas with nature conservation or archaeological designations and less existing infrastructure. It avoids some of the better quality landscapes such as the Cheviot Hills and Sandstone Ridge. Improvements to the FOB will continue to implement measures to reduce visual impact such as colour scheme agreed with NNPA.

Table 5.10 Review of Landscape and Townscape Effects

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Construction			
National Park (as a resource) Local community, visitors and residents of National Park (receptors)	Potential for temporary visual impact resulting from works vehicles and activities in undertaking modification/repair works	Minor increase in the number of vehicles accessing the site to undertake the modification/repair works. Works are anticipated to last approximately six weeks, resulting in a temporary, short term effect on visual impact. Colour of structures to blend with landscape.	Unlikely to be significant.
Operation			
National Park (as a resource) Local community, visitors and residents of National Park (receptors)	Potential visual impact resulting from permanent operation of the FOB	Location of FOB selected to avoid highest quality landscapes and not highly visible to local receptors. Colour of any new boundary walls/fencing to be agreed in advance with NNPA. Existing FOB infrastructure (such as HESCO baskets and ISO containers) to be maintained in existing colour (brown/green as agreed with NNPA for previous planning permission) to blend with landscape.	Once mitigation measures have been fully implemented, there is likely to be a slight significant effect.
Decommissioning			

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
National Park (as a resource) Local community, visitors and residents of National Park (receptors)	Beneficial effect on visual impact once the FOB is no longer required	Potential for restoration to moorland when no longer required.	Unlikely to be significant.

Effects Requiring Further Investigation

5.10.4 None

5.11 Health, Safety and Wellbeing

5.11.1 During construction there is the potential for accidents. Mitigation to avoid or reduce possible impacts will be implemented in accordance with regulation, policy and best practice and controls will comprise Construction Design Management Regulations, Contractors Health & Safety (H&S) Management Plan and H&S audits. As a result, it is considered unlikely there will be any significant effects.

5.11.2 During military training within the completed FOB, existing regulations for the maintenance of a safe place for military training and for the safe conduct of live firing will be in operation. These regulations include Joint Services Publication (JSP) 403; Handbook of Defence Land Ranges Safety Volumes I –V; JSP 815 Defence Environment and Safety Management; and Pamphlet 21 Regulations for Training with Armoured Fighting Vehicles, Infantry Weapon Systems and Pyrotechnics. In addition the existing OTA Standing Orders will continue to apply. The MOD has a duty of care to ensure that our troops are competently trained before deploying to theatre and facilities such as these at OTA are essential to achieve battle readiness.

5.12 Communities and Social Values

Existing Conditions

5.12.1 The nearest residential settlement to the existing temporary FOB is Harbottle to the north east.

Potential Effects and Significance

5.12.2 Effects on communities and social values have been considered during the construction and operation phases of the proposed development. There will be no change to the existing level of training activity on OTA and therefore no potential effects on the surrounding communities or local environmental quality experienced by them.

Table 5.12 Review of Communities and Social Values Effects

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Construction			
Local communities	Short term, minor increase in local traffic movements associated with the modification/repair works. These are unlikely to result in any change in local environmental quality experienced by the local communities.	N/A	Unlikely to be significant.
Operation			
Local communities	No change to the existing level of training activity on OTA therefore no change in local environmental quality experienced by local communities.	N/A	Unlikely to be significant.
Decommissioning			
None	N/A	N/A	N/A

Effects Requiring Further Investigation

5.12.3 None.

5.13 Infrastructure and Amenities

Existing Conditions

5.13.1 As outlined above, the nearest residential settlement to the existing temporary FOB is Harbottle to the north east, however infrastructure and amenities required by personnel attending OTA are provided wholly by the associated Otterburn Camp.

Potential Effects and Significance

5.13.2 Effects on infrastructure and amenities have been considered during the construction and operation phases of the proposed development. There will be no change to the existing level of training activity on OTA and therefore no potential effects on the surrounding infrastructure or amenities. For users of the proposed development, these will continued to be provided wholly by Otterburn Camp.

Table 5.13 Review of Infrastructure and Amenities Effects

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Construction			
None	N/A	N/A	N/A

Operation			
Military Users	Improved, long term provision of training facilities on OTA.	None.	Unlikely to be significant.
Decommissioning			
None	N/A	N/A	N/A

Effects Requiring Further Investigation

5.13.3 None.

5.14 Economy and Employment

Existing Conditions

5.14.1 There are a number of tenant farmers on the OTA.

Potential Effects and Significance

5.14.2 There will be no change to the existing level of training activity on OTA and therefore tenants will continue to use the land as per their existing agreements with the MOD resulting in no effect on their farming operations or management.

Table 5.14 Review of Economy and Employment Effects

Resource / Receptor	Changes and potential effects	Mitigation/ Controls	Significance of effect taking into account the mitigation/ controls (Unlikely/ Likely)
Construction			
Estate tenants	Short term, temporary access required for the modification/repair works to the FOB.	Tenants to be notified of works commencing.	Unlikely to be significant.
Operation			
Estate tenants	No change to the existing level of training activity on OTA therefore no change in existing access arrangements between tenant and MOD.	Continue to operate existing system for notifying tenants of military activity.	Unlikely to be significant.
Decommissioning			
None	N/A	N/A	N/A

Effects Requiring Further Investigation

5.14.3 None.

6 CONCLUSIONS

- 6.1 It is considered that the FOB development does not fall within any of the descriptions listed in Schedule 1 or 2 in the EIA Regulations. However, the development is located within a National Park which is defined as a 'sensitive area' in the EIA Regulations and therefore requires screening.
- 6.2 The proposal was evaluated to consider whether it is likely to have significant effects on the environment by taking account of the characteristics of development, location of development and characteristics of the potential impacts and effects. A combination of the themes provided in the EIA Regulations and the MOD Sustainability Appraisal have been used to address the aspects of the environment likely to be affected by the proposed development and conclude whether there is a likelihood of significant environmental effects.
- 6.3 Taking account of the characteristics of the development, location and characteristics of any potential impacts, Defence Infrastructure Organisation's Environmental Planning Support Team is of the view that EIA will not be required.

REFERENCES

Secretary of State for Defence (July 2009) Secretary of State's Policy Statement on Safety, Health, Environmental Protection and Sustainable development in the Ministry of Defence. Available at www.mod.uk [April/2010].

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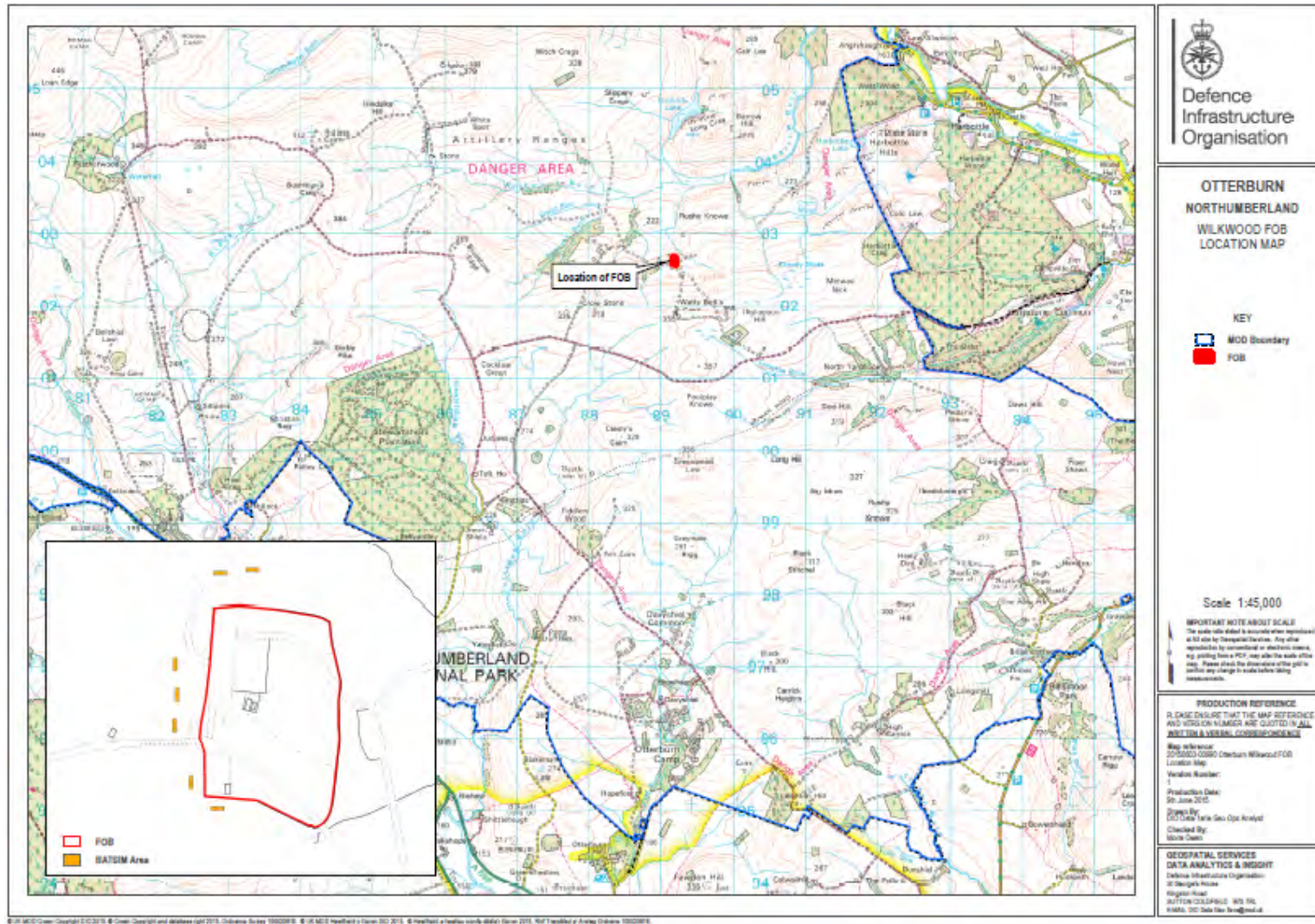
Phase 1 Habitat Survey (1992) for Northumberland National Park and English Nature.

ABBREVIATIONS

AHEMP	Archaeology and Historic Environment Management Plan
BAP	Biodiversity Action Plan
BATSIM	Battle Simulation Area
BSA	Battle Shooting Area
Db	Decibels
DIO	Defence Infrastructure Organisation
EA	Environmental Appraisal
EIA	Environmental Impact Assessment
EMS	Environmental Management System
ES	Environmental Statement
FOB	Forward Operating Base
GR	Grid Reference
Ha	Hectares
HET	Historic Environment Team
H&S	Health and Safety
ILMP	Integrated Land Management Plan
IRMP	Integrated Rural Management Plan
JSP	Joint Service Publication
Km	Kilometre(s)
LWC	Land Warfare Centre
m	Metre(s)
MOD	Ministry of Defence
NNPA	Northumberland National Park Authority
NET	Natural Environment Team
OTA	Otterburn Training Area
Ops	Operations
PM	Project Manager
QA	Quality Assurance
SA	Sustainability Appraisal
SAC	Special Area of Conservation
SSSI	Site of Special Scientific Interest
UK	United Kingdom

MAPS, FIGURES AND PHOTOGRAPHS

Map 1 Development location



Map 2 Otterburn location map

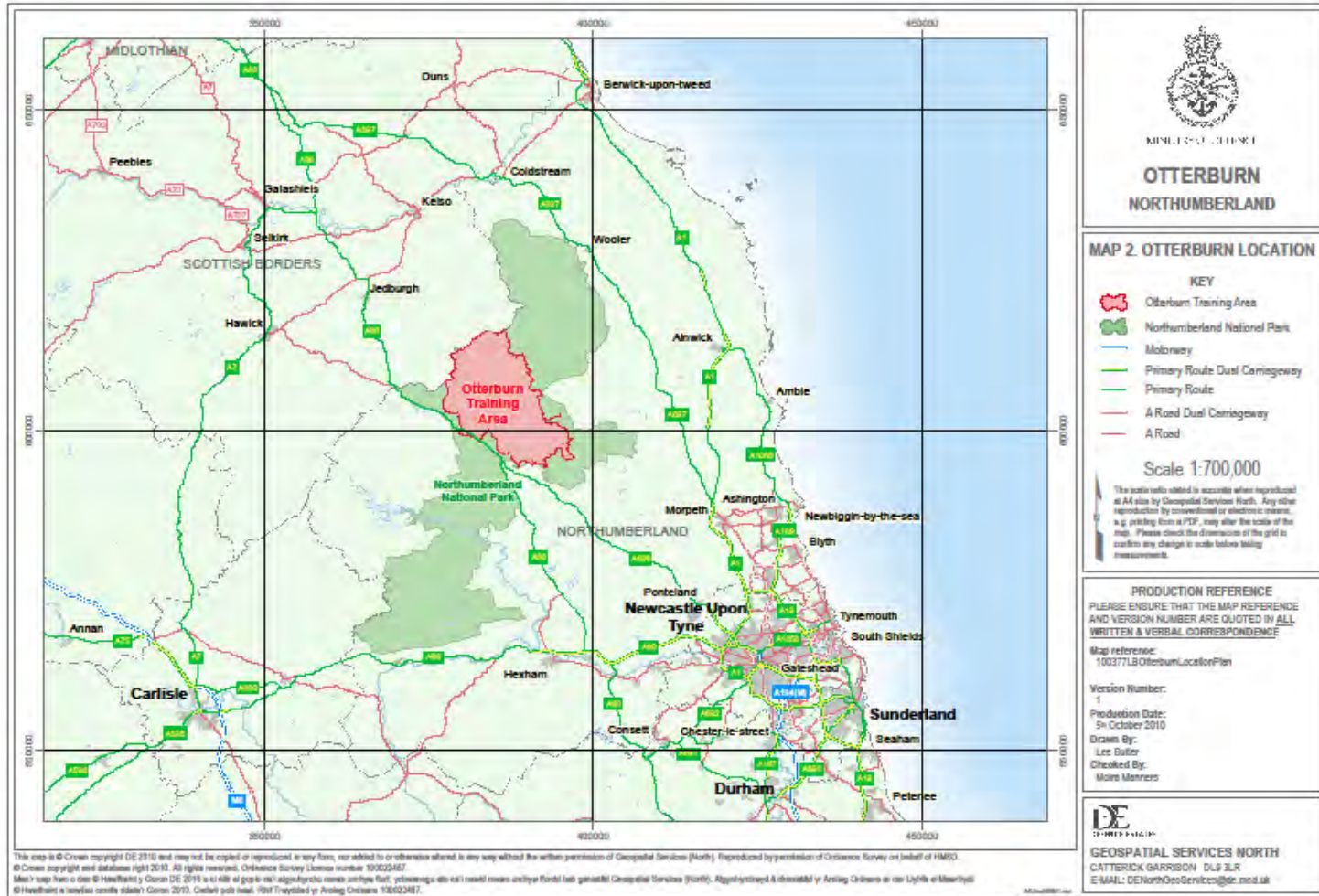


Photo 1 Example of HESCO baskets



Photo 2 Example of an Elevated sangar

