

# Environmental Management Plan (EMP)

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Revision Number	Description of Change	Updated by	Date of update
0	Original	L Barnes	15/12/14
1	General update	M Burton	20/01/15
2	Control of invasive species added	M Burton	26/01/15

## 1.0 INTRODUCTION

Kier is committed to managing the environmental impacts associated with Flying high academy and achieving consistently high standards of performance throughout the duration of the project.

The purpose of this Environmental Management Plan (EMP) is to:

- **Ensure compliance with all applicable legislation & statutory controls** (see schedule II) – this includes planning conditions, Section 106 agreements and client’s environmental requirements;
- **Ensure Conformance with the Company Environmental Policy Statement** (Appendix P) – including all associated Kier standards and procedures;
- **Achieve Company Objectives & Targets** (Appendix Q);
- **Deliver best practicable environmental performance** – this means preventing pollution, minimising adverse environmental impacts and securing the potential benefits associated with higher standards of environmental performance.

This EMP has been prepared in accordance with the Kier [Environmental Management Procedure](#). It identifies specific environmental issues associated with Flying high academy, and stipulates core procedures that will be used to manage them. Relevant environmental information will be communicated as required.

All amendments to this EMP must be made by project management in consultation with the Safety, Health and Environmental Manager or Environmental Manager / Adviser.

## 2.0 GENERAL PROJECT ENVIRONMENTAL REQUIREMENTS

### 2.1 Waste Management

Flying high academy will manage waste through the development and implementation of a bespoke version of the Building Research Establishment (BRE) SMARTWaste Plan. The project team will use this plan to identify waste streams, forecast waste volumes and identify suitable methods to eliminate, or where this is not practicable, reduce waste generated by the project.

When considering management options for identified waste streams, Kier and supply chain members will adhere to the principles outlined in the waste hierarchy below.



Kier and supply chain members will ensure waste is stored away from drains, boreholes, wells and controlled waters. Containers shall be in good condition and, where required, covered to prevent dust and litter being blown out. If there is any likelihood of stored waste contaminating the surrounding environs, all necessary steps will be taken to ensure no contamination occurs. This may include the use of containment bunds with rain shelters and the use of sealed containers, i.e. clip-top drums and fluorescent tube coffins.

Before waste is treated and / or removed from Flying high academy, all subcontractors / waste contractors must provide the project team with legible copies of the following documentation:

- Environmental permits (mobile plant licences) and exemption certificates authorising on-site crushing and screening activities;
- Waste Carriers Registration Certificates;
- Environmental Permits, (Waste Management Licences and PPC Permits);
- Notification certificate of exemption from environmental permitting.

The project team and, where applicable, subcontractors will ensure that the removal of all inert / non-hazardous waste is recorded on Waste Transfer Notes. These documents must be kept for a minimum of two years. These documents will be stored on site and made available on request.

The project team and, where applicable, subcontractors will ensure the removal of all hazardous waste is recorded on Hazardous Waste Consignment Notes. These documents must be kept for a minimum of three years. These documents will be stored on site and made available on request.

Legible copies of all Waste Transfer and Consignments Notes, recording the removal of waste from Site must be issued to Kier. This includes waste generated on site by subcontractors).

When removing hazardous waste from the flying high academy , the following Premises Code must be used on all Hazardous Waste Consignment Notes:

OMR505

## 2.2 Storage of Fuel, Oils & Building Chemicals

Containers must be stored within a Spill Nappy (or similar), bund or any other suitable secondary containment system (SCS). All containers must be located in a safe place to minimise the risk of damage and locked-off when not in use.

For oil tanks, intermediate bulk containers and mobile bowsers the SCS must be able to hold:

- Where one container is being stored - a minimum of 110% of the total volume;
- Where more than one container is being stored - a minimum of 110% of the largest container's storage volume, or at least 25% of their total volume (whichever is greater);
- For drum storage, the interceptor tray must be able to hold at least 25% of the total storage capacity of the drums.

Bunded areas must be made impermeable to water and oil. The base and walls must not be penetrated by any valve, pipe or opening that is used for draining the system. For further guidance on bund construction and other requirements, please refer to CIRIA publication *Construction of bunds for oil storage tanks (R163)* and Environment Agency Pollution Prevention Guidelines 2 and 6.

Areas used to store fuel / oil and other potential contaminants are identified in Appendix H Fire Safety & Other Emergencies Plan.

## **2.3 Particulate Matter (Dust) & Noise**

### **2.3.1 Mobile Crushing & Screening Process**

Crushing and screening of demolition material must be conducted in accordance with the plant operators' manual and, where applicable, environmental permit (mobile plant licence) / waste exemption certificate. The operator must use the Best Available Techniques (BAT) for preventing or, where this is not practicable, reducing emissions from the installation. The following items must be considered when attempting to reduce the environmental impact of this process:

- Location;
- Operation;
- Maintenance;
- On-site transfer of dusty materials;
- Condition of roadways / haulage routes;
- Stockpiling materials.

### **2.3.2 General Site Activities**

With regard to nuisance, the methodology in which work activities are undertaken must apply Best Practicable Means (BPM) in order to minimise negative impact on local, sensitive receptors, such as schools and domestic dwellings. However, if measures to reduce excessive dust and noise are unsuccessful, work must stop and an alternative method devised before work can resume.

The following measures must be considered when attempting to reduce noise and dust:

- Use sheeted lorries and sealed / covered skips;
- Use dust extraction equipment when drilling and cutting;
- Damp down haulage roads and stockpiled materials in dry or windy weather;
- Sweep access roads regularly;
- Grass over topsoil which is being stockpiled for landscaping or off-site re-use;
- Locate plant and equipment away from sensitive receptors;
- Use screens, including earth bunds to act as acoustic barriers;
- Isolate plant and equipment when not in use;
- Fit white noise systems on vehicles to reduce noise nuisance when reversing;
- Keep engine compartment doors closed;
- Limit vehicle movements on-site, i.e. use of one-way system.

## 2.4 Previously Unidentified Issues

If one or more of the following is discovered, work in that location must stop immediately and the Project Environmental Co-ordinator Lee Barnes (PEC) informed:

- Contaminated soils;
- Archaeological remains or features;
- Suspicious objects;
- Underground storage tanks;
- Invasive species, i.e. Japanese Knotweed;
- Protected species, i.e. badgers, bats, amphibians, reptiles and plant life.

## 2.5 Subcontractor Environmental Reporting

[Where applicable, outline company specific requirements – example provided below]

All subcontractors will complete relevant sections of the Monthly Environmental Report (MER) template (see schedule II). The report consists of the following Worksheets:

- WS1 – *Subcontractor Details*;
- WS2 – *Waste Metric*;
- WS3 – *Utilities / Resource Metric*;
- WS4 – *Commercial Transport Metric*;
- WS5 – *Timber Source Metric*;
- WS6 – *Explanatory Notes*.

The MER template will be provided electronically as a Microsoft Excel document. When returning completed MERs, subcontractors will ensure the report is in its original format, i.e. compatible version of Excel.

## 2.6 Emergency & Incident Preparedness

In order to minimise the risk of a pollution incident, subcontractors must ensure all operatives understand the environmental risks associated with their work activity and what control measures are in place to eliminate or reduce negative environmental impact.

Should an environmental incident occur, follow the SHE Accident / Incident Management & Investigation Process Flowchart (Appendix H Fire Safety & Other Emergencies Plan) and [Management of Accidents and Incidents Procedure](#).

## 2.7 Monitoring, Auditing & Reporting

Please refer to 4.18 of the Construction Phase Plan.

## 2.8 Management Structure & Responsibilities

Please refer to 4.1 and 4.2 of the Construction Phase Plan

## 2.9 Training Awareness & Competence

Please refer to 4.14 of the Construction Phase Plan

### **3.0 SPECIFIC PROJECT ENVIRONMENTAL REQUIREMENTS**

This section incorporates information derived from documents scheduled in 2.3.2 of the Construction Phase Plan. –

#### **UNEXPLODED ORDNANCE (IF INFO PROVIDED ELSEWHERE, REFERENCE WHERE)**

- SENSITIVE AREAS (REFERENCE EMERGENCY PROCEDURE)

#### **EXTERNAL (CLIENT' / ENFORCING AUTHORITY) REQUIREMENTS**

- KPI MONITORING REQUIREMENTS, I.E. NOISE, DUST, VIBRATION, TREE PROTECTION, PROTECTED SPECIES, WASTE, POWER USEAGE, WATER CONSUMPTION, COMMERCIAL DELIVERIES, ETC
- BREEAM ASSESSMENT REQUIREMENT, I.E. EXCELLENT
- MATERIALS WITH RECYCLED CONTENT & LOW EMBODIED ENERGY
- CONSIDERATE CONSTRUCTORS SCHEME, I.E. MINIMUM SCORE
- EMPLOYMENT & / OR TRAINING OPPORTUNITIES FOR LOCAL PEOPLE
- LIAISON / WORKING WITH SCHOOLS & LOCAL COMMUNITY GROUPS
- VOLUNTEERING & CHARITY WORK

#### **WATERCOURSES & WELLS**

- PROTECTION REQUIRED, I.E. MEASURES TO PREVENT RUN-OFF
- MINIMUM DISTANCE REQUIRED FOR PROTECTION
- CONSENTS REQUIRED / OBTAINED

#### **WASTE (SIGNIFICANT WASTE STREAMS THAT WILL BE GENERATED)**

- RE-USE OF DEMOLITION MATERIALS, I.E. SOIL & STONES, CRUSHED CONCRETE, ETC
- WASTE EXEMPTION(S) REQUIRED, I.E. U1
- RECLAIM DEMOLITION MATERIALS, I.E. BRICKS, TILES AND ARCHITECTURAL FEATURES
- WASTE SEGREGATION ON / OFF SITE
- USE OF PREFABRICATED MATERIALS

#### **CONTAMINATED GROUND, ISSUES WITH GROUNDWATER & DEWATERING**

- HYDROCARBON CONTAMINATION
- AREAS USED FOR THE DISPOSAL OF OTHER WASTES, I.E. ASBESTOS
- CFA, LDA AND DRIVEN PILE SOLUTIONS
- RE-USE OR DISPOSAL OF GROUNDWATER, I.E. REQUIRED DISCHARGE CONSENTS

#### **STANDING HERITAGE & ARCHAEOLOGY**

- LISTED BUILDINGS, I.E. CONSENTS REQUIRED / OBTAINED
- PROTECTION OF WWII 'PILL BOXES' & ANTI-TANK DEFENCES
- ARCHAEOLOGICAL INVESTIGATIONS & SENSITIVE AREAS

#### **MATERIALS & DESIGN**

- MATERIALS WITH RECYCLED CONTENT & LOW EMBODIED ENERGY
- BREEAM, CEEQUAL, CODE FOR SUSTAINABLE HOMES ASSESSMENT REQUIREMENT, I.E. EXCELLENT
- USE OF BRE GREEN GUIDE TO SPECIFICATION & A WEB-BASED RESOURCE CALLED GREENSPEC
- IF KIER ARE NOT RESPONSIBLE FOR PROJECT DESIGN, HAVE WE INFLUENCED OUR CLIENT TO CONSIDER ECO MATERIALS & CONSTRUCTION TECHNIQUES



- REFERENCE SUSTAINABLE PROCUREMENT POLICY, I.E. USE OF LOCAL SUPPLIERS & LABOUR
- REFERENCE TIMBER PURCHASING POLICY, I.E. USE OF FSC, PEFC
- LOCAL SUPPLY CHAIN (REDUCING NUISANCE, CARBON EMISSIONS & SIMULTANEOUSLY BRINGING SOCIO-ECONOMIC BENEFITS TO THE IMMEDIATE AND SURROUNDING AREA)

**\*CROSS REFERENCE EXTERNAL (CLIENT' / ENFORCING AUTHORITY) ENVIRONMENTAL REQUIREMENTS AS REQUIRED\***

**SENSITIVE NEIGHBOURS (IF INFO PROVIDED ELSEWHERE, REFERENCE WHERE)**

- SCHOOLS
- HEALTHCARE FACILITIES
- PLACES OF WORSHIP
- RESIDENTIAL AREAS
- LOCAL COMMUNITY MEETINGS

**ECOLOGY & BIODIVERSITY**

- TREE PROTECTION & TREE PROTECTION ORDERS (TPOs)
- PROTECTED PLANT SPECIES, PROTECTION / TRANSLOCATION REQUIRED
- PROTECTED SPECIES, I.E. BADGERS, BATS, BIRDS, NEWTS - INCLUDE PROTECTION REQUIRED, SPECIFIC DEMOLITION REQUIREMENTS, CONSTRUCTION OF RECEPTOR AREAS, NEST BOXES, ETC
- INVASIVE SPECIES, I.E. JAPANESE KNOTWEED

COMMON PIPESTRELLE ROOST WITHIN EXISTING BUILDING, LICENCE TO BE OBTAINED TO RELOCATE

FOX EARTH REMOVAL

REMOVAL OF MONTEBRETIA & COTONEATER AROUND PERIMETER OF EXISTING SCHOOL – SEE METHOD STATEMENT

- measures will be taken to protect mammals (i.e. badgers) during construction; trenches will be covered overnight or left with a suitable means of escape (such as ramps or sloping ends) in order to allow any animals that may fall into the trenches to escape; and that any exposed pipe ends of 200mm diameter or above will be capped off overnight.





#### 4.0 ENVIRONMENTAL ASPECTS & IMPACTS

The project team has identified elements of its work which will have an impact on the environment.

Work activity / package Aspects & Impacts Registers will be developed and provided to all subcontractors. The subcontractor must manage all risks associated with their work activity / package in accordance with this document.

Where the subcontractor identifies additional environmental risk, it is the subcontractor's responsibility to inform the Project Environmental Co-ordinator (PEC) and request that the register is reviewed and amended.

In the event subcontractors undertake works that require reference to document(s) listed in section 2.3 of the Construction Phase Plan, these will be provided / incorporated into their contract as part of the subcontract documentation.

Kier may, from time to time, externally communicate information relating to significant environmental aspects and the company's performance. Such decisions will be made by appropriate management and documented.

## **Schedule I - Register of Supporting Information**

- Habitat Survey report – Jacobs October 2013
- Tree Survey report – Jacobs Jan 2014
- Unexploded ordnance – BACTEC 2014
- Trent Valley Drainage Board Letter –TVDB Sept 2014
- Site SI - Nicholls Colton Feb 2014

## **Schedule 2 – Planning conditions specifically relating to Environmental Management**

### **a & b. Lorry routeing for traffic and measures to prevent the deposit of debris on the public highway.**

The site has a separate access on Somersal Street, remote from the existing school entrance on Tounrow Drive. Construction traffic entering and leaving the site will be tightly controlled with deliveries restricted to the hours set out by the planning conditions. The reversing of vehicles is only to be employed as a last resort. At the earliest opportunity an access road will be created on site to keep vehicles as clean as possible when leaving site and the roads will be constantly monitored. All vehicles will be checked for cleanliness before leaving site. Any material deposits on the access road will be removed immediately and a roadsweeper will be employed when required. All vehicles will adhere to speed limits and a set of site rules will be issued to all subcontractors & delivery companies.

### **c. The segregation of construction vehicle and pedestrian movements on site.**

There will be segregated access for both vehicles and pedestrians entering and leaving site. All individuals entering site will be required to sign in and will enter site via a separate pedestrian gate. This will be discussed in detail during the daily site inductions.

There will be no deliveries at the busiest times of the day, i.e between 8.00am-9.00am and 2.45pm -4.00pm which will aid in co-ordinating vehicle and pedestrian movements and create a safer environment at these busy times.

### **d. Measures for the control of noise, vibration and dust emissions (including mitigation in the event of a complaint).**

The control of noise, vibration and dust emissions will be considered in the planning of all activity at all times. Plant will not be started until 7.30am and construction activities on site will not exceed 65dB measured at a distance of 3.5m from the nearest façade of a property. There are some earth bunds around the site that will assist in restricting noise travelling beyond site. Noisy activities will be checked with a noise level meter as necessary to monitor levels which appear excessive.

Regarding dust, topsoil heaps will be suitably compacted and seeded, vacuum extraction and water suppression techniques will be used extensively. Roads will be regularly cleaned and lorries will be sheeted. There are no vibration issues apparent.

Please refer also to section 2.3.2 of this plan. If there is a complaint then work will stop immediately and the activity will be investigated and re-assessed. The



local Environmental Health Office will be called for advice and to make them aware of the situation.

**e. A scheme for the recycling/disposal of surplus soils and waste resulting from Construction.**

Section 2.1 of this plan identifies the scheme and measures put in place for recycling and disposal of waste.

**f. Construction site management practice to safeguard against risk to mammals (protected species) throughout the period of construction.**

- measures will be taken to protect mammals (i.e. badgers) during construction; trenches will be covered overnight or left with a suitable means of escape (such as ramps or sloping ends) in order to allow any animals that may fall into the trenches to escape; and that any exposed pipe ends of 200mm diameter or above will be capped off overnight.

## **Montebretia**

### Remove by Hand:

Hand removal is only practical for small clumps of the weed. Use a fork to dig all corms and underground stems to ensure complete removal. Cut stems first if the plant is in seed which is unlikely mid Jan.

### Spray with Herbicide:

Montbretia can be sprayed with a glyphosate based product or alternatively you can swipe leaves with poison using a dabber bottle. No use as the sap is not rising in winter.

### Dig Out:

Dig out patches of Montbretia weed carefully when soil is moist as corms break off easily; corms often form linked chains. Best method.

## **Cotoneaster**

### Mechanical:

Seedlings and small plants can be grubbed out using a mattock or spade at any time of the year but preferably when soil is moist to lessen disturbance. Berries should be carefully collected and disposed of in a bin – check for small red berries, unlikely due to season. If plants are removed before the fruits ripen, any seeds that fall to the ground during removal are not likely to be viable. Seedlings may also be smothered with mulch, old carpet or black plastic. To remove larger plants, branches should be cut off first and then the roots dug out with a shovel. It is important to entirely remove stumps and roots as both are capable of resprouting.

### Chemical:

Small plants and stump regrowth can be treated with a glyphosate or triclopyr herbicide, applied as a wipe or hand-held spray when plants are actively growing between spring and autumn. This method is not suitable for use in species-rich habitats as the glyphosate is indiscriminate and will kill other plants too. For larger plants, glyphosate or may also be applied to cut stumps or abraded bark.