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HAREWOOD ESTATE, CHEADLE

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (BIODIVERSITY)

FEBRUARY 2018

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Wardell Armstrong
Sir Henry Doulton House, Forge Lane, Etruria, Stoke-on-Trent, ST1 5BD, United Kingdom
Telephone: +44 (0)1782 276 700 Facsimile: +44 (0)845 111 8888 www.wardell-armstrong.com

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DATE ISSUED:	**February 2018**
JOB NUMBER:	**ST16225**
REPORT NUMBER:	**005**
VERSION:	**V0.1**
STATUS:	**Draft**

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CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (BIODIVERSITY)

FEBRUARY 2018

PREPARED BY:

Matthew Rohner Ecologist

REVIEWED BY:

Emily Macfarlan Ecologist

APPROVED BY:

Caroline Mellor Technical Director

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1 INTRODUCTION

1.1 Terms of Reference

1.1.1 Wardell Armstrong LLP (WA) was commissioned by J C Bamford Excavators Ltd (JCB) to produce a biodiversity Construction Environmental Management Plan (CEMP) to be implemented in advance of the development at the Harewood Estate, Cheadle, central Ordnance Survey (OS) grid reference SJ999442.

1.2 Site Context

1.2.1 A Preliminary Ecological Appraisal (PEA) of the Site was carried out by WA on 21st April 2017. The Site comprises approximately 38ha of commercial development with associated hardstanding and planting.

1.3 Relevant Planning Conditions

1.3.1 A planning application (SMD/2017/0400) for car parking, reorganisation of goods in, machine dispatch areas, new machine storage and waste areas, was submitted to Staffordshire Moorlands District Council in June 2017. It was granted planning permission on the 13th November 2017.

Condition 3 states:

"No development shall commence until a Construction Environmental Management Plan (CEMP) has been submitted to and approved in writing by the Local Planning Authority. The CEMP shall provide full details of avoidance and mitigation outlined in the Preliminary Ecological Appraisal (Wardell Armstrong 2017) and must include:

a) Risk assessment of potentially damaging construction operations.
b) Identification of biodiversity protection zones.
c) Practical measures (both physical and working methods) to avoid or reduce impacts during construction. This should include Site clearance, Site set up, groundworks and construction, disposal of wastes and final Site clearance.
d) Detailed measures to reduce Site run off, effluents or pollution.
e) The location and timing of work to avoid harm to biodiversity features.
f) Responsible persons and lines of communication.
g) The role and responsibilities of an ecologist, ecological clerk of works or similarly competent person.
h) Use of protective fences barriers or warning signs.

The approved CEMP shall be adhered to and implemented throughout the construction period."

1.4 Purpose of Report

1.4.1 The ecological management objectives within this document are in line with recommendations set out in the published British Standards (2013) BS 42020:2013 *Biodiversity - Code of practice for planning and development.*

1.4.2 The CEMP (Biodiversity) will:

- Identify key elements of biodiversity on the Site, including legally protected species and species of high conservation value such as those listed on Section 41 NERC Act 2006; and
- Identify means to safeguard species and habitats within the Site before and during the construction phase.

2 BASELINE DATA

2.1.1 This section provides a summary of the notable and/or protected habitats and species recorded within the Site during the surveys undertaken between 21st April 2017 and 17th May 2017 which have the potential to be adversely impacted by the proposed development.

2.2 Designated Sites

2.2.1 The PEA identified two Sites of Special Scientific Interest (SSSI) within the locality but due to the distance and lack of ecological connectivity between the Sites, the development was assessed as unlikely to directly or indirectly impact upon the nature conservation value of these SSSI.

2.2.2 Two Local Nature Reserves (LNR) were also identified within 2km of the Site. Hales Hall Pool LNR was considered suitable distant and with a lack of ecological connectivity to the Site to not be adversely affected by the development. Cecilly Brook LNR lies approximately 1.1km south-east of the Site, connected by a drainage ditch within the Site to Cecilly brook further upstream of the LNR. There is potential for effluents and increased surface water run-off to travel downstream and adversely affect the conservation value of the LNR.

2.3 Status of Protected Habitats

2.3.1 The PEA identified the following national and/or local prioity habitats that are present within the Site and although they are retained within the masterplan there is potential that they could be impacted during the construction phase of the development:

- Species-poor hedgerows (s.41);
- Standing open water (Local BAP); and
- Streams (Local BAP).

2.3.2 Other habitats recorded within the Site, that are not listed as priority habitats or those that do not meet criteria of priority habitat include calcareous, neutral and marshy grassland, plantation broad-leaved woodland, scrub, ruderal vegetation, bareground, amenity grassland and buildings/hardstanding.

2.4 Status of Protected Species

2.4.1 The PEA identified several notable/protected species that have the potential to be present on the Site and those, that without mitigation, are likely to be impacted during the construction phase of the development. These species are summarised in Table 1, along with their legal status and status within the Site.

Table 1: Species Site Status

Receptor	Legal Status	Site Status
Badger *Meles meles*	Badgers and their setts are protected under the Protection of Badgers Act 1992.	Badger activity was recorded within the Site, but no badger setts were identified.
Hedgehog *Erinaceus europaeus*	Although not specially protected, hedgehog is listed under s.41 of the NERC Act 2006 as a Species of Principal Importance for Biodiversity.	Suitable foraging and hibernation habitat is present within the Site to support hedgehog.
Nesting birds	With certain exceptions all wild birds, their nests and eggs are protected by the Wildlife and Countryside Act 1981 (as amended).	There is suitable habitat on Site to support nesting bird species. The typical nesting season is between March and August (inclusive).
Reptiles	All native UK reptile species are protected under the WCA 1981 (as amended), as well as s.41 and the Staffordshire LBAP.	Grassland, ruderal vegetation, scrub and open water could support common reptile species.

2.4.2 In addition to the species identified in Table 1, brown hare *Lepus europaeus* was observed within the Site. However, it was assessed within the PEA that the development of the Site would not adversely impact individuals or local populations. Development works are within areas of the Site where brown hare are unlikely to be present additionally, brown hare are a highly mobile species and could readily disperse to offSite habitats.

3 RISK ASSESSMENT OF POTENTIALLY DAMAGING CONSTRUCTION OPERATIONS

3.1.1 The potential impacts that the proposed construction works may have on biodiversity present within the Site were assessed within the PEA (WA, 2017).

3.1.2 The following activities associated with construction have been identified as having potential to impact upon the sensitive ecological receptors known or potentially present within the Site.

3.2 Vegetation clearance

3.2.1 Vegetated habitats within the Site with the potential to support protected species (namely poor semi-improved grassland, dense scrub, marshy grassland and plantation broadleaved woodland) will be removed to facilitate to the commencement of Site construction.

3.2.2 Poor semi-improved grassland to the east and north of the will be removed to facilitate the construction of both car parks and the north eastern attenuation pond. In the south of the Site, poor semi-improved grassland will be removed to constructthe south western pond, as well as the south western bund works and construction of both stock yards.

3.2.3 Immature broadleaved plantation woodland will be removed during construction of the Compact Products stock yard in the south of the Site.

3.2.4 An area of dense scrub will be impacted by the south western bund works.

3.2.5 Uncontrolled, these activities have the potential to kill, injure or disturb protected/notable species that could be present.

3.3 Debris removal

3.3.1 Areas of debris within the Site, such as deadwood and spoil/rubble mounds, located within areas of immature broadleaved plantation woodland in the south of the Site and marshy grassland habitat will be removed prior to the start of development.

3.3.2 Uncontrolled, these activities have the potential to kill, injure or disturb protected/notable species that could be present within debris.

3.4 Location of Site compounds, car parking, fuelling areas & materials storage areas

3.4.1 Site compounds and car parking will be located adjacent to the construction areas. Care must be taken to ensure that no areas of dense vegetation, such as woodland

to be retained or scrub, are impacted by the movement of plant and/or materials. Compounds and associated parking should be encompassed by heras fencing.

3.4.2 A 5m buffer from the edge of plantation broadleaved woodland will be implemented to prevent damage to trees and root systems, aside from those areas of plantation broadleaved woodland to be removed. This buffer should be demarcated by suitably robust fencing, such as heras fencing or similar.

3.4.3 Fuelling areas are to be located in existing areas of hardstanding. Pollution prevention measures for these areas are outlined in section 8 – Pollution and Biosecurity Protocols.

3.5 Ground works

3.5.1 Re-profiling of existing bunds, creation of attenuation ponds and soil stripping could potentially lead to the disturbance of protected/notable species through the generation of vibration, lighting, noise and dust.

3.5.2 Deep excavations created as a result of ground works have the potential to entrap species.

3.5.3 Uncontrolled, ground works have the potential to disturb and harm protected/notable species.

3.6 Plant movement

3.6.1 Use of machinery on Site during the construction phase could impact upon habitats directly through direct contact and damage or indirectly by the generation of noise, vibration or increased lighting.

3.6.2 Uncontrolled, this could result in the destruction or degradation of retained semi-natural habitats, including priority habitats, and could disturb species within these habitats.

3.7 Environmental incidents

3.7.1 Hazardous substances (fuel for plant, concrete and diffuse pollution) to be used during construction or to arise from construction activities have the potential to impact upon sensitive ecological receptors within the Site. Additionally, there is potential to contaminate Cecilly Brook LNR, connected by a drainage ditch within the north-east of the Site.

3.7.2 Uncontrolled, release of pollutants could contaminate semi-natural habitats and protected/notable species within them.

4 BIODIVERSITY PROTECTION ZONES

4.1.1 Plantation broadleaved woodland is to be retained along the south western and south eastern boundaries of the Site. This will be managed to allow development into a semi-natural habitat.

4.1.2 Woodland planting to the south east of the Site will connect existing habitats and enhance connectivity across the Site.

4.1.3 The areas of plantation broadleaved woodland in the southwest and southeast of the site are to be connected through the inclusion of a planting scheme of similar tree species. This will promote ecological connectivity along the southern site boundary.

4.1.4 These areas will be protected from excessive noise and light pollution through sound boarding installation to the south-east of the Site, as detailed in the Noise Monitoring Report (Wardell Armstrong LLP, 2018) and in the External Lighting Proposals (Couchperrywilkes, 2017).

4.1.5 The existing and areas of new plantation connecting woodland are to be subjected to a 5m buffer, as demarcated by Heras fencing in order to prevent accidential or incidental damage from plant, or from compression of root zones. These measures will also satisfy tree protection requirements as outlined in Tree Survey Report (Treetec, 2014).

4.1.6 Further to this, root protection zones and other arboricultural protection recommendations as outlined in the Tree Survey Report should be adhered to.

4.1.7 A small (5 x 5m) area of Japanese knotweed has previously been identified in the southwest of the site during the Extended Phase 1 Habitat survey, as detailed in PEA (WA, 2017). This area is also to be protected against incursion from construction activities, in order to prevent the spread of Japanese knotweed throughout/off-site. Details of this, and subsequent remedial action for the removal of the Japanese knotweed can be found in the Invasive Non-Native Species Protocol (WA, 2018).

5 PRACTICAL MEASURES TO AVOID OR REDUCE IMPACTS DURING CONSTRUCTION

5.1.1 Practical measures, including timings, working methods, protective measures and supervision, to avoid or reduce the likelihood of impacts resulting from construction activities having an adverse affect upon biodiversity are summarised for all species and habitats in Table 2 and are detailed below.

5.2 Appointment of an Ecological Clerk of Works

5.2.1 The ECoW will act as an ecological advisor throughout the course of the construction period and will be responsible for the following:

- Providing inductions and species-specific toolbox talks to all staff on Site;
- Carrying out pre-construction checks for protected species and sensitive habitats that are present or may be present within the Site;
- Providing advice and monitoring construction activities that may potentially have negative effects on biodiversity; and
- Enforcing and monitoring construction exclusion zones.

5.3 Toolbox Talk

5.3.1 The ECoW will undertake a toolbox talk to the Site Manager,Principal Contractor and all personnel working on the Site during vegetation clearance to ensure that they are aware of the potential presence of protected species within the Site.

5.3.2 The tool box talk will include a brief description of the protected species that may be present within the Site and how to proceed if they encounter any protected species, as detailed in this CEMP (Biodiversity).

5.3.3 All personnel will be required to read this CEMP (Biodiversity) to ensure that they fully understand the requirement for the implementation of this CEMP (Biodiversity).

5.3.4 Any new personnel working on the Site during vegetation clearance, that are not present at the initial tool box talk will be given a tool box talk and asked to read this CEMP (Biodiversity).

5.3.5 After vegetation clearance and the removal of debris piles, it will be the responsibility of the Site Manager to brief all new personnel working on Site as to the location and working procedures to be adhered to in relation to protected ecological receptors that remain either on Site or in the close vicinity of the Site.

5.3.6 Should ecological issues arise during the course of construction, that require the attendance of an ecologist, the ecologist shall provide a toolbox talk to personnel on Site during work activities that have the potential to impact upon that receptor.

5.4 General Precautionary Working Measures

5.4.1 Should any protected species be found during construction, all works will cease immediately and advice from the ECoW will be sought.

5.4.2 All movement of debris and clearance of dense vegetation will be undertaken between mid-March – October; outside of the hibernation season, which therefore will mitigate against harm to any protected species residing within. Works are proposed to continue for 40 weeks.

5.4.3 To avoid killing or injuring individuals, vegetation removal will be overseen by the ECoW who will hand search habitat that could harbour resting species in advance of vegetation clearance by machinery.

5.4.4 Where searching by hand is not possible, debris will be carefully excavated using a digger under the supervision of the ECoW.

5.5 Trees and Hedgerows

5.5.1 Existing trees and hedgerows to be retained will be protected from damage in line with British Standard BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*' through the erection of protective fencing.

5.5.2 Fencing will also be used prevent damage to or contamination of the Biodiversity Protection Zones highlighted in Section 4.

5.6 Species Specific Measures

Badger

5.6.1 Although there was minimal evidence of badger using the Site at the time of survey, badgers are a highly mobile species.

5.6.2 Should any evidence of an active badger sett be identified, mitigation measures, including a licence application for any required sett closures, will be formulated and implemented prior to any impacting works.

5.6.3 To avoid harm to foraging and commuting badgers, uncovered holes or trenches will either be covered over night or equipped with a suitably sized mammal ramp to allow trapped animals to escape.

Hedgehog

5.6.4 Suitable habitats to support hedgehog are present within the Site in the form of tree bases, scrub, tall ruderal vegetation, and debris piles (i.e. logs and leaf accumulations).

5.6.5 All vegetation or debris-pile clearance works should be undertaken between March to October, during the hedgehog active period and outside of their hibernation period. To avoid harm to foraging hedgehog, any uncovered holes or trenches will either be covered over night or equipped with a mammal ramp to allow any trapped animals to escape.

5.6.6 In the event that a hedgehog is uncovered during site works, it should be placed in a cloth bag by an individual wearing suitable protection (thick rubber gloves as a minimum) and transported to a suitable adjacent habitat (woodland, hedgerow or dense scrub) that will not be impacted by site works.

Nesting Birds

5.6.7 A nesting bird check will be undertaken by a SQE prior to any vegetation clearance. Any active nests should be identified and protected subject to the relevant legal provisions until the nesting attempt is complete.

5.6.8 A suitable buffer should be placed around the nest attempt and demarcated by Heras fencing in order to prevent disturbance of the nest. This buffer is species dependant and will be confirmed by a suitably qualified ornithologist, however a minimum of a 5m buffer should be implemented immediately.

Reptiles and Amphibians (herptiles)

5.6.9 Precautionary measures are to be adopted during vegetation clearance in order to mitigate against the risk of harm to herptiles that may be present within the Site. All vegetation or debris-pile clearance works should be undertaken between March to October, during reptiles active period and outside of herptiles hibernation period.

5.6.10 To ensure no harm occurs to herptiles during habitat clearance, the following measures are to be observed:

- Prior to the commencement of works all vegetation within the proposed development area of the Site should be cut to a height of 15cm and left for 24hrs to encourage reptiles to move out of the area.

- To ensure that the proposed development area remains unfavourable to reptiles it is essential that the vegetated area is maintained as a short sward. Removal of vegetation should take into account seasonal constraints such as the breeding bird season.
- Any trees and shrubs should be cut back to stump level.
- Areas of debris should be checked by hand prior to their removal.
- Should any reptiles or common toad be encountered, they should be transferred in a bucket or cloth sack and placed in a suitable adjacent habitat that is not going to be impacted by the development.

Table 2: Risk Assessment, Mitigation, and Timetable				
Ecological Receptor	**Sources of Impact**	**Possible Impacts**	**Proposed Working Methods and Mitigation Methods**	**Timing of Proposed Works/Mitigation**
Badger	• Clearance of vegetation • Deep excavations	• Destruction or damage to active setts • Disturbance of badgers whilst they are occupying a sett • Trapping of animals in open excavations	• Pre-commencement check of the Site undertaken by an experienced and suitably qualified ecologist to identify any badger activity present on the Site • Suitable mitigation as advised by the ECoW will be implemented should badger be found • Toolbox talk by ECoW to include badgers • Open excavations will be covered overnight, or equipped with ramps to allow egress	• An update badger survey will be undertaken if works do not commence before 21st April 2018 • Toolbox talk provided prior to commencement of works • Installation of egress ramps or covering of open excavations will take place throughout the whole duration of works
Nesting Birds	• Clearance of vegetation	• Destruction of active nests • Loss of nesting habitat	• Vegetation clearance should avoid the nesting season, usually taken to be March – August (inclusive).	• Vegetation clearance will take place during the active nesting bird season. • As a result, an ECoW must be present on Site at all times to check for nesting birds • If any nests are discovered, a buffer will be set up surrounding the nest in order to minimise disturbance
Hedgehog	• Clearance of vegetation • Deep excavations	• Death or injury of individual hedgehog	• Key personnel on Site will be made aware of the location of suitable habitat for hedgehog through provision of a toolbox talk • Clearance of habitat suitable for hedgehogs will be supervised by the ECoW. • Open excavations will be covered overnight, or equipped with ramps to allow egress.	• Toolbox talk provided prior to commencement of works • Supervision of vegetation clearance will take place between March to October. • Installation of egress ramps or covering of open excavations will take place throughout the whole duration of works.

Table 2: Risk Assessment, Mitigation, and Timetable				
Ecological Receptor	**Sources of Impact**	**Possible Impacts**	**Proposed Working Methods and Mitigation Methods**	**Timing of Proposed Works/Mitigation**
Reptiles and amphibians	• Clearance of vegetation • Excavation • Tracking of plant	• Death or injury of individual reptiles	• Key personnel on Site will be made aware of the location of suitable habitat for reptiles through provision of a toolbox talk • Clearance of habitat suitable for reptiles will be supervised by the ECoW. Open excavations will be covered overnight, or equipped with ramps to allow egress.	• Toolbox talk provided prior to commencement of works • Supervision of vegetation clearance will take place between March to October. • Installation of egress ramps or covering of open excavations will take place throughout the whole duration of works.
Running water	• Run-off from construction activities	• Contamination of streams , ditches, and riparian habitat on and off Site • Damage to freshwater and riparian ecosystems in the area.	• Key personnel on Site will be made aware of the location of streams/ditches. • Substances used during development must be controlled appropriately and prevented from being released into the environment	• See Section 8: Pollution and Biosecurity Protocols
Standing open water	• Run-off from construction activities	• Contamination of streams, ditches, and riparian habitat on Site.	• Key personnel on Site will be made aware of the location of waterbodies. • Substances used during development must be controlled appropriately and prevented from being released into the environment	• See Section 8: Pollution and Biosecurity Protocols
Hedgerows/ trees	• Clearance of vegetation • Excavation • Tracking of plant	• Damage to or loss of ecologically important hedgerows/trees	• Key personnel on Site will be made aware of the location of the hedgerows/trees through provision of a toolbox talk.	• Toolbox talk provided prior to commencement of works.

Table 2: Risk Assessment, Mitigation, and Timetable				
Ecological Receptor	**Sources of Impact**	**Possible Impacts**	**Proposed Working Methods and Mitigation Methods**	**Timing of Proposed Works/Mitigation**
			• Protective fencing will be erected around trees and hedgerows in accordance with approved arboricultural plan. • Fencing will be maintained via daily checks by the Principal Contractor.	• Fencing erected prior to commencement of works and maintained for duration of whole construction period.

6 KEY PERSONNEL AND RESPONSIBLE PERSONS

6.1 The Client

6.1.1 The Client (JC Bamford Excavators Ltd) and Principal Contractor (PM Harris) are responsible for the implementation of this CEMP (Biodiversity).

6.1.2 The Client will ensure that the Principal Contractor and all personnel working on the Site, read and adhere to this CEMP (Biodiversity).

6.2 On Site Staff

6.2.1 The Site Manager will be responsible for:

- Appointing attendance of an ECoW for acitvities; and
- Reporting to the supervising Ecological Clerk of Works (ECoW) during construction.

6.2.2 The Principal Contractor (PM Harris) will be responsible for:

- Compliance with all regulations, legal consents, planning conditions, environmental procedures and contractual agreements;
- Issuing regular reviews of the implementation of the CEMP in conjunction with periodic reports on success and compliance to feedback into the CEMP and ensure results are effectively communicated to off-Site staff;
- Contingency measures to cover accidents or other potentially damaging scenarios such as pollution incidents; and
- Erection and maintenance of all protective barriers and warning signs on Site.
- Retaining copies of all relevant ecological reports and planning conditions will be kept on Site by the Principal Contractor so they can be referred to at any time.

7 COMPLIANCE AND MONITORING

7.1.1 During supervision of works by the ECoW, a log book of activities undertaken to protect the sensitive ecological receptors identified within this report will be maintained on Site.

7.1.2 If during construction works, ecological issues arise, such as the unforeseen presence of a protected species which could be impacted by ongoing works, works shall cease, and the Site Manager shall contact the ECoW and record the incident within the log book. The course of action taken subsequently will also be logged, alongside any necessary mitigation measures implemented.

8 POLLUTION AND BIOSECURITY PROTOCOLS

General points

8.1.1 Responsibility for the adherence to procedures put in place to avoid pollution incidents lie with the Principal Contractor. Procedures encompass the following:

- An incidence response plan will be put in place and communicated to personnel, who will be trained to act in accordance with it in the event of a pollution incident;
- In the unlikely event of a pollution incident, the Environment Agency will be informed via 0800 807060 and appropriate action taken to reduce/contain the incident.
- Tanks will be labelled clearly with contents and storage capacity.
- Fuel, oil, hazardous materials will be stored in accordance with best practice, including storage on impervious base within bunded containers of sufficient capacity, above flood water level, with clear signage indicating maximum volume to be stored.
- Regular checks to ensure bund and containers intact and not leaking will be carried out.
- All tanks, drums and bowsers will be stored in the secure Site compound when not in use.
- Plant to be refuelled in the Site compound in designated area, on impermeable base, using a bunded bowser with drip trays and spill kit to be provided.
- Contained area for washing out of concrete batching plant or lorries will not be located within 10m of a watercourse.
- Wash water will be collected for discharge to sewer (with permission from sewerage undertaker) or disposal off Site.

Cecilly Brook LNR

8.1.2 To prevent accidental pollution or physical damage to the ditch to the east of the Site that connects to Cecilly Brook LNR, the following measures will be undertaken:

- Temporary fencing should be constructed along the ditch to avoid any incidental damage;

- Only use lightweight excavators in close proximity to the ditch to avoid damage to the banks;
- No re-fueling or handling of chemicals within 10m of the drainage ditch;
- All re-fuelling/use of hazardous chemiclas within 25m of the ditch to utilise a spill catching membrane to avoid contamination;
- Do not store any chemicals within 25m of the ditch and within a secure contained area in case a of breakage overnight; and
- Do not park plant within 25m of the ditch overnight in case of fuel leakage.

Invasive Species

8.1.3 Japanese knotweed *Fallopia japonica* was recorded within the Site, as identified in the PEA (WA, 2017). This species is listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). The law makes it is illegal to plant or otherwise permit the growth of plants listed under Schedule 9 species in the wild. This includes spreading it, with or without intent.

8.1.4 In order to avoid committing an offence a Japanese knotweed protocol has been produced (Wardell Armstrong LLP, 2018).

9 CONCLUSION

9.1.1 It is considered that with the implementation of the mitigation measures detailed within this CEMP that biodiversity interests currently present on Site will be protected during construction activities and that in the long term, biodiversity will be maintained through the proposed development.

10 REFERENCES

British Standard (2013) BS 42020:2013-'*Biodiversity – Code of practice for planning and development*'.

British Standard (2012) BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*'.

Couchperrywilkes (2017) *JCB Car Park External Lighting Proposals.*

Wardell Armstrong (2017) J C Bamford Excavators Ltd, Harewood Estate, Cheadle; *Preliminary Ecological Appraisal*.

Wardell Armstrong LLP (2018) J C Bamford Excavators Ltd, Harewood Estate, Cheadle; *Invasive Non-Native Species Protocol*

wardell-armstrong.com

STOKE-ON-TRENT
Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)178 227 6700

BIRMINGHAM
Two Devon Way
Longbridge Technology Park
Longbridge
Birmingham
B31 2TS
Tel: +44 (0)121 580 0909

CARDIFF
22 Windsor Place
Cardiff
CF10 3BY
Tel: +44 (0)292 072 9191

CUMBRIA
Marconi Road
Burgh Road Industrial Estate
Carlisle
Cumbria
CA2 7NA
Tel: +44 (0)122 856 4820

EDINBURGH
Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GLASGOW
2 West Regent Street
Glasgow
G2 1RW
Tel: +44 (0)141 433 7210

LONDON
46 Chancery Lane
London
WC2A 1JE
Tel: +44 (0)207 242 3243

MANCHESTER (City Centre)
76 King Street
Manchester
M2 4NH
Tel: +44 (0)161 817 5038

MANCHESTER (Greater)
2 The Avenue
Leigh
Greater Manchester
WN7 1ES
Tel: +44 (0)194 226 0101

NEWCASTLE UPON TYNE
City Quadrant
11 Waterloo Square
Newcastle Upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

SHEFFIELD
Unit 5
Newton Business Centre
Newton Chambers Road
Thorncliffe Park
Chapeltown
Sheffield
S35 2PH
Tel: +44 (0)114 245 6244

TRURO
Baldhu House
Wheal Jane Earth Science Park
Baldhu
Truro
TR3 6EH
Tel: +44 (0)187 256 0738

International offices:
ALMATY
29/6 Satpaev Avenue
Regency Hotel Office Tower
Almaty Kazakhstan
050040
Tel: +7(727) 334 1310

MOSCOW
21/5 Kuznetskiy Most St.
Moscow
Russia
Tel: +7(495) 626 07 67

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