Rail Central Strategic Rail Freight Interchange

Northamptonshire

Construction Environmental Management Plan

Report for

Ashfield Land Management Limited and Gazeley GLP Northampton s.à.r.l.

Hydrock Ref. RCL-HYD-XX_VAL-RP-GE-5001-S2-P4.

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22 Long Acre
London
WC2E 9LY

Tel: 020 3846 8456
www.hydrock.com

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Issue Number:	S2 P4	Name	Signature
Prepared		**Paul Shelley** BSc, MSc PIEMA	
Checked		**Allan Bell** BSc, MSc, C.Geol, FGS, RoGEP.	
Approved		**Allan Bell** BSc, MSc, C.Geol, FGS, RoGEP.	

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APPENDICES

1.0 INTRODUCTION

1.1 Background

This Construction Environmental Management Plan (CEMP) has been prepared for the enablement and construction works to be undertaken for Ashfield Land Management Limited and Gazeley GLP Northampton s.à r.l (the Applicant) at a site known as Rail Central, Northamptonshire.

The Proposed Development is to comprise a Strategic Rail Freight Interchange (SRFI) including warehousing, an intermodal facility, express freight platform, lorry park and associated infrastructure. Works to J15a of the M1 and minor highway works are also proposed.

A site location plan (Hydrock Drawing 151171/D001), and a Site Extents Plan (Hydrock Drawing 151171/D002) are presented in Appendix A. This shows the Main SRFI Site only and not the J15a works and minor highway works. However, this CEMP will also apply to these works as applicable.

This CEMP is a document to accompany the S42 consultation, and eventually the proposed DCO application for the scheme. It sets the site-specific control measures included following consultation with the relevant stakeholders. It may be varied in accordance with the requirements in the DCO and with the consent of the relevant local planning authority (LPA).

The Code of Construction Practice (CoCP) defines the overarching control measures and standards to be implemented throughout the scheme's development.

At this stage a Principal Contractor has not been appointed. Consequently this document will be updated taking into account the Principal Contractor's construction methodology and any relevant implications arising from detailed design. Comments will also be incorporated from stakeholders, the Applicant and local regulators.

The Principal Contractor will update this CEMP as appropriate.

It is considered that adherence to the CEMP can be controlled through a requirement of the Development Consent Order (DCO).

1.2 Purpose & Objectives

The CEMP is designed to set out the standards of construction logistics and practices that will minimise (if not eliminate) the impacts of the Proposed Development upon the local environment and local community surrounding the Site. As such, the CEMP forms part of the "Embedded Mitigation" used to assess the potential effects of the Proposed Development on the environment within the Preliminary Environmental Information Report (PEIR) and eventually in the Environmental Statement (ES) accompanying the application for DCO consent.

The environmental issues relating to the works are considered systematically and procedures are outlined for dealing with issues as they arise during the course of the works.

The following sections outline how the construction project will mitigate or minimise, so far as reasonably practicable, its effects on the environment and surroundings, by:

- Describing the environmental conditions relevant to the construction works.
- Highlighting stakeholder requirements (further detailed in the PEIR, and eventually in the ES).
- Ensuring that the development is compliant with current environmental legislation.

- Indicating detail Environmental Management Systems to be implemented.
- Detailing the planned mitigation and how it will be delivered on site.
- Ensuring that any adverse effects are minimised during construction.
- Describing any site-specific method statements required.

1.3 Previous Reports

This CEMP is based on the following reports:

- Hydrock Consultants Limited. April 2015, Updated February 2018. 'Milton Malsor Northamptonshire - Desk Study Report', Ref R/151171/001 Issue 8.
- Hydrock Consultants Limited. April 2015, Updated February 2018. 'Rail Central. Milton Malsor, Northamptonshire. Ground Investigation Report - Main SRFI Site', Ref R/151171/002 Issue 4.
- Hydrock Consultants Limited. July 2017, Updated February 2018. 'Rail Central, Milton Malsor. Ground Conditions Desk Study Report, M1 Junction 15A Improvements', Ref R/151171/003 Issue 2.
- Hydrock Consultants Limited. September 2017, Updated February 2018. 'Rail Central. Milton Malsor, Northamptonshire. Ground Investigation Report - Main Strategic Rail Freight Interchange - Conceptual Geotechnical Design', Ref R/151171/005 Issue 3.
- Hydrock Consultants Limited. September 2017, Updated February 2018. 'Rail Central. Milton Malsor, Northamptonshire. Ground Investigation Report - Main Strategic Rail Freight Interchange - Remediation Method Statement', Ref R/151171/006 Issue 3.
- Hydrock Consultants Limited. February 2018. 'Rail Central Strategic Rail Freight Interchange Northamptonshire. Pollution Prevention Method Statement, Ref. Hydrock Ref. RCL-HYD-XX_REM-RP-GE-3003-S2-P4.
- Hydrock Consultants Limited. February 2018. 'Rail Central Strategic Rail Freight Interchange, Northamptonshire. Materials Management Plan', Ref. RCL-HYD-XX_REM-RP-GE-3001-S2-P4.
- Hydrock Consultants Limited. February 2018. 'Rail Central Strategic Rail Freight Interchange, Northamptonshire. Site Waste Management Plan, Ref. RCL-HYD-XX_REM-RP-GE-3002-S2-P4.
- Hydrock Consultants Limited. February 2018. 'Rail Central Strategic Rail Freight Interchange, Northamptonshire. Code of Construction Practice, Ref. RCL-HYD-XX_REM-RP-GE-5002-S2-P2.

The assessment and conclusions of the reports have not been replicated within this CEMP. The reader is directed to the original documents within the PEIR.

1.4 Limitations

This document will be updated as detailed design progresses and consultation with the appointed Principal Contractor is undertaken.

Hydrock has prepared the report based on available information obtained during the study period. Although every reasonable effort has been made to gather all relevant information, all

potential environmental constraints or liabilities associated with the site may not have been revealed.

The report has been prepared for the exclusive benefit of the Applicant and those parties designated by them for the purpose of providing information on the environmental management of works to be undertaken during the enablement and construction phase of the development. The report contents should only be used in that context. Furthermore, new information, changed practices or new legislation may necessitate revised interpretation of the report after the date of its submission.

Hydrock has used reasonable skill, care and diligence in reporting. Information provided by third parties has been used in good faith and is taken at face value. However, Hydrock cannot guarantee the accuracy or completeness of any information provided by others.

The work has been undertaken out in general accordance with recognised best practice as detailed in this document.

Any site boundary line/ Order Limits depicted on plans does not imply legal ownership of land.

1.5 Next Steps

Prior to submission of the Application for development consent, the following actions will be undertaken:

- Clarification of the role of this CEMP and the accompanying Code of Construction Practice (CoCP) to avoid duplication of commitments, or merging of the two documents.
- The relationship with the DCO will be more firmly referenced, identifying which measures will be committed to as a requirement of the DCO and which measures will be addressed only if and when required. It is assumed that the CEMP could be divided into two parts - “general” measures (Part 1) and “specific/ additional” measures – for example, specific method statements or similar where the detail is not yet known (Part 2). Both parts would be delivered through a requirement of the DCO unless agreed otherwise with the LPA. Further specific measures may be made through amendments to “Part 2” in agreement with the LPA and in consultation with the relevant key stakeholders.
- Clarification of the extent to which the CEMP will form “embedded mitigation” within the PEIR (and eventually in the ES). The “embedded” and non-embedded aspects will be more clearly separated.
- The application of this document to the entire Proposed Development (including J15a and other highway works) will be clarified – for example provision of appropriate information in the site details and anticipated works sections.
- Inclusion of Order Limits plan.

2.0 SITE DETAILS

This section summarises the background and environmental site conditions.

2.1 Site Location

The site is located at:

Rail Central,
Main SFRI Site
Milton Malsor,
Northamptonshire

NGR: 473080, 254830.

A site location plan (Drawing 151171/D001), and a Site Extents Plan (151171/D002) are presented in Appendix A.

2.2 Site Description and Setting

A summary of site conditions within the Main SRFI Site and the immediate surroundings is detailed in Table 2.1 below.

Table 2.1: Site Description

Item	Brief Description
Site description	Predominantly agricultural, bound by the A43 to the west, the West Coast Main Line (WCML) to the south and the Northampton Loop Line (NLL) to the east. There are farms, a derelict filling station, two former sand pits, a horticultural nursery and a private dwelling (Rathvilly Farm) present on site. Works to J15a of the M1 and minor highway works are also proposed.
Site area	Approximately 291 ha (Main SRFI Site only).
Elevation, topography and any geomorphic features	Generally the Main SRFI Site is located within a shallow south to north orientated valley associated with the Milton Malsor Brook. Higher ground is present in the northwest, north and east reflecting variation in the geological conditions, specifically the occurrence of Glaciofluvial sands in the north and Glacial Till in the west and east. There are a number of small ponds or springs within the site. Earthworks are present in the southwest of the site in the form of embankments for the Grand Union Canal and former Great Central Railway, and in the southeast of the site, understood to be arisings deposited following excavation of Roade Cutting which is located to the southeast of the site along the WCML.
Present land use	The Main SRFI Site consists of predominately agricultural land. There are two farms, Lodge Farm and Manor Farm, in the east and centre of the site respectively. Lodge Farm is a fully operational farm, whereas Manor Farm is a private residence and stables. There is a horticultural nursery and a private dwelling (Rathvilly Farm) within the centre and east of the site.
Vegetation	The majority of the site is used for agriculture, predominantly arable but with some grassland supporting livestock. Field boundaries are generally characterised by mature hedgerows and trees with occasional trees within fields. There is a small plantation in the west of the site immediately to the north of the former filling station.

Item	Brief Description
Site boundaries and surrounding land	The site is generally in a rural setting and surrounded by the A43, Gayton Marina and farmland to the west, the village of Milton Malsor to the north, the NLL and farmland to the east, and the WCML and village of Blisworth to the south. The M1 motorway is located approximately 1km to the east and north.
Site boundaries and surrounding land	Between the southern boundary and the WCML, there is a row of terraced houses and a small business park, known as JBJ Business Park, and a redundant small sewage treatment works. The business park includes a workshop, food recycling facility, garage, carpet and caravan sales. An abattoir was formerly located at the business park site. There is a transport yard immediately adjacent to the northwest corner of the site, located in or immediately adjacent to a former sand pit, now landfilled.

2.3 Site History

A detailed summary of the site history derived from a review of historical mapping is provided in the desk study report (**Appendix 13.1** of the PEIR). The site has remained mainly as farmland since the earliest map edition of the late 19th century with development essentially limited to:

- a filling station in the west adjacent to the A43 (now disused, the tanks were decommissioned and filled with foam in 2004);
- Lodge and Manor Farms in the centre and east of the site;
- two former sand and gravel pits in the northwest and north of the site, with the pit in the northwest later filled as an inert landfill; and
- embankments carrying the Grand Union Canal and former Great Central Railway in the southwest corner of the site.

In addition, numerous small farm buildings have been constructed across the site and demolished later in the 20th century. Adjacent development includes the existing highways and railways, the transport yard to the northwest and the Business Park and housing to the south.

2.4 Geology and Soils

The general geology of the site area is shown on the 1:50,000 geological map of Towcester (Sheet 202) and is summarised in Table 2.2.

Table 2.2: Geology

Location	Age	Stratigraphic Name	Description
Central valley	Recent	Alluvium	Normally consolidated sandy clay.
Northeast			
North	Pleistocene	Glaciofluvial Deposits	Sand and gravel.
Locally in the northwest		Glacial Till (Oadby Member)	Over consolidated gravelly clay with associated sand and gravel deposits.
Locally in the east			
Entire Site	Jurassic	Whitby Mudstone Formation	Dark grey, fossiliferous mudstone and siltstone with fine grained sandstone beds and fossiliferous limestones.
Centre and northwest		Marlstone Rock Formation	Sandy, ooidal, ferruginous limestone with shell fragments.

Location	Age	Stratigraphic Name	Description
Centre and northwest of the area		Dyrham Formation	Pale to dark grey, silty, sandy mudstone weathering to a yellow clay.

Made Ground may be present associated with areas of former or current development and landfilling.

2.5 Hydrogeology

The aquifer designations given in Table 2.3 are based on the Environment Agency interactive aquifer designation map. Additional information on the hydraulic characteristics of the geological units has been abstracted from Allen et al (1997)[1] and Jones et al (2000)[2].

Table 2.3: Hydraulic Characteristics of Strata

Stratum	Aquifer Designation	Hydraulic Characteristics
Alluvium	Secondary Undifferentiated	May be a source of groundwater but vertical and lateral variability means these aquifers are locally changeable.
Oadby Member	Unproductive Strata	Maybe a source of localised groundwater but low permeability and porosity make these poor aquifers. Likely to behave as an aquiclude.
Glaciofluvial Deposits	Secondary A Aquifer	May be a localised source of groundwater.
Whitby Mudstone Formation	Unproductive Strata	Maybe a source of localised groundwater but low permeability and porosity make these poor aquifers. Likely to behave as an aquiclude.
Marlstone Rock Formation	Secondary A Aquifer	May be a localised source of groundwater.
Dyrham Formation	Secondary Undifferentiated	May be a source of groundwater but vertical and lateral variability means these aquifers are locally changeable.

The site is not within a Source Protection Zone (SPZ) and there are no SPZ in the vicinity of the site. There are no recorded groundwater abstraction licenses within 2km of the site. There is however anecdotal evidence of a water abstraction borehole at Lodge Farm.

2.6 Hydrology

The following surface waters are present at the site (Table 2.4).

Table 2.4: Surface Water Features

Feature	Location Relative to Site
Milton Malsor Brook	Crosses the western side of the site on a south to north course.

[1] ALLEN, D. L., BREWERTON, L. J., COLEBY, L. M., GIBBS, B. R., LEWIS, M. A., MACDONALD, A. M., WAGSTAFF, S. J. and WILLIAMS, A.T. 1997. The physical properties of major aquifers in England and Wales. *British Geological Survey Technical Report WD/97/34.* 312pp. Environment Agency R&D Publication 8.

[2] JONES, H. K., MORRIS, B. L., CHENEY, C. S., BREWERTON, L. J., MERRIN, P. D., LEWIS, M. A., MACDONALD, A. M., COLEBY, L. M., TALBOT, J. C., MCKENZIE, A. A., BIRD, M. J., CUNNINGHAM, J. and ROBINSON, V. K. 2000. The physical properties of minor aquifers in England and Wales. *British Geological Survey Technical Report WD/00/04.* 234pp. Environment Agency R&D Publication 68

Feature	Location Relative to Site
Ditches	The centre and west of the site is drained by open ditches which ultimately fall to the Milton Malsor brook. The ditches appear to originate at the railway, and may collect water from small ponds or springs present within the site at various places along the field boundaries.
Surface Water Springs	There are a number of small ponds and springs in the west and centre of the site which are drained via agricultural ditches to the Milton Malsor Brook
Abstraction Borehole	Anecdotal evidence water abstraction borehole at Lodge Farm.
Wootton Brook	The Wootton Brook rises in a marsh area to the northwest of Lodge Farm in the east of the site.
Grand Union Canal	The Grand Union Canal is carried on an embankment adjacent to the southwest corner of the site. There is a culvert underneath the canal carrying surface water, presumably originating from pre-existing land drainage constructed prior to the canal and railway. The canal appears to be leaking causing overland flow over the field in the southwest corner of the site.

2.7 Mining & Ground Stability

There are two former sand pits onsite. The first is in the northwest corner, and the second in the north immediately to the east of Northampton Road. There is a further pit immediately offsite to the north of Gayton Road beyond the northwest corner of the site. The transport yard located in the to the northwest of the site is at a reduced level which is anticipated to be a continuation of the former sand pit in the northwest of the site itself and subsequently landfilled.

An unrecorded pit is present in the northeast of the site.

Northamptonshire Minerals and Waste Local Plan (MWLP) defines a Minerals Safeguarding Area (MA2) for sand resources within the Milton Malsor area. The MA2 area does not include any of the Main SRFI Site as it is separated from the site by the Northampton Loop Line and the village of Milton Malsor.

2.8 Pollution Incidents

A significant pollution incident occurred at Gayton Marina in June 2015 when kerosene leaked from the BPA pipeline into the Grand Union Canal. Whilst it is not anticipated that this event will have had a significant impact on land quality at the site, there is a small possibility of an impact in the southwest if the canal had been leaking at the time. Further details are provided in the Hydrock Desk Study Report (Ref R/151171/001 Issue 8) (**Appendix 13.1** in the PEIR).

2.9 Radon

A British Geological Society (BGS) radon risk report (GR210997/1) has been obtained for the site and indicates that it is in a Radon Affected Area where recorded radon concentrations in 1-3% of homes are above the action level. The source of radon at this site is likely to be the Marlstone Rock Formation.

2.10 Ecology

Significant ecological assessment has been undertaken on the site. A summary of the ecological surveys completed to date is shown below in Table 2.5.

Table 2.5: Summary of Ecological Surveys Undertaken

Survey Type	Details of Survey	Main Site Month/ Year	Junction 15a Month/Year	Other Minor Junction Improvements Month/Year
Ecological Background Data Search	Data search of records from the local record centre, and freely available data. A 10km search area was used for internationally designated sites, 5km search area was used for statutory designated sites and 2km for non-statutory designated sites and protected species records.	October 2016, updated in January 2018.	May 2017, updated in January 2018.	July 2017, updated in January 2018.
Phase 1 Habitat Survey and assessment of habitat for protected animals	Identification of broad habitat types and habitat suitability for protected species following the JNCC methodology for Phase 1 Habitat Survey and CIEEM Preliminary Ecological Assessment methods.	March 2015 and 2016 (Additional areas surveyed in February 2017 where access has previously been denied).	February, April and May 2017.	No field surveys completed.
Phase 2 Botany – NVC and other surveys	Species listing throughout the site and NVC surveys in selected areas, mostly grassland, but also representative examples of other vegetation types.	April to July 2017.	May to July 2017	No field surveys completed.
Phase 2 Botany - Hedgerow surveys	Survey of all hedges to estimate their ecological value, principally by reference to ecological aspects of the Hedgerows Regulations 1997.	June 2016.	May to July 2017.	No field surveys completed.
Veteran Tree Survey	All trees were viewed from ground-level and from within the site boundary only. The trees were inspected and data recorded following guidance from 'Ancient and other veteran trees; further guidance on management'.	2016 [Development Tree Survey]	July 2017	No field surveys completed.

Amphibians - Habitat Suitability Index and presence / absence for great crested newt	Nineteen ponds where access was granted were assessed for their suitability for great crested newts using a Habitat Suitability Index. This was followed by eDNA surveys and presence / likely absence surveys. These involved undertaking four surveys between mid-April and mid-June. The surveys were undertaken by licensed ecologists and in accordance with English Nature survey guidelines.	May and June 2016 (Pond 13 surveyed in 2017 due to access restrictions in 2016)	March to June 2017	No field surveys completed.
Aquatic invertebrates	Surveys of a single baseline sample site in each of the watercourses (Milton Malsor Brook and Rothersthorpe Stream) were carried out on 5 October 2017 by RSK Ecologists This used a combination of the standard three minute hand-net sampling surveys with one minute visual search technique, developed for the National Pond Survey and the Natural England protocol for shallow waterbodies**.** Samples were collected in order to assess diversity and conservation importance of aquatic macro-invertebrates present within the watercourses on the site.	October 2017	Not required	No field surveys completed.
Badgers	Habitat assessment of the study area for its suitability for badgers. Locations of setts and foraging activity were recorded.	March 2016 (to be updated in August 2017)	To be completed in August 2017	No field surveys completed.
Bats (tree roost potential)	Ground-level Tree assessment – to establish which trees had potential roosting features for bats and to grade those trees as: Grade 1 – low potential, Grade 2 - medium potential or Grade 3 - high potential for roosting bats and to identify where more detailed surveys such as tree climbing assessments would be required (if individual trees were to be impacted during development).	January to May 2016	To be completed in May and June 2017	No field surveys completed.
Bats – tree climbing surveys	Trees with medium of high potential identified during the ground level tree assessment were subject to climbing surveys to inspect features that were identified to have potential for roosting bats.	May to September 2017	May and June 2017	No field surveys completed.
Bats – tree emergence and dawn surveys	Emergence surveys were completed for some trees that were identified as high or moderate following the climbing surveys.	May to August 2016	June to August 2017	No field surveys completed.

Bats (initial building assessment)	The buildings within the Order Limits of the Main SRFI Site and the J15a works were surveyed for roosting bats. Buildings surveyed included farm houses and associated barns at Manor Farm and Lodge Farm. This involved consideration of the age and condition of the structure, and identifying features that roosting bats may favour (e.g. holes, cracks and cavities that might be used as bat-entrance points or roost sites). Detailed searches were made for signs of bats using ladders, high powered torches, binoculars and an endoscope. All accessible cracks crevices and voids were searched. Where definite signs of bats or other evidence was found (such as actual sightings, droppings, urine stains, odour, scratch marks, grease stains and feeding remains), they were recorded.	May-August 2016 (further surveys undertaken in April 2017 for properties where access was unavailable in 2016).	April 2017	No field surveys completed.
Bats (emergence / dawn re-entry)	Following the initial building surveys, any buildings which were identified as Low, Moderate or High potential for roosting bats were subject to emergence and dawn re-entry surveys. Surveyors were positioned at pre-selected survey points so that potential bat roosting features were visible. Surveyors used bat detectors and edirols to record bat calls to allow analysis at a later date.	May to July 2016	June, July and August 2017	No field surveys completed.
Bats (activity)	Three transect surveys were completed – to assess the level of activity of commuting and foraging bats. Each transect commenced 15 minutes before sunset and lasted for approximately 3 hours.	May to October 2016 (April surveys were called off due to unsuitable weather).	May to October 2017 (April surveys were called off due to unsuitable weather).	No field surveys completed.
Breeding birds and barn owls	Breeding bird survey, consisting of three surveys in March to June was undertaken using methods based on Common Bird Census (CBC) methodology. A specific barn owl survey, involving an inspection of the buildings and trees on site for nests, was undertaken on 4 May 2016. Further activity surveys were conducted throughout 2017 were undertaken to assess the known barn owl breeding sites.	May and June 2016	April to June 2017	No field surveys completed.
Golden plover and	Golden plover surveys were conducted by experienced ornithologists using pre-selected viewpoints to observe the site from pre-dawn or	February and March 2016. November,	Not required.	Not required.

lapwing surveys	pre-dusk. Surveys were undertaken for 6 hours and all golden plover or lapwing observations marked on a map of the site. Habitat was assessed for suitability for golden plover within the Order Limits and for 500m outside the Order Limits.	December and January 2017.		
Reptiles	Protected species presence/absence survey using 200 felt tiles (artificial refuges) placed in three areas across the Main SRFI Site. These were checked on seven separate occasions in line with guidance by Froglife. Surveys on the Junction 15a site focused on the boundary of the canal and stream within the tall herb swamp to the west of the canal and involved 120 felt tiles. The surveys were conducted in September 2017.	May and September 2016	September 2017	No field surveys completed.
Otter and water vole	During the Phase 1 Habitat Survey the suitability of the site for otters and water voles was assessed. Specific surveys were subsequently carried out and signs were recorded, if present, including footprints and slides, feeding remains, holts and couches (resting places) and spraint (droppings). Habitat was classified as suitable, suitable (sub-optimal), or unsuitable.	3 May and 27 July 2016	3 May and 27 July 2016	No field surveys completed.
White clawed crayfish	A walkover survey was undertaken at both watercourses in May 2017 to assess their suitability for white-clawed crayfish. Both watercourses were subsequently surveyed using day time hand searching / hand netting methods and night time torch surveys which are in accordance with standard survey methods for white-clawed crayfish.	May 2017	Not required.	No field surveys completed.
Fish	Two survey sites were electrofished, one on each of the two watercourses on the Main SRFI Site, and these were selected following the crayfish walkover survey. Electrofishing took place on 5 October 2017.	May 2017	Not required.	Not required.
Terrestrial invertebrates	An initial walkover survey of the Main SRFI Site was performed on 21 July 2016 and 23 June 2017 at J15a. Invertebrate species sampling was then undertaken on 22 July, on 7 August and 18 September 2016 at the Main SRFI Site and 5-7 July 2017 at J15a. This spread of dates recognises the seasonal appearance of most invertebrate species and was aimed at maximising the number of taxa	July 2016	July to September 2017.	Not required.

	available for listing and analysis. Sampling affected the whole area of the Main SRFI site. However, for practical reasons it was concentrated in a number of areas that were judged likely to generate samples that were representative of the whole area.			

2.11 Archaeology & Heritage

The archaeological evaluation (including geophysical work and trial trenching) demonstrated that the Main SRFI Site contains archaeological remains of later pre-historical, Romano-British and medieval and later date, which could be divided into 15 discrete archaeological sites. Desk-based assessment indicated that the M1 J15a and the A43/A5 Tove Roundabout locations have some archaeological potential, with the possibility that archaeological remains of comparable date to those within the Main SRFI Site could be present. A programme of archaeological mitigation works will be carried out to offset the predicted direct impacts on archaeological assets.

2.12 Unexploded Ordnance

A non-specialist Unexploded Ordinance (UXO) screening exercise has been undertaken which indicates low bomb risk.

3.0 ENVIRONMENTAL OBLIGATIONS

3.1 Identification of Requirements

It is important that the scheme adhere to the requirements of:

- Appropriate legal and regulatory requirements.
- Any consents, permits and licences.
- Any technical reports provided in support of future planning/ DCO applications and decisions.

Additionally the Principal Contractor is expected to possess and operate in accordance with its own Environmental and Sustainability Policies.

3.2 Legal and Regulatory Requirements

The Principal Contractor shall comply with all legal requirements and best practice regarding environmental pollution protection and undertake the works in accordance with future Specification(s) and Employers Requirements.

A summary of the key relevant environmental legislation and regulations for the scheme is listed in Table 3.1 below. Other legislation and regulations may also apply.

The Principal Contractor shall update the CEMP (in accordance with the requirements of the DCO and with consent of the relevant planning authority) with any relevant updates to existing environmental legislation and new legislation coming in to force.

Table 3.1: Legislation and Relevance to Project

Legislation	Relevance
Control of Waste (Registration of Carriers and Seizure of Vehicles) regulations, 2009	Transportation of waste from site.
Environmental Damage (Prevention and Remediation) Regulations, 2009	No required permits and consents, except environmental permit for transport and handling waste.
Environmental Damage and Liability Regulations, 2009	Use approved Risk Assessment documents.
Environmental Permitting (England and Wales) Regulations (Amendment), 2013	Waste Management / permit for waste recycling contractor. Responsibility for producing Waste Transfer Notes.
Environmental Protection (Controls on Injurious Substances) Regulations, 1992 (Amended 2001)	COSHH Assessment completed for all known substances to be used on site.
Environmental Protection (Duty of Care) Regulations, 1991 (Amended 2003)	Ensure compliance with Duty of Care requirements.
Environmental Protection Act, 1990	Framework for Duty of Care for waste, contaminated land and statutory nuisance.
Hazardous Waste (England) Regulations, 2002 (Amended 2005)	In the event of hazardous waste. Qualifying limit for notification changed from 200kg to 500kg a year of hazardous waste.
Health and Safety at Work Act, 1974	All hazardous substances on site COSHH assessment should be produced.
Land Drainage Act, 1991	For land drainage consent.
Landfill (England and Wales) Regulations, 2002 (Amended 2005)	For all site waste sent to landfill.

Legislation	Relevance
Landfill Tax Regulations, 1996 (Amended 2009)	For any waste sent to landfill.
List of Wastes (England) Regulations, 2005	List of EWC Codes needed.
Pollution Prevention and Control Regulations, 2000	Approved plant and equipment to be used on site.
Protection of Badgers Act, 1992	There has been no evidence of badgers on site but vigilance required.
The Rail Central Rail Freight Interchange and Highway Order 201X	Adhere to the requirements of the Order
The Noise and Statutory Nuisances Act 1993	For any noise disturbance caused.
Planning Act, 2008	Discharge of appropriate DCO requirements.
Traffic Sign Regulations and General Directions (TSRGD) 2011	Appropriate signage for lorries delivering to site.
Waste Electrical and Electronic Equipment (WEEE) Regulations, 2006	For any electrical or electronic waste. When purchasing new EEE (i.e. computers), retain producing registration number for future replacement or disposal.
Waste (England and Wales) Regulations, 2011	Declaration that waste hierarchy has been applied on the Waste Transfer Notes and consignment notes. Classification of the 2007 Standard Industrial Classification (SIC) code of the person transferring the waste.
Waste Management Licensing (England and Wales) (Amendment and Related Provisions) Regulations, 2006	Environmental Permit to be included within documentation.
Water Resources Act ,1991 (Amended 2009)	Section 119 Consent to discharge trade effluent into public sewer.
Wildlife and Countryside Act, 1981 (as amended)	Protected species of birds and animals. Species most likely to be found on site include breeding birds and great crested newts. Animals, nests and eggs cannot be disturbed or destroyed unless a licence is issued.

3.3 Consents, Permits and Licences

In addition to the above legislation, the Principal Contractor will need to work within the following consents and licences. Table 3.2 outlines management of consents, permits and licences for the project. Other consents may also be required and will be added to this list.

Table 3.3 lists the typical ecological conditions that can commonly pose a constraint to construction works, though further ecological requirements maybe indicated in the surveys to be undertaken.

Table 3.2 Consents and Permits

Consent / Permit	Statutory Authority	Requirements
Planning Act, 2008	Northampton Borough Council (NBC) South Northamptonshire Council (SNC)	Discharge of appropriate DCO requirements.
Environmental Permitting for construction works regarding Waste / Water Discharge / Groundwater.	Environment Agency / DEFRA	To be agreed by the Environment Agency
Discharge to sewer (usually foul) if Contractor needs for works.	Water Utility Company (United Utilities)	For Contractor to apply for.

From the surveys undertaken, ecological constraints to construction, include the items below.

Table 3.3 Typical Ecologically Related Licences

Ecology Condition	Comment
Great crested newts (GCN)	A pond east of the NLL within 500 m of the Main SRFI Site has a medium-population of GCN. The railway is not considered a complete barrier to GCNs. The Main SRFI Site has limited terrestrial habitat suitable for GCNs and no GCNs have been found in the ponds there, but a licence will be required prior to any works within suitable terrestrial habitat. The methods used will be finalised in the licence but are likely to include the installation of a drift fence and hand searches of suitable terrestrial habitat prior to and during habitat works.
Common pipistrelle – minor non-maternity roost for small numbers of bats	European Protected Species Licence (EPSL) required for exclusion of bats from Field Barns near Barn Lane.
Common pipistrelle – minor non-maternity roost for small numbers of bats	EPSL required for exclusion of bats from the main house and barn at Lodge Farm prior to demolition.
Common pipistrelle – minor non-maternity roost for small numbers of bats	EPSL required for exclusion of these bats from the house and stable block at Manor Farm.
Bats	Rathvilly Farm and the Nursery require survey to determine whether works will require an EPS licence.
Signal crayfish (Pacifastacus leniusculus)	Brook diversion works may generate excavated material containing signal crayfish (a non-native invasive species) which may carry crayfish plague disease lethal to the native species. Environment Agency approval (but no actual licence) will be needed for on-site retention and handling of such material to avoid transferring disease to native crayfish habitat elsewhere. If precautions were to include the intentional capture and removal of signal crayfish then a licence would be necessary. Waste transfer from all excavated material would require transfer to a waste disposal facility that is licenced to receive contaminated material.
Fish	Prior to works to divert the Milton Malsor Brook, a fish rescue and translocation will require Environment Agency authorisation (but no actual licence) will be needed for 'authorisation to fish using instruments (other than rod and line) under section 27A Salmon and Freshwater Fisheries Act 1975' (FR2 application form). This will be sufficient provided that fish are transferred to another section of the same watercourse in close proximity to their original site of capture.

4.0 SITE ROLES AND RESPONSIBILITIES

The Applicant, and the Project Manager will establish roles, responsibilities, authorities and accountabilities in advance of the construction phase and these will be embedded within the construction contract performance requirements. All works will be carried out in accordance with the requirements of the DCO and general law. A summary of the anticipated roles are detailed in Table 4.1 below.

Table 4.1: CEMP Summary of Anticipated Roles & Responsibilities

Role	Responsibilities
Applicant: Ashfield Land Management Limited and Gazeley GLP Northampton s.à r.l	
Project Manager (tbc)	Overall environmental management of the site on behalf of the owner.
Principal Contractor, to be appointed. Overall responsibility to ensure works are undertaken in accordance with all legislation, best practice and the CEMP Team will include:	
Construction Manager	Day-to-day management of the site.
Waste & Environmental Manager / Environment Manager	Plan the works, and those of their sub-Contractors
Site Staff	Obligations under Duty of Care
Designer, Various	
Design out adverse effects on the environment as reasonably practicable, in accordance with legislation and best construction practice. Where effects cannot be designed out, advise Principal Contractors and sub-Contractors on environmental hazard that a competent contractor cannot reasonably anticipate.	
Other Stakeholders, Northampton Borough Council; South Northamptonshire Council, Northamptonshire County Council, Environment Agency, Natural England, Highways England, HSE, Historic England.	
Environmental Officer	Enforce planning requirements and liaise with public enquiries received.

It is anticipated that the Applicant will nominate a Project Manager for the site.

The successful Principal Contractor will have overall responsibility to ensure works are undertaken in accordance with all legislation, best practice and the CEMP. The Principal Contractor will appoint a suitably qualified and experienced:

- Site Manager, will monitor the day-to-day management of the site, including legal and environmental responsibilities, site health and safety, and to ensure adherence to the CEMP and all approved method statements and the DCO. The Site Manager will be responsible for ensuring that all site staff receive a briefing on the CEMP and other requirements as part of their site induction and are aware of their roles and responsibilities in fulfilling the requirements of the CEMP.
- The Principal Contractor's Waste & Environmental Manager (if necessary), shall carefully plan the works, and those of their sub-Contractors. The Principal Contractor will provide these details in a Health and Safety Plan (as required under the Construction (Design and Management) Regulations (CDM) 2015). The Principal Contractor and sub-Contractors will be required to adhere to the CEMP.
- Ecology Manager, will supervise the habitat clearance activities and licensable activities, including supervision of an Ecological Clerk of Works (ECoW). They will also plan and oversee implementation of ecology mitigation including habitat creation, protection of

retained habitat, and the licensable activities. The Ecology Manager will be responsible for the implementation of the Habitat Management Plan for the site.

- Site Staff will have an obligation under Duty of Care to follow training, inductions, method statements, briefings and toolbox talks.

As part of the contract management, between the Applicant, the Project Manager, Designer(s) and the Principal Contractor, the following will need to occur (responsibilities should be allocated in the Contract documents):

- Advising and assisting in avoiding, minimising and mitigating adverse effects of environmental aspects associated with construction.
- Review the construction progress on site and the upcoming works in the context of environmental mitigation.
- Review the environmental monitoring.
- Review the effectiveness of the environmental mitigation.

Should any unexpected environmental issues arise during construction; such as complaints the Principal Contractor will immediately report them to the site management team so that suitable measures can be implemented consistent with the various component plans within this CEMP.

The environmental impacts of the works will be assessed within the risk assessments, method statements and control measures developed for the works. Should complaints be received, the appointed Principal Contractor will liaise with the design team, establish the cause of the complaint and propose mitigations to the relevant stakeholder. Further monitoring should then be undertaken to ensure the scenario that first caused the complaint is addressed.

5.0 CONSTRUCTION

This CEMP will be secured within the DCO and therefore can only be amended with the explicit consent of the Local Planning Authority (LPA). The Principal Contractor will seek approval from the LPA for any updates, including provision of more detailed methodologies etc. as appropriate. It is envisaged that the Principal Contractor will update this CEMP to provide details on how the Principal Contractor will:

- Conform to the technical reports provided in support of the DCO application.
- Ensure that all environmental undertakings and obligations of the Principal Contractor are fulfilled.
- Adopt working practices that will achieve good environmental practice on site.
- Ensure that sub-Contractors and suppliers are aware of the environmental constraints and opportunities of the site, and follow any necessary procedures in order to ensure good environmental practice.
- Detail the responsibilities of staff and the Principal Contractor in achieving good environmental practice on site.

5.1 People & Communities

The Principal Contractor's update to the CEMP will detail how earthworks and construction works will be controlled in accordance with best practice and guidance to control possible nuisance issues to neighbouring communities, including dust, noise, ground vibration, odours and traffic management.

5.2 Contractor Requirements

All works will be undertaken in accordance with all relevant environmental legislation, agreements, authorisations, commitments (included in this CEMP) and best construction practice to minimise the impact, so far as reasonably practicable, to the environment, neighbours and the environment.

Works that may cause an impact to neighbours will be advertised through a mechanism to be agreed with NBC, SNC or other relevant Planning Authorities. This mechanism may be door to door leafleting of nearby properties, advertising in a local paper, posters in prominent locations etc. and will address issues relating to programme, activities and likely effects, duration and points of contact. The CEMP will detail a communications protocol to be agreed with NBC and SNC before works begin.

The Principal Contractor will ensure that all site personnel, specialist sub-Contractors, delivery drivers and any other persons working on or visiting the site fully understand and implement the obligations of the CEMP and monitor their compliance with it. This will be achieved by providing to all site staff, and those attending site, a safety induction. Inductees will be required to sign a statement stating that they have understood and will abide by the content of the CEMP, the induction, Method Statements and training.

5.3 Anticipated Works

Design associated with developing the detailed phasing of the scheme is ongoing, however it is broadly anticipated to be undertaken in the following stages:

- Construct a temporary construction access off the A43 (left in and left out slip). Ultimately the access will comprise a grade separated junction off the A43 which will come into operation during the early phases;
- The initial construction works will focus on delivering a route through to the east of the site, east of Northampton Road, to construct the intermodal terminal. This will involve a new highway with underpass below the Northampton Road and haul road from the underpass to intermodal area.
- Construction of the intermodal terminal.
- The first buildings are anticipated to have direct rail links
- Thereafter it is envisaged that buildings will be constructed at the front of the site and then the remaining plots will follow. This order of construction will be flexible, however.

There are significant earthworks required in each phase (see **Appendix 5.3** of the PEIR) – to create the required building plateaus and to create landscape screening mounds in a number of locations within the site.

Works will also include ecological mitigation, J15a and minor highways works.

5.4 Construction Programme

The programme for the construction works is to be confirmed once the Principal Contractor is appointed, however works are anticipated to take approximately 10 years (2019-2029, with first operation in 2021). The Construction Phase Plan will be controlled as a requirement in the DCO.

5.5 Plant & Equipment

For the earthworks, at this preliminary stage, main earthworks plant is considered to include excavators (envisaged to be 13t and 21t), bulldozers, mobile crusher, compaction rollers and dumpers, with third party lorries arriving and departing.

5.6 Site Access and Construction Traffic

The Construction traffic movements will be controlled as part of the Construction Phase Plan. The plan, in compliance with CDM 2015 Regulation 27, will consider and detail:

- Staff and visitor parking arrangements - no vehicles will be allowed to park on the approach roads to the site.
- Arrangements and timing of deliveries to the site.
- Arrangements for the removal of plant and equipment and waste vehicle and plant and equipment movement- An adequate turning area will be provided at all times to ensure that no vehicles reverse out of the site entrance.
- Pedestrian Routes - Separate and dedicated pedestrian access routes and walkways will be provided around the site in order to provide safe access for site operatives and others around the site.
- Segregation of vehicular and pedestrian routes.
- Existing vehicular and pedestrian routes.
- Maintaining access for emergency services.

- Signage requirements.
- Banksman requirements for the co-ordination of movements into, around and off the site.
- Traffic plan drawings.

Detailed methodology and designs will be submitted for approval before works commence.

It is planned to minimise disruption during the construction stage by implementing the following measures:

- External roadways will be signed with the permission of NBC, SNC and other relevant planning authorities to assist construction traffic in finding the site and not blocking the main roads.
- The Principal Contractor will notify the local businesses via newsletters prepared by the Project Manager, explaining the Construction Traffic Management Plan for the Project and the impact on the local roads including those associated with J15a and minor highways works.
- Deliveries will be phased to suit the construction works and 'just in time' deliveries will be utilised where required.
- There will be a rigid booking system for the Main SRFI Site and any unannounced deliveries that cannot be accommodated immediately will be turned away. The booking procedures will be reviewed to ensure this approach does not adversely impact the road network.
- Restrictions for parking out-side of the Main SRFI Site will be imposed. The Principal Contractor will support any highway enforcement and actively assist to prevent any parking outside the site on the main road.

The following procedures / arrangements for will apply for traffic and pedestrian routes on site:

- Only access the site by the dedicated access off the A43. The grade separated junction will be used once constructed.
- All traffic and pedestrian routes will be clearly separated from each other by designated walkways and suitable barriers.
- Road crossing points will be clearly identified.
- Vehicles will be subject to a site set speed limit, commensurate with the site conditions.
- All vehicles to the site will be pre-booked onto site a minimum of 48 hours' notice and on arrival will notify security.
- All delivery vehicles will sign in and security will notify the respective Principal Contractor of their presence before releasing it onto site.
- All delivery drivers will be advised of Site issues on arrival including all pedestrian routes, crossing points, etc.
- All traffic on site will be checked for cleanliness prior to leaving the site and if required, will pass through the wheel cleaning facility before entering the public roads.

The separation zone where site traffic will cross pedestrian walkways will be clearly marked and delineated.

In addition, the plan will include the following specific details:

- Works will be programmed and managed so that deliveries to site will be either onto a stone capping layer or hard surfacing to minimise the risk of any mud or debris being deposited on the Public Highway.
- The wheels of vehicles leaving the construction site will pass through a wheel wash to minimise the risk of materials being tracked onto the highway.
- Any mud on the site access road will be assessed on at least a daily basis.
- Provision will be made for the immediate removal of any mud, stones, chippings or other debris from the main carriageways.
- Excluding the J15a construction works, heavy construction traffic, such as dump trucks and tracked machines will not be allowed to cross the existing road network. If operational reasons require this approach to be amended it will be subject to the implementation of further task specific mitigation and control that will be developed by the Principal Contractor.
- Particular care will be taken not to damage the existing highway including kerbs, verges and highway drainage. The Project Manager will agree a photographic record of the highway with the Principal Contractor or their sub-Contractor prior to starting work and the Principal Contractor will be liable to repair and damage to the highway network caused by vehicles / plant or those of his sub-Contractors.
- No loaded vehicle entering or leaving the site will contain material stacked to a level higher than the rigid sides of the vehicle. Vehicles will be stacked such that there is no risk of materials spilling over the sides whilst the vehicle is in motion, and is compliant with current motor (construction and use) regulations.

5.7 Construction Compounds

More than one site compound will be required for the construction of the Proposed Development and their locations will be confirmed with the planning authority. The initial compound is likely to be adjacent to the initial construction entrance on the Main SRFI Site by the disused filling station covering approximately 3 ha. Further compounds are anticipated to be established for different aspects of the work – for example, the intermodal area and J15a. The location of each element in each compound will be agreed when the Principal Contractor is appointed and whilst the scale and nature of these compounds will reflect the scope and duration of the works to be undertaken, they are anticipated to include: site security cabin (if deemed necessary by the Principal Contractor), welfare facilities, storage, office accommodation, site notice board and designated parking areas.

The compound(s) will be designed in line with best practice and will be constructed in layers using compacted crushed stone with intermediate geotextile layers (if necessary). Each layer will be fully compacted using a vibrating roller and trimmed to provide a profile and finish suitable to accommodate the necessary facilities. The surface shall be cambered to shed rainwater and is likely to be maintained for the construction period.

All appropriate safety signage will be displayed at the site entrance to the site compound. A pedestrian area will be clearly defined within the compound.

Following completion of the Proposed Development, the construction compounds will be dismantled and the areas reinstated. All temporary accommodation, fencing and barriers will be removed. The area will then be reinstated as appropriate to the location.

The main construction compound shall be used for the storage of equipment, site offices, messing/welfare facilities, materials, fuel and parking. Site catering and welfare facilities shall only be present at the site compound during the construction works. The compound will include suitable facilities to protect the health and wellbeing for employees including water supplies and shaded areas to reduce the risk of overheating.

Toilet facilities shall be a sealed chemical system and will be emptied on a routine basis throughout the works. No foul water will be discharged on site.

All offices, canteens and cabins shall be serviced by lighting and electricity provided initially by electrical generators moving to mains supply as soon as possible. The generators shall be silenced and shall be within a waterproof enclosure incorporating the requirements of the Environment Agency's PPG's (although now withdrawn) and relevant regulations. Both the electrical generator and any associated (bunded) fuel tank will be sited on a drip tray or within a bunded area.

A water supply will be installed to the site.

Oil spill kits will be based at the construction compound to deal with any localised oil or fuel spillage. All site plant and site vehicles will also carry spill kits. It is important that wherever oils and fuels are stored, the filling and dispensing points are capable of being locked in the closed position to ensure fuel/oil cannot be accidentally or deliberately spilt or left to drip contaminating the surface water runoff.

Appropriate firefighting equipment will be located around the compound to deal with any small localised fires. Muster points and evacuation routes will be clearly signed around the construction compound and around the site as necessary. Where possible, waste from the site shall be sorted and recycled locally or compacted and removed from the site.

Concrete wagons, plant and equipment will be washed out in designated areas with appropriate facilities designed to treat the wastewater including the removal of suspended solids and the adjustment of pH as necessary. Concrete works and washing areas will be located at least 20m from watercourses and surface water drainage.

Surface water runoff from the compound will be controlled and diverted via silt traps and oil separators to prevent runoff into watercourses. This will include an allowance for increased winter rainfall due to climate change.

5.8 Lighting

Security lighting will be provided to the compound area and for task specific items associated with earthworks and stockpiling activities on site and the surrounding works area.

Lighting will be directed so only the site compound is illuminated, minimising light pollution beyond the compound boundary. There may be a security presence on site overnight. However to minimise impacts on local residents there will be minimal lighting of the construction site once works cease each evening.

Construction lighting will be required to illuminate the access / egress point to the site, site safety working and security. Construction lighting may also be required to facilitate early evening working through the winter. Where appropriate, site lighting will be time controlled to turn off to a reduced coverage for security after dark.

Where the demands for external lighting would be particularly concentrated, potential obtrusive light impact will be minimised through orientation and the positioning of buildings and artificially lit operations.

The lighting adopted will be selected and installed to negate obtrusive light (light pollution). The selection of lighting fittings and illumination levels will be in accordance with the recommendations of the Chartered Institute of Building Services Engineers (CIBSE) and relevant Health and Safety Regulations. Modern, LED luminaires will be used where possible to minimise the obtrusive light spill footprint and to be as energy efficient as possible. Luminaire selection will be based on inherent glare control to an appropriate G class ranging between 4 and 6. All luminaires used around the perimeter (but within) the Order Limits will be mounted so that the main photometric distribution of the luminaire will be towards the task area only.

Columns will be placed as far away as practicable from rail bridges or the fence line of the railway track. Warm/ neutral white light will be used where there is risk of conflict with rail signal lights being green, yellow and red.

A Lighting Management Plan, secured as part of the DCO, will be prepared which includes periodic monitoring and makes provision for necessary remedial works, and deals with the control of lighting associated with after-dark construction activities.

During the earthworks and development works temporary site lighting will be in accordance with the Guidance Notes for the Reduction of Obtrusive Light GN01 (Institution of Lighting Professionals 2011). including:

- Lighting will be switched off when not required for safety or security;
- Temporary lighting will be directed into the site away from residential areas;
- Wherever possible lighting will be directed downwards to illuminate the target area to reduce spill light to a minimum;
- Specifically designed lighting equipment will be installed to minimise the spread of light near to or above the horizontal;
- Keep glare to a minimum; the main beam angle of all lights directed towards any potential observer will be kept below 70 degrees. Higher mountings used for the lighting will lower the main beam angle reducing potential glare; and,
- Wherever practicable, floodlights with asymmetric beams will be used.

Wherever possible and subject to landscape design, natural and solid screen perimeters should be included to reduce obtrusive light to adjacent sensitive areas and light should be extinguished when not in use.

Illuminance levels should be designed in accordance with BS EN 12464-2: 2014 and CIE 129 to ensure areas are not over lit.

Lighting Design for Ecological Protection

Wherever possible consideration should be given to minimise the need for lighting in areas of ecology habitat or in areas situated directly adjacent to ecology habitat. Should health & safety risks demonstrate a need for artificial lighting of these areas all luminaires will be directed away from the habitat area.

After dark lighting during construction phases will be directed away from retained natural habitat, as directed by the Ecological Clerk of Works (ECoW) i.e. wetland habitats, hedgerows or specimen trees. These dark corridors will reduce the impact on bats, allowing free movement between foraging and resting sites.

In ecologically sensitive areas, and to minimise disruption to bats, the lighting design will employ lamps with minimal or zero ultra violet (UV) and blue light emission such as 'LED' light sources (<4200K) (insects are attracted to UV).

To minimise disturbance to commuting/foraging otters and bats, there will be no after-dark working within 100m of the Grand Union Canal. No lighting will be left on within 50m of the canal, and none within 100m unless it is screened and directed away.

5.9 Storage and Use of Hazardous Materials

Any hazardous materials and substances stored on site during the construction phase shall be stored in a 'Haz-Bin' or similar secure lockable container located within the construction compound. Spill kits will be available at all storage lockers and in all plant/machinery associated with the works.

All Contractors for activities using hazardous substances shall complete Control of Substance Hazardous to Health (COSHH) assessments, incorporating data sheets supplied by manufacturers. Copies of all relevant COSHH sheets shall be available at the storage area and at the site office.

5.10 Fuel Storage

Fuel storage on site will only be permitted in secure and bunded areas and quantities will be kept to a minimum.

Fuel will be stored in containers that house a separate fuel tank internally. These have a void between the tank and outer wall of the container that acts as a bund to store 110% of the tanks volume. Fuel will only be stored at the site compounds.

There will be spill kits kept on site to deal with spillages. Designated refuelling areas will also be put in place to reduce the risk of spillages. Other hazardous substances will be stored in secure areas in accordance with the control measures identified in the manufacturers COSHH assessment**.**

5.11 Site Waste Management

As part of the CEMP, minimising and reducing waste during the construction stage is a key priority and the following core principles will be maintained throughout the construction process:

- Toolbox briefing sessions (including ecology toolbox talks to be delivered by the ECoW).
- Adopting good on-site working practices.
- Reducing wastage on site.
- Ensuring adequate waste storage facilities are provided.
- Ensuring adequate security measures are in place.
- Appropriate waste disposal routes.

Details of good site practices include:

- All construction personnel including sub-Contractors will be briefed through toolbox talks regarding the importance of minimising, segregating and recycling wastes during the construction process. The objectives of the toolbox talks will be to maximise opportunities for recycling and minimise waste to landfill.
- Guidance will be provided on the segregation of certain waste streams such as aggregates, excavated materials, metal, wood, cardboard and polythene packaging waste.
- Deliveries will be on a 'just-in-time' basis to minimise potential damage and wastage of materials.
- Clearly labelled waste skips will be provided at the site for the segregation of waste streams for recycling and for general waste to be disposed of to landfill. The skips will be stored in a secure location on-site to prevent waste nuisance issues arising.
- Construction materials will be stored in a secure compound to prevent the potential for vandalism and theft of material.
- Segregated waste for recycling will be removed from site by a licensed sub-Contractor to an appropriate Materials Recycling Facility (MRF).
- A licensed waste sub-Contractor will remove wastes that cannot be recycled from site to an appropriate licensed landfill facility-ensuring adherence to the Environmental Protection (Duty of Care) Regulations.
- Waste will only be placed in the approved locations to minimise litter and pollution.
- To minimise water use during construction, monitoring and recording of water use and capture will be undertaken. Where feasible, this will include the re-use of rainwater and water from de-watered excavations.

A draft site waste management plan (SWMP) [RCL-HYD-XX-REM-RP-GE-3002-S2-P4] has been produced to accompany the S42 consultation documents, and will be updated as appropriate to inform the DCO submission. It is intended that it will be secured through the DCO, so would only be amended in accordance with the requirements of the DCO and with agreement of the LPA. For further information please refer to this document.

The main principles of waste management are:

- to re-use site won arisings on site;
- the processing and re-use of on-site and other incorporable materials, including demolition arisings; and

- the disposal of non-compliant or non-incorporable materials to landfill or for off-site treatment or recycling.

The intention is that maximum volumes of materials are re-used on site, no unacceptable material shall be reused on site and as much of the unsuitable material as possible shall be treated off site in preference to landfilling.

A key opportunity is to recycle waste from one component of the construction into another. For example, excavation waste (topsoil) will be retained on site for use as site bunding. Any additional excavation waste (soil and stones) would likely be retained on site for recycling or reuse in the proposed development, e.g. as low-grade backfill, where it is suitable for use; otherwise, the material will be sent for recycling off-site.

Appropriate space is provided in the site for recovering and storing waste, including segregation of contaminated soil if identified. The management of this process will be the responsibility of the Waste and Environmental Manager.

Materials and methods will be specified to optimise the opportunities to utilise recycled materials. The appointed Principal Contractor will be charged with utilising recycled materials and selecting methods of construction which create recyclable products, whenever possible. Sub-Contractors will also be charged with the responsibility of segregating wastes to facilitate recycling onsite in the first instance and offsite for waste that cannot be recycled into the works

The Principal Contractor will be required to:

- undertake waste management activities in accordance with the principles of the waste hierarchy;
- undertake activities in accordance with the Applicant's Environmental Policy;
- undertake activities in accordance with the CL:AIRE Definition of Waste Code of Practice; and
- obtain the waste metrics of waste management solutions providers where waste is removed from site.

All excavation processing, treatment and material reuse will be undertaken under the supervision of the Site Manager.

Waste tracking and recording will be carried out using a template form. Relevant forms and records will be available for inspection throughout the project, including:

1. waste carrier registrations;
2. environmental permit and exemptions;
3. waste transfer notes; and
4. hazardous waste consignment notes.

The SWMP will be a live document, and will be kept on site along with all relevant waste documentation including waste carrier registrations and environmental permits.

On completion of the site construction, these documents will be transferred, with all other SWMP documentation to the Project Manager for completion before issue to the Applicant.

The SWMP also contains forecasts of waste tonnage likely to arise.

5.12 Excavated Soils Management

Earthworks and remediation works will be undertaken in accordance with the 'Definition of Waste: Development Industry Code of Practice, March 2011' with the development of a Materials Management Plan (MMP) for the earthworks under a Qualified Persons Declaration.

A draft MMP [RCL-HYD-XX-REM-RP-GE-3001-S2-P4] has been produced to accompany the S42 consultation documents, and will be updated as appropriate to inform the DCO submission. For further information please refer to this document.

It is envisaged that the majority of the soils present onsite will be suitable for reuse during the earthworks.

The appropriate reuse of excavated materials will minimise haulage traffic, with resultant reduced noise, dust and ground vibration, as well as improving air quality, in the vicinity of the site. These environmental controls are achieved by the reduction of haulage traffic both disposing of materials off-site and bringing imported soils to site.

5.13 Construction Site Drainage

The Section below details how construction works will deal with drainage for the temporary construction works. In addition, Controlled Waters will need protection and relevant information is detailed in Section 7.9.

Run-off from the site will be treated to reduce silt loads to acceptable (permitted) limits. The drainage system put in place will include an allowance for increased rainfall due to climate change

Any earth moving and construction activity that takes place in close proximity to a watercourse will include measures for water control. These will include the use of temporary settlement lagoons, cut off ditches, settling ponds, silt traps and restricting activity in certain areas by temporary fencing and other delineations.

Specific drainage facilities shall additionally be provided for:

- Construction vehicle parking areas; and
- Excavations below the water table which requiring de-watering.

Any specific discharges from the above to any watercourse shall be subject to discharge consents from the Environment Agency. Discharges will pass via settlement and oil interception facilities and will be monitored to a programme agreed with the Environment Agency. Effluent exceeding the Environment Agency discharge consent conditions will be held for further on site treatment / settlement or alternatively will be tankered away to a licensed liquid waste disposal site.

Construction site sewage will either be tankered to treatment facilities off site or disposed to public foul sewer, under a licence to discharge to foul sewer from the utility company (United Utilities). Also, the Principal Contractor may obtain a licence to discharge to foul sewer for

groundwater, if pumping is necessary to advance deep(er) excavations (to be determined by the Principal Contractor, depending on the earthworks necessary).

6.0 IMPLEMENTATION AND OPERATION

6.1 Environmental Management System

The Principal Contractor shall operate an accredited environmental management system and will operate to the requirements throughout the contract.

The principal requirement of the environmental management system for the earthworks and development works is to provide a management framework to address the environmental aspects identified for the works.

Significant aspects and impacts relating to expected activities will be detailed by the Principal Contractor.

These environmental aspects identified will be evaluated in terms of significance to ensure that resources are targeted appropriately and effectively and will be reviewed for improvement in performance, where appropriate. The Environmental Aspects Register is to be compliant with the Principal Contractor's Environmental Management System, which will be available for inspection on site at all, times. Headline terms for the schedule register may comprise:

Environmental Aspects Register						
Activity	Aspect	Impact(s)	Legislation	Significance	Management Response	Comments

Although the Principal Contractor's template may vary, these headlines are to be considered.

The Aspects and Impacts Schedule will be a live document and will be updated through the project. It is intended that the requirement for an environmental management system and therefore and aspects and impacts schedule will be secured through a requirement of the DCO.

6.2 Sub-Contractor Environmental Management

Sub-Contractors will work to the CEMP and must comply with risk assessments and method statements (RAMS) that apply to the tasks being undertaken.

6.3 Communication

The Principal Contractor will ensure all issues requiring liaison and co-ordination are identified, and a responsible person with the required skills and experience will be appointed to resolve and co-ordinate. Refer also to Section 4, Site Roles and Responsibilities.

Environmental information will predominantly be communicated by ensuring that all relevant parties have a copy of the CEMP and / or ensure all relevant parties have access to the CEMP, relevant management plans and work specific Risk Assessments and Method Statements (RAMS).

The Principal Contractor will keep a register of all issued copies of the CEMP and will circulate any amendments to copyholders. The CEMP shall not be copied or distributed by holders; if additional copies are required, a request will be made to the Principal Contractor.

Environmental risk information detailed in the CEMP that is deemed relevant to the workforce will be communicated through formal inductions and Health and Safety Assessment Briefings. Environmental Toolbox presentations will also be undertaken during the construction phase.

A register of all appropriate internal environmental communication will be compiled and a process will be implemented to ensure that all actions are dealt with accordingly. All relevant internal communications will be stored for the duration of the project and will be made available for audit by an external representative or on a monthly basis.

In addition a copy of the complaints log will be made available for a monthly review and at the request of the local authority.

6.4 Training, Awareness and Competence

For the successful implementation of the CEMP, it is essential that all people working for, or on behalf of, the Principal Contractor who have responsibility to undertake work activities (that have the potential to result in environmental impacts) are appropriately trained and are competent to fulfil their designated roles within the project.

During the construction phase, the Principal Contractor will take ultimate responsibility for identifying all environmental training needs, ensuring that all key staff and personnel responsible for environmental management are competent, made aware of their environmental responsibilities, and are trained as necessary to meet the requirements of the CEMP and all applicable method statements.

As part of the commitment to achieving effective management of the environment, awareness training will be provided to all appropriate Project Management and site personnel.

The primary focus of such training will be to ensure that all team members understand the key environmental and sustainability issues and requirements associated with the project works; ensuring that all key staff and personnel working are sufficiently aware of the key environmental issues associated with the project and understand the importance of compliance with Environmental Management documents.

Training will include briefings on general environmental issues of concern as part of Induction Training and Toolbox Talks, and cover environmental responsibilities comprising:

- Minimising the use of resources – materials, fuel, power, water etc.
- Applicable legislative, regulatory and other requirements.
- Principal Contractor's policies.
- Housekeeping requirements.
- Incident management and use of the Pollution Incident Response Handbook (PIRH).
- Cultural heritage requirements.
- Air quality management.
- Noise reduction and abatement.
- Pollution prevention.
- Ecology including protected species/areas and invasive species.

- Waste management.

These training requirements will be reviewed through the project and added to where required. Such additional training will be included within Toolbox Talks.

A record of competence and training will be maintained by the Principal Contractor throughout the project.

Environmental awareness among site personnel will also be promoted through media such as notice boards and newsletters. All site personnel will be made aware of the structure and individuals by which environmental issues are managed.

7.0 ENVIRONMENTAL MANAGEMENT

7.1 Introduction

The Principal Contractor will aim to minimise, and if reasonably practical, eliminate all risks including environmental, planning, health, safety, commercial and operational risks associated with the Project.

To ensure that environmental aspects and impacts are identified and addressed throughout the construction, all works will be undertaken in accordance with the requirements set out in this CEMP.

7.2 Ecology

7.2.1 Habitat Management Plan

The Habitat Management Plan will set out the specific management prescriptions for the areas of habitat to be managed for wildlife benefit. It will be designed by ecologists who are knowledgeable about the scheme, and implemented by the Ecology Manager. The plan will include a schedule of monitoring to measure the success of mitigation measures and implement changes if necessary, for a period of 5 years.

7.2.2 Retained Habitat

All retained habitat will be appropriately buffered or fenced to ensure there is no accidental damage or encroachment from construction traffic. This will follow general best practice methods such as were contained in the withdrawn Environment Agency Pollution Prevention Guidelines (PPG). This will address the following matters that are of particular relevance to ecology:

- installation and maintenance of fencing at the start of construction;
- environmental awareness training for construction personnel;
- dust control;
- appropriate storage of fuels,
- lubricants and chemicals;
- lighting, and
- environmental management.

Unless otherwise specified, there will be fenced-buffers of at least 15m from retained potential wildlife sites within and adjacent to the development area.

Retained watercourses and hedgerows will similarly be protected from damage during construction by 10m and 5m buffers respectively. Silt fencing will be installed to prevent run-off from spoil piles into watercourses and ponds as directed by the ECoW.

Specific advice on ecological issues to be adhered to during construction will be further developed by the appointed Contractor (Ecology Manager), as detailed below, and supervised by the ECoW if appropriate.

7.2.3 Grand Union Canal

Disturbance to sensitive ecology areas will be minimised by measures designed to avoid lighting impacts (see **Section 5.8**). In particular, to avoid disturbance to commuting bats and otters, no lighting will be left on within 50m of the Grand Union Canal, and none within 100m unless it is screened and directed away.

There will be no after-dark working within 100m of the canal.

7.2.4 Nesting Birds

Where possible, habitat should be removed during the winter period, before the end of February. Trees and scrub should be cut to ground level and where possible roots removed. Where this is not possible, appropriate action must be taken to ensure relevant habitats remain unsuitable for nesting birds during the nesting season. This could include trimming scrub prior to the nesting season, and as above keeping the grass short. If removal at this time is not possible then the vegetation will require checking by an ecologist prior to removal.

If a nest is found then works around the nest should be stopped and the Ecology Manager will be informed. Works within the immediate area will be delayed until the young have fledged.

Trees with Barn Owl nesting sites will be excluded at a suitable time of year following the installation of pole mounted nest boxes both within the red-line and in neighbouring land to provide compensation roost sites. No works will take place within 500 m of the nest sites if they are being used by nesting Barn Owls.

7.2.5 Tree Removal - Potential Bat Roosts

A high proportion of trees on the site have the potential for use by roosting bats. A thorough survey of all trees on the site has been undertaken, but final surveys are required for medium and high potential trees prior to their felling. A detailed tree removal plan will be supplied to the Principal Contractor and no trees should be removed without first being surveyed by an ecologist to prevent the possible destruction of a roost site. Nothing should be stored against tree trunks and the site compound and excavation works should be undertaken outside the spread of the trees canopy.

7.2.6 Veteran Tree Removal

A CIEEM[3] registered ecologist/arboriculturalist will be consulted at least one month in advance of tree felling, so that an appropriate receptor location for the felled veteran tree can be identified.

- Tree Resurrection – Large diameter stems should be utilised in as large a single length as possible and appropriate and installed resting on the ground at the base of an existing tree and attached at the top by non-invasive methods. The location and method should be coordinated by the ecologist and an arboriculturist in order to choose the best combination of providing habitat for a variety of species with connectivity to nearby features, together with safe positioning and attachment in an appropriate location for health and safety.

[3] Chartered Institute of Ecology and Environmental Management

- Limb/feature re-attachment – Deadwood and newly cut limbs can be affixed to living tree branches to provide habitat for saproxylic invertebrates, woodpeckers and bats. This again should be undertaken with advice from the ecologist and the arboriculturist.
- Deadwood habitat piles – Any stems and branch wood that cannot be utilised as above should be retained in appropriate areas close their origin in the largest pieces that are possible and compatible with other aspects of land use.

7.2.7 Great Crested Newts

There is a medium population of great crested newts outside the Main SRFI Site to the east of the NLL, but within 500m of the Order Limits. Under the current guidance an EPS licence will be required for works to proceed. Although no earthworks are proposed for the area east of the NLL, fencing will be required to prevent great crested newts moving into the development area. Exclusion of the site using drift fencing and hand searches to ensure any great crested newts are relocated prior to any works.

7.2.8 Construction of Bat and Barn Owl Roosts in Buildings

Renovation of the field barns on the Main SRFI site and J15a Site are part of the ecology mitigation proposals. Specific guidance from ecologists will be sought regarding the design and construction of the buildings, and the works will be subject to an EPS licence.

Any other bat roosts in buildings due to be demolished will be the subject of an EPS licence. The Ecology Manager in collaboration with the licence holder will be responsible for ensuring that the mitigation measures are implemented and that subsequent monitoring is undertaken.

7.2.9 Badgers

The site should be re-surveyed for badgers within 1 month of construction starting as badgers can set up a new territory very rapidly. Should a new sett be discovered near the construction area an ecologist will monitor the holes for activity. If any new holes are discovered on site the use of heavy machinery within 50 m of the sett must be avoided and the Ecology Manager contacted.

While construction is ongoing all Contractors should be aware badgers are active on the site any pits or trenches should be covered up or left with an escape ramp if left overnight.

A ‘good housekeeping’ policy should be adopted e.g. chemicals should be stored securely at night, food waste should be removed at frequent intervals, and any machinery should be prevented from encroaching into root protection areas for all retained vegetation including woodland and hedgerows.

7.2.10 Additional Elements

Other elements of the site will require specific inputs from an ecologist during and in advance of construction (as well as subsequent monitoring) and will be overseen by the Ecology Manager. These are likely to include the following:

- Sign-off on source and composition of grass seed mixes to be used in areas of natural habitat creation.
- Inputs to design of attenuation ponds.
- Inputs to design and planting of re-aligned river corridor.
- Advice on location, type and source of bat boxes, bird boxes, and barn owl boxes.

- Detailed inputs to design and implementation of ecology mitigation area at J15a.
- Wildlife pond creation including location, design and planting.
- Location of deadwood piles.
- ECoW assistance in watching briefs during removal of potential reptile habitat.

7.3 Heritage & Archaeology

Archaeological investigation work across the Order Limits has been undertaken, the scope of which was agreed with Northamptonshire County Council (NCC) Archaeology Team. Based on the findings of the initial investigation works, a programme of mitigation will be devised, in consultation with NCC's Archaeology Team that will deliver mitigation acceptable to the Council.

The commitment to construction phase archaeological mitigation acceptable to NCC, and set out in the Written Scheme of Investigation(s) would include provision for post-excavation analyses and dissemination of the results of the mitigation works, as well as for archiving of the project materials and records, as appropriate.

If required, subject to the requirements of the WSI following the adoption of other proposed and agreed mitigation measures, written guidelines would be issued for adoption by all construction Contractors to avoid causing unnecessary damage to archaeological sites. This will include arrangements for calling upon retained professional support on the event that buried remains of potential archaeological interest (such as building remains, human remains and artefacts) should be discovered in areas not subject to archaeological monitoring. The guidance would make clear the legal responsibilities placed upon those who disturbed artefacts or human remains.

7.4 Air Quality & Dust

The works have the potential to result in impacts upon local air quality and dust as a result of emissions from plant used on site, vehicle movements, plant and vehicle emissions and dust generation especially related to the large volumes of excavation and soil movement. There is a particular need to account for a potential increase in dust due to warmer, dryer summer climate during construction.

Control measures, as set out below, will be put in place to minimise construction dust and any potential adverse effect on air quality from vehicle emissions.

7.4.1 Odours

There will be no burning of any material anywhere on-site. Anyone caught breaching this will be disciplined appropriately.

Appropriate air quality monitoring will be agreed with NBC and SNC with the Principal Contractor.

7.4.2 Emissions to Air

The following measures are proposed to minimise emissions to air:

- Vehicle and equipment engines shall not be left running unnecessarily.

- Maintenance of vehicles and equipment through a programme of routine servicing completed in accordance with the manufacturers' recommendations and keep records for the work undertaken.
- Location of haul routes and operation of equipment away from sensitive receptors including, but not limited to, houses and ecological receptors, wherever practicable.
- Avoidance of the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.

7.4.3 Dust

Monitoring at the Northampton Kingsthorpe monitoring station will provide NO_2 and PM2.5 concentrations during the construction of the development and once it is operational.

The Institute of Air Quality Management (IAQM) provides guidance on the assessment of dust from demolition and construction document lists mitigation measures for low, medium and high Dust Impact Risks. The measures described as 'highly recommended' for high risk sites are listed below following sign-off from the Applicant will be implemented where appropriate:

7.4.4 Communications

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the Environment Manager/Engineer or the Site Manager.
- Display the head or regional office contact information.

7.4.5 Dust Management

- Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include recommended measures outlined in this section of the CEMP, as appropriate for the site.

7.4.6 Site Management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book.
- Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.

7.4.7 Monitoring

- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local

authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of the site boundary, with cleaning to be provided if necessary.

- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it is a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.

7.4.8 Preparing and maintaining the site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Where possible erect solid screens or barriers around dusty activities.
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extended period.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.
- Operating vehicle/machinery and sustainable travel
- Ensure all vehicles switch off engines when stationary – no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
- Implement a Construction and Operational Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).

7.4.9 Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.

- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

7.4.10 Waste management

- Avoid bonfires and burning of waste materials.

7.4.11 Measures specific to earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only remove the cover in small areas during work and not all at once.

7.5 Noise

The Principal Contractor shall minimise the generation of noise from the construction works, in accordance with guidance including BS 5228 and 'Noise Database for the Prediction of Noise on Construction Sites', Defra, HMSO 2005 (including maximum permitted noise levels in Schedules 1 & 2 and maximum permitted vibration in Schedules 3 & 4).

The following measures will be adopted during the construction phase to minimise the risk posed to nearby receptors during construction.

- Construction working hours are proposed Monday to Friday between 7-00 and 19-30, except Bank Holidays, and Saturday 8-00 to 13-00. Some out of hours works may be necessary, however this will be undertaken in consultation with the relevant authorities and due consideration shall be given to those sensitive receptors potentially impacted by this activity.
- Where practical and where there is a positive environmental benefit, temporary spoil heaps could be used to shield the environs from the construction works.
- Site plant will consist of modern machinery fitted with efficient silencers designed to minimise noise levels that are generated during operations.
- Plant will be powered by electricity wherever practicable, and all pumps, plant and generators will be placed at locations to minimise noise emissions to sensitive receptors.
- Plant will be properly maintained in accordance with the manufacturers' instructions to ensure that the occurrence of malfunctions that can give rise to elevated noise levels is reduced, and any malfunctions that do occur are swiftly repaired. Rattling noises will be controlled by tightening loose parts and by fixing resilient materials between the surfaces in contact.
- Plant known to emit noise strongly in one direction will, wherever possible, be orientated to minimise noise where receptors / neighbours are sensitive.

- Stationary plant such as compressors and generators will be positioned away from sensitive locations within the confines of the operational use of the equipment.
- As reasonably practical, noisy plant or processes will be replaced by less noisy alternatives in accordance with Annex B of BS5228.
- The effectiveness of acoustic insulation and silencers fitted to plant will be qualitatively assessed and recorded.
- Any items of plant with defective insulation or silencers will be identified for immediate investigation and remediation.
- To ensure effective acoustic insulation is provided at all times plant will not be operated with covers open or removed.
- Plant and equipment will be shut down when not in use.
- Continuous noisy plant will be housed in acoustic enclosures which will be installed and maintained according to the manufacturer's specifications.
- Semi-static equipment will be sited and orientated as far as is reasonably practicable away from occupied buildings and, where feasible, will be fitted with suitable acoustic enclosures.
- Wherever possible, low noise versions ('smart') of reversing alarms will be fitted to all mobile plant to reduce the intrusive nature of such sources and maintained to the manufacturer's specifications at all times.
- All internal tracks will be regularly graded to remove loose material and a site speed limit imposed to minimise potential 'body slap' impact noise.
- Loading/unloading activities will be located away from residential properties and shielded from those properties where practicable.
- Materials will be handled in a manner that minimises generation of noise, e.g. minimisation of drop heights and bucket impacts.
- Efforts will be made to maximise efficiency of deliveries by arranging full loads.
- Deliveries will be co-ordinated to minimise waiting times.

Construction processes that have the potential to generate significant noise and vibration at nearby residential receptors should be limited in duration as far as is practicable. Residents should be given advance notice of any such activities being carried out and be kept informed as to their likely duration. Where it is anticipated that set thresholds may be exceeded, a programme of noise monitoring will be carried out. If monitoring indicates that thresholds are exceeded, further mitigation will be implemented to reduce noise levels as far as is reasonably practicable.

On-site staff training will include the following, with updates to encourage good practice in minimising noise:

- The proper use and maintenance of tools and equipment.
- The positioning of machinery on site to reduce the emission of noise to the neighbourhood and to site personnel.
- Avoidance of unnecessary noise when carrying out operations, and when operating plant and equipment.
- Using and maintaining measures adopted for noise control.

- By reporting defective noise control equipment.
- Managers and supervisors recognising the need for employees to make proper use of measure to minimise noise.
- Machines in intermittent use will be shut down in intervening periods of non-use or, where this is impracticable, they will be throttled down to a minimum.
- Where practicable white noise reversing alarms will be fitted to all mobile plant.

7.6 Ground Vibration

Ground vibration will be controlled to prevent nuisance and damage to neighbouring property. Should complaints be received monitoring will be undertaken with the agreement with the relevant planning authorities. Assessments to date have indicated minimal ground vibration impacts are anticipated.

In respect of vibration, BS5228: Part 2:2009+A1:2014 gives detailed advice on standard good construction practice for minimising nuisance from construction vibration. This will be adopted as appropriate.

7.7 Land Quality & Contaminated Land

There is the potential for the presence of contaminated land onsite. However, potential impacts were identified, including the following:

- On-site human health: Asbestos Containing Material (asbestos cement) present within a former, now backfilled pit at Rathvilly Farm in the northeast of the site.
- On-site human health: Potential for hotspots of petroleum hydrocarbons at the former petrol filling station in the central western boundary of the site.
- On-site human health: Elevated contaminants at Lodge Farm and an isolated hotspot of hydrocarbons in the southwest of the site adjacent to the Grand Union Canal.
- Plant Growth: Elevated concentrations of Boron and Copper in Made Ground that could impact on plant growth.

A full assessment has been undertaken within the PEIR (**Chapter 13: Ground Conditions**) with recommendations forming a "Remediation Method Statement" (**Appendix 13.8**). This method statement includes practices such as:

- Removal by specialist Contractors of asbestos from buildings in accordance with relevant legislation, followed by controlled decommissioning, decontamination and demolition of site buildings and ancillary structures such as tanks and the existing drainage system.
- Removal of the former fuel tanks at Lodge Farm and the Filling Station together with any petroleum hydrocarbon impacted soils around and below the tanks. Whilst not expected, any free phase hydrocarbons should be removed from the surface of the groundwater and treated or disposed.
- It is anticipated that remediation can be undertaken by excavating the impacted soils (if required) which can then be stockpiled, screened or otherwise treated on site (e.g. bioremediation). Suitable material can be reused where appropriate under a Materials Management Plan and the unsuitable material removed from site. Given the volume of

earthworks, it is anticipated that all materials are likely to be suitable for use on the site, as unsuitable material from the perspective of human health is likely to be suitable for reuse in the platforms in areas external to the proposed buildings, e.g. in noise bunds or landscaping areas.

- Earthworks on site should be subject to a watching brief by an independent geo-environmental specialist to identify any areas of suspected contamination and recommend remedial measures.
- It is recommended that consideration be given to incorporating basic protection measures.
- Installation of barrier pipework as necessary and agreed with the Water Authority

The Remediation Method Statement which will be updated following pre-construction surveys will form an appendix to the CEMP (subject to requirements of the DCO and agreement with the LPA).

7.8 Pollution Prevention

Due to the requirements of the construction works and processes, various hazardous substances will be used, including plant fuel, maintenance oils and chemicals that may pose a risk to the environment and require appropriate management.

Control measures will be put in place to limit the impacts of oils, chemicals and other hazardous substances to contaminate the environment. Reactive control measures will be developed by the Principal Contractor which will be made available at all times on site.

The following measures will be adopted during the construction phase to minimise the risk posed by the presence of oils, chemicals and other hazardous substances.

- Oil will be stored in accordance with the Prevention of Pollution (Oil Storage) (England and Wales) Regulations 2001 and Oil storage regulations for businesses[4].
- All storage facilities will be located within the construction compounds in appropriately contained areas to provide protection from theft and vandalism and facilitate containment and clean-up of any spills.
- Storage of diesel fuel will be within a bunded area or self-bunded tank in accordance with Oil storage regulations for businesses (replacing PPG 2 and PPG 26) so that 110% of the stored capacity is provided. Rainwater will not be allowed to accumulate and reduce the required storage volume.
- Storage of other non-biodegradable Fuels, Oils and Chemicals - storage areas and containers will not be placed within 10m watercourse and 50m of a borehole, well or spring and will be located in designated areas. Only Suitable Qualified and Experienced personnel will have access to these facilities and compounds and will enter and carry out work activities wearing appropriate Personal Protective Equipment (PPE).
- Authorised personnel trained in refuelling and emergency spill response to ensure appropriate procedures are implemented will supervise fuel deliveries and refuelling activities.

[4] https://www.gov.uk/guidance/storing-oil-at-a-home-or-business

- Drainage within the construction compound where diesel fuel is stored, refuelling takes place and vehicles are parked, will be directed to an oil interceptor to contain any accidental spillage.
- Drip trays shall be used beneath static plant; small mechanical tools will be refuelled and maintained. Refuelling will be subject to a detailed method statement and risk assessment.
- All vehicles and plant will be regularly maintained and inspected for fuel, oil and hydraulic fluid leaks.
- A proprietary oil spill kit will be carried by all construction vehicles with additional kits positioned at appropriate locations around the site.
- Chemical additives provided in small containers will be stored in a secure fixed container (COSHH Store) located in the compound. Access to the secure container will be by suitably trained and authorised personnel.
- Biodegradable oils will be used on plant operating in or within 10m of any watercourse on site.
- Refuelling will be undertaken in accordance with Oil storage regulations for businesses (and guidance in the withdrawn PPG7) and will be subject to a detailed method statement and risk assessment.
- Vehicle Parking, Maintenance and Refuelling Areas - Mobile refuelling will be avoided wherever possible and shall not be carried out within 10m of a watercourse.

7.9 Protection of Controlled Waters

There are several ponds and springs on the site including the Milton Malsor Brook and Wootton Brook which flow from south to north across the site. Construction works will need to protect the ponds and brooks onsite, which would be considered as controlled waters. The protection of controlled waters and specifically the design of storage, and pollution control systems will include allowance for future climate change due to increased winter rainfall.

To minimise the risk of complaints, should analysis indicate that works are affecting controlled waters, relevant measures will be agreed with stakeholders, including the Principal Contractor and regulators.

The Principal Contractor will ensure that any water which may come into contact with contaminated materials will be disposed of in accordance with the Water Resources Act (1991) and to the satisfaction of the Environment Agency.

All liquids and solids of a potentially hazardous nature (e.g. diesel fuels, oils, solvents etc.), will be stored in accordance with guidelines laid down by the Environment Agency.

The response to all emergency pollution incidents will be set out in the Pollution Incident Response Handbook (PIRH) to be held at all times on site.

The proposed development has the potential, if unmanaged, to result in:

- Contaminated run-off entering watercourses – leading to potential impacts to controlled waters.

- Suspended sediment in site run-off leading to potential impacts to drainage ditches, ponds, Milton Malsor Brook and Wootton Brook.
- Pollution from foul drainage and waste storage.

The following measures will be undertaken during the construction phase to minimise the risk of contaminated and/or silt-laden run-off during construction. Their requirement will be dependent on consultation with the appointed Principal Contractor and detailed design and will be detailed within updates to the CEMP (subject to agreement with the LPA).

- Detailed design of permanent and temporary drainage will be prepared. This will include for settlement lagoons, silt interceptors and oil interceptors as appropriate.
- Spill kits and drip trays will be provided. Spill kit training will be undertaken.
- Designated parking, maintenance and refuelling areas with appropriate drainage system incorporating oil interceptors. Designated refuelling areas will be located at least 10m from watercourses.
- Fuels, oils, lubricants and other chemicals will be stored where appropriate, in a secure, locked and appropriately signed compound. The compound and facilities will be located at least 10m away from watercourses.
- Oil will be stored in accordance with the Prevention of Pollution (Oil Storage) (England and Wales) Regulations 2001.
- The mixing of concrete will be controlled under a specific and approved method statement and risk assessment.
- Confirming the presence of the water abstraction borehole at Lodge Farm and where present, decommissioning in line with Environment Agency best practice.
- Drainage rate control will be investigated to ensure run-off does not exceed discharge rates stipulated by the Environment Agency.
- Surface water run-off from stockpiles shall be directed through a surface water drainage system to will provide attenuation, monitoring and, if necessary, treatment.
- Oil interceptors will be incorporated into the drainage design, if required, to minimise the risk of hydrocarbon contamination.
- All vehicles and plant will be regularly maintained and inspected for fuel, oil and hydraulic fluid leaks and a proprietary oil spill kit will be carried by all construction vehicles with additional kits positioned at appropriate locations around the site.
- All fuel storage facilities will include impermeable protection or drip trays within the compound to minimise the potential for impact to the underlying soils and groundwater.
- Oil Separators (interceptors) if required - To ensure the good performance of oil separator units they will be subject to routine inspection, maintenance and emptying as part of an appropriate and agreed maintenance schedule.
- Authorised personnel trained in refuelling and emergency spill response to ensure appropriate procedures are implemented will supervise fuel deliveries and refuelling activities. Refuelling will be undertaken in accordance with Oil storage regulations for businesses and will be subject to a detailed method statement and risk assessment.

- The storage, handling and use of all chemicals on site will be subject to Control of Substances Hazardous to Health (COSHH) Regulations 2002.
- Storage of diesel fuel will be within a bunded area or self-bunded tank in accordance with Oil storage regulations for businesses so that 110% of the stored capacity is provided. Storage will be located at least 10m away from the watercourse. Rainwater will not be allowed to accumulate and reduce the required storage volume.
- A register and plan of all storage facilities will be maintained, reviewed and updated as required and will be accessible to the emergency services in the event of an incident.
- Appropriate decommissioning of the Lodge Farm water supply borehole in accordance with Environment Agency best practice guidance.
- Visual inspection of measures implemented to prevent pollution and monitoring equipment shall be undertaken following their installation at regular intervals.

7.10 Landscape and Visual

Construction activities have the potential to result in landscape and visual effects, specifically regarding views of construction activities from surrounding properties.

The following measures will be adopted as embedded mitigation within the Proposed Development to minimise the potential for landscape and visual effects (dependant on the findings of further investigations / surveys and reports):

- The construction compounds will be located in non-visually intrusive locations.
- Where earthworks are in proximity to neighbours, works will be screened in consultation with stakeholders as assessed within the PEIR.
- Appropriate protection of trees and hedgerows to be retained.
- Public rights of way have been determined for the site and construction works will be managed to avoid or control these as necessary. Public rights of way which have been identified will be maintained with temporary signage and other safety features to direct and route people around the works if necessary. Alternatively such routes will be stopped up or diverted in accordance with the powers granted in the DCO.
- Adherence to, and management of, agreed working hours.

Any additional mitigation measures required will be developed by the Principal Contractor and will form part of a CEMP and COCP variation, in accordance with the requirements of the DCO and in agreement with the LPA.

8.0 SITE ENVIRONMENTAL AUDITING AND VERIFICATION MONITORING

Regular independent environmental audits will be undertaken to ensure that the requirements of this CEMP are being implemented. The frequency of the audits will be dependent upon the potential for the works being carried out to give rise to environmental impacts. The audits will include a site inspection and review of documentation. This will include a review of the in-house auditing. Non-conformances will be reported to the Principal Contractor's Environment Manager with a deadline for remedial action, where necessary.

Environmental issues must be included as an item on the agenda at Progress Meetings, attended by the Principal Contractor, Sub Contractors, relevant Trade Contractors and other members of the project team where appropriate. Where relevant, the following should be discussed:

- Status of Remedial Strategy implementation;
- Results of the monitoring;
- Complaints, including cause and remedial action;
- Neighbourhood liaison;
- Communications with NBC and other statutory bodies; and
- Incidents that have taken place.
- Summary of monitoring undertaken and results. Where appropriate details of proposed corrective actions.

8.1 Documentation

The following documentation must be retained on site for inspection as indicated in the previous sections of the CEMP:

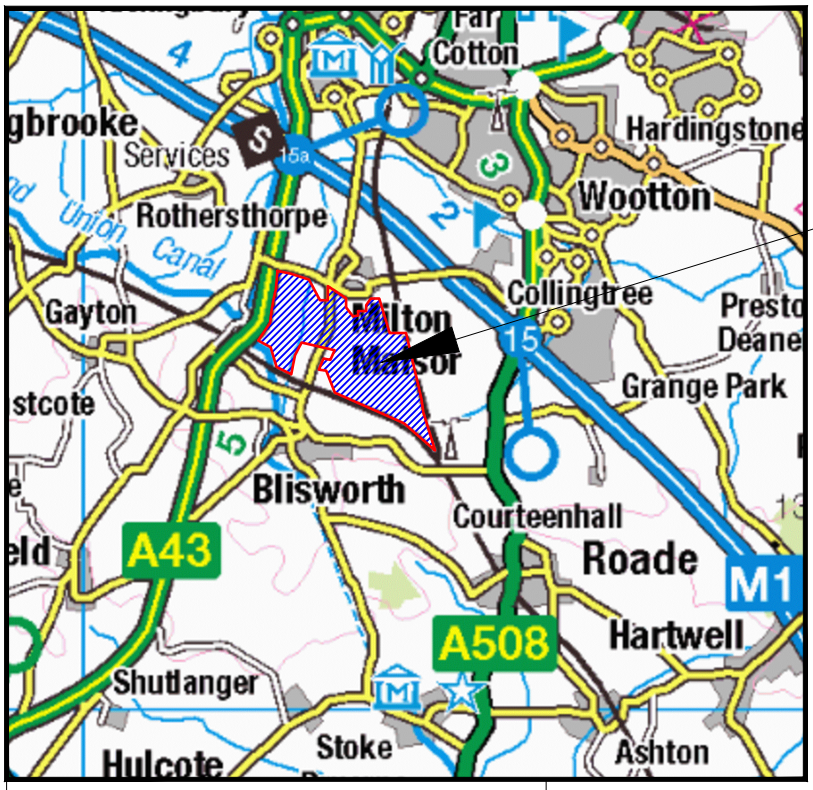
- The Complaints log book with details of the response made to complaints received.
- Noise and vibration monitoring record sheets with details of corrective actions taken where the action levels are exceeded.
- Dust monitoring records.
- Plant maintenance and defect records.
- Details of waste recycling targets and records.
- Records of quantities of waste produced, reused, recycled and disposed of to landfill.
- Waste transfer notes, hazardous waste consignment notes and waste carriers registrations.
- Any validation requirements associated with the sites remediation strategy.
- Copies of discharge consents and licenses.
- Results of discharge water quality testing.
- Controlled water sampling events and data.
- Environmental incident logbook containing details of environmental incidents and corrective action taken.
- Pollution Incident Response handbook

Appendix A

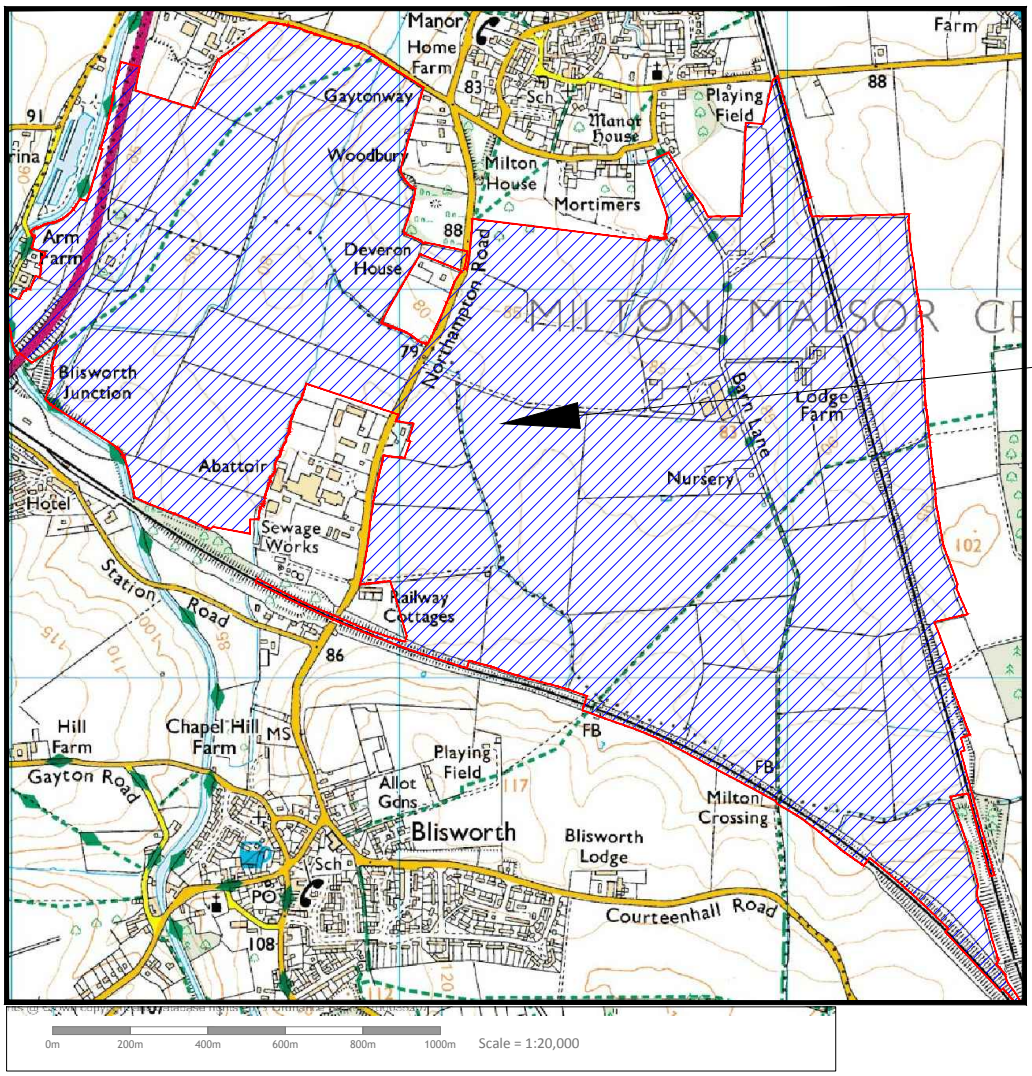
Drawings

Notes:

1. Contains Ordnance Survey data © Crown copyright and database right 2015



THE SITE



THE SITE

Rev	Date	Description	By	Ckd
C	09/02/18	Boundaries revised	NS	AB
B	07/06/17	Boundaries revised	RB	AB
A	14/02/17	Boundaries revised	RB	AB

Architect :

Hydrock

Hydrock Consultants Ltd
3 Hawthorn Park
Holdenby Road
Spratton, Northampton
NN6 8LD
T +44 (0)1604 842888
www.hydrock.com

Client : Ashfield Land

Project Title: Rail Central, Milton Malsor

Drawing Title: Site Location Plan

Drawing Status: FINAL

Hydrock Job No: C151171

Drawn	Checked	Scale @ A4	Date	Issue Date
NS	AB	See Drawing	09/02/18	09/02/18

Drawing Number: C151171/D001 Revision: C

Notes:

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

Key

- Railway line
- Road
- Footpath
- Foul sewer
- BPA Oil Pipeline
- Watercourses
- Trees/Hedges

Rev	Date	Description	By	Ckd
C	09/02/18	Updated Site Boundary	NS	AB
B	06/07/17	Updated	RB	AB
A	14/02/17	Updated	RB	AB

Architect :

Hydrock

Hydrock Consultants Ltd
3 Hawthorn Park
Holdenby Road
Spratton, Northampton
NN6 8LD
T +44 (0)1604 842888
northampton@hydrock.com
www.hydrock.com

Client :

ASHFIELD LAND

Project Title:

MILTON MALSOR, NORTHAMPTONSHIRE

Drawing Title:

Site Extents Plan

Drawing Status:

FINAL

Hydrock Job No:

C151171

Drawn	Checked	Scale @ A1	Date	Issue Date
NS	AB	1:5000	09/02/18	09/02/18

Drawing Number: 151171/D002

Revision: C