

Cambridge Science Park Station Interchange

GRIP 4 Design Environmental Management Plan

Cambridgeshire County Council

October 2013



Cambridgeshire
County Council

ATKINS

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Project Overview

Cambridgeshire County Council (CCC) proposes to build a new station building and transport interchange on Chesterton Sidings beside the now redundant Chesterton Junction. These works will provide interchange facilities between the five main modes of transport (rail, bus, cycle, pedestrian and car) which will allow:

- A reduction in congestion at Cambridge Station;
- A reduction in car journeys from the northern fringes to Cambridge Station through the historic centre;
- Improved access to the rail and bus network to Chesterton and Cambridge Science Park, and;
- Minimised journey times.

The development is expected to include the items listed below, following demolition and clearance of existing features and capping of redundant sidings.

Railway Station and Network Rail Infrastructure

- 450m² building (passenger waiting facilities, toilets, staffed ticket office, retail, amenity space, rail staff accommodation and facilities);
- Two main line platforms (270m in length and capable of accommodating a 12 car train) and a bay platform;
- Pedestrian/cycle bridge linking station building and platforms over the main line (lift and stair access); and
- Associated rail infrastructure works to facilitate the operation of the Railway Station.

Interchange Facility

- Landscaped 450 space car park, 1000 space cycle parking;
- New pedestrian and cycle links to the surrounding area including Discovery Way, Pippin Drive, Ribston Way, Long Reach Road and through Bramblefields Local Nature Reserve, and Nuffield Road industrial estate. No links are currently intended to be provided east of station/railway to existing development located along Fen Road;
- Extension of a bus lane and cycle route from the Cambridgeshire Guided Busway into the site along the alignment of the former St Ives Branch Line;
- Highway access from Cowley Road/Milton Road (new junction to station, limited works to Cowley Road/Milton Road junction). It is anticipated that the necessary upgrade works to existing junctions and road will be minor; and,
- Multi-modal choice of train, bus, cycle pedestrian and car routes.

In addition to the above, much of the existing Network Rail infrastructure affected by the proposed works will require upgrade, including the following:

- Lifting and relaying of existing freightliner siding to the north of the siding away from the new station development;
- Lifting of main track line;
- Relocation of Distribution Network Operator (DNO) generator building, and;

- Relocation of Signal Supply Point building to a dedicated Network Rail compound south of the site.

Site Description

The site is located in Chesterton off Cowley Road, approximately 1km south of the A14 ring road in the northern part of Cambridge. The site is located at approximate National Grid Reference 547500, 260900. The proposed station is between the Down Loop and the Kings Lynn Line (BGK) between chainage 57m 54ch (57 miles 1188 yards) and 58m 40ch (58 miles 880 yards).

The site is irregular in shape and covers an area of approximately 15ha. The site is currently occupied by both disused and operational sidings and the majority of the site, in particular the western part, is heavily overgrown with vegetation (note vegetation clearance was ongoing throughout investigation works). A signalling relay room and a generator room are located to the southwest of the site.

The site is accessed via Cowley Road, to the north, where ballast (approximately 2m high) is stockpiled adjacent to the main access track, on land leased by LaFarge.

The central area of the site, from the Cowley Road access point in the north to the Down Loop line, is occupied by an operational ballast stockpile area associated with the adjacent LaFarge aggregate works.

The stockpile area and adjacent access track form a corridor, leading south past the Down Loop line and beyond to a signalling relay room. An operational siding line lies to the east, adjacent to a generator room with the Up and Down Main lines beyond. Several soil bunds are present between the stockpile area and the operational sidings lines.

The eastern boundary of the site is marked by the Up and Down Main lines which run approximately north – south to the level crossing at Fen Road, which forms the southern boundary of the site.

West of the stockpile, the site is heavily overgrown with vegetation and several disused railway sidings and associated derelict buildings are present. The route of a historic railway branch line runs northwest – southeast from Milton Road, approximately 600m northwest of the site access, to the southern extent of the site and forms the western site boundary.

Existing ground levels vary from approximately 5.8m to 7.7m AOD. Local changes in elevation exist in all areas of the site containing stockpiled material and disused railway siding including, for example, the redundant shallow railway embankment in the west of the site.

The land to the north of the site is predominately occupied by the LaFarge aggregate works, light industrial and commercial buildings and the Cambridge Business Park to the west of Cowley Road. To the east of the Up and Down Main lines lies a large caravan park, which is present for much of the site length. Beyond this are areas of open grassland and the River Cam, which lies approximately 500m to the east of the site and approximately 70m from Fen Road in the south.

Extensive areas of residential housing are present to the south and west of the site, with associated green spaces and a large area of allotment gardens directly to the west of the disused railway. The Trinity Hall Industrial Estate lies to the northwest of the site, on Nuffield Road, with further residential properties beyond.

1. General Environmental Requirements

This Environmental Management Plan (EMP) describes the process by which potential environmental issues were identified, how the environment may be impacted by the proposed works, and how these impacts will be minimised and managed.

To ensure that environmental issues are managed in a way that is acceptable to the client, the approach taken has been informed by Network Rail's Contract Requirements: Environment¹, and DEL04 – Environment².

This EMP is a live document, and as such, it will be updated as additional and relevant information becomes available. The EMP has been prepared at design stage and is intended to:

- Inform DESIGNERS of environmental information relevant to them and of their RESPONSIBILITIES to undertake environmental design management for the purpose of minimising negative environmental impacts and maximising positive ones, where appropriate; and
- Act as a basis for CONTRACTORS to develop their construction stage EMPs.

This EMP document DOES NOT:

- Discharge, in itself, the environmental responsibilities of the Designer; however it shows *how* those responsibilities will be discharged; and
- Pertain to the planning process or any Environmental Impact Assessment that may be required.

1.1. Risk and Opportunities

A Risk and Opportunity Register has been compiled in accordance with CR-E (see Appendix B) using desk study information, the Environmental Appraisal done at GRIP 3 and the site surveys/walkovers. The method for assigning values to the likelihood and the impact are provided in Appendix B.

Aspects are grouped in the following categories:

- Air quality;
- Archaeology and cultural heritage;
- Contaminated land;
- Ecology;
- Energy;
- Landscape;
- Lighting;
- Materials and waste;
- Noise and vibration; and,
- Water.

Additional aspects have also been considered:

¹ NR/L2/ENV/015, September 2011 (formerly RT/SP/ENV/015, April 2004).

² Guide to Railway Investment Projects (GRIP) – The Delivery Manual: DEL04 – Environment. Version 8.02, October 2008.

- Traffic and access; and
- Site boundaries.

To date, no hazards have been identified that require recording within the National Hazard Directory. Any hazards identified during future stages of the works should be reported in accordance with Standard NR/L2/MTC/006 'Maintenance and Contents of the National Hazard Directory'.

1.2. Requirements and Consents

The Atkins Rail Environmental Policy states our commitment to comply with all legislative requirements and other standards. Atkins QSE provides a Register of UK Environmental Legislation and Policy, which is updated regularly. The environmental legislation, regulations, standards, permissions and consents, relevant to this project, have been identified and recorded in the Register provided in Appendix D.

Network Rail's Contract Requirements – Environment, refers to the following legislation as particularly important:

- Control of Pollution Act (1974);
- Environmental Protection Act (1990);
- Water Framework Directive (2000/60/EC);
- Wildlife and Countryside Act (1981);
- The Conservation of Habitats and Species Regulations (2010); and
- Environment Act (1995).

The likely requirement for permissions and consents is identified in the Register. This requirement can be considered further during GRIP 5 when detailed designs are finalised.

Atkins will become holder of existing permissions and consents for the duration of the contract when instructed by the Employer's Representative. Atkins will transfer permissions and consents to NR (or any persons nominated) when instructed to by the Employers Representative. Atkins will provide copies of any permits/consents/licenses to the Employers Representative within 7 days of receiving them.

1.2.1. Environmental Design Management

All design team leaders shall review the Environmental Appraisal/Action Plan and ensure that the proposed designs reflect the environmental aspects identified, minimise any environmental impacts, and identify benefits where possible. A copy of the Environmental Appraisal/Action Plan is provided in Appendix C. Actions are recorded in the Environmental Appraisal/Action Plan.

Actions that have been taken at GRIP 4 AiP Design stage have been summarised in the "Action Taken" column in the Register. Where mitigating designs will be developed at a later stage, this is stated in the Register. Circulation of the EMP amongst design discipline leads, and ongoing consultation between members of the environment team, will ensure that this is achieved.

1.2.2. Planning Permission and Environmental Impact Assessment

The works are deemed to be permitted development, and the development will require planning permission and an Environmental Impact Assessment.

The Cambridge Science Park works will be reviewed in consultation with the client's planning team and relevant Local Planning Authorities (LPA), in order to establish whether the works are deemed to be permitted development, or whether any aspects will require planning permission or prior approval.

The proposals for the station interchange were submitted to the LPA in June 2013 and will be determined by the Joint Development Control Committee for Cambridge Fringes which is comprised of elected members of

Cambridge City Council (CCiC), South Cambridgeshire District Council (SCDC) and CCC. A decision is expected to be made on 18th Decemeber 2013.

Due to the size, scale and location of the proposed works an Environmental Impact Assessment has been carried out and an ES³ produced for the site.

1.2.3. Environmental Policy

The Atkins Rail and Atkins Group Environmental Policies (Appendix A) recognise that environmental impacts and their relevant controls need to be developed on a project-by-project basis, in conjunction with our clients' needs. Atkins' Policies also require compliance with all relevant legislation, the identification of significant environmental aspects, and that objectives, targets, and operational controls are implemented, where appropriate, to ensure effective environmental management.

The policies require that we (Atkins) deliver sustainable solutions across our activities by evolving our multidisciplinary approach, developing our technical expertise, and building on our track record of delivery.

In preparing this document reference has been made to Network Rail's Sustainability Policy and corresponding Sustainability Policy Statement as well as Cambridgeshire County Council Sustainable Community⁴ pages viewed on the Council website.

1.3. Objectives and Targets

The over-riding environmental objectives will be to discharge all responsibilities relating to relevant environmental legislation and Atkins' and the client's Environmental Policies. If further environmental issues become apparent during the course of the environmental study process, the design process, and the construction stage, relevant objectives should be developed and action taken to address them. For example, a preliminary SWMP will be used to identify opportunities for improving environmental performance via waste reduction.

The following objectives have been identified at GRIP 4 AiP design:

- Incorporation of appropriate design measures to ensure minimal disturbance of areas of contaminated ground that are identified in the desk study and ground investigation to prevent or minimise exposure and creation of preferential pathways for contamination;
- Identify opportunities to improve biodiversity where significant vegetation removal and earthworks are to be undertaken;
- Identify opportunities to minimise energy use by incorporating minimising earthworks and programming logistics to ensure efficient delivery of materials to site;
- Identify opportunities to improve the landscape character of the area by enhancing existing features and creating landscape buffer areas;
- Identify opportunities to minimise waste creation and use of raw materials by re-using site-won material where possible; and
- Identify opportunities to improve surface and groundwater quality and mitigate against flooding by incorporating SUDS into the design and removal/remediation of contaminated land where appropriate.

The Environmental Appraisal/Action Plan sets out how Designers will address each relevant issue identified.

³ Carter Jonas, Cambridge Science Park Environmental Statement, June 2013 available to download at <http://www.cambridgeshire.gov.uk/transport/projects/cambridge/scienceparkrail/>

⁴ Cambridgeshire County Council Sustainable Communities available at <http://www.cambridgeshire.gov.uk/environment/sustainable/sustainable+communties.htm> [accessed 25.10.13]

Project specific non-compliances and corresponding corrective and preventive actions will be identified throughout the monitoring and audit regimes. The Client's Representative will take corrective and preventive action following any non-compliance identified against the Project EMP.

1.4. Project Roles at GRIP 4 Design Stage

Responsibilities for environmental management throughout the project are listed in Table 6.1 and Table 6.2 and defined below.

Table 6.1 Project Roles

Organisation	Role
Cambridgeshire County Council	Client
Atkins	Designer
Network Rail	Approving Authority

Table 6.2 Contact Details for Project Team

Name	Position/Organisation	Telephone Number
Stan Doyle	Project Director/Atkins	+44 141 220 2075
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Clive Sheppard	QSE Manager/Atkins	+44 121 483 5225
Gary McCann	Environmental Coordinator/Atkins	+44 141 220 2305
Craig MacFarlane	Civils CRE/Atkins	+44 141 220 2414
Angus Malloch	E&P CRE/Atkins	+44 141 220 2238
Kashmir Lota	Telecoms/Atkins	+44 141 220 2235
Ken Stewart	OLE CRE/Atkins	+44 141 220 2412
John Bell	PWay/Atkins	+44 141 220 2419
Steven Stark	Signalling CRE/Atkins	+44 141 220 2241
Rob McGowan	Project CEM/Atkins	+44 141 220 2240
George Irvine	Highways/Atkins	+44 141 220 2184
Cristina Ciucci	Parking and Drainage/Atkins	+44 141 220 2409
Quintin Doyle/Scott Dickson	Architecture/Atkins	+44 141 220 2068 / +44 141 220 2069
Alex Hill/Ian Miller	Structures/Atkins	+44 141 220 2035/ +44 141 220 2015
Kenny Paxton	Geotechnical/Atkins	+44 141 220 2206

1.5. Training, Awareness and Competence

Project Managers/Client's Representative at GRIP 4 Design Stage will ensure that all individuals employed on the project have the appropriate training and experience required to implement the EMP. Compliance against these requirements will be monitored by line management and through audit where appropriate.

Employee training requirements at Atkins are managed in accordance with the Business Management System (BMS) procedures for appraisal, training, recruitment, induction, and competence. Records of staff training, awareness and competence are held in accordance with department procedure. Training requirements and awareness will be considered in accordance with the requirements of Network Rail. Project staff and contractors will be briefed on the Environmental Appraisal (EA) and controls arising from it. Where required, training and advice will be provided:

- To enable the project team to be responsible for the environmental management issues of the project;
- To identify new environmental management issues generated by the project; and
- To identify any changes to the register.

The Principal Contractor and their Sub-Contractors will be expected to demonstrate their own systems for training and competence and this will be reviewed through the tender review stage.

At all future stages, prior to the commencement of work on site, all staff must be briefed on the contents of the EMP and required actions, along with any site-specific mitigation required. This information shall be contained in the Task Briefing Sheet. Each briefing will be recorded and each individual will be required to acknowledge receipt and understanding of the briefing. It is expected that the Principal Contractor and their Sub-Contractors will refer to this EMP when preparing their briefings.

Environmental competence will be reviewed throughout the project.

1.5.1. Project Roles (all stages)

Project roles and responsibilities anticipated throughout the project are listed below.

All Staff (at all stages)

- Have a duty to protect the environment;
- Are responsible for reporting any environmental concerns to their supervisors;
- Are responsible for complying with specified systems of work; and
- Only staff who have the required understanding, qualifications, and where necessary certification, carry out the specialised tasks.

Environmental Specialist (all stages)

- Establishes and maintains the project EMP Implementation Schedule;
- Co-ordinates the environmental risk analysis process for all project activities;
- Acts as the principle focal point for environmental issues;
- Provides expert advice on environmental issues; and
- Is responsible for the review and maintenance of the EMP.

Project Manager (design stage)

- Carries overall responsibility for delivery of the design stage of the project and for meeting environmental performance objectives and targets;
- Ensures adequate trained and competent resources are provided to implement the EMP;
- Ensures that environmental risks are evaluated and considered during the planning stage of the project;
- Approves and authorises the EMP at design stage; and

- Acts as the interface between various design disciplines to ensure that environmental considerations have been taken account of in final design output.

Design Managers (design stage)

- Obtains environmental information during technical site surveys; and
- Ensures that due consideration is made for environmental issues when drawing up and finalising design.

Client's Representative (construction stage)

- Is responsible for ensuring all Contractors comply with the requirements of the Principal Contractor's EMP;
- Is responsible for ensuring that all consents required to facilitate the construction process are in place prior to the work commencing;
- Is responsible for the effective planning, organisation and provision of adequate resources to meet all the environmental needs of the project;
- Is responsible for ensuring that systems and designed management procedures relating to the environment are identified, produced and circulated to all parties concerned, including where appropriate, the client and/or the Principal Contractor and their Sub-Contractors; and
- Is responsible for the production, review and submission to the client for approval of Work Package Plans, ensuring consideration of the minimisation of the project's environmental aspects.

Project Site Managers / Supervisors (construction stage)

- Are responsible for ensuring that all relevant safety and environmental information contained within work package plan and associated task brief is briefed to all staff and contractors under their control before any work commences and re briefed as circumstances change;
- Are responsible for reporting any environmental issues discovered on site;
- Are responsible for ensuring that all road/ rail vehicles are carrying spill kits and that all relevant staff are trained in their use; and
- Is responsible for delivering tool box talks and briefings.

Plant and Machine Operators (construction stage)

- Are responsible for carrying out pre-use checks on their equipment and using it only in accordance with instructions, taking account of the proximity of personnel, structures, operational railway lines, environmentally sensitive areas etc.;
- Operators must bring to the attention of the Site Supervisor/Team Leader any defect in their equipment so that it can be taken out of service and repaired or replaced; and
- Must comply with the site rules with regards to refuelling, use of generators and other petrol driven plant.

1.6. Internal Communications

Communication between the various levels within Atkins is controlled in accordance with the BMS procedure for internal communication.

The project team will be briefed on the requirements of this EMP at the design stage. All Contractors must be briefed when the EMP has been updated for construction works, and the Principal Contractor's Environmental Policy should be displayed on all site office safety notice boards or made readily available.

Communication, including environmentally-related information for the project, will be by means of: project induction, environmental briefings/toolbox talks, written environmental briefs, memos, publications, COSS packs and information posted on safety notice boards.

1.7. External Communication and Managing Lineside Neighbours

1.7.1. Communication with Network Rail

Atkins staff will attend monthly progress meetings with NR and CCC representatives. Environmental performance will be discussed during these meetings. An effective communication programme will be established with Network Rail and relevant Contractors and include: regular progress reports, formal reporting methods, and a system for establishing and maintaining effective communication channels both internally and externally at the meetings detailed below.

Work Package Plans and Task Briefings

Staff preparing Work Package Plans and Task Briefings must familiarise themselves with the information contained within the EMP and draft the documents accordingly, taking into account the environmental aspects and potential impacts for the relevant locations. This is relevant to both construction stage works and design stage activities (e.g. geotechnical investigations)

1.7.2. Communication with Statutory Authorities and Non Governmental Organisations

A record of discussions with Statutory Authorities will be maintained by Atkins and available upon request by the Employer's representative. The Employer's Representative will be informed of unplanned approaches by Statutory Authorities.

1.7.3. Other Stakeholders

Other stakeholders include lineside neighbours and the general public. Communication with these groups shall be via public consultations which will be undertaken where necessary. Public consultation was carried out in November 2012 and the results of this and information regarding the project including the EIA/ES is available to view on the CCC website⁵

1.8. Records and Documents

1.8.1. Environmental Management System Documentation

The Atkins Project Manager is responsible for identifying standards, regulations, and procedures applicable to the project, and for communicating requirements to the Atkins project team. The Information Co-ordinator notifies each Project Manager of revisions and changes to standards, and the Project Manager is responsible for briefing project staff on changes applicable to the Project.

Incoming and outgoing project-specific documentation and data are controlled and reviewed by the Atkins Project Manager in accordance with the BMS procedure for project documentation. The use of computer software is controlled by the BMS procedure for software control.

The Principal Contractor will be expected to demonstrate similar suitable systems for managing documentation within their organisation and to their Sub-Contractors.

1.8.2. Records

The Atkins Project Manager will establish and maintain a project filing and referencing system in accordance with the BMS procedure for filing. Records are to be maintained in a secure environment to prevent damage, deterioration, or loss.

⁵ Cambridgeshire County Council Website available at:
<http://www.cambridgeshire.gov.uk/transport/projects/cambridge/scienceparkrail/default.htm>

The Atkins Project Manager will identify any special requirements for the type of records and retention periods including records that are to be supplied to Network Rail and/or the Principal Contractor and their Sub-Contractors.

The Atkins Group Information Services provide security and backup facilities to prevent the loss of electronic data.

The final version of this EMP and all relevant work package plans and risk registers will be provided to the client on completion of the works to ensure that any information or advice that might be relevant to subsequent works on the site is recorded and communicated.

2. Specified Environmental Impact Areas

Environmental Assessment Methodology

This section summarises the management controls identified in the Register of Significant Environmental Aspects and Impacts.

The following methodology was followed in order to assess the specified environmental impact areas.

Initial Screening and Desk Study

The project was screened for environmental constraints using the sources outlined in Table 3.1 below. Note: web sites were viewed between June 2012 and October 2013. In addition, information was obtained for all topics from the Cambridge Science Park Station and Interchange Environmental Statement and Non-Technical Summary⁶.

Table 3.1 Data Gathering Information and Search Areas

[illegible]

⁶ Cambridge Science Park Station and Interchange Environmental Statement and Non-Technical Summary, June 2013.

⁷ Great crested newt mitigation guidelines, English Nature, 2001.

⁸ Cresswell & Whitworth, 2004, An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt, *Triturus cristatus*, English Nature Research Report 576.

Topic	Source	Data Gathered	Search Area
Landscape	Local Council Plan Map	Country Parks, Landscape Character Areas, Areas of Outstanding Natural Beauty (AONB), National Scenic Area, National Heritage Area, Green Belt, Regional Park, Area of Great Landscape Value.	1 km
Landscape	Local Council Plan Map	Tree Preservation Order (TPO) and Open space and recreation areas.	50 m
Heritage	English Heritage	Listed Buildings, Scheduled Monuments, and Conservation Areas.	50 m
Heritage	English Heritage	Gardens and Designed Landscape.	1 km
Water	Ordnance Survey maps and aerial photographs	Locations of water courses that could act as surface water receptors.	50 m
Water	Environment Agency Website	Floodplain.	50 m
Water	Environment Agency Website	<ul style="list-style-type: none"> Surface water (River, Lake / Loch, Estuarine, Coastal⁹); Water Framework Directive (WFD) Protected Area (PA) (Freshwater Fish PA – salmonid or cyprinid, Urban Wastewater Treatment PA, Drinking Water PA, Nitrates PA). <p>For groundwater quality two classes are used to describe the status of groundwater, good and poor. The ground water classification uses two systems: 'Groundwater quantitative' status, which assesses whether there is sufficient water to maintain the health of the ecosystems it feeds, and 'Groundwater chemical status, which assesses the chemical quality against certain criteria'¹⁰. Therefore the classifications are recorded: good/good, good/ poor, poor/ good and poor/ poor.</p>	50 m
Soils and Geology	British Geological Survey (BGS) (http://maps.bgs.ac.uk),	Geological SSSI's, Underlying strata.	50 m
Noise / vibration	Ordnance survey maps and aerial photographs	Locations of sensitive human receptors (i.e. properties in use).	300 m

Site Walkover/Survey

Site walkovers/surveys were carried out during May 2012 to August 2012.

The objectives of the site walkover/survey were to:

- Identify potential areas of contaminated land;

^{9, 8} As defined by the EA River Basin Management Plans (RBMP)
<http://www.environment-agency.gov.uk/research/planning/33106.aspx>

- Identify the presence of, or potential habitat for, legally protected species (bats, badgers, breeding birds, otters, water voles, great crested newts and reptiles), and terrestrial plant species subject to legal control (including Japanese knotweed and giant hogweed), within the footprint of works and immediate surrounds;
- Identify the ecological constraints to the proposed works arising from the presence of legally protected species and identify the requirement for any development licences for such species; and,
- Obtain sufficient information to recommend appropriate measures to avoid, or practically reduce, any adverse ecological effects arising from the proposed works, and recommend measures to reduce the risks of wildlife offences being committed.

Ecological Survey Limitations

Ecological surveys are limited by a variety of factors that affect the presence of flora and fauna, such as season, climate, migration patterns, and species behaviour. Evidence of protected species is not always identified during the survey. This does not mean that a species is not present; hence the survey also recorded and assessed the potential of habitats to support protected species. The time frame in which the survey is carried out provides a snapshot of activity on the site but cannot necessarily detect all evidence of the presence of, or use by, a particular species.

The level of information collected during the ecological survey is considered to be sufficiently detailed to indicate the presence of a species, confirm places of shelter or protection, and to provide an interpretation of ecological status and activity, from which it is possible to provide the positive identification of the main potential constraints to the proposed works.

The ecological survey has not attempted to produce a comprehensive list of plant species, but was sufficient to define broad habitat types and the potential for legally protected species to be present.

2.1. Air Quality

An assessment of changes in air quality as a result of the development was conducted by Atkins Ltd. (Atkins). The main sources of air quality pollutants are related to road traffic and construction activities. Local air quality conditions in the vicinity of the site are likely to remain relatively good compared to busy and congested roads near the site. The impact of construction traffic on local air quality is likely to be insignificant. Emissions from the traffic generated by the development when it is operational will be undetectable from relevant receptors and thus the impact on air quality is considered to be insignificant. Construction vehicles will not pass close to sensitive receptors.

Nuisance air emissions are most likely to arise from the running of diesel-powered plant, such as generators and vehicles. Mitigation measures could include insuring the plant is efficient, well maintained, and turned-off when not required, particularly when works are near sensitive receptors. During construction, mitigation measures to control emissions (particularly dust) are set out in the Construction Environmental Management Plan (CEMP) produced as part of the Environmental Impact Assessment (EIA) in order to reduce impact upon those receptors which lie within 350m of the Site.

2.2. Archaeology and Cultural Heritage

English Heritage information was accessed for this report and this indicated that no Listed Buildings, Scheduled Monuments, Parks and Gardens, World Heritage Sites, Battlefields, Wrecks, Building Preservation Notices, Certificates of Immunity or English Heritage Sites are located within 50 m of the proposed development.

A full assessment of the potential archaeological features has been conducted under separate cover by Oxford Archaeology commissioned by Atkins on behalf of CCC. An archaeological ground investigation comprising 15 No. machine excavated trial pits was carried out between 19 and 20 January 2012 and on 3 January 2013. Potential archaeological features from the following periods have been identified previously in the area surrounding the site:

- Palaeolithic to Neolithic – Flint artefacts;
- Bronze Age – Hoards, spearhead and pit;

- Iron Age – Pottery and pit;
- Roman – Pottery and pits;
- Anglo-Saxon – Properties, land divisions and pits, and;
- Medieval – Settlements, properties and pottery.

No preserved archaeological features were identified during the archaeological investigation.

It is considered unlikely that the site has any surviving archaeology and the Development is therefore unlikely to result in a harmful impact upon below ground remains. No mitigation measures are proposed for archaeology, on the basis that the Development is considered unlikely to have a significant adverse impact upon below ground remains. However it was recommended a programme of monitoring and recording will be undertaken in conjunction with the construction to identify and record archaeological assets surviving within the site.

2.3. Soils and Geology (Contaminated Land)

According to the BGS information, the site is underlain by terrace deposits overlying Cretaceous strata of Gault and Lower Chalk. Alluvium is shown close to the site to the south and east in the vicinity of the River Cam. The geological map indicates that rock is at or near the surface in areas to the east of the site with outcrops of Gault. No other details regarding the strata are provided on the geological map.

Assessment of historical information and the site walkover indicated that the following land uses have been located on or within 250m of the site: railway and supporting infrastructure, embankments and infilled gravel pits presumably containing Made Ground, electricity substation, industrial estate, tank of unknown contents and a coal yard.

The land to the north is predominantly occupied by an aggregate works, light industrial and commercial buildings and the Cambridge Business Park. A caravan park is located to the east with grassland and the River Cam beyond. Extensive areas of residential housing are present to the south and west of the site, with associated green spaces and a large area of allotment gardens. The Trinity Hall Industrial Estate lies to the north-west of the site, on Nuffield Road, with further residential properties beyond.

Two phases of ground investigation have been carried out by URS as specified and commissioned by Atkins between 17 and 26 September 2012 and 7 and 11 January 2013. This included the following investigation:

- 3 No. cable percussion boreholes to a maximum depth of 15.0 mbgl;
- 15 No. trial pits to a maximum depth of 1.20 meters below ground level (mbgl);
- 26 No. hand pits to a maximum depth of 1.20 mbgl; and
- 10 No. windowless sampling competitor boreholes to a maximum depth of 8.45 mbgl.

Selected soil samples were subjected to environmental analysis and the results of the analyses were used to assess the potential waste classification of the soils. The analysed material was not classed as hazardous according to CATWaste¹¹. However, due to the presence of chrysotile asbestos fibres in a sample collected from TP07 at 1.0 mbgl the material at this location would be regarded as hazardous.

The single soil sample was also found to contain fibres of chrysotile asbestos and localised PAH concentrations were found to pose a potential risk to human health receptors.

Soil leachate, surface and groundwater samples were also analysed. Concentrations of leachable contaminants within the soils at various locations were found to pose a potential risk to the underlying groundwater and nearby surface water receptors.

¹¹ CATWaste^{SOIL} Character Assessment Tool, Atkins and McArdle Group, available at <http://www.catwastesoil.co.uk/> [accessed February 2013].

It should be noted that due to the extent of the investigations undertaken and the size of the site, there is the potential for unidentified areas of contamination to still be present. The Construction Environmental Management Plan (CEMP) details the mitigation measures to deal with new sources of contamination and the potential for the development to introduce new pathways for existing contamination. This will be implemented during the design and construction phase (GRIP 5 and GRIP 6). The development will operate in accordance with best practice.

It is anticipated that there would be a neutral impact on soils and geology from the construction of the Development, assuming mitigation measures are implemented.

Gas monitoring was undertaken and the results analysed in accordance with CIRIA C665¹². The risk to site receptors from ground gas is considered to be Low, however, as only two rounds of monitoring were conducted it is recommended that further gas monitoring is undertaken.

2.4. Ecology

The site was found to comprise various habitats including scattered and dense/continuous scrub, ephemeral/short perennial, areas of bare ground, ponds and poor semi improved neutral grassland. In combination these habitats were considered to provide breeding and foraging habitat for a range of protected species.

The desk-based literature search indicated that protected species such as Great Crested Newts, reptiles, breeding birds, bats and Water Voles had been recorded within 2km of the Chesterton Sidings site, and some species were present within a few metres of the site boundary. It was also the location of recent habitat management for reptiles and was a receptor site for a reptile translocation in 2010-11. In addition, notable assemblages of invertebrates and scarce plants were also recorded within the Chesterton Sidings site boundary. Water body surveys of the site indicated that the site did not appear to provide an optimal habitat for the Great Crested Newt Population.

The desk-based literature search also indicated that two statutory designated sites (Bramblefields and Logan's Meadow LNR) were identified within 2km of the site, while eleven non-statutory designated sites were identified within 2km of the site. No records for protected habitats were returned for areas within the Chesterton Sidings site boundary. The nearest non-statutory designated site (River Cam County Wildlife Site) was located over 300m away from the eastern boundary of the Site.

A variety of species-specific surveys were carried out in 2012 by Cambridge Ecology/CB3 Consulting in order to provide data to ensure legal compliance during the construction of the development and to meet the pre-requisite planning policy requirements. These surveys included Great Crested Newts, reptiles, breeding birds, bats, Water Voles, invertebrates and flora. The site includes various habitats, including open mosaic habitat (a UK BAP¹³ priority habitat) together with protected species (reptiles, breeding birds, invertebrates and flora). The results of the species specific surveys and the Phase 1 Habitat Survey found the following species to be present on site:

- Common lizards and grass snakes;
- Cinnabar moth (UK BAP listed species for research purposes only);
- 16 No. species of breeding birds and 7 seven species of possibly/probably nesting birds;
- 16 No. butterfly species;
- Six bumblebee species;
- Two common damselfly species; and,
- A number of common dragonfly species.

¹² CIRIA C665 Assessing risks posed by hazardous ground gases to buildings. CIRIA 2007.

¹³ UK Biodiversity Action Plan (BAP); Priority habitat descriptions. BRIG (ed. Ant Maddock) 2008 Updated Dec 2011.

- 26 No. beetle species
- 214 No. species of plant.

In addition the invasive species *Crassula helmsii* was noted in an existing pond in the Bramblefields LNR.

Information obtained from the surveys indicated that during construction and post-construction operation and management the development proposals have the potential to affect the biodiversity value of the site. Adverse effects would be likely to include habitat loss, mainly the dense scrub and open mosaic habitat within the Station/Interchange Area. There is also the potential, without mitigation for the Development to have probable negative effects on the Bramblefields LNR, reptiles, breeding birds, invertebrates and a variety of flora present on site. In addition, construction activities could result in displacement, disturbance and direct mortality effects to the local ecology without mitigation. Potential beneficial effects include habitat creation, biodiversity value enhancement and improved connectivity with the adjacent sites of biodiversity value.

The results of the species specific surveys identified potential constraints that need to be considered as part of the planning process for the development proposals and design process necessary in order to maintain legal compliance; for instance the incorporation of suitable mitigation measures into the scheme design to address protected species issues.

Construction of the development will result in a loss of existing habitat. Actions to be taken as a result of the surveys include the following:

- Vegetation will be retained, where possible and not required for construction purposes, in order to minimise impacts;
- Loss of habitat is mitigated and offset through the creation of new habitat and enhancement of the Bramblefields LNR;
- Ecological management plans for the Station/Interchange area and Bramblefields LNR will ensure that the remaining habitats are managed in a way beneficial to biodiversity and remain permanent.

Detailed mitigation measures are contained within the CEMP and ES. In addition, ecological management plan to be provided by the contractor. The proposed measures will minimise certain and probable negative effects and in addition, maintain and enhance the biodiversity value of the site as a result of the Development.

2.5. Energy

Energy use is not governed by legislation, but it does have significant cost implications along with a public perception dimension: being seen to limit emissions of greenhouse gases would help the environmental credentials of the participant organisations.

An energy and sustainability statement was submitted as part of the planning application. Guidance given in the Chartered Institute of Building Services Engineers (CIBSE) Guide L - Sustainability¹⁴.

In order to reduce demand, the building will be highly insulated, glazing ratios shall be optimised for carbon emission reduction. PTFE roof lights and perforated cladding panels shall provide high levels of natural daylight in order to reduce the demand for lighting and shading systems shall be tuned for the building orientation. In order to meet end-use demand efficiently. Low pressure drop mechanical ventilation systems with thermal recovery will be used in the accommodation area, all pumps and fans shall have energy saving inverter variable speed drives, lifts will incorporate the latest energy saving features such as an energy accumulation facility and lighting controls shall include presence detection and daylight dimming/shutting off.

In addition two low carbon/renewable energy sources were identified as suitable for the Station, an air source heat pump and solar photovoltaic (PV) panels. The air source heat pump shall provide the heating

¹⁴ Chartered Institute of Building Services Engineers (CIBSE) Guide L - Sustainability

and domestic hot water requirements. At present it is anticipated that the PV installation will provide approximately 12% of the overall electricity consumption per year.

In order to manage energy in the station, electricity meters shall be installed on all major items of equipment. It is anticipated that the above energy strategy will make significant contribution to the energy credits as part of the BREEAM assessment process.

The main energy implication for the proposed works is the extraction, in the case of primary aggregates and fill, and transport of materials, both to and from site determined using a preliminary carbon calculator.

Responses to this can include:

- Designing in order to minimise the amount of earthworks required, if applicable; and
- Programming logistics so that deliveries of materials are as efficient as possible.

Secondary energy implications relate to the use of plant, vehicles, and other ancillary equipment (such as in mess and welfare facilities, and site offices), and their efficiency and judicious use.

In addition when operational, the station building will include two sources of renewable/low carbon technology providing at least 10% of the sites predicted energy consumption. A desktop pre-assessment exercise was carried out on the design and indicated BREEAM rating of GOOD. Following a detailed review of the BREEAM assessment by the design team and with the incorporation of a number of changes in the next design stage the project will endeavour to upgrade this rating to VERY GOOD. The aim is to provide maximum accessibility to the Site for all sustainable modes of travel in keeping with the local and national planning policy and recognising that these modes are widely used in Cambridge.

2.6. Landscape and Visual

A landscape and visual assessment has been carried out by Atkins. The site has little visual connection with the wider Fen landscape to the north and east of the site. It has an urban fringe location and is scenically of no outstanding merit. Its landform and low lying nature means that it is visually discrete and makes no significant contribution to the scenic value of the wider area. The development would not result in the loss of any defining characteristics of the landscape or features. It is expected to be attractive and in keeping with the character of the surrounding area and new landscape components will be consistent with the general character of the view.

The Development aims to retain existing features, where possible, and in particular along boundary edges. There would be an overall strengthening of the landscape features as a result of the Development with a large gain in the amount of native trees and hedges planted. The landscape would also be improved through the creation of new wetland swales, amenity shrub area and wildflower grassland. In addition there would be management and enhancement of the existing pond and watercourse along Cowley Road and Bramblefields LNR.

The impacts of the Development on the landscape character, quality and visual effects will occur mainly through the removal of vegetation although no defining characteristics of the landscape or features of importance would be lost. There is likely to be a temporary minor harmful effect of construction on the landscape character of the area (e.g. cranes on the skyline), however with careful planning and design any adverse effects will be avoided and reduced.

There is likely to be a minor harmful effect on views from properties which back on to the western boundary of the Site as a result of the introduction of the station and associated lighting and other infrastructure. The Development will have a moderate to slight adverse visual impact on some residents of Sunningdale Caravan Park and Grange Park Residences due to the loss of the open setting and closer proximity of built form in the view. These will be mitigated through retention of existing boundary vegetation, where possible, and enhancement of the boundary planting to provide additional screening.

Mitigation will ensure there will be an overall strengthening of landscape features as a result of the Development and there will be management and enhancement of the existing ponds and watercourses.

In addition the station building will include structural and specimen native planting (Birch trees and Hawthorn Hedges) that will help integrate the Development with the surrounding landscape and complement the existing retained trees and hedgerows.

Mitigation of likely construction effects on landscape and views would largely be achieved through the implementation of the CEMP which will include measures such as enhanced landscape buffer areas around the northern and western boundaries of the Site to provide an interface with the surrounding townscape and assist in the maintaining of the rural-urban fringe character of the area.

2.6.1. Nuisance (Noise, Dust, Lighting)

A detailed noise and vibration study and lighting assessment have been undertaken by Atkins and the findings of these studies need to be considered by the Design Team.

There is a significant risk of the works creating a noise nuisance, particularly given the proposed earthworks and required demolition works. Liaison with the Local Authority Environmental Health Officer will be required at these sites to determine if Section 61¹⁵ consent is required. The Construction EMP should thoroughly address the issue of noise nuisance and how it is to be mitigated.

Construction noise could give rise to a significant impact at noise sensitive receptors especially those within 20m of the Site. Good working practices, as well as minimising the noisiest activities adjacent to noise sensitive properties at night, will minimise the extent of significant construction noise.

Additional road traffic generated by the development will be of sufficiently low volume not to affect the existing road network on all but one of the roads.

Noise from PA announcements was assessed in accordance with BS4142¹⁶ and considered to be of less than marginal significance. All daytime impacts were considered neutral in accordance with IEMA/IOA¹⁷ example criteria and the station is closed between 23:00 and 05:30 at night therefore no noise will be generated during these hours.

Additional information on noise and vibration is contained in the ES.

Dust is also likely to be generated by the proposed works. There are a number of sensitive receptors in place (residences, properties, schools and Bramblefields Local Nature Reserve) within 350m of the site that could be affected temporarily by dust during construction. The contractor will be required to ensure that controls are in place to avoid any adverse impacts (e.g. by reducing dust emissions and ensuring careful handling and storage of materials). The CEMP should thoroughly address the issue of dust nuisance and how it is to be mitigated.

Light nuisance is also a statutory nuisance (the Clean Neighbourhoods and Environment Act 2005 amended the Environmental Protection Act 1990 to this effect). Where works are to take place at night, appropriate mitigation measures should be used and documented in the CEMP.

The Development includes new artificial lighting of the site (30m high lighting towers currently on site and can be used by NR at any time). The receptors likely to receive the most significant impact are local residents. Mitigation measures will ensure no negative impact on the surrounding properties through modifying the magnitude of the impact of the lighting installations. In addition, architectural forms, hard and soft landscaping/planting will eliminate or limit fields of view of the lighting installations.

Mitigation measures for light nuisance are detailed in the CEMP and include; design of the station lighting design such that the illumination in any area will not exceed the appropriate level for the function of that environment, all luminaries selected to emit downward light only and the use of lower columns for the platforms due to the proximity of high voltage NR overhead line equipment and in the vicinity of adjacent properties to ensure minimal light spill to the residents.

¹⁵ Control of Pollution Act, , Prior Construction and Demolition Site Noise Section 61 Consent

¹⁶ British Standard Method for rating industrial noise affecting mixed residential and industrial areas (BS4142:1997)

¹⁷ Institute of Environmental Management and Assessment (IEMA) and the Institute of Acoustics (IOA), Draft Guidelines for Noise Impact Assessment, 2002.

2.7. Materials and Waste

Materials used on the site consist predominantly of:

- Concrete mass, reinforced and pre-cast for sleepers, foundations and structures;
- Steel (various grades) for new track, signalling and Overhead Line Electrification (OLE) infrastructure; and,
- Aggregates (ballast) for the Permanent Way (PWay).

The use of these materials are sustainable insofar as they are the most appropriate for the purpose, and the most suitable for maintaining the integrity, performance and safety of the railway.

If uncontaminated, these materials, particularly steel and concrete, can be processed and re-used. As part of the detailed design, cost-effective and sustainable use of materials will be considered.

The Development will include demolition, excavation and construction activities which will produce a variety of materials including aggregates, concrete, metal, soils, plastic, steel and timber. There is also the potential for the Development to generate hazardous waste including contaminated soils and contaminated ballast from excavation works. Disposal of such waste is governed by legislation and it must be segregated so that it is disposed of appropriately. It is possible that site-won material from earthworks may be re-used on site, and track assets, such as Pway material, could also be re-used elsewhere.

A Site Waste Management Plan (SWMP), detailing anticipated types and quantities of waste, has been produced at GRIP 3 stage and will be updated throughout the project. Sustainable waste management measures are detailed through the SWMP providing a live document to plan, track and record the management of waste arisings. The sleeper timbers are expected to be the only waste produced during the demolition phase to be reused off-Site without prior treatment. Waste management mitigation measures would divert an estimated 98% of the waste arisings generated by the Development from landfill/disposal.

The estimated waste arisings produced during the demolition phase is expected to be dominated by ballast contributing 80% of the waste being recycled offsite. Steel from track removal and track relay and missed C&D waste from building demolitions is anticipated to be recycled offsite.

Materials may be reused if testing shows no residual contamination following treatment/remediation. Should there still be residual contamination it will require to be disposed of at a hazardous waste site or remediated.

The overall waste generated from demolition has been estimated from previous study reports and from communications with relevant team members. Waste arisings have been estimated as:

- 8823 tonnes during demolition phase;
- 7402 tonnes during the excavation phase; and,
- 262 tonnes during the construction phase.

This constitutes a total of 16,487 tonnes of waste. Recycling of waste has been considered in terms of reuse on-site, re-use offsite and recycling offsite. For demolition waste it is anticipated that 8134 tonnes may be recycled offsite and 583 tonnes may be reused offsite. For excavation waste it is estimated that 6662 tonnes may be reused onsite and 740 tonnes (potentially contaminated soil estimated volume) will be treated and may be suitable for reuse post treatment. For construction waste it is estimated that 33 tonnes may be reused on site, 194 tonnes of waste may be recycled offsite and 35 tonnes will be disposed of offsite.

Therefore 40.6% (6695 tonnes) of the waste arisings are estimated to be reused onsite, 57.6% (9503 tonnes) is estimated to be reused/recycled offsite therefore diverting 98.3% of the waste arisings from landfill.

The adoption of good waste management practices will allow for high levels of waste minimisation, reuse, recovery and recycling to be achieved.

The overall impact of the waste generated by the development is expected to have a neutral effect on waste management arisings and infrastructure capacity within the region.

For additional information on waste and materials please refer to the ES and accompanying SWMP.

2.8. Water, Flood Risk and Drainage

According to the Environment Agency information (see Table 3.1), the site is located in an area which has an undesignated aquifer for bedrock and a “secondary A” for superficial deposits and this indicates areas of permeable layers capable of supporting water supplies.

The nearest surface water feature (the River Cam) is located 40m south of the site boundary and so is considered to be a potential receptor. All water environment receptors have a medium or low importance of surface water quality and groundwater flood risk.

A flood risk and drainage assessment was carried out in February 2013 by Atkins. The Site lies within Flood Zone 1 (low risk of flooding as defined by the Environment Agency) and is shown on the CCiC Strategic Flood Risk Assessment (SFRA) as an area that has not experienced flooding. Based on information from the Environment Agency, pluvial and groundwater flood risk for the area is considered to be medium.

The importance of groundwater quality for the majority of the site is considered to be low, however in the south-east the importance of groundwater quality is considered to be high. Without mitigation there is likely to be a harmful impact on the water environment, particularly with regards to the risk of existing contaminated land and groundwater flood risk.

With mitigation, including the removal of contaminated land, raising of ground levels and the implementation of a Sustainable Urban Drainage System (SUDS), the significance of effect of the Development on the water environment is considered insignificant/beneficial. There are likely to be improvements to surface water and groundwater quality as a result of the Development and mitigation measures are detailed in the CEMP.

A SUDS for access roads, car parks etc. is to include swale creation and contouring of existing ditches to allow plant colonisation.

2.9. Traffic and Access

A Transport and access study has been carried out by Atkins. There is likely to be an adverse environmental impact if large numbers of vehicles, especially heavy vehicles, access the site. The effects of these can be reduced by maximising the delivery of materials and plant by rail; planning delivery routes in advance to avoid sensitive roads (e.g. narrow residential roads); and ensuring efficient deliveries, i.e. minimising the overall number of deliveries. This strategy should be included within the project wide CEMP (GRIP Stage 5).

It is considered unlikely that these works will require the closure of access paths; however this will be confirmed with the Access Officer at the GRIP 5 design stage. However, construction and operational traffic generated by the proposals will be of neutral significance.

The location of the Development promotes sustainable modes of travel by its nature. Development will include sufficient cycle parking storage for passengers to encourage sustainable travel to/from the station, a sufficient number of car parking spaces to meet necessary demand without over provision, appropriate access for disabled passengers, a direct link to the Busway and safe and convenient cycle and pedestrian access. Overall the Development is envisaged to generate a slight beneficial effect on local transport infrastructure.

2.10. Site Boundaries

Where used, site boundary fencing/screening should be sufficient to adequately reduce the visual impact of the works, but not becoming an intrusion in themselves, e.g. if the site boundaries attracted graffiti, were unnecessarily high, or reduced space on footpaths adjacent to the site.

Site boundaries must also be secure to prevent vandalism. Any pollution or nuisance caused by vandalism is still the responsibility of the site owner/operator.

3. Implementation Schedule

This EMP is a live document and must be updated as new information is identified, and the project moves through from the design to the construction stages. Key tasks and responsible persons are listed in Table 3.1.

Table 3.1 Implementation Schedule

Task	Schedule	Responsible Person
Undertook a site desk study and site survey to inform EMP	May 2012 to August 2012	Environmental specialist
Review EMP and incorporate requirements into design process	February 2013	Project Manager
Update Register of Risks and Opportunities to record how design process addressed the relevant issues	Detailed design stage	Project Manager
Update EMP to reflect project moving to construction stage	Project handover to construction stage Principal Contractor	Principal Contractor's environmental specialist
Issue EMP to Sub-Contractors	Appointment of sub-contractors	Principal Contractor's Project Manager
Sub-Contractors incorporate or modify EMP as appropriate to fit their roles	Prior to works beginning	Sub-Contractors' environmental specialists
EMP briefed out to site staff as appropriate	Prior to works beginning	Site Managers

Appendix A: Environmental Policy

ATKINS

Rail Environment Policy Statement

The Atkins' rail business is committed to minimising the environmental impact of our business operations. We accept our responsibility for environmental sustainability, which is incorporated into our business management system.

Senior management is fully committed to this policy and supports this commitment by:

- Continually improving our environmental performance
- Striving to be a leader in our environmental practices in our designs
- Managing our business operations to prevent pollution
- Reducing our consumption of resources and improving the efficient use of those sustainable resources
- Measuring and taking action to reduce the carbon emission of our business activities, with a particular focus on energy use and travel impact
- Managing waste generated from our business operations according to our voluntary commitment to the Waste Resource Actions Programme's principles of reduction, re-use and recycling
- Ensuring environmental impact is assessed throughout the planning, design and enablement of our services to prevent pollution, minimise impact and consider opportunities for improvement
- Working in partnership with our employees, clients, supply chain and landlords to achieve realistic environmental improvements
- Complying with applicable legislation, codes of practice, industry standards and client requirements
- Developing meaningful Environmental Performance Indicators to measure and minimise emissions, waste and energy consumption

- Maintaining our certification to International Standard ISO 14001:2004 (Environmental Management Systems) through rigorous monitoring and performance review
- Providing sufficient resources and appropriate training to manage our impacts effectively

The Atkins' rail business QSE Director is responsible for providing environmental direction, guidance and advice to our employees in the pursuit of achieving this policy.

The Directors and I are committed to the successful implementation of this policy, which reflects the Atkins plc Environmental Policy. We look to all our employees for support and co-operation in making this policy truly effective.

This policy is reviewed at least annually to ensure its continuing appropriateness.



Douglas McCormick
Rail Managing Director



Plan Design Enable

January 2011

ATKINS

Atkins is committed to conducting our business in an environmentally responsible manner. We accept that we have responsibility for the environment and sustainability, which should be influenced, incorporated and promoted within our operations and the services we provide.

Environmental impacts associated with our operations and services are controlled by a corporate framework, requiring all Atkins' businesses to develop suitable and effective management systems. Our businesses are accountable for reinforcing this policy and ensuring that defined requirements of business management systems are achieved.

Senior management is fully committed to this policy and supports this commitment by:

- Continually improving our performance, setting objectives and targets as part of our overall business strategy
- Providing sufficient resources and appropriate training to manage our impacts effectively
- Complying with relevant environmental legislation and, where practical, with codes of practice, industrial standards and other requirements, such as those specified by our clients
- Ensuring environmental impact is assessed throughout the planning, design and enablement of services to prevent pollution, minimise impact and consider opportunities for improvement
- Setting our policy on sustainability into our operations and services focusing on the specification and use of materials, energy usage, travel impact, waste and recycling
- Assessing our supply chain and partnerships for suitability to meet policy requirements
- Regularly monitoring our performance against stated objectives and publishing the results in our Corporate Responsibility report
- Targeting reductions in our carbon emissions associated with energy consumption and business travel.

Management systems are maintained to meet and exceed the requirements of this policy statement and International Standard ISO 14001:2004 (Environmental Management Systems).

We look to our employees' support and professionalism in making this policy truly effective on behalf of Atkins.

M. Kruger

Uwe Krueger
Chief Executive
October 2010

www.atkinsglobal.com

See a full and comprehensive study statement: <http://www.healthyhillsmanagement.com/press/2014/04/01/040114.htm>

Appendix B: Risks and Opportunities Register

Scoring System

The significance of an aspect or impact was determined by scoring it for two factors:

1. the likelihood of the aspect/impact occurring, and
2. the consequence of the aspect/impact occurring.

A numerical value assigned for likelihood reflects how likely the problem is to be encountered; and the value assigned to consequence relates to how severity the impact will be, should it occur, for example, whether or not the aspect is governed by legislation, is likely to be high-profile etc. The numerical value assigned (score), is shown in the Table below.

Table B1 Significance Scoring Values

Score	Likelihood	Consequence
0	Will not or cannot occur	No consequence
1	Could occur, but not likely to	Minor consequence e.g. limited to cost implications
2	Likely to occur	Significant consequence such as generating negative publicity
3	Almost certain to occur	The impact is covered by legislation

The likelihood score is then multiplied by the consequence score to give a risk score. Thus, the risk score for each aspect / impact can range from 0 to 9. Aspects are deemed significant if the summed score is five or more. Significant aspects will include information on what steps should be taken at design stage to ensure that the risk and hazard of potential impacts are minimised.

As significant issues are identified these should be raised with the design team and, where possible, an appropriate action decided upon and recorded in the register.

Cambridge Science Park

Table B2 Risks and Opportunities Register

Activity	Issue	Requirement	Description	Affected parties	Likelihood	Impact	Score	Existing mitigation	Future Actions	Owner	Legislation
Air Quality											
Construction	Air quality	Legal (Nuisance)	Generation of dusts and smoke; hazard or nuisance to nearby receptors	Local Community Contractor CCC	2	2	4	Recommended dust mitigation measures detailed in Construction EMP.	Update and implement CEMP at GRIP Stages 5 and 6.	Principal Contractor	Control of Pollution Act 1974, Environmental Protection Act 1990
Idling of diesel plant	Air quality	Legal (Pollution)	NOx and particulate matter impacts on lineside neighbours	Local Community Contractor	1	2	2	Recommended mitigation measures detailed in CEMP.	Implement mitigation measures detailed in CEMP at construction stage. Update SWMP in order to maximise the reuse of materials on site and therefore reduce the traffic going to and from site.	Principal Contractor	Control of Pollution Act 1974, Environment Act 1995
Archaeology and Cultural Heritage											
Earthworks	Archaeology	Legal	Potential for archaeological features to be present below	CCC	1	2	2	Archaeological ground investigation did not identify any archaeological features therefore further mitigation not	Programme of monitoring and recording to be undertaken in conjunction with	Principal Contractor	Ancient Monuments and Archaeological Areas Act 1979

Activity	Issue	Requirement	Description	Affected parties	Likelihood	Impact	Score	Existing mitigation	Future Actions	Owner	Legislation
			ground on site					considered necessary.	construction.		
Soils and Geology											
Earthworks	Contamination	Legal	Potential for significantly contaminated material to be present on site.	CCC Principal Contractor Local Community	2	2	4	Ground investigation has identified areas of contamination. Recommended mitigation measures detailed in CEMP. DQRA Design	Design in order to minimise earthworks required, Implement mitigation measures detailed in CEMP.	Design Engineers Principal Contractor	Town and Country Planning Act 1990; Environmental Protection Act 1990, Part IIA

Activity	Issue	Requirement	Description	Affected parties	Likelihood	Impact	Score	Existing mitigation	Future Actions	Owner	Legislation
Ecology											
Clearing vegetation	Ecology	Legal	Disturbance of nesting birds	CCC Principal Contractor	2	2	4	Ecological species specific surveys carried out.	Design in order to minimise vegetation clearance	Principal Contractor	Wildlife and Countryside Act, 1981
Site preparation and construction works	Ecology	Legal	Risk to reptiles	CCC	2	2	4	Recommended mitigation measures detailed in CEMP. N/A	Construction ecological management plan including precautionary method of working (PMW) should be drafted by an ecologist for any design stage works that will entail disturbance e.g. clearing of vegetation or log piles.	Principal Contractor	Wildlife and Countryside Act, 1981
Construction works	Ecology	Legal	Spread of invasive species Crassula helmsii from existing pond in Bramblefields LNR	CCC	2	2	4		Construction ecological management plan and PMW produced and briefed to site staff and implementation supervised by an ecologist for construction works that will entail disturbance e.g. clearance of vegetation or log piles Clear site out with nesting season or vegetation to be checked by ecologist prior to clearance. Active nests to be left undisturbed with appropriate vegetation buffer around them.	Principal Contractor	Wildlife and Countryside Act, 1981; Environmental Protection Act 1990; Environmental Protection Act (Duty of Care) Regulations 1991

Activity	Issue	Requirement	Description	Affected parties	Likelihood	Impact	Score	Existing mitigation	Future Actions	Owner	Legislation
Energy											
Design and Construction of Scheme	Energy	Energy Costs Public Perception	Construction will entail the use of energy and embodied energy	CCC Principal Contractor	3	2	6	Design to minimise embodied energy and maximise buildability where possible	Construction planning to ensure that plant and materials are used efficiently to minimise both on-site energy use and embodied energy in materials	Design Engineers Contractor	N/A
Landscape and Visual											
Removal of Vegetation	Visual	Legal	This will affect the visual amenity of roadside neighbours	CCC Local Community	3	2	6	Design should take in to account the potential impact on visual amenity of roadside residents, aiming to minimise vegetation clearance needed and considering the possibility of landscaping/screening.	Minimise non-essential vegetation clearance. Update and implement mitigation measures detailed in CEMP.	Design Engineers Principal Contractor	Town and Country Planning Act 1990
Construction	Visual	Legal	Temporary adverse effect on the landscape character of the area	CCC Local Community	3	1	3	Design to minimise adverse effects. Recommended mitigation measures detailed in CEMP.	Ongoing consultation with the public. Update and implement mitigation measures detailed in CEMP.	Design Engineers Principal Contractor	Town and Country Planning Act 1990
Operation of Station	Visual	Legal	Permanent change to landscape effecting the view of residents to the	Network Rail	3	2	6	Design to minimise adverse effects including retention of existing boundary vegetation where possible and	Ongoing consultation with the public. Update and implement	Design Engineers	Town and Country Planning Act 1990

Activity	Issue	Requirement	Description	Affected parties	Likelihood	Impact	Score	Existing mitigation	Future Actions	Owner	Legislation
			west of the station	CCC Local Community				enhancement of the boundary planting to provide additional screening.	mitigation measures detailed in CEMP.		
Nuisance (Noise, Dust, Lighting)											
Site Works	Noise	Legal (nuisance)	Noise, particularly when including heavy plant or noisy equipment	CCC Contractor Local Community	3	1	3	N/A	Contractor and NR to liaise with council for S61 Consent. Appropriate PPE to be worn by all contractors. Ongoing public Consultation.	Principal Contractor	Control of Pollution Act 1974
Site Works	Dust	Legal	Dust and particulate matter impact on lineside neighbours	CCC Contractor Local Community	2	2	4	Recommended dust mitigation measures in CEMP.	Update and implement recommended mitigation measures detailed in CEMP.	Principal Contractor	Environmental Protection Act 1990
Construction	Lighting	Legal	Lights used during construction could affect lineside neighbours	CCC Local Community	3	2	6	Recommended mitigation measures in CEMP.	Lights to be located so as to minimise the impact on neighbour, and brightness/number of lights to be no more than necessary. Update and implement recommended additional mitigation measures detailed in CEMP.	Principal Contractor	Clean Neighbours and Environment Act 2005

Activity	Issue	Requirement	Description	Affected parties	Likelihood	Impact	Score	Existing mitigation	Future Actions	Owner	Legislation
Operation of Station	Lighting	Legal	New signals and operational lighting	CCC Network Rail Local Community	3	2	6	Signal location design should take in to account potential impact on visual amenity of lineside residents.	Architectural forms, hard and soft landscaping/planting will eliminate or limit fields of view of the lighting installations. Update and implement recommended mitigation measures detailed in CEMP	Design Engineers	Clean Neighbours and Environment Act 2005
Materials and Waste											
Construction	Materials	CCC Sustainability Objectives Network Rail Sustainability Policies SWMP	Construction of standardised rail line means there is little scope for innovative materials in the design	CCC Principal Contractor	3	1	3	Site Waste Management Plan.	Construction planning to ensure that materials are used efficiently to minimise wastage.	Principal Contractor	N/A
Design and Construction of Scheme	Production of waste especially given possible contamination of ground along route	CCC Sustainability Objectives Network rail Sustainability Policy SWMP	Potential to create waste	CCC	3	2	6	Site Waste Management Plan	Seek to minimise waste volumes e.g.by sourcing supplies in appropriate quantities to minimise over-ordering and waste. Abide by and update SWMP as necessary.	Principal Contractor	Environmental Protection Act Part II; Environmental (Duty of Care Regulations 1991; the Waste Management Licensing Regulations 1994; Site Waste Management Plans Regulations 2008; Landfill Waste (England and Wales) Regulations 2011

Activity	Issue	Requirement	Description	Affected parties	Likelihood	Impact	Score	Existing mitigation	Future Actions	Owner	Legislation
Water											
Construction	Water Quality	Legal	Temporary impacts on water quality due to pollution incidents or exposure of contaminated land creating a linkage	CCC Local Community	1	3	3	Identify areas of contamination and incorporate mitigation in to the design	Abide by and update mitigation measures listed in CEMP.	Design Engineers Principal Contractor	Water Resources Act 1991; Environment Act 1995; Water Act 2003; Anti-Pollution Regulations 1999; Control of Pollution Act 1974 (Part II); Control of Pollution (Oil Storage) Regulations 2001; PPS23
Construction and Operation	Flood Risk	Legal	Area has medium risk of pluvial and groundwater flooding	CCC Network Rail Principal Contractor Local Community	2	2	4	Design to mitigate against flooding including SUDS and raised ground levels	Abide by and update mitigation measures listed in CEMP.	Design Engineers Principal Contractor	Water Resources Act 1991; Environment Act 1995; Water Act 2003; Air Pollution Regulations 1999; Control of Pollution Act 1974 (Part II); EAPPGs; PPS23
Traffic and Access											
Construction	Traffic	Network Rail Sustainability Policy CCC Sustainability Objectives Legal	Increased numbers of vehicles and congestion	Local Community	1	2	3	N/A	Strategy for traffic management to be included in the CEMP	Principal Contractor	Planning approval

Activity	Issue	Requirement	Description	Affected parties	Likelihood	Impact	Score	Existing mitigation	Future Actions	Owner	Legislation
Site boundaries											
Construction and Operation	Visual Impact (Vandalism)	Legal	Site boundaries must not become an adverse visual impact to lineside residents	CCC Local Community	1	1	2	N/A	CCC to maintain site boundaries during construction and Network rail to maintain boundaries during operations	CCC Network Rail	Town and Country Planning Act 1990

Appendix C: Environmental Appraisal / Action Plan

TEMPLATE: ENVIRONMENTAL APPRAISAL/ACTION PLAN

NOTE: This checklist may be used as it stands or modified as appropriate for the project in hand.

PURPOSE:

The purpose of this checklist is to assist Programme/Project Managers to identify potential environmental issues and risks early in the GRIP Stages, and to ensure that actions are undertaken through optioneering and detailed design (GRIP Stages 2-5) to construction (GRIP Stage 6) stages to address the highlighted issues. This is not a discrete document but one that is part of the building process as the project progresses and associated environmental issues become more defined or eliminated through to project implementation and close-out.

GUIDANCE ON HOW TO USE THIS DOCUMENT:

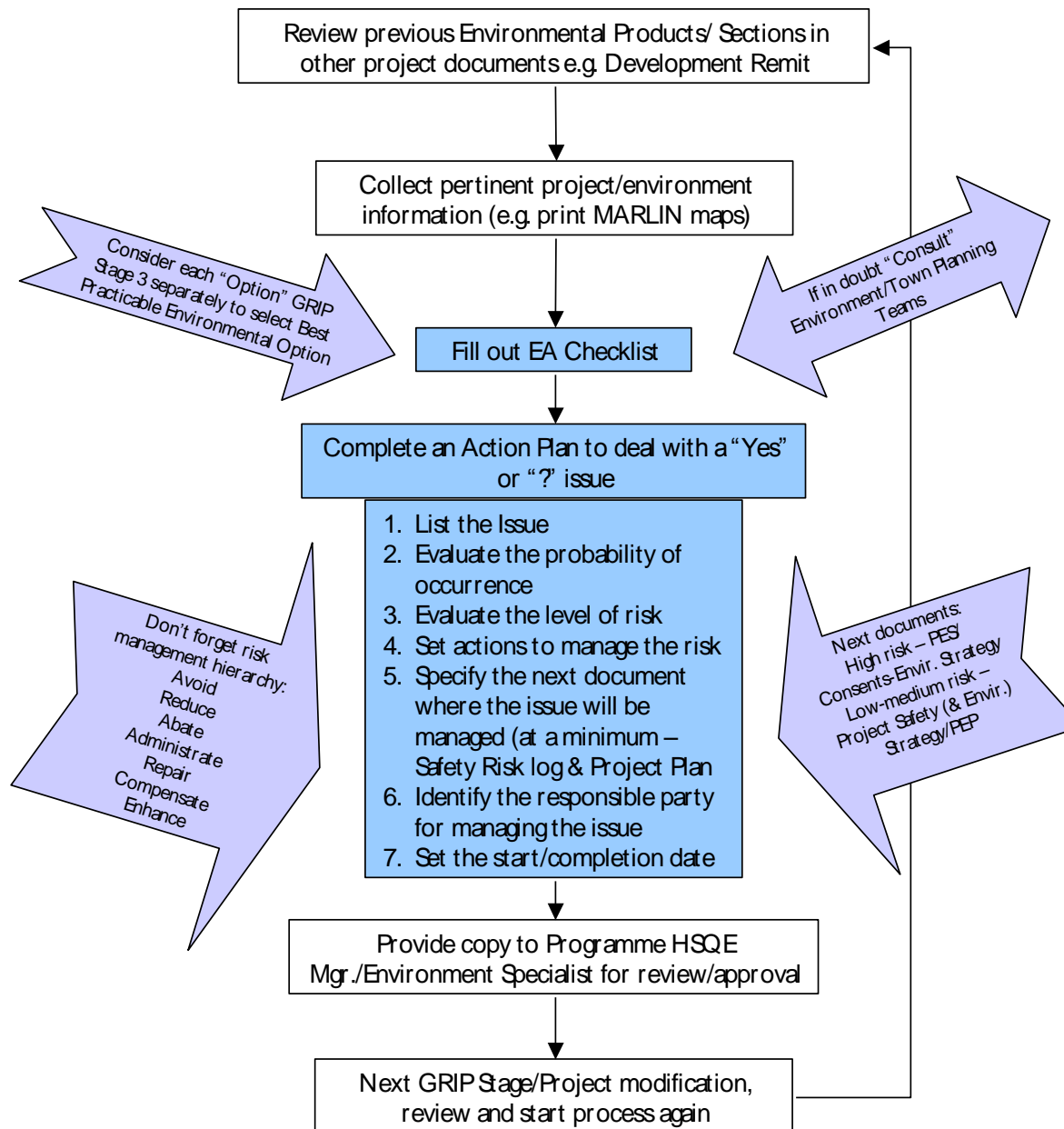
NOTE: This is a “working document” and is a practical tool that should be used to direct project activities and requirements in order that the environmental issues and risks are effectively managed and controlled through project design and engineering.

If in doubt, please consult the appropriate Environment/Town Planning/Community Relations Team and sponsor’s agent to discuss the project’s likely implications.

1. The Environmental Appraisal should be started in GRIP Stage 2 and reviewed during GRIP Stages 3 and 4.
2. Indicate the appropriate GRIP Stage.
3. Review environmental information/risk identification from the previous GRIP stage(s).
4. Collect pertinent environment documentation/information; e.g. print Marlin maps or National Hazard Directory extract and attach as appropriate. Note: the information sources listed are to be used as prompts but they do not form a complete listing of sources available to complete the checklist.
5. Use during Stage 3 to evaluate and select the project option with the least environmental risk/constraint.
6. Complete the simple action plan at the end of the EA for all issues that generate a positive or question mark (“?”) response.
7. Evaluate the probability of occurrence and the level of risk of each issue.
8. Be specific as to what actions are required to address the issues, and to control, prevent, and/or mitigate, the level of risk to an acceptable level.
 - Note: The listed “possible actions” are to be used as prompts and are not a complete listing of actions required to effectively manage the project environmental issues and risks. Generally if the response is “?”, the first action should be to collect more information or to revisit when the project becomes more defined.
 - Before undertaking any site investigation and/or surveys, consult with an Environment Specialist to ensure that the correct survey and level of effort is commissioned.
9. Specify where the actions will reside in the project documentation and the responsible parties for taking forward the actions.

- Depending on the complexity of the project and the significance of the environmental risks, the action plan will either be: carried into the safety risk log, project schedule/plan; combined with a Consent Strategy Plan, as a stand-alone Project Environment Strategy Plan (PESP); and/or in the Contractor Environment Management Plan.
 - Generally for smaller, less complex, low- to medium-risk projects, a stand-alone PESP will not be required, as long as the actions are sufficiently detailed and managed through the other project and document processes.
 - For larger, complex and higher risk projects, particularly where a compulsory or significant land purchase is required, the project covers a substantial area of the network and/or generates a number and wide variety of environmental issues, it is recommended that a dedicated Environmental specialist is appointed and a stand-alone PESP is prepared.
 - Consult with the Territory Environmental Specialist/HQ Environment Team if in doubt.
10. Review the EA/Action Plan as the project develops through the GRIP design stages and/or if the project design is modified.
- Note: Environmental and project information may not be available, or is limited particularly in the early stages of Project design and engineering. The checklist should be completed as much as possible in GRIP stage 2-3. As the project becomes more defined and more information becomes available through subsequent GRIP stages, the EA and action plan should be reviewed and updated at each GRIP Stage until handover to the Contractor, or the project issues are managed through the PESP.
11. Provide a copy to the Environment Specialist for review.
12. Retain the completed checklist in the project files and provide a copy to the Programme HSEQ Manager.

HOW TO USE THE ENVIRONMENTAL APPRAISAL CHECKLIST



ENVIRONMENTAL APPRAISAL

Introduction

1. Project Name: Cambridge Science Park Station Interchange
2. Address/Location: Chesterton Sidings
3. Project Manager: Victor Franciso-Suarez
4. GRIP Stage: Single Option Development (Stage 4)

Purpose

The purpose of this document is to identify potential environmental issues and risks that may arise during the design and construction of Cambridge Science Park Station Interchange and to ensure that actions are undertaken to manage these aspects.

GENERAL RISKS/ENVIRONMENTAL CONSTRAINTS

NOTE: IF CHECKED “YES”, BEST TO EVALUATE WHETHER THE PROJECT/SITE AND/OR ACTIVITIES CAN BE MOVED TO AVOID THE NEED TO ADDRESS THESE ENVIRONMENTAL RISKS/CONSTRAINTS.

	Information Sources	Environmental Considerations and Risks	Yes	?	No	Possible action (but not limited to)	Comments
1.	General Risks						
1.1	Project Description, Town Planning/ Infrastructure, Liabilities/ Operational Surveyor Teams, MARLIN	Does land or land rights (easements/way leaves/permanent – temporary site compounds, etc.) need to be purchased? Note: even if works are within permitted development (PD) rights there may be restrictions as to what activities are allowed (e.g. vegetation clearance during nesting season).			No	<ul style="list-style-type: none"> • Seek advice from Town Planning/Property/ Environment/Community Relations Teams and consult with external stakeholders/ local authorities (LA) where necessary • Site investigation/ surveys • Obtain consent (TWA Order/ planning permission/ area land rights) if required • Specify protective measures in design/contract/construction requirements • Develop a Consent/ Environment/ Communication Strategy plan as required 	The land is currently owned and will remain under the ownership of Network Rail.
1.2	Project Description, Town Planning/ Infrastructure, Liabilities/ Operational Surveyor Teams, MARLIN, RAR, Utility Diagrams	Is the land leased out or are there 3 rd party interests or onsite utilities, telecommunication, etc.)?	Yes				Obtain more information and consult with any affected parties.

	Information Sources	Environmental Considerations and Risks	Yes	?	No	Possible action (but not limited to)	Comments
1.	General Risks						
1.3	Town Planning Team	Does the acquisition or lease of the land change the status of the land?	-	-	No		N/A
1.4	Project Description, MARLIN, Town Planning Team	Is land that may need to be purchased/leased contaminated or a licensed waste facility?			No		Land may be contaminated, but it does not have to be purchased or leased as it already belongs to Network Rail.
1.5	Town Planning Team	Does the project require Transport and Works Act (TWA) order/planning permission or similar?	Yes				As part of the Transport and Works Act Order for the Busway (2005), rights to extend the Busway across Milton Road and along the former St. Ives Branch Line were given in anticipation of the new station proposals for what was then Chesterton sidings. These rights will be exercised as part of this development proposal enabling Busway services to access the station forecourt directly from Milton Road on a section of new route.

	Information Sources	Environmental Considerations and Risks	Yes	?	No	Possible action (but not limited to)	Comments
1.	General Risks						
1.6	Town Planning/ Environment/ Community Relations Teams	Has the Local Planning Authority or any other Statutory Body expressed concern over the project or similar projects?			No		No concerns have been raised relating to the development.
1.7	Town Planning/ Community Relations/ Environment Teams	Have residents or any other interest group indicated concern over the project or similar projects? Note: even if the works are within PD rights and are common activities, e.g. vegetation/tree clearance, this may still be sensitivity for stakeholders.			No		Public consultation carried out and no interest groups have expressed concerns.
1.8	Town Planning Team/local authority	Are there any local plans/development proposals of land adjacent to/near the project that may have future ramifications on the project?			No		CCiC and SCDC are currently preparing an Area Action Plan for the Northern Fringes. Both councils have had extensive consultation during the development of the proposals and as such no negative impacts are expected from future development of the wider Chesterton Sidings site.

	Information Sources	Environmental Considerations and Risks	Yes	?	No	Possible action (but not limited to)	Comments
1.	General Risks						
1.9	Project Description	Are there new or unusual features associated with the project that may become an issue with internal/external stakeholders e.g. tall masts, incompatible features with existing Network Rail structures?			No	Design aspects: include in/modify design/incorporate mitigation measures e.g. landscape buffer areas	Development will entail new features but these will not be incompatible with the surroundings.
1.10	Guidance from Asset steward/ other Network Rail departments	Any relevant Network Rail policies (such as TWA/planning process)/conditions that may require derogation (e.g. siting issues: substations next to telecommunication masts) or adjacent Network Rail projects?			No		N/A
2	Environmental Constraints						
2.1	Project Description, MARLIN, RAR, site investigation	Does the local environment constrain the project e.g.:				<ul style="list-style-type: none"> Design aspects: include in/modify design/incorporate mitigation measures e.g. raised ground levels 	
		Flood plain?			No		Adjacent land has increased flood risk. The design will include measures to mitigate against flooding
		Flooding?		?			No steep slopes that affect the site
		Landslide?			No		Good access
		Difficult access (e.g. steep embankment)?			No		Rats may be present on site
		Other (specify e.g. pests such as rabbits)?		?			

ENVIRONMENTAL ISSUES

	Information Sources	Environmental Implications and Risks	Yes	?	No	Possible action (but not limited to)	Comments
3	AGRICULTURE /FORESTRY/VEGETATION MANAGEMENT						
3.1	MARLIN, BAP, Site survey	Does the project require taking good quality agricultural land, or affect any agriculture holding (e.g. severance)?			No	<ul style="list-style-type: none">Design aspects: include in/modify design/incorporate mitigation measures e.g. retaining vegetation where possible	-
3.2		Does the project need to clear vegetation or trees on railway land or access routes?	Yes				Preliminary vegetation clearance carried out and additional vegetation clearance to be carried out during construction.
3.3		Does the project need to remove hedgerows?			No		N/A
3.4	MARLIN, BAP, HERITAGE, Town Planning/ Environment Teams	Will the project need to remove, trim, cut trees under Tree Preservation Order (TPO) or in local planning conservation areas?			No		Ecology survey did not identify any TPOs in the area
4	AIR QUALITY						
4.1	Project Description, MARLIN, Town Planning Team/	Will there be significant project activity that could generate large quantities of dust/noxious fumes or change the local air quality?	Yes			<ul style="list-style-type: none">Modify design/ incorporate mitigation measuresConsult with local authoritiesSpecify protective measures	Construction and demolition activities may generate a significant amount of dust or fumes
4.2	LA – (Environmental Health Officers)	Are there adjacent/nearby receptors: residences, businesses, schools, medical facilities, etc.?	Yes				Residences, properties and businesses, schools and Bramblefields LNR located within 350m of the Development

	Information Sources	Environmental Implications and Risks	Yes	?	No	Possible action (but not limited to)	Comments
4.3		Are there any local authority policy constraints (e.g. within/close to an Air Quality Management Area, breaching of government air quality objectives or limit values)?			No		-
5	BUILDING, STRUCTURES, HISTORIC ASSOCIATION						
5.1	MARLIN, RAR, HERITAGE, LA, Town Planning Team	Does the project affect a Listed Building, structure and/or Scheduled Ancient Monument; e.g. from piling, excavation, demolition, change of use, visual obstruction, potential for subsidence, cable attachments, bridge platforms?			No	<ul style="list-style-type: none"> • Seek advice from Town Planning • Consult with LA/Heritage Agencies 	Archaeological investigations carried out and no listed buildings identified within 50m of the proposed Development
5.2		Does the project affect a local planning Conservation Area, historic landscape features or similar designated area?			No		Archaeological investigation was undertaken and addressed the landscape character of the site. It was found that the site was not in an area of landscape interest.
5.3		Does the project affect any other historical or manmade feature likely to be of value?		?			Archaeological monitoring and recording to be done in conjunction with site works in order to identify any archaeological features of interest.

	Information Sources	Environmental Implications and Risks	Yes	?	No	Possible action (but not limited to)	Comments
6	CONTAMINATED LAND						
6.1	MARLIN, RAR, Contaminated land reports/ database, Railway Estates/ Environment team	Will the project disturb contaminated land?		?		<ul style="list-style-type: none"> • Seek advice from environment team • Consult with LA if remediation required • Specify protective measures. 	Localised areas of contamination were identified during the ground investigation and there is a potential for this to be disturbed during construction work.
6.2	MARLIN, RAR Contaminated land reports/ database, site survey, Railway Estates/ Environment team	Is the project site located adjacent to/near an externally owned (e.g. landfill/industrial site) or Network Rail potentially contaminated site or sidings?	Yes			<ul style="list-style-type: none"> • Seek advice from Environment Team • Seek alternative site • Site investigation • Specify protective measures, including possible remediation 	Site is located in redundant and operational sidings and could be contaminated from historical rail use. Localised areas of contamination have been identified on site.
6.3	Project Description, MARLIN, RAR	Will the project activities open up pathways (e.g. channels) from contaminated areas to environment/stakeholder receptors; e.g. SSSIs		?		<ul style="list-style-type: none"> • Seek advice from Environment Team • Design aspects: include in/modify design/ incorporate mitigation measures • Specify protective measures 	Localised areas of contamination are present and there is the potential for excavations to create pathways to receptors.

	Information Sources	Environmental Implications and Risks	Yes	?	No	Possible action (but not limited to)	Comments
6.4	Project Description	Will produced wastes/spent ballast likely to be contaminated?		?		<ul style="list-style-type: none"> • Seek advice from Environment Team • Site investigation/ sampling • Follow RT/LS/P/044 for used ballast and/or Special Waste requirements • Good management of soil stockpiles • 	Localised areas of hazardous waste were identified.
7	ECOLOGY (protected species/areas and invasive species)						
7.1	MARLIN, BAP, RAR, HERITAGE, Town Planning/ Environment Teams, site survey, LA BAP	Is the project site/access/staging areas/ compounds on/adjacent/nearby a statutory nature conservation site (e.g. SSSI, RAMSAR, SPA/SAC/cSAC/pSPA site) or other ecological designations?	Yes			<ul style="list-style-type: none"> • Seek advice from Environment Team • Site survey • Consult with local Conservation Agencies/LA • Design aspects: include in/ modify design/ incorporate mitigation measures • Obtain protected species license if required • Specify protective measures/follow site management plan (SMS) if SSSI • Train staff • Continue monitoring if required 	Bramblefields LNR is located within 100m of the development. Enhancement of the LNR is incorporated in to the design. Open mosaic habitat on site is to be retained where possible,
7.2	local conservation organisations	Will the activity (e.g. working in a culvert, drainage works) and/or materials used have the potential to indirectly affect the designation and/or a protected area (e.g. downstream SSSI water quality)?			No		Enhancement of the Bramblefields LNR is included as part of the design.
7.3		Are there any protected species and/or habitats e.g. bats, badgers, newts etc. at or near the project site?	Yes				Site included an open mosaic habitat (a UK BAP priority habitat) and protected species (reptiles, breeding birds, invertebrates and flora) were present.

	Information Sources	Environmental Implications and Risks	Yes	?	No	Possible action (but not limited to)	Comments
7.4	BAP, RAR, Site survey	Are there any invasive vegetation species (Japanese knotweed, Giant hogweed, etc.) at or near the project site?	Yes			<ul style="list-style-type: none"> • Site investigation • Enabling works for removal • Specify protective measures 	Crassula helmsii identified in existing pond in Bramblefields LNR. Jersey Cudweed was not identified during the surveys however was recorded historically in the area.
8	LANDSCAPE/TOWNSCAPE/VISUAL						
8.1	Desk Study, Aerial photographs, Maps, Site surveys, consultation with planning authorities	Is the site at/near or can be seen from a National Park/World Heritage Site/Area of Outstanding Natural Beauty (AONB)/local landscape/coastal/townscape designation?			No	<ul style="list-style-type: none"> • Design aspects: include in/ modify design/ incorporate mitigation measures (e.g. restoration plan) • Specify protective measures 	N/A
8.2		Will the visual amenity of lineside residents be affected; e.g. removing vegetation, erecting new/taller structures than existing surroundings, demolition in Conservation Areas?	Yes				Removal of vegetation and new structures will have an effect however there will be an overall strengthening of the landscape features as a result of the development. Temporary minor harmful effect of construction on the landscape character of the area. Permanent minor harmful effect on properties at western side of Development.
8.3		Will new structures/project components obstruct visual amenity of dwellings/recreational areas/cultural heritage/conservation areas?			No		-
8.4		Will grading and vegetation removal with subsequent landscaping be required?	Yes				Vegetation removal and landscaping incorporated in to the design.

	Information Sources	Environmental Implications and Risks	Yes	?	No	Possible action (but not limited to)	Comments
9	NUISANCE: NOISE, VIBRATION AND LIGHT						
9.1	Project Description, MARLIN	Will noise/vibration likely to increase from existing levels at site during construction?	Yes			<ul style="list-style-type: none"> • Design aspects: include in/modify design/incorporate mitigation measures • Neighbour letter drops/consultation • Specify protective measures • Train staff • Continue monitoring • Good working practices CEMP 	Noise assessment survey carried out. Increase minor and temporary
9.2		Will it affect?					
		Adjacent/nearby residences?	Yes				Increase will be minor and temporary and noise barriers are not required
		Adjacent/nearby businesses, worship, schools, hospitals, hotels etc.?	Yes				Light industry and commercial units and residences may experience temporary and minor effects during construction.
		Adjacent/nearby SPA/SAC, nesting birds, seasonal constraints?		?			Nesting birds may be present.
9.3		Will the project occur at night/weekend or public holiday (use of lights/noise)	Yes				It is likely that some works will take place at night as this is the only time they can take place.

	Information Sources	Environmental Implications and Risks	Yes	?	No	Possible action (but not limited to)	Comments
10	TRAFFIC GENERATION AND ACCESS						
10.1	Project Description	Will significant traffic (vehicular/heavy loads) particularly through villages and along farm/country roads be generated (Public Rights of Way)?		?		<ul style="list-style-type: none">• Consult local authorities/highways dept.• Design aspects: include in/modify design• Obtain Highways consent if required• Specify protective measures• Train staff	An increase in vehicular traffic to the site is likely during construction, but site is within an urban area, so additional traffic due to works likely to be insignificant.
10.2		Will the scheme result in new vehicular traffic flows? (Before and/or after)	Yes				Development includes a new bus lane and a new junction at Cowley Road/ Mitlon Road for highway access.
10.3		Will it cause new pedestrian movements? (Before and/or after)	Yes				New pedestrian routes are part of the design.
10.4		Any footpath, road closures/diversions required during construction?		?			Consult LA as soon as possible
10.5		Will parking outside railway land be required (e.g. on streets, on/near lineside neighbour's land)			No		Development will provide circa 450 car park spaces.
10.6		Are access points near adjacent properties (nuisance including noise)	Yes				Access points near properties
11	WATER RESOURCES, POLLUTION (including Silt) AND DRAINAGE						
11.1	Project Description, MARLIN, RAR, Surface water risk assessment model, Site	Is the project on/near/adjacent to a watercourse and drainage channels?	Yes			<ul style="list-style-type: none">• Site investigation• Consult with local Environment Agency/DEFRA for coastal/ marine/estuary areas• Design aspects: include in/	The River Cam is located approximately 50m from site.
11.2		Will the works occur within 8-m of the bank and/or in a designated main river			No		

	Information Sources	Environmental Implications and Risks	Yes	?	No	Possible action (but not limited to)	Comments
11.3	investigation	Will the project need to remove vegetation close to/on or in a riverbank?			No	modify/design to remove the need for a consent • Obtain work near watercourses, obstruction to watercourse, discharge to controlled waters and/or sewerage system, etc. consents if required • Specify protective measures (e.g. Site Drainage Plan, Emergency Incident Plan) • Continue monitoring • Train staff	
11.4		Is it likely to affect the flow of watercourses?			No		
11.5		Will works occur around a water source protection area or require abstraction of water from a well?			No		
11.6		Will works occur near marine waters, on coastal areas below mean high tide or affecting navigation?			No		
11.7		Will it generate a discharge either directly to a watercourse or to soakaway/ground; e.g. dewatering operation/discharge from a bund?	Yes				SUDS proposals being developed.
11.8		Will it generate a discharge to a foul sewer?	Yes				Identify suitable discharge points at detailed design stage.
11.9		Will waste/spoil be stockpiled, materials/chemicals/fuels/oils stored at site that could enter a watercourse, major aquifer underneath or on a flood plain?		?			SWMP will ensure efficient management of waste.
12	WASTE/SURPLUS MATERIAL						
12.1	Project Description/ Environment Teams	Will it generate large quantities of surplus material; i.e. spoil sleepers?	Yes			• Design aspects: include in/ modify design/ incorporate mitigation measures: reuse, recover, recycle • Specify protective measures	Large quantities of ballast will be generated. Surplus material will originate from other sources e.g. sleepers, rail, and spoil from other excavations and demolition.

	Information Sources	Environmental Implications and Risks	Yes	?	No	Possible action (but not limited to)	Comments
12.2		Can surplus material be reused (spares, spoil, etc.)?	Yes			(e.g. Waste Management Strategy/Plan) • Ensure that the surplus remains in the chain of utility and is not seen as “getting rid of”; a waste exemption if applicable may also be required, seek advice from Environment Team	It is anticipated that some surplus materials can be re-used where possible but this needs to be determined. Some material can be recycled; however some material will have to be disposed off-site given the likely volumes to be produced.
12.3		Will onsite disposal or land purchase be required?			No	• Specify protective measures • Obtain consent if required/ follow hazardous waste regulations	Waste material will be disposed offsite.
12.4		Will it generate special wastes; e.g. oil, paint cans, contaminated land?		?		• Specify protective measures (e.g. Waste Management/ Strategy Plan)	Localised hazardous waste containing asbestos was identified. Demolitions and excavations could generate hazardous waste.

	Information Sources	Environmental Implications and Risks	Yes	?	No	Possible action (but not limited to)	Comments
13	SUSTAINABILITY: ENVIRONMENTAL OPPORTUNITIES						
13.1	Project Description/ Environment Team	Can recycled/reclaimed materials such as sleepers/ballast/spoil/cables be used instead of raw materials?		?		<ul style="list-style-type: none"> Modify design/contract/ construction strategy to capitalise on opportunities 	Possibly. Needs to be determined in GRIP 5 detailed design stage.
13.2		Can energy/water efficiency be gained through building design/supply chain?		?			Water efficiency needs to be determined. Would require information on suppliers. Station building design is to include two sources of renewable/low carbon technology.
13.3		Can work be performed in parallel with another project reducing wastage, duplication and redundancy of materials, timing and resources?		?		<ul style="list-style-type: none"> Modify design/contract/ construction strategy to capitalise on opportunities 	Possibly. Needs to be determined.
13.4		Can effluents and discharges be minimised?	Yes				Small amounts of water used on site for making cement. Concrete will be supplied in bulk and mixed off site.
13.5		Can potentially polluting materials be replaced with less harmful materials (e.g. biodegradable oils)?		?			Polluting materials such as engine oil will be present on site however mitigation measures to prevent pollution are detailed in the CEMP
13.6		Are there other areas where environmental and sustainable benefits can be gained; such as				<ul style="list-style-type: none"> Modify design/contract construction strategy to capitalise on opportunities 	
13.7		Positive communication/interactive consultation with lineside neighbours/other stakeholders?	Yes				Public consultation already carried out.

	Information Sources	Environmental Implications and Risks	Yes	?	No	Possible action (but not limited to)	Comments
13.8		Innovative environmental designs/methods of work?	Yes				New buildings provide scope for innovative designs.
13.9		Positive contribution to habitats/protected species?	Yes				Protection of existing habitats where possible and enhancement of Bramblefields LNR are part of the design.
13.10		Other (specify on action log)?		?			This will be determined at detailed design stage.

	Information Sources	Environmental Implications and Risks	Yes	?	No	Possible action (but not limited to)	Comments
14	OTHER						
14.1	Project Description/ Environment Team	Are there any other possible environmental effects specific to this project? If so list them: e.g. electro-magnetic effects, settlement, local issues/policies		?			None identified at present. Any other issues may be determined at future stages of the project.

ACTION PLAN

Note: For each positive or “?” response, the issue must be taken forward into the action plan for further management with the specific actions required, the responsible party for that action, and the start and target completion dates identified. Evaluating the probability and the significance of the risk will assist to prioritise the issues and identify areas with unacceptable risk that will need to be eliminated, reduced and/or controlled.

ISSUE	PROBABILITY OF OCCURRENCE ¹			LEVEL OF RISK ²			ACTIONS TO BE TAKEN ³	RESPONSIBLE PARTY(IES)	START DATE	TARGET COMPLETION
	Low	Medium	High	Low	Medium	High				
1.2 Is the land leased out or are there 3 rd party interests or onsite utilities, telecommunication, etc.)?			High		Medium		Obtain more information (e.g. utilities plans) and liaise with Network rail regarding the lease of the land.	Design Engineers CCC	GRIP 4	GRIP 6
1.5 Does the project require Transport and Works Act (TWA) order/planning permission or similar?			High	Low			Rights to extend the busway already given, no actions needed.	N/A	N/A	N/A
2.1 Does flooding constrain the project?	Low				Medium		Incorporate measures to mitigate against flooding in to design.	Design Engineers	GRIP 4	GRIP 6

ISSUE	PROBABILITY OF OCCURRENCE ¹			LEVEL OF RISK ²			ACTIONS TO BE TAKEN ³	RESPONSIBLE PARTY(IES)	START DATE	TARGET COMPLETION
2.1 Rats			High		Medium		Ensure Principal Contractor aware of risks and that appropriate precautions are incorporated in to the CEMP and site works risk assessment (i.e. PPE, hygiene).	Principal Contractor	GRIP 6	Completion of site works
3.2 Does the project need to clear vegetation or trees on railway land or access routes? (Nesting Birds)			High		Medium		Design should aim to minimise vegetation clearance. Carry out works out side of the bird breeding season (which runs from 1st February to 1st September) or undertake a check for nests immediately prior to any vegetation clearance. An ecological management plan will be provided by the contractor.	Design Engineer Principal Contractor	GRIP 4 GRIP 6	GRIP 6 Completion of site works
4.1 Will there be significant project activity that could generate large quantities of dust/noxious fumes or change the local air quality?		Medium			Medium		Design should consider this in relation to the construction methods that are specified or implied. Construction should proceed with due care, and a strategy to minimise dust and fumes nuisance should be specified in the CEMP.	Design Engineer	GRIP 4	GRIP 6

ISSUE	PROBABILITY OF OCCURRENCE ¹			LEVEL OF RISK ²			ACTIONS TO BE TAKEN ³	RESPONSIBLE PARTY(IES)	START DATE	TARGET COMPLETION
4.2 Are there adjacent/nearby receptors: residences, businesses, schools, medical facilities, etc.?			High	Low			Construction should proceed with due care, and a strategy to minimise nuisance to lineside neighbours should be specified in the CEMP.	Principal Contractor	GRIP 6	GRIP 6
5.3 Does the project affect any other historical or manmade feature likely to be of value?	Low				Medium		Archaeological monitoring and recording to be done in conjunction with site works in order to identify any archaeological features of interest.	Principal Contractor	GRIP 6	GRIP 6

ISSUE	PROBABILITY OF OCCURRENCE ¹			LEVEL OF RISK ²			ACTIONS TO BE TAKEN ³	RESPONSIBLE PARTY(IES)	START DATE	TARGET COMPLETION
6.1 Will the project disturb contaminated land?			High		Medium		<p>Contamination Specialist to be on site during intrusive works. Maintain vigilance when excavating material. If visual or olfactory evidence of contamination encountered, Engineer should be notified immediately</p> <p>Excavations should proceed with due care, and a strategy to minimise impacts from contaminated land should be specified in the CEMP</p> <p>Include information on contaminate land in Risk Assessment and ensure all site staff wear appropriate PPE.</p>	Principal Contractor	GRIP 6	Completion of site works
6.2 Is the project site located adjacent to/near an externally owned (e.g. landfill/industrial site) or Network Rail potentially contaminated site or sidings?			High		Medium					
6.3 Will the project activities open up pathways (e.g. channels) from contaminated areas to environment/stake holder receptors; e.g. SSSIs		Medium				High				
6.4 Will produced wastes/spent ballast likely to be contaminated?		Medium			Medium					

ISSUE	PROBABILITY OF OCCURRENCE ¹			LEVEL OF RISK ²			ACTIONS TO BE TAKEN ³	RESPONSIBLE PARTY(IES)	START DATE	TARGET COMPLETION
7.1 Is the project site/access/staging areas/ compounds on/adjacent/nearby a statutory nature conservation site (e.g. SSSI, RAMSAR, SPA/SAC/cSAC/p SPA site) or other ecological designations?			High	Low			Design should consider this in relation to the construction methods that are specified or implied. Brief consultation should be undertaken to determine the nature of the site and hence its vulnerability to works. Precautionary method of working (PMW) should be drafted by an ecologist for any design stage works that will entail disturbance of the local ecology.	Design Engineers	GRIP 4	GRIP 5
7.3 Are there any protected species and/or habitats e.g. bats, badgers, newts etc. at or near the project site?			High		Medium		Pre-construction site walkovers should be conducted in order to identify any changes to the local ecology and construction should proceed with care. A strategy address issues should be specified in the CEMP.	Design Engineers Principal Contractor	GRIP 4 GRIP 6	GRIP 6 Completion of site works

ISSUE	PROBABILITY OF OCCURRENCE ¹			LEVEL OF RISK ²			ACTIONS TO BE TAKEN ³	RESPONSIBLE PARTY(IES)	START DATE	TARGET COMPLETION
7.4 Are there any invasive vegetation species (Japanese knotweed, Giant hogweed, etc.) at or near the project site?			High		Medium		Invasive species to be removed by specialists following the environment agency protocol.	Principal Contractor	GRIP 6	Completion of site works
8.2 Will the visual amenity of lineside residents be affected; e.g. removing vegetation, erecting new/taller structures than existing surroundings, demolition in Conservation Areas?			High	Low			Design should consider this and seek to minimise and mitigate against adverse effects e.g. landscape buffer	Design Engineers	GRIP 4	GRIP 6
8.4 Will grading and vegetation removal with subsequent landscaping be required?			High	Low						

ISSUE	PROBABILITY OF OCCURRENCE ¹			LEVEL OF RISK ²			ACTIONS TO BE TAKEN ³	RESPONSIBLE PARTY(IES)	START DATE	TARGET COMPLETION
9.1 Will noise/vibration likely to increase from existing levels at site during construction?			High		Medium		Design should seek maximum buildability in order to minimise the time and effort required on site to complete the works, also with reference to construction methods that could affect how noisy the works are.	Design Engineers	GRIP 4	GRIP 6
9.2 Will it affect Adjacent/nearby residences, businesses, worship, schools, hospitals, hotels etc, SPA/SAC, nesting birds, seasonal constraints?			High		Medium		Works should be scheduled during day time and week days if possible. CEMP should specify measures for minimising noise and vibration levels. Need for Section 61 Consent should be investigated.	Principal Contractor	GRIP 6	Completion of site works
9.3 Will the project occur at night/weekend or public holiday (use of lights/noise)			High		Medium					
10.1 Will significant traffic (vehicular/heavy loads) particularly through villages and along farm/country		Medium			Medium		Design should seek efficient use and reuse of materials in order to minimise vehicle journeys required to transport material to and from site.	Design Engineer	GRIP4	GRIP 6

ISSUE	PROBABILITY OF OCCURRENCE ¹			LEVEL OF RISK ²			ACTIONS TO BE TAKEN ³	RESPONSIBLE PARTY(IES)	START DATE	TARGET COMPLETION
roads be generated (Public Rights of Way)?							CEMP should include a traffic management plan.	Principal Contractor	GRIP 6	Completion of Development
10.2 Will the scheme result in new vehicular traffic flows? (Before and/or after)			High	Low			Design should consider how the new highway access will affect current traffic movements in the area and seek to reduce congestion.	Design Engineers	GRIP 4	GRIP 6
10.3 Will it cause new pedestrian movements? (Before and/or after)			High	Low			Design will need to address new pedestrian movements.	Design Engineers	GRIP 4	Completion of Development
10.4 Any footpath, road closures/diversions required during construction?		Medium			Medium		Consultation with the local authority will be necessary when more information becomes available CEMP should include a traffic management plan.	Principal Contractor	GRIP 6	Completion of Project
11.1 Is the project on/near/adjacent to a watercourse and drainage channels?			High	Low			Design should consider how the new development will affect the existing watercourses and drainage channels. A SUDS is to be incorporated in to the design which should seek to improve water quality and drainage at the site.	Design Engineers	GRIP 4	GRIP 6
11.7 Will it generate a discharge either			High	Low						

ISSUE	PROBABILITY OF OCCURRENCE ¹			LEVEL OF RISK ²			ACTIONS TO BE TAKEN ³	RESPONSIBLE PARTY(IES)	START DATE	TARGET COMPLETION
directly to a watercourse or to soakaway/ground; e.g. dewatering operation/discharge from a bund?							Minimise use of water and ensure discharges are minimised.	Principal Contractor	GRIP 6	Completion of site works
11.8 Will it generate a discharge to a foul sewer?			High	Low			Obtain relevant consents when designs are finalised.	Design Engineers	GRIP 4	GRIP 6
11.9 Will waste/spoil be stockpiled, materials/chemicals/fuels/oils stored at site that could enter a watercourse, major aquifer underneath or on a flood plain?		Medium		Low			Design should seek to minimise the number of excavations necessary. CEMP and SWMP should detail storage of waste materials in order to reduce the likelihood of adverse impacts to the water environment.	Design Engineers Principal Contractor	GRIP 4 GRIP 6	GRIP 6 Completion of site works
12.1 Will it generate large quantities of surplus material; i.e. spoil sleepers?			High			High	Minimise amount of materials that will be generated.	Design Engineers	GRIP 4	GRIP 6

ISSUE	PROBABILITY OF OCCURRENCE ¹			LEVEL OF RISK ²			ACTIONS TO BE TAKEN ³	RESPONSIBLE PARTY(IES)	START DATE	TARGET COMPLETION
12.2 Can surplus material be reused (spares, spoil, etc.)?			High	Low			Seek possible alternative uses of these materials other than disposal. Consideration should be given to reuse materials in design.	Design Engineers	GRIP 4	GRIP 6
12.4 Will it generate special wastes; e.g. oil, paint cans, contaminated land?			High	Low			Follow hazardous waste regulations. Specify actions for contaminated material in CEMP and SWMP.	Design Engineers	GRIP 4	GRIP 6
13.1 Can recycled/reclaimed materials such as sleepers/ballast/spoil/cables be used instead of raw materials?		Medium		Low			Reuse of materials should be considered during design stages and in the SWMP.	Design Engineers	GRIP 4	GRIP 6
13.2 Can energy/water efficiency be gained through building design/supply chain?		Medium		Low			Seek ways of reducing the amount of energy required for the works, including procurement of materials.	Design Engineers	GRIP 4	GRIP 6

ISSUE	PROBABILITY OF OCCURRENCE ¹			LEVEL OF RISK ²			ACTIONS TO BE TAKEN ³	RESPONSIBLE PARTY(IES)	START DATE	TARGET COMPLETION
13.3 Can work be performed in parallel with another project reducing wastage, duplication and redundancy of materials, timing and resources?	Low			Low			Explore ways in which works could be carried out in conjunction with neighbouring works to facilitate economies of scale or re-use of materials.	CCC Principal Contractor	GRIP 4	GRIP 6
13.4 Can effluents and discharges be minimised?		Medium		Low			Minimise use of water and ensure discharges are minimised.	Principal Contractor	GRIP 6	GRIP 6
13.5 Can potentially polluting materials be replaced with less harmful materials (e.g. biodegradable oils)?		Medium		Low			Where viable, use more environmentally friendly products. Consider in design.	Design Engineers	GRIP 4	GRIP 6
13.7 Positive communication/interactive consultation with lineside neighbours/other stakeholders?			High	Low			Employ a pro-active approach.	CCC	Start of project	Completion of project
13.8 Innovative environmental designs/methods of work?		Medium		Low			New buildings provide scope for innovative designs.	Design Engineers	GRIP 3	GRIP 6

Note: The Environmental Appraisal and Action Plan should be reviewed through the GRIP design stages and/or if the project design is modified

¹ Probability	² Risk
Low: Unlikely to occur during the lifetime of the project Medium: Can be expected to occur High: Almost certain to occur	Low: Unlikely to affect to cost or schedule of the programme Medium: Fairly likely to affect the cost or schedule of the programme High: Almost certain to have a significant adverse impact on the project
³ Actions to be Taken: Be specific in what, where, how and who	
1. Carry Actions forward in <ul style="list-style-type: none"> • Safety risk log • Safety and Environment Strategy Plan/ Other Project Documents • Project Environment Strategy Plan • RT/LS/S/015 – CR-E Checklist 	2. Undertake more detailed assessment work/site investigation 3. Consult with affected parties and/or statutory authorities 4. Obtain environmental consents/permissions 5. Modify design to reduce or mitigate impact 6. Specify environmental protective measures within EMP to mitigate during construction

Appendix D: Consent Summary

Possible Consent Needed for Project Work	Responsible Agency
TWA Order for compulsory purchase of land	Planning Authority
Planning permission from local authorities (Town and Country Planning Act 1990). Prior Approval or Permitted Development	Local Planning Authority
Heritage	
Consent to disturb a scheduled ancient monument (Ancient Monument and Archaeological Areas Act 1979)	Secretary of State/Local Planning Authority
Listed Buildings/Conservation Area (Town and Country Planning Act)	Planning Authority
Trees and Ecology	
Work affecting Tree Preservation Orders, which offer legal protection to trees (Town and Country Planning (Trees) Regulations 1999)	Local Planning Authority
Licence for felling timber (Forestry Act 1967)	Local Planning Authority
Works affecting Important Hedgerows (Hedgerow Regulations 1997)	Local Planning Authority
Licence for disturbance to badgers (Protection of Badgers Act 1992)	DEFRA
Other wildlife consents required for works affecting protected species e.g. great crested newts, bats	EN/SNH/CCW; DEFRA
Noise and Vibration	
Section 61 consent on nuisance (noise) during construction (under the Control of Pollution Act 1974)	Local Authority – Environment Health Officer
Traffic Generation and Access	
Highways stopping/diversion consent (including temporary closures) (Highways Act 1980)	Highways authority

Vehicle crossing consents (Highways Act 1980)	Highways Authority
Water Resources (quality and hydrology)	
Consent for works over, under or adjacent to designated main rivers (Land Drainage Act /Water Resources Act 1991)	Environment Agency
Works affecting flow/structures in watercourse or navigation (Land Drainage Act 1991)	Environment Agency
Works around water source protection area (Water Resources Act 1991)	Environment Agency
Consent for works within 8m of a watercourse (Land Drainage bylaws)	Local Planning Authority
Water abstraction license (Water Resources Act 1991)	Environment Agency
Consent for dewatering/discharge of water from excavations (Land Drainage Act 1991)	Environment Agency
Consent for discharge to controlled water and/or groundwater (Water Resources Act 1991/Groundwater Regulations)	Environment Agency
Water Authority Consent to discharge to foul sewer (Water Industries Act 1991)	Sewerage undertaker/ Environment Agency
Consent for works in coastal areas and marine waters (Coastal Protection Act 1949/Harbours Act 1964)	Marine Consents & Environment Unit (DEFRA)/Local Harbour Authority
Waste Management	
Waste management licences under the Waste Management Licensing Regulations 1994	Environment Agency

Consent Requirement	Approximate Time Period to Obtain Licence/ Consent and Implement (weeks)	Possible Requirements for these works
TWA Order for compulsory purchase of land	18 months minimum	N
Consent to build on land i.e. planning permission	12	Y
Local authority agreement for works under Part 11 or 13 of the Town and Country Planning GPDO (known as permitted rights)	12	?
HERTIAGE		
Listed building consent	12	N
Scheduled Ancient Monument Consent (AAI)	6	N
Conservation Area Consent	12	N
Area of Archaeological Importance Consent	6	N
ECOLOGY / TPOs		
Consent from local authorities / English Heritage / Natural England for development affecting ecological or landscape designations	12	N
Licence for badger set closure from DEFRA	(Seasonal – 6 months)	N
Licences for otter holt removal from DEFRA	(Seasonal – 6 months)	N
Licence for bat roost closure	(Seasonal – 6 months)	?
Agreement to move or affect legally protected species e.g. great crested newts, nesting birds	(Seasonal – 6 months)	?
TRAFFIC GENERATION AND ACCESS		

Highways Authority consent for structures over (or adjacent to) roads	12	?
Highways Authority consent for road closures (including temporary road closures)	24	?
Agreement with landowners for temporary access/occupation of land	4	?
Powers to change other people's rights over land e.g. footpath diversions	12	?
WATER RESOURCES		
Environment Agency consent for works on a floodplain	12	N
Environment Agency consent (Land Drainage) for works within 8m of a watercourse	12	N
Discharge consent (Environment Agency)	12	?
Water Abstraction Licence (Environment Agency)	12	?
WASTE MANAGEMENT		
Waste Storage Regulations (Duty of Care/Hazardous Waste)	2	?
NOISE AND VIBRATION		
Section 61 COPA 1974 agreements with the local authority on the level of site noise during construction	8	?

GLOSSARY

Abbreviations

AONB	Area of Natural Beauty
BAP	Biodiversity Action Plan (plus accompanying guidance sheets/toolkits)
CR-E	RT/LS/S/015 Network Rail Contract Requirements, Environment
cSAC	Candidate Special Areas of Conservation
EA	Environmental Appraisal
EHO	Environmental Health Officer
EMP	Environment Management Plan
GRIP	Guide to Railway Investment Projects
HERITAGE	Network Rail-wide database of protected land and/or buildings
LA	Local Authority
LNR	Local Nature Reserve
MARLIN	Network Rail-wide property Geographical Information System
NDS	National Delivery Service
PD	Permitted Development
PSPA	Potential Special Protection Area
RAMSAR Site	Wetlands of International Importance Designation

RAR	Railtrack Asset Register
SAC	Special Areas of Conservation
SMS	Site Management Statement
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TPO	Tree Preservation Order
TWA	Transport and Works Act

Statutory Agencies

Environment Agencies	Environment Agency for England and Wales
Conservation Agencies	Department of Environment, Food and Rural Affairs (DEFRA) English Nature (EN)
Heritage Agencies	English Heritage Welsh Heritage Agency (CADW)

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