Land North of Cherry Hinton
Outline Construction and Environmental Management Plan

On behalf of Marshall Group Properties and Endurance Estates
Document Control Sheet

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For and on behalf of Peter Brett Associates LLP

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This report has been prepared by Peter Brett Associates LLP (‘PBA’) on behalf of its client to whom this report is addressed (‘Client’) in connection with the project described in this report and takes into account the Client’s particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which PBA was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). PBA accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

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1 Introduction

1.1 Background

1.1.1 Peter Brett Associates LLP (PBA) has been appointed by Marshall Group Properties and Endurance Estates (representing the White family, landowners) and (herein ‘the Applicant’) to prepare an Outline Construction and Environmental Management Plan (CEMP) to support the outline planning application for the development of the Land North of Cherry Hinton, Cambridge.

1.1.2 This document provides a framework which governs the construction works associated with the proposed development of the Land North of Cherry Hinton for all contractors. It sets out, in broad terms, methods to avoid, minimise and mitigate construction effects on the environment.

1.1.3 This Outline CEMP is an active document and will require updating at key milestones. During the construction works, there may be changes in working practices, plant and equipment that should be used and also new regulatory requirements. Therefore, this Outline CEMP should be reviewed periodically through the life of the project. Ongoing reviews will allow the Outline CEMP to be renewed and updated as necessary.

1.1.4 This Outline CEMP will be passed onto the Principal Contractor, once appointed, to review, implement and audit a Detailed CEMP.

1.2 Purpose of this Document

1.2.1 A CEMP is the lead environmental management document that defines the procedures for achieving the objectives set out in relevant environmental policy, best practice and identified environmental performance targets for the project.

1.2.2 This Outline CEMP has been prepared to set out the environmental issues and management procedures to be adopted during the construction works on site to help control potential adverse impacts to the environment and the local community. This document has also considered the potential impact of construction on Cambridge Airport and identified measures required to mitigate potential construction effects which could impact its operation.

1.2.3 This Outline CEMP will help guide the Principal Contractor(s) in being aware of the environmental issues that could affect the contract.

1.2.4 The Outline CEMP has been prepared on the basis of the Environmental Impact Assessment (EIA) undertaken in relation to the proposed development and documented in the Environmental Statement (ES) (LDA, 2018), as well as additional technical work such as the Lighting Assessment.

1.2.5 The EIA and supporting technical documents which have been used to inform the CEMP have considered relevant local policy requirements in relation to construction impacts associated with each discipline.

1.2.6 The ES identifies the construction mitigation measures that should be implemented to enable the environmental effects of the proposed development to be acceptable. Such construction mitigation measures, along with national and local requirements and policy with regards to construction, have been included in this Outline CEMP to enable measures to be implemented into the construction of the proposed development.

1.2.7 The Principal Contractor should comply, as a minimum, with applicable environmental legislation at the time of construction. For this reason, the applicable statutory requirements are not repeated within this Outline CEMP. Further guidance on specific areas, such as soil handling and dust management, will be considered from industry best practice guidance
documents as set out in each discipline section. The references to guidance documents within this document are not intended to be exhaustive.

1.2.8 In summary, the objectives of this Outline CEMP are to:

- Minimise (eliminating where practicable) the adverse environmental effects of the construction of the proposed development;
- Document the environmental controls to be adopted during construction;
- Enable agreement with the relevant approval authorities on mitigation measures to be adopted during construction; and
- Provide a framework for contractors to manage construction impacts.

1.3 Structure of CEMP

1.3.1 This CEMP covers a range of topics relating to the identification and management of potential environment effects of construction. These topics are:

- Visual Considerations;
- Ecology and Nature Conservation;
- Transport;
- Air Quality;
- Noise;
- Lighting;
- Protection of Historic Features;
- Water Resources;
- Contamination and Ground Conditions;
- Waste and Materials Management; and
- Consideration for Others and the Environment.

1.3.2 Each of these topics is covered by individual Sections 4 to 14 that consider the general issues for construction, potential impacts, mitigation of these impacts and topic-specific legal compliance.

1.3.3 Section 2 of this CEMP provides a description of the site and its location, along with a summary of the proposed development.

1.3.4 Section 3 discusses general site management issues that relate to good practice in environmental site management, including:

- Roles and responsibilities;
- Communications and training;
- Emergency and incident planning; and
- Monitoring and reporting.

1.4 Update of CEMP

1.4.1 The CEMP should be reviewed periodically throughout the life of the project. Review will help enable the CEMP to be renewed and updated as necessary, adapting to any changes in legislation, working practice, etc.

1.4.2 A site specific CEMP will be provided for approval as part of any future reserved matters application and will accord with measures presented in this Outline CEMP as appropriate.
2 Site Location and Proposed Development

2.1 Site Location

2.1.1 The site comprises 55.9 hectares of land to the east of Cambridge. The site is located within the administrative boundaries of both boundaries of Cambridge City Council (CCiC) and South Cambridgeshire District Council (SCDC). The red line boundary is presented in Figure 2.1 below.

![Figure 2.1: Land North of Cherry Hinton Read Line Boundary](image)

2.1.2 The site is located to the north of Coldhams Lane, and to the north of the residential suburb of Cherry Hinton; bordering dwellings along Teversham Drift, March Lane, Reilly Way and Church End. The eastern boundary of the site is formed by Cherry Hinton Road / Airport Way. To the west and north-west of the site is Cambridge International Airport. The area north of the site is in agricultural use. The village of Teversham is located immediately to the north east of the site.

2.1.3 The site comprises large open arable fields, some of which are bounded by fragmented mature and semi-mature hedgerows and scattered hedgerow trees. The western extents of the site consist of airport land, which is open managed grassland. The land is generally flat, rising very slightly to the centre of the site and consists of Grade 2 and 3b quality agricultural land. There is an existing building (known as Glider blister, Building ‘B’) associated with the Airport activities located in close proximity to the Site boundary, which is connected by a track to the main Airport facilities. A public footpath that connects Teversham and Cherry Hinton, crosses the Site in a south to north direction.

2.1.4 An unnamed watercourse flows south to north through the centre of the site and along the eastern boundary towards Teversham. The watercourse is defined by a number of existing...
trees, hedgerows and scrub. Two shallow ditches fed into the watercourse from the west of the site.

2.1.5 There are three ecological designations located along the site boundary:
- Teversham Drift Hedgerow (City Wildlife Site);
- Airport Way Roadside Verge (County Wildlife Site); and
- Teversham PRV S38 (Protected Road Verge).

2.2 Proposed Development

2.2.1 The proposal is for an outline planning application with all matters (appearance, landscaping, layout and scale) reserved for future determination, except for the primary access junctions. The Proposed Development comprises:
- A mixed use residential led scheme providing a maximum of 1,200 dwellings (Class C3);
- Potential retirement living facility; up to 90 bed spaces (Class C2/C3 within 1,200 above);
- Local centre; up to 1,850 sqm floorspace (Use Class A1/A2/A3/A4/A5/B1a/D1/D2 flexible units – of which a food store will not be more than 500 sqm);
- Community hall (Class D2); up to 250 sqm (within 1,850 sqm above);
- Primary School 2 Form Entry (FE);
- Secondary School 6 FE;
- New primary access street from Cherry Hinton Road to Coldhams Lane (that passes through the local centre), as well as other access routes;
- Pedestrian, cycle and vehicle routes and parking; and
- Open space and landscaping; including pocket parks, play areas, playing fields, allotments, Sustainable Drainage System (SuDs) water features, and formal and informal open space.

2.2.2 The application is to be made based on a series of Parameter Plans and highway plans which are as follows and are presented in full in Figures 4.1- 4.8 of the ES:
- Drawing number: 2346 03/PP001 – Application Boundary;
- Drawing number: 2346 03/PP002 – Land Use;
- Drawing number: 2346 03/PP003 – Movement and Access;
- Drawing number: 2346 03/PP004 – Building Heights;
- Drawing number: 2346 03/PP006 – Landscape and Green Infrastructure;
- Drawing number: 2346 03/PP007 – Urban Form;
- Drawing number: 37305/5501/001 – Junction 1 Airport Way / Cherry Hinton Road Access Signalised Junction;
- Drawing number: 37305/5501/002 – Junction 2 Cherry Hinton Road / Gazelle Way Roundabout Access; and
- Drawing number: 37305/5501/003 – Junction 3 Coldhams Lane Site Access Signalised Junction.

Construction Programme Overview

2.2.3 It is anticipated that construction of the proposed development would commence in early 2020 with an anticipated completion date of 2027. The development will be built out at approximately 170 homes per annum.
2.2.4 A detailed phasing plan will be confirmed when developer(s) are appointed. At this stage it is anticipated that the development will comprise three phases:

- **Phase 1** – Development will commence form the east of the site, adjacent to the Cherry Hinton Road Junction;
- **Phase 2** – Land to the west of Phase 1 will be developed; and
- **Phase 3** – The western extent of the site will be developed, this will include the construction of the junction onto Coldhams Lane.

2.2.5 The timing of the provision of education facilities will be in accordance with s106 discussions.
3 Construction Management & Methodology

3.1 Introduction

3.1.1 This section provides an overview of proposed site management procedures.

3.1.2 Key legal and guidance references are provided for information purposes only. The lists are not exhaustive but are considered to be current at the time of writing.

3.2 Roles & Responsibilities

The Applicant

3.2.1 For the purpose of this Outline CEMP. The ‘Applicant is Marshall Group Properties and Endurance Estates (representing the White family, landowners). Overall responsibility for the CEMP and ensuring legislative compliance lies with the Applicant. The Applicant should make sure that all contractors engaged in a particular phase have an obligation to comply with good environmental practice for construction including preparation and implementation of the detailed CEMP building upon this Outline CEMP.

Project Manager

3.2.2 The project manager will act as a central point of contact between SCDC, CGiC, the Principal Contractor, the local community and other third parties. It is anticipated that a project manager will be confirmed once the developer(s) have been appointed.

The Principal Contractor

3.2.3 The Principal Contractor will be charged with responsibility for management, co-ordination and implementation of the CEMP.

3.2.4 It will be the responsibility of the Principal Contractor to see that all of their staff, subcontractors, and site workers are aware of the CEMP. This is so that everyone understands the aims of the CEMP and recognises their personal responsibility in its implementation, protection of the environment and legislative compliance.

3.2.5 The Principal Contractor will have responsibility for ensuring that the CEMP and associated documentation are kept up to date along with details of specific permits etc. Documentation, recording and monitoring of the CEMP will be essential and updated on a regular basis and verified at the end of the project.

3.2.6 It is the Principal Contractor’s responsibility to check that construction works are undertaken in compliance with all relevant and current legislation applicable at the time of the works.

3.2.7 The Principal Contractor could register with a national compliance scheme such as the Considerate Constructors Scheme (CCS). The CCS recognises and rewards better than standard industry practice in the following sections:

- Care about Appearance;
- Respect the Community;
- Protect the Environment;
- Secure everyone’s Safety; and
- Value their Workforce.
Environmental Manager

3.2.8 For each phase of works an Environmental Manager should be identified by the Principal Contractor to co-ordinate environmental activities during construction. This will include:

- Making sure that a detailed CEMP(s) is prepared;
- Ensuring appropriate environmental training and advice is provided to contractors;
- Monitoring construction activities and compliance; and
- Acting as point of contact between constructors and other stakeholders.

Sub-contractors

3.2.9 Sub-contractors and suppliers will be obliged contractually to adhere to the requirements of the CEMP (based on this Outline CEMP), and should check that all their site personnel are inducted on the requirements of the CEMP and are aware of it prior to commencing any work on site.

3.2.10 Materials suppliers should provide details to the Principal Contractor of the provenance of all materials they supply to the development e.g. timber.

3.3 Risk Assessments

3.3.1 The majority of construction activities undertaken on-site will be subject to more detailed environmental risk assessment by the Principal Contractor, which will form part of the method statement and will:

- Identify potential environmental impacts that can be anticipated;
- Assess the risks from these impacts;
- Identify the control measures to be taken and re-calculate the risk; and
- Report where an unacceptable level of residual risk is identified so that action can be taken through design changes, re-scheduling of work or alternative methods of working in order to reduce the risk to an acceptable level.

3.3.2 The results of risk assessments, and their residual risks, are only considered acceptable if:

- The severity of outcome is reduced to the lowest practical level;
- The number of risk exposures are minimised; and
- All reasonably practical mitigating measures have been taken and the residual risk rating is reduced to a minimum.

3.3.3 The findings of the risk assessment and in particular the necessary controls would be explained to all contractors before the commencement of the relevant works using an agreed instruction format (e.g. toolbox talks).

3.4 Method Statements

3.4.1 Method Statements will be completed by the Principal Contractor or sub-contractor, in consultation with on-site staff and, where necessary, environmental specialists. Their production should include a review of the environmental risks and commitments, so that appropriate control measures are developed and included within construction processes.
3.4.2 Where required, Method Statements should also be submitted to the enforcement agencies (Environment Agency, Environmental Health Officer etc.). Method Statements would most likely contain the following:

- Location of the activity and access/egress arrangements;
- Work to be undertaken and methods of construction;
- Plant and materials to be used;
- Labour and supervision requirements;
- Health, safety and environmental considerations; and
- Any permit or consent requirements beyond those already obtained.

3.5 Site Environmental Standards

3.5.1 Site Environmental Standards will be agreed with the Principal Contractor and would detail the minimum measures that should be achieved for general operations falling outside the risk assessment/method statement procedure. The site environmental standards will be designed to cover the majority of construction activities.

3.5.2 These will cover issues such as storage of materials, management of waste, noise and vibration, and water pollution control. The standards should be used as a briefing tool on site. These standards will also form the basis of ‘toolbox talks’ which will inform all contractors working on site of the potential environmental risks arising from construction activities.

3.5.3 Best practice construction site management techniques will be implemented to avoid/minimise the generation of excessive waste, dust, noise, lighting, noise and vibration.

3.6 Communications and Training

Overview

3.6.1 The Principal Contractor will be required to establish a series of communication protocols to enable relevant stakeholders to be kept informed of construction progress and any issues arising. This will also help to establish lines of communication should any stakeholders wish to raise issues regarding the construction works.

3.6.2 The communication protocols will also establish appropriate relations between contractors to each area, the Applicant, any adjacent construction works; and with occupants of properties near construction sites, including the current occupiers and the local community, particularly relating to the development access arrangements.

3.6.3 Where there is change of construction personnel between infrastructure delivery and construction stages, appropriate liaison and handover must take place.

Local Community and Third Party Liaison

3.6.4 The Project Manager, working with the Environmental Manager, will act as a central point of contact between Marshall Group Properties and Endurance Estates (or any future developers), the Principal Contractor, the local community and other third parties. This Project Manager will have the responsibility of keeping the local community informed of construction progress and be the main point of contact with them should any issues arise. The Project Manager will also have the responsibility of responding to complaints or emergencies.

3.6.5 To minimise disruption to occupiers of existing facilities on the site and nearby residents, all parties potentially affected by construction works would be contacted. Correspondence would include details of the nature of the work, hours of works, timetable of works and phasing.
3.6.6 Letter drops should be used to inform local stakeholders in advance of works and in particular where any particularly disruptive activities are scheduled to take place. Letter drops should also give contact details for the Project Manager and a 24hr contact telephone number should be displayed around the site boundaries for any complaints or updates.

3.6.7 The Project Manager should also consider the requirement for meetings to be set up with the local resident and employer representatives. This could include a ‘Construction Practice Liaison Group’ being established, comprising the developers, SCDC, CCiC and local representatives.

3.6.8 The Principal Contractor, as part of their own communications procedure, will need to make sure that all site generated enquiries and/or complaints are effectively logged, communicated to the Project Manager and put into action as appropriate.

**Training**

3.6.9 Environmental training is essential to implement the CEMP, protect the environment and minimise impacts during construction activities. It is also necessary to enable compliance with environmental legislation. A short briefing note on the CEMP will be provided to visitors to the site.

3.6.10 A copy of the CEMP will be available in the main site office reception.

3.6.11 No construction personnel including office staff will be permitted to work on the site until they have attended a site induction course which includes a briefing on the CEMP and ways of minimising environmental effects, waste management and responding to emergencies.

3.6.12 Toolbox talks, as certain activities take place or areas of high risk, are an effective means of focused communication to the site staff.

**Project Communications and Reporting**

3.6.13 The Principal Contractor will need to set up procedures for communicating and reporting to the Project Manager on all matters relating to the environment. This may include the use of key performance indicators.

3.6.14 The Principal Contractor is responsible for environmental management during construction works. The CEMP is the key operating document.

**3.7 Consents and Licences**

3.7.1 The Principal Contractor will be responsible for any consents, permissions or licences necessary for the construction works that are not already in place by the Applicant. For example, land drainage consent and waste licenses.

3.7.2 A register of consents etc. must be kept, to include all applied for and secured, details of expiry dates, conditions and commitments that must be adhered to and all related correspondence. The Principal Contractor should make sure that this is kept up-to-date.

**Legislation and Guidance**

3.7.3 It is the Principal Contractor’s responsibility to check that construction works are undertaken in compliance with all relevant and current legislation application at the time of the works.

3.7.4 It is expected that through site induction and toolbox meetings, staff will gain an awareness of the information contained within these documents. The list is not exhaustive, and will be added to when necessary.
3.7.5 Provision, communication and update of the list of environmental legislation during construction will be the responsibility of the Principal Contractor.

3.7.6 Pertinent legislation and guidance includes the following:

- Construction (Design and Management) Regulations 2015;
- Control of Pollution Act, 1974;
- Control of Substances Hazardous to Health Regulations 2002;
- Environmental Protection Act 1990;
- Clean Neighbourhoods and Environment Act 2005;
- Health and Safety at Work etc. 1974;
- Health and Safety Executive (HSE) – Codes of Practice and Guidance Notes; and
- Code of practice for noise and vibration control (BS 5228).

3.8 Emergency Planning & Incident Control Procedures

General

3.8.1 The Principal Contractor will develop and implement an incident control procedure as part of the CEMP. The aim of this incident control procedure is to prevent the release of pollutants (for example oil and fuels) into the environment and to protect health and safety of those on-site.

3.8.2 Emergency procedures are also to be prepared by the Principal Contractor.

Environmental Pollution Incident Recognition

3.8.3 The Principal Contractor will undertake health, safety and environmental induction training courses to highlight the key potential environmental pollution issues to all project personnel. Briefing topics will include:

- Uncontrolled discharge/spillage of polluting substances such as chemicals, oil, concrete etc. into controlled waters or sewers;
- Uncontrolled discharge of contaminated surface water run-off such as oil, chemical, suspended solids contamination into controlled waters;
- Release of smoke (e.g. fire) into the atmosphere;
- General ecological, archaeological and environmental awareness; and
- Spillage of solid waste into sensitive areas and risks of windblown litter and debris.

Emergency Planning

3.8.4 The Principal Contractor will set up and manage systems, procedures and equipment for emergency planning which will include the following:

- Provision of adequate spillage containment materials to stop and contain pollution, for example the use of available earth where stockpiles are strategically placed in environmentally vulnerable areas;
- Provision of a site drainage plan identifying and colour coding surface water drainage separate to foul sewer drainage - this will assist in the siting of storage containment areas and associated protection measures;
- Emergency bunding /control packs to be available at key locations in the event of a pollution incident;
- Liaison with the appropriate representatives from the Environment Agency, and essential local emergency services to discuss, in particular, emergency pollution control plans and emergency communications strategy; and
- Appointment of a site ‘emergency pollution control response team’ to respond to pollution incidents.

**Incident Control and Reporting**

3.8.5 Incident control procedures will be developed by the Principal Contractor in liaison with the Environment Agency, SCDC, CCiC, Marshall Group Properties, Endurance Estates (or any future developers) and essential emergency services. The control procedure in outline will include:

- Immediate containment of pollution at source;
- Reporting incident immediately to site management team;
- Raising the alarm to the emergency pollution control response team;
- Summoning emergency services where appropriate;
- Safe disposal of pollution waste; and
- Notifying the local Environment Agency regional office.

3.8.6 All environmental incidents shall be recorded by the Principal Contractor and reported to the Applicant as soon as practicable and if appropriate reported to the Environment Agency or other relevant stakeholders. The Principal Contractor will complete an environmental incident report as part of the procedure.

**3.9 Site Logistics Control and Site Planning**

**Construction Site Logistics**

3.9.1 Schedules and plans to be prepared by the Principal Contractor will show an overview of the logistics plan for construction. It will most likely follow the general principles outlined below unless otherwise agreed with stakeholders. Topics covered should include:

- Site working hours;
- Site layout (e.g. principal access/egress points, routing plans, site security);
- Site offices and welfare facilities;
- Site access routes (construction traffic management);
- Site demarcation and access control;
- Lighting arrangements;
- Delivery areas; and
- Storage and lay-down.

**Welfare Facilities**

3.9.2 In accordance with the *Construction (Design and Management) Regulations 2015*, and HSE guidance, welfare facilities will need to be provided on site. Given the scale and range of development there may be several contractors on site at any given time. It is likely that each contractor will have their own accommodation site set ups. Each temporary site should include site offices and site welfare facilities. These should include canteens, toilets and washrooms with hot water; drying/changing rooms; and a first aid post, as appropriate.
Operating hours

3.9.3 Where construction is scheduled to take place in close proximity to residential premises, and heavy plant, noisy equipment or operations and deliveries are likely to occur, SCDC and CCiC are to be consulted on permissible hours of work. **No construction works, demolition works, collections or deliveries will be undertaken during the demolition/construction phase other than between the following hours:**

- Monday-Friday 8.00-18.00;
- Saturday 8.00-13.00; and

3.9.4 **No construction or demolition works, or collections or deliveries will take place on Sundays or Bank/Public Holidays.**

3.9.5 Prior notice and agreement will be sought with SCDC and CCiC where work outside of the above stated working hours is required. **Notification will normally be made in writing 10 working days in advance, with justification for deviation from permitted hours and details of alternative noise limits or similar that will be adhered to (either within a Construction Method Statements or in supplemental correspondence). Prior approval by CCiC will be sought for any deviation from agreed limits and for the application of alternatives before works commence.**

3.9.6 During winter months, work may continue during hours of darkness within normal working hours subject to adequate artificial lighting to illuminate the works in question. However, where artificial lighting is proposed this will be subject to environmental restrictions as noted in this Outline CEMP.

General Types of Plant and Equipment

3.9.7 All key static plant and equipment (e.g. hoists, power distribution units, diesel storage tanks etc.) will be clearly identified on site logistics drawings.

3.9.8 The Principal Contractor will be required to complete a ‘Register of Plant & Equipment and Statutory Certification’ within their Health & Safety ‘Method Statement’ prior to works commencing on site.

3.9.9 The Register allows an inventory of on-site plant and equipment to be kept to, check they are maintained in accordance with statutory test/examination/inspection requirements, and that specific operator training requirements are addressed. This list also assists by providing a useful cross-reference for noise level predictions and assessments of plant and machinery in respect to ensuring that excessive noise levels are identified and suitable control measures implemented to minimise those noise levels.

3.10 Monitoring, Review and Complaints

3.10.1 The detailed CEMP will present a comprehensive method for monitoring, review and complaints. This will include:

- A contact board with a complaints number will be advertised at the site entrance; and
- A programme of monitoring and review will be implemented to generate information by which the success of all aspects of the CEMP can be evaluated against its objectives; and

3.10.2 This process will provide the opportunity for construction operations and procedures on the site to be reviewed and new management measures to be implemented to achieve the objectives.

3.10.3 Monitoring will be documented and available to the Applicant and to SCDC and CCiC.
3.10.4 As part of the ongoing process for ensuring that impacts due to construction activities are minimised, ongoing engagement will be undertaken with neighbours and stakeholders.
3.11 Auditing and Reviewing

3.11.1 Checks will be undertaken on the effectiveness of the CEMP. Should deficiencies be identified, the CEMP will be updated to enable the document to continue to fulfil its objectives. This will include a review of current legislation, standards, plant, processes, etc. Revised copies of the CEMP will be available to the Applicant, SCDC and CCiC as appropriate and provided in the site office.

3.11.2 In addition, consideration will be given to regular environmental audits of the construction works to enable compliance with the CEMP. The scope of the audits should include:

- Waste management & duty of care;
- Noise & vibration;
- Dust;
- Construction traffic;
- Fuel storage;
- Pollution;
- Community liaison; and
- Biodiversity and ecology.

3.11.3 All audits undertaken should be documented in an Audit Report. Where non-conformances with the CEMP are identified, these will be recorded on a Non-Conformance Report, this should include:

- Details of who and what is being audited;
- Details of the non-conformance;
- Corrective action required; and
- Review of corrective action dated and signed.

3.11.4 The report allows subsequent audits to monitor the performance of the corrective action and then sign off the corrective action request once it has been successfully implemented. All completed Non-Conformance Reports will be held on site in a designated file.
4 Visual Considerations

4.1 Introduction

4.1.1 This section identifies the mitigation measures relating to the potential impacts on the surrounding landscape arising from construction activities of the proposed development.

4.1.2 This section has been informed by the Landscape and Visual Impact Assessment (LDA, 2018).

4.2 Potential Impacts

4.2.1 Potential impacts identified associated with construction activities include the clearance of trees and hedgerow and visual impact associated with temporary structures, construction roads and site lighting.

4.3 Mitigation Measures

4.3.1 The following mitigation measures should be implemented during the construction phase in order to specifically limit impacts on landscape and visual amenity of the surrounding area:

- Land / vegetation clearance will be limited to the minimum necessary for the works;
- Where practical stockpiles of soil (and other appropriate material) would be stored and used to screen the construction works from sensitive receptors;
- Construction areas will be laid out to minimise adverse impacts arising from temporary structures, construction activities and lighting;
- Construction roads will use the same route as permanent access roads where practical;
- Use of construction site lighting outside normal working hours will be restricted to the minimum necessary for workforce and public safety, and for security. Directional luminaries will be used to limit unwanted light spill;
- Maintenance of tidy and contained site compounds;
- Hoardings erected around the area of construction works, for reasons of creating a visual barrier to construction activities and also as a safety measure, to prevent access to the general public.
- Temporal measures including the removal of all temporary structures and stockpiles when no longer required; and
- Reinstatement of all amenity space required temporarily during construction.

4.3.2 Screening and hoarding details will be provided for approval for SCDC and CCiC as part of the site specific CEMP for future reserved matters applications.
5 Ecology and Nature Conservation

5.1 Introduction

5.1.1 This section identifies the mitigation measures which will be implemented to limit potential impacts on ecologically sensitive habitats and species arising from construction activities of the proposed development.

5.1.2 This section has been informed by the Ecology ES Chapter (BSG Ecology, 2018).

5.1.3 No statutory designated areas are located within the site, the nearest statutory designated area is Barnwell Road East Local Nature Reserve which is 600m from the site. Three non-statutory sites (Airport Way RSV County Wildlife Site (CWS), Teversham Drift Hedgerow City Wildlife Site (CiWS) and Teversham Protected Road Verge (PRV)) adjoin the site and/or are partially located within the site.

5.2 Potential impacts

5.2.1 During the construction phase of the scheme, the main activities will include site clearance, ground works, the use of operational plant and machinery and associated vehicle movements. Impacts likely to arise from these activities could include loss, fragmentation and physical damage of habitat, hydrological changes and pollution, direct mortality of species and disturbance (physical disturbance, lighting and air pollution) of sites, habitats and species.

5.2.2 During construction there is potential for ecological impacts to occur as a result of the loss of the habitats within the site such as hedgerows and drainage ditch. There will also be habitat loss within two sites of local importance:

- 0.12 hectares of the Airport Way RSV CWS and associated unimproved neutral grassland; and
- 0.19 hectares of Teversham PRV and associated unimproved neutral grassland.

5.2.3 A range of ecological surveys were also carried out which identified protected species which had the potential to be impacted by construction works, these species include:

- Bats;
- Water voles;
- Reptiles;
- Badgers; and
- Breeding and nesting birds.

5.3 Mitigation

5.3.1 The following mitigation measures are to be implemented as appropriate in order to minimise the ecological impacts resulting from the construction phase.

5.3.2 A pre-construction ecological walkover survey will be undertaken in advance of each construction phase. This survey will be undertaken by a suitably qualified ecologist and identify if any additional construction phase mitigation is required.

Non-Statutory Sites

5.3.3 Airport Way RSV is partly within the east section of the site and Teversham Drift Hedgerow adjoins the south boundary of the site.
5.3.4 Ecological protection zones should be established during the construction phase to prevent any accidental damage to the non-statutory designated sites. These will be fenced during construction and included in a toolbox talk given for contractors with respect to retained habitats and good practice measures within the construction site. Construction activities will be undertaken outside of the Root Protection Areas (RPA) of the trees within the local sites, or if within the RPA, a no-dig construction method will be used to avoid harm to existing trees with reference to The British Standard BS 5837 Trees in relation to design, demolition and construction - Recommendations (BSI, 2012).

Habitats

5.3.5 A similar approach will be taken to protect retained trees, woodland and hedgerows where possible during construction.

5.3.6 Where construction activities take place alongside retained trees and the woodland, these will take place outside of the RPA of the trees, or if within the RPA, a no-dig construction method will be used to avoid harm to existing trees with reference to The British Standard BS 5837 Trees in relation to design, demolition and construction - Recommendations (BSI, 2012).

5.3.7 Retained hedgerows will be subject to a 3m stand-off which is to be demarcated and included in a toolbox talk given for contractors.

Bats

5.3.8 One of the trees identified with bat roosting potential will be removed as part of the construction works. Although there has been no evidence of bats roosting in this tree, a suitably qualified and licenced ecologist will inspect the tree prior to its removal as a precaution.

5.3.9 If roosting bats are identified during the inspection, works to the tree will cease and advice from a suitably qualified and licenced ecologist will be sought to determine a suitable strategy for future work which may include the need to obtain a European Protected Species Licence.

5.3.10 Disturbance to bats resulting from construction lighting will be minimised by directing light away from trees that have been identified with roosting potential and also away from features, such as hedgerows and drainage ditches, which may be used by bats for foraging and commuting. Where this is not possible directional lighting measures should be included to minimise light spill, and help maintain dark movement corridors around the site.

Water Vole

5.3.11 Previous water vole survey work has identified water vole occupation of drainage ditches on site.

5.3.12 A water vole Natural England Conservation Licence will be secured to undertake works to wet drainage ditches within the proposed development. This will include measures to avoid the killing and injury of water vole, such as the removal of vegetation to encourage water voles to move to nearby habitat, (including the new compensatory habitat) and a thorough search for current occupation by water vole and dismantling of relevant sections of bank by hand, under an ecological watching brief.

5.3.13 In early spring, prior to works commencing on each section of the existing unnamed watercourse, the banks will be removed of vegetation to encourage water voles to move to nearby habitat and a thorough search for current occupation by water vole will be undertaken.

5.3.14 Drainage ditches on site will have a fenced 5m buffer erected during construction unless the absence of water vole has been confirmed by the supervising ecologist. Any works within the area will otherwise be undertaken under an ecological method statement and the supervision of an ecologist. These measures will be explained to contractors in a toolbox talk.
Reptiles

5.3.15 The site has limited suitability for reptiles as it is mostly comprised of arable fields and grassland. Only small areas of scrub, drainage ditches and hedgerow have been identified as potential habitats. The mitigation measures are proposed as a precaution due to the limited likelihood of reptile presence on site.

5.3.16 The removal of small sections of hedgerow or ditches will be undertaken following measures set out in a method statement and under the supervisor of an ecologist to avoid the risk of killing/injury of reptiles in the unlikely event that they are present on site. This may include a walk through and thoroughly inspecting habitats to encourage reptiles to vacate the area prior to works and the gradual reduction of vegetation height.

Badgers

5.3.17 Potential habitats for badgers, such as hedgerows, have been identified on site. No evidence of badger activity has been recorded during previous surveys on site and the following mitigation should be undertaken as a precaution.

5.3.18 During the pre-construction walkover survey badger activity and setts will be checked for and any necessary additional mitigation measures will be identified.

5.3.19 In addition to this, where there are open trenches left overnight earth ramps should be created to prevent badgers from becoming trapped.

Nesting Birds

5.3.20 A number of bird species of Principal Importance have been identified as breeding within the site. These species utilise a range of habitats provided on site such as hedgerows and shrub.

5.3.21 Where possible, any work requiring vegetation removal or ground clearance work (particularly any work affecting hedges and trees) will be carried out between September and February, in order to avoid the bird breeding season. If any work has to take place during the bird breeding season, then the suitable nesting habitat will be surveyed for active bird nests by a suitably qualified ecologist before the work is carried out. If active bird nests are present, then work within the area supporting the nests will be delayed until nesting activity has ceased and this has been confirmed by a suitably qualified ecologist.
6  Transport

6.1  Introduction

6.1.1  Traffic will be generated during the construction of the development as a result of bringing plant and materials to the site, removing waste and construction personnel movements. This section identifies the mitigation measures required to limit potential impacts of highway work, transport and traffic movements arising from the construction of the proposed development.

6.1.2  This section has been informed by the Transport ES Chapter and Transport Assessment (PBA, 2018).

6.2  Potential Impacts

6.2.1  No significant effects in relation to transport are expected to arise during the construction of the proposed development. However, careful planning and traffic management arrangements will need to be in place to minimise disruption.

6.2.2  The construction of the highway works, such as creation of the site access junctions onto Airport Way and Coldhams Lane, associated with the proposed development may result in a short term localised increase in delays during the construction period.

6.3  Mitigation Measures

6.3.1  Where construction works interrupt routes used by pedestrian, cyclist and road users details of diversions and alternative access arrangements will be provided and noted on the site boundaries.

6.3.2  A Construction Traffic Management Plan (CTMP) will be implemented in order to minimise the effects of construction traffic upon local receptors during the construction phase. The CTMP will also include safety procedures relating to on-site traffic movements.

6.3.3  The CTMP is intended to address the health and safety issues related to all vehicles and mobile plant travelling to, from or around site during the construction phase of the project.

6.3.4  The CTMP will minimise impact of construction work for nearby residents, other sensitive receptors and on the immediate highway and will identify appropriate controls should they be necessary. The CTMP will provide details of measures that are considered appropriate at this time; however, it is a ‘live’ document that will evolve as more details are known as the project progresses.

Site Access

6.3.5  It is currently proposed that the Phase 1 construction access will be the site access off the existing Gazelle Way / Cherry Hinton Road Roundabout, then via new signalised junctions from Airport Way and Coldhams Lane in subsequent phases.

6.3.6  The Police, SCDC and CCiC will be informed prior to any abnormal loads accessing the site and appropriate arrangements made to manage their safe access and egress to and from the site. Delivery routes, access points and construction details will be provided and agreed with SCDC and CCiC.

Access Routes

6.3.7  During Phase 1 and 2, HGV Construction traffic will be routed only via:

- Airport Way;
6.3.8 During Phase 3 construction traffic will be routed only via:
- Coldham’s Lane;
- Barnwell Road;
- Newmarket Road; and
- A14.

6.3.9 No vehicles involved in deliveries, collections or other services in connection with the construction operations shall use any other route except where required for direct access to premises for the purpose of materials or plant delivery, dispatch or collection, or waste transfer.

6.3.10 Such access routes shall be the most practical route for the class of vehicle entailing the least impact on any residential areas.

6.3.11 Where such direct access is required within the defined permitted routes the access route shall be notified by the relevant supplier or sub-contractor to the Principal Contractor for prior approval.

6.3.12 The approved access route will then be recorded in the appendix to the detailed CEMP/CTMP.

6.3.13 All sub-contractors and suppliers will be issued with copies of the off-site construction traffic permitted routes map for issuing to their drivers together with instructions for notifying the Principal Contractor of any requirement for an access route different from the permitted routes.

6.3.14 At all entry points to the off-site permitted routes and along those routes, subject to the permission of the highway authority, direction signs to the site will be posted in accordance with any requirements of the highway authority.

6.3.15 Subject to the permission of the highway authority and where deemed necessary by the local authority, ‘No Access to Land North of Cherry Hinton Development site’ signs will be posted at the junctions of sensitive roads into residential areas in the immediate vicinity of the site.

6.3.16 Site personnel transport including crew vehicles will also be restricted to the permitted routes except where it is necessary to pick up and set down passengers.

6.3.17 Where possible deliveries which require large HGVs, such as for concrete and bituminous material, should be scheduled to avoid peak periods in order to minimise disruption to the surrounding highway network.

**Entering the Site**

6.3.18 Vehicle waiting and queuing on the public highway at or near the site access gate will not be permitted (see also ‘Parking off site’). Deliveries will be programmed so that vehicles do not wait or queue on the public highway.

6.3.19 The entry into the site will be laid out to allow vehicles to leave the public highway smoothly without the need for excessive deceleration or stopping, and so that vehicles leaving the site do not obstruct entry.

6.3.20 Sufficient queuing distance will be provided from the point of entry up to the checking in point to avoid vehicle queues tailing back onto the highway.
6.3.21 In the case that queuing appears to be getting critical the checking in point will be moved temporarily further into the site.

6.3.22 The queuing distance will be monitored and the checking in point adjusted as necessary.

6.3.23 Once within the site, the speed limit would be 10 mph.

6.3.24 Within the site, main access roads and haul roads will be provided to enable access to the on-site compound(s).

6.3.25 The road will either be one-way with a loop through to the exit or of adequate width to allow two-way flow.

6.3.26 A site movement map will be produced to indicate the locations of the site access entry and exit, the temporary main access and any subsidiary haul roads, checking in and out points, parking areas, pedestrian and cycle access points and routes, and the wheelwash location.

6.3.27 As these various facilities may need to be moved from time to time to accommodate the development requirements, the site movement map will be updated. This will be the responsibility of the Principal Contractor.

6.3.28 The main site construction access road will be of robust construction to minimise issues with mud and dust.

**Leaving the Site**

6.3.29 A wheelwash facility of a type approved by the EA will be established at each approach to the exit point to the highway.

6.3.30 Every vehicle driver will be required to check that their vehicle is clean before leaving the site so that mud and other debris are not shed onto the highway. This will include, as appropriate, inspection of the underside and sides, as well as the wheels and wheel arches.

6.3.31 On all vehicles transporting material from the site, the load will be either completely enclosed or covered by adequate tarpaulin covers in the case of open bed vehicles to prevent dust blowing or debris shedding off the vehicle.

6.3.32 The exit point from the site will be determined in consultation with the highway authority.

**Parking Off-Site**

6.3.33 Adequate parking facilities will be provided onsite for staff and construction vehicles to reduce potential disruption which could be caused by vehicles associated with the construction of the proposed development parking on nearby roads.

6.3.34 No motor vehicles involved in construction, site personnel, or visitors’ vehicles will be permitted to park on the roads or parking areas within the adjacent residential areas.

6.3.35 No delivery, collection, or service vehicles en route to the site will be permitted to lay up along the permitted routes, including laybys, at any time, except in the locations agreed in advance with the highway authority.

**Parking on Site**

6.3.36 A hardstanding parking area will be established for site personnel and visitors’ private vehicles.
Enforcement

6.3.37 All site personnel, visitors, sub-contractors and suppliers will be expected to abide by the traffic management plans in the CEMP.

6.3.38 Where the drivers will be regularly coming to the site they will be issued with copies of the CEMP either as paper copies or in electronic form.

6.3.39 The checker will record the registration number of all delivery, collection and service vehicles and the time of the vehicle entering and leaving the site.

6.3.40 This information may be used if an incident with the vehicle occurs off-site to ascertain whether the vehicle trip was in connection with the development construction and if the off-site requirements of the plan have been transgressed. Appropriate action will be taken if a driver is found to transgress the management requirements.
7 Air Quality

7.1 Introduction

7.1.1 This section identifies the mitigation measures required to alleviate the potential impacts on air quality arising from construction of the proposed development.

7.1.2 The construction works will be carried out in such a way that emission of air-borne pollutants including dust and odours are minimised and managed by best practicable means. This will allow there to be minimal nuisance, loss of amenity or health effects to nearby buildings and their occupants (e.g. residents) and the local community, and that air quality objectives are not exceeded. By minimising dust emissions this will also help reduce the impact of construction on Cambridge Airport and its operations.

7.1.3 The principal source of potential air quality impacts associated with construction of the proposed development relates to dust and elevated levels of Particulate Matter (PM).

7.1.4 This section has been informed by the Air Quality ES Chapter (AQ Consultants, 2018).

7.2 Potential Impacts

7.2.1 Dust is defined in BS 6069 ‘Characterisation of Air Quality’ as particles with a diameter between 1 to 75 microns (μm). The main impact from dust is the annoyance caused by the soiling of surfaces which could have an impact on airport stands including to runways, taxiways and aircraft engines. The smaller fraction of dust overlaps with the definition of PM$_{10}$, (particulate matter less than 10μm), which can enter the lungs and cause health effects. Where dust is allowed to escape from contaminated soil it can also spread contaminants.

7.2.2 The following activities have the potential to cause emissions of dust during construction of the proposed development:

- Site preparation including delivery of construction material, erection of fences and barriers;
- Earthworks including digging foundations and landscaping;
- Materials handling such as storage of material in stockpiles and spillage;
- Movement of construction traffic including haulage, vehicles and plant movements;
- Construction and fabrication of buildings; and
- Disposal of waste materials off-site.

7.2.3 Two of the main causes of unmitigated dust generation on construction sites is from vehicles using unpaved haul roads and off-site from the suspension of dust from mud deposited on local roads by construction traffic. The main determinants of unmitigated dust annoyance are the weather and the distance to the nearest receptor.

7.3 Mitigation measures

7.3.1 As outlined in the Air Quality ES Chapter (AQ Consultants, 2018), guidance published by the following standard mitigation and monitoring measures from the Institute of Air Quality Management (IAQM, 2012 and 2016) guidance are recommended to prevent the promulgation of dust and adverse effects on public amenity. Mitigation measures will include the following as appropriate:

Communication
- Develop and implement a stakeholder communications plan to notify nearby building owners/occupiers when operations that may create large amounts of dust (e.g., demolition works) will take place and complaints procedures to be followed;

- Display the name and contact details of persons accountable on fencing around individual construction parcels where they can easily be seen by local residents;

- Display the head or regional office information on the site boundaries of construction parcels.

**Management**

- Develop and implement a Dust Management Plan (DMP) approved by the Local Authority which documents the mitigation measures to be applied, and the procedures for their implementation and management;

- Record all dust and air quality complaints, identify causes and take measures to reduce emissions;

- Record exceptional incidents and action taken to resolve the situation;

- Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes;

- Carry out regular site inspections to monitor compliance with the dust management plan and record results;

- Increase site inspection frequency during prolonged dry or windy conditions and when activities with high dust potential are being undertaken;

- Agree dust monitoring locations with the local authority and instigate monitoring 3 months in advance of works commencing in the area;

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as possible;

- Erect solid screens or barriers around dusty activities at least as high as any stockpile on site;

- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;

- Avoid site run off of water or mud;

- Keep site fencing, barriers and scaffolding clean using wet methods;

- Remove potentially dusty materials from site as soon as possible;

- Cover, seed or fence stockpiles to prevent wind whipping;

- Check all vehicles switch off engines when stationary;

- Avoid the use of diesel or petrol powered generators where possible;

- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas;

- Produce a Construction Logistics/Delivery Plan to manage the delivery of goods and materials;

- Implement a Travel Plan that supports and encourages sustainable staff travel;

- Only use cutting, grinding and sawing equipment with suitable dust suppression techniques such as water sprays or local extraction;

- Provide an adequate supply of water on site for dust suppressant;

- Use enclosed chutes and conveyors and covered skips;
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use water sprays on such equipment where appropriate;

Provide equipment that is readily available on site to clean up spillages of dry materials; and

No on-site bonfires and burning of waste materials on site.

**Monitoring**

- Undertake daily on-site and off-site inspections where receptors (including roads) are nearby, to monitor dust. Record inspection results, and make the log available to the Local Authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of the site boundary, with cleaning to be provided if necessary;
- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the Local Authority when asked;
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions; and
- Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it is a large site, before work on a phase commences.

**Each site specific CEMP submitted with the RMA will outline the dust monitoring arrangements for that site.**

**Construction**

- Avoid scabbling (roughening of concrete surfaces), if possible;
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless required for a particular process;
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored silos with suitable emissions control systems; and
- For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.

**Earthworks**

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

**Trackout**

- Use water assisted dust sweepers on the site access, internal roads and local highway;
- Avoid dry sweeping of large areas;
- Ensure vehicles entering and leaving the site are covered to prevent escape of materials;
- Record inspection of on-site haul routes and any subsequent action, repairing as soon as reasonably practicable;
- Install hard surfaced haul routes which are regularly damped down;
- Install a wheel wash with a hard-surfaced road to the site exit where site layout permits; and
- The site access gate to be located at least 10m from receptors where possible.

7.3.2 Dust monitoring requirements will be agreed with SCDC and CCiC including the timing and type of monitoring (e.g. real time monitoring or spot checks). The need for long term real-time continuous monitoring of dust will be considered in the event of:

- Extensive land engineering/ profiling and dust storage mounds us been undertaken and agreed target levels are likely to be exceeded;
- Upon the receipt of substantial complaints; or
- At the request of the SCDC, CCiC or Environmental Health following justified complaints.

7.3.3 Where mitigation measures rely on the use of water to e.g. damped surfaces, water should be used sparingly to allow measures to be effective but also reduce potential contamination on local watercourses.
8 Noise and Vibration

8.1 Introduction

8.1.1 This section identifies the mitigation measures required to alleviate the potential noise impacts arising from construction of the proposed development.

8.1.2 This section has been informed by the Noise and Vibration ES Chapter (Hoare Lea, 2018).

8.1.3 There are residential areas immediately south of the site which will be particularly sensitive to noise given their close proximity to construction activities. It is also anticipated that residential units that form part of the proposal will be occupied whilst construction works are being undertaken on site and therefore have the potential to be affected.

8.2 Potential Impacts

8.2.1 Construction of the new residential area, schools, community centre and associated infrastructure is likely to include site levelling/clearance, ground excavation, concreting, superstructure construction, landscaping and road infrastructure works. Internal building construction phases and the servicing and fitting out of new building is not normally a significant source of noise or vibration for nearby receptors.

8.2.2 Significant vibration during construction of this type of development is normally only associated with piling activity for foundations. It is not anticipated that piling will be undertaken but in the event that it is required, the recommended piling method during construction of the new buildings and infrastructure is continuous flight augering. This piling method reduces adverse impacts from vibration as it does not involve driving piles into the ground using impulsive forces instead concrete pumped through the hollow stem of the drilling, and the drill withdrawn, removing any soil and forming a shaft of fluid concrete extending to ground level. This approach creates much less vibration (and noise), therefore it is unlikely that there will be any significant vibration impacts as a result of the construction phase.

8.3 Mitigation

8.3.1 Further assessment of construction noise mitigation should be undertaken when the Principal Contractor(s) is appointed for each stage/plot and detailed method statements and the construction programme are available. These assessments will be undertaken in accordance with the technical guidance and best practice measures, including:

- BS 7385-2:1993 Evaluation and measurement for vibration in buildings. Guide to damage levels from groundborne vibration;
- BS ISO 4866:2010. Mechanical vibration and shock. Vibration of fixed structures. Guidelines for the measurement of vibrations and evaluation of their effects on structures. BSI London. (Supersedes BS 7385-1:1990 and ISO 4866:1990); and

8.3.2 The following mitigation measures will be applied as appropriate to minimise the noise breakout from the construction activities affecting noise sensitive receptors:

- Breaking out of concrete structures should be undertaken, where possible, using low noise effect methods including bursting and splitting rather than percussive breaking.
- Detailed programming of works to make maximum use of existing barriers to noise (e.g. existing bunds and buildings);
- Where appropriate, construction activities are to be separated from residential neighbours by the maximum possible distance;
- Careful selection of construction methods and plant to be used;
- Switching off of plant and vehicle engines when not in use;
- Restriction of drop heights onto lorries;
- Regular maintenance and servicing of vehicles, equipment and plant and any associated noise attenuation such as engine casing and exhaust silencers shall remain fitted at all times;
- Appropriate handling and storage of materials;
- Appropriate operational hours (to be agreed with the local authority);
- Enforcement of restricted working hours for excessively noisy activities;
- Implementation of an appropriate traffic management strategy to control the movement of vehicles to and from site; and
- Use of temporary acoustic barriers where appropriate and other noise containment measures such as screens, sheeting and acoustic hoardings at the construction site boundary to minimise noise breakout and reduce noise levels at the potentially affected receptors.

8.3.3 In addition to the above, all reasonable steps would be taken to keep the local community informed of the proposed construction operations. Measures for community liaison would be dealt with by the Project Manager who would coordinate the dissemination of information (for example, by means of a regular newsletter) and schedule operations at times that would minimise the potential for disturbance.

8.3.4 Noise monitoring requirements will be agreed with SCDC and CCiC prior to commencement of works on site.
9 Lighting

9.1 Introduction

9.1.1 This section identifies the mitigation measures required to alleviate the potential impacts of using artificial lighting during construction of the proposed development.

9.1.2 This section has been informed by the Lighting Assessment Report (PBA, 2018) which has been submitted with this application.

9.1.3 The proposed development will introduce new external artificial lighting required for safe and secure construction during hours of darkness. This has the potential to impact on sky glow, glare and light intrusion on a number of receptors including residential dwellings and Cambridge Airport.

9.2 Potential Impacts

9.2.1 Adverse effects from the temporary use of lighting for construction include light intrusion for residents and users of roads and public rights of way in close proximity to the site.

9.2.2 Due to the proximity of the site to Cambridge Airport there is potential for temporary lighting used during construction to impact the safe functioning of the airport. Therefore, construction lighting will be installed in accordance with the Civil Aviation Authority (CAA) guidance on construction in close proximity to aviation activities and the Airport Operators Association (AOA) guidance – Safeguarding of Aerodromes. Advice Note 2. Lighting Near Aerodromes to limit the impact on Cambridge Airport.

9.2.3 It is anticipated that some of the residential units to be provided as part of the proposal will be occupied whilst construction works related to further phases of the development are being undertaken. As a result, temporary construction lighting has the potential to impact both existing and future sensitive receptors.

9.3 Mitigation measures

9.3.1 In addition to measures outlined in the CAA and AOA guidance, the following mitigation measures should be applied to reduce the potential impacts of light pollution occurring as a result of the construction activities:

- Temporary artificial lighting will be controlled in accordance with site working hours during the construction of the proposed development;
- Construction lighting should be directed so it does not create light intrusion outside of the immediate working area;
- Sufficient lighting units used to avoid the need for tall, wide beam lighting units to illuminate large areas;
- Vehicle lights should be properly directed and lenses must be intact to prevent unnecessary glare and breakout of obtrusive light (this is also an MOT requirement);
- Lighting should be reduced when not required for safety purposes. Security lighting should be kept at the minimum level needed for visual and security protection;
- If appropriate, to reduce the need for fixed visible lighting outside working hours, the use of infrared flood lighting and CCTV systems should be considered for security;
- All lighting related to the works will be designed and fitted to minimise light intrusion onto any sensitive habitat such as hedgerows, mature trees and woodland;
- The use of visual screening, such as hoardings between more sensitive visual receptors and construction light sources in proximity to the Site; and
- Dark corridors should be maintained during the evening, overnight or early morning (i.e. outside approximately one hour before dusk and one hour after dawn) along hedgerows, watercourses and any other linear features by avoiding light intrusion on these areas. This will avoid the fragmentation of habitat used by species such as bats.
- Measures to protect habitats and species during the construction phase (including impacts from lighting).
- Consideration will also need to be given to the phased construction programme; the effect construction lighting will have on new residents on the Site, preventing obtrusive light affecting the adjoining countryside beyond the site boundary and the potential effects construction lighting will have on bats.

9.3.2 Details and location of lighting required for each plot will be provided to SCDC and CCiC for approval prior to commencement of works on said plot.
10 Protection of Historic Features

10.1 Introduction

10.1.1 This section identifies the mitigation measures required to alleviate the potential impacts of the proposed development on archaeology and cultural heritage.

10.1.2 This section has been informed by the Cultural Heritage and Archaeology ES Chapter (Cambridge Archaeology, 2018).

10.1.3 While impacts upon any surviving archaeological remains may already have occurred during previous construction of roads, it is possible that features do still survive as the majority of the site has remained free from past development.

10.2 Potential Impacts

10.2.1 Groundworks such as construction of foundations, infrastructure, landscaping and flood management have potential to have a direct impact on below ground archaeology. As the site has been identified as having a high archaeological potential it is anticipated that remains may be present on site which may be partially or entirely removed during the construction process.

10.2.2 There are no known cultural heritage features or designations within the boundary of the site although there are a number of heritage assets within 1 km of the site boundary that may be subject to indirect impacts due to vibration emanating from construction activities, such assets include:

- All Saints Church, Teversham (Grade II* listed building);
- St Andrew Church, Cherry Hinton (Grade I listed building); and
- Two scheduled monuments, one at Moated Site at Manor Farm and another at the Settlement Site by Caudle Corner Farm.

10.3 Mitigation

10.3.1 In relation to potential below ground archaeology on site, a mitigation programme is to be agreed with the Historic Environment Team at Cambridge County Council (CCC) which is anticipated to include full excavation of significant areas of the site.

10.3.2 If remains are found to be present, mitigation measures would be adapted to best deal with remains, including excavation, recoding or preservation in situ as agreed with the Historic Environment Team. Archaeological fieldwork would be conducted in accordance with a Written Scheme of Investigation drawn up in consultation with the CCC Historic Environment Team.

10.3.3 It is anticipated that the mitigation measures outlined for transport (see Section 6) and visual considerations (see Section 4) will be sufficient so as to limit impacts on any off-site heritage assets (e.g. scheduled monuments).
11 Water Resources

11.1 Introduction

11.1.1 This section identifies the mitigation measures required to alleviate the potential impacts of flood risk and surface water runoff during construction of the proposed development.

11.1.2 This section has been informed by the Water Resources ES Chapter and Flood Risk Assessment (PBA, 2018).

11.1.3 The Environment Agency (EA) flood map for planning indicates that the site is wholly within Flood Zone 1 ‘Low Probability’, with less than 1 in 1,000 annual probability of river or see flooding.

11.1.4 The EA surface water flood map shows that risk varies across the proposed development site from ‘Very Low’ to ‘High’. The risk is very localised across the site and it is not subject to any overland flow.

11.2 Potential Impacts

11.2.1 The potential impacts on surface water associated with construction activities are as follows;

- Increase in runoff rates;
- Uncontrolled flows of waters across surfaces; and
- Pollution of water from silt or fuel from construction machinery.

11.2.2 The principal risks during the construction period will likely be the potential for silt pollution into the Anglian Water surface water sewer network from runoff over areas of exposed earthworks and the potential for contamination due to leaks and spills associated with plant, machinery and materials.

11.2.3 There are several ‘ordinary watercourses’ in the southern part of the site which drain into an ‘awarded watercourse’ at the northern part of the site. Drainage ditches associated with the ‘awarded watercourses’ on site may be removed or rerouted as part of the proposed Surface Water Drainage Strategy. This alteration has the potential to affect flow regimes in the remaining water courses and ditches. These surface water bodies may also be impacted by pollutants such as:

- Silt;
- Cement and concrete;
- Oils and fuels;
- Waste materials; and
- Effluent / waste for welfare facilities.

11.2.5 The site at Land North of Cherry Hinton is also situated above a Principal Aquifer. In addition to pollution incidents, the remobilisation of contaminants and creation of new pathways during excavation and earthworks may have the potential to affect groundwater quality.

11.3 Mitigation

**Construction Surface Water Drainage Strategy**

11.3.1 The Principal Contractor will be required to prepare a Surface Water Management Plan, to outline appropriate water management precautions to be adopted during construction.
11.3.2 Construction will be managed in accordance with BS8582:2013 Code of practice of surface water management for development sites, other relevant standards and guidance to enable best practice to be adopted for all site works. More detailed proposals on how to manage construction risks related to water will need to be drawn up by the Principal Contractor to be agreed with SCDC and CCiC.

**Accidental Pollution Control**

11.3.3 The following measures will be implemented on site avoid accidental water pollution:

- The construction works would be managed so as to comply with the necessary standards and consents as identified by the EA and the local planning authority, and secured through planning condition;
- Any construction water runoff from the site would require the filtering out of suspended solids before reintroduction to the water system;
- Runoff areas would be identified and water drainage in those areas would be actively managed;
- Water bodies would be monitored regularly to check that the quality and quantity remains unaffected;
- Areas where contamination may occur would be provided with suitable pollution protection. Storage areas and vehicle refuelling/maintenance areas would be protected by an impervious base, while impermeable bunds of an adequate capacity would be provided around tanks containing potential pollutants;
- Potentially hazardous materials should not be stored in areas at known risk of flooding;
- Construction plant would have drip trays and undergo regular maintenance checks;
- Pollution control packs would be positioned within vulnerable areas to allow immediate reaction to any pollution incident;
- A toolbox briefing about the importance of the water supply, water bodies and use of pollution control packs would be disseminated to all site staff;
- All fuel and chemical storage would be away (twenty metres minimum) from all watercourses, all oil and fuel storage will be undertaken in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001. Storage tanks will be located on an impervious base provided with bund walls to give a containment capacity of the greater of 110 per cent of the largest tank volume within the bund or 25 per cent of the total storage capacity of all tanks within the bund. All valves and couplings will be contained within the bunded area;
- Refuelling of construction vehicles and equipment will be restricted to a designated area with properly designed fuel tanks and bunds and suitable operating procedures;
- The contractors would be required to use closed circuit wheel and chassis washing facilities located at all site boundary access and egress points;
- Particular care would be taken when working with concrete as it is highly alkaline and can cause serious pollution to controlled waters;
- In the event of a water quality incident the EA would be notified as necessary;
- The potential for flooding would be monitored via the EA’s flood warning programme; and
- Should the potential for a flood event be identified all potential pollutants would be moved to a safe area and it would be checked that the river channels are free from obstruction.

11.3.4 Appropriate practical techniques for managing pollution risk during construction include the following:

- Restrictions on the extent of vegetation removal in advance of earthworks;
- Construction of cut-off drains and grips to intercept surface water flows which will then divert flows to settlement ponds;
- Silt fences, bunds and grips at the top of watercourse embankments;
- Settlement ponds to remove suspended solids (regularly maintained);
- Siting of stockpiles a minimal distance from watercourses to avoid pollution runoff and adhering to best practice working guidelines to avoid spillages near watercourses;
- Oil booms and/or oil separators to remove fuel/oil contamination;
- Grassland infiltration where appropriate; and
- Secondary fuel/oil booms and baffles installed on existing watercourses where appropriate.
12 Contamination and Ground Conditions

12.1 Introduction

12.1.1 This section identifies the mitigation measures required to alleviate the potential impacts related to contamination and ground conditions during construction of the proposed development.

12.1.2 This section has been informed by the Ground Conditions ES Chapter (PBA, 2018).

12.2 Potential Impacts

12.2.1 During construction there is potential for construction workers and airfield workers from Cambridge Airport (due to proximity to the site) to come into contact with existing contaminated soil, water and ground gases via ingestion, inhalation and dermal absorption pathways on-site. In addition to this, potentially harmful substances and material may be brought on site which may introduce a new potential source of contamination.

12.2.2 A threat assessment was previously undertaken on site which indicated that there was a site wide low-medium risk of explosive ordnance (UXO). The risk of UXO varies across the site with the highest risk (medium) being identified in the western area.

12.3 Mitigation Measures

12.3.1 In accordance with current health and safety legislation, the Principal Contractor will be required to adopt measures to mitigate the risk to site workers. Such measures should include:

- Informing site workers of the contamination on the site and the potential health effects from exposure through site induction and ‘toolbox talks’;
- The provision of appropriate protective clothing and equipment to be worn by site workers;
- The adoption of good standards of hygiene to prevent prolonged skin contact, inhalation and ingestion of soils during construction; and
- Selection of appropriate methods of working to limit disturbance to the contaminated materials.

12.3.2 Further investigation is to be undertaken on site to delineate ‘hotspots’ of soil and groundwater contamination and monitor ground and surface water. Following this, a remediation strategy will be prepared outlining works required to mitigate potential risks to the identified receptors. The remediation works will then be implemented and validated with approval from the relevant regulators.

12.3.3 Measures will also be adopted to mitigate the risk to off-site users associated with airborne or settled dust arising from areas of potentially contaminated land. Such measures will include the selection of appropriate methods to reduce disturbance to the existing near-surface soils present on the site, such as the spraying of stockpiles and other large unsealed surfaces to limit the risk of generating airborne dust.

12.3.4 In relation to the potential for contaminative releases to occur during the construction phase, there is potential for leaks and spills which could have an adverse effect on surrounding environments such as surface and ground water. However, adoption of standard industry practices for environmental management (as outlined in Section 11), will allow risks to be appropriately controlled.
12.3.5 Due to the risk presented by unexploded ordnance, a UXO survey should be undertaken prior to construction works commencing to enable any UXOs present on site to be identified and removed safely.

12.3.6 A Soil Management Strategy will be implementing to monitor, document and audit potentially contaminated soil to enable it to be appropriately managed and identify a suitable final end use.
13 Waste and Materials Management

13.1 Introduction

13.1.1 The proposed development will generate waste material from construction which will require appropriate handling, storage, treatment, transportation and disposal. Therefore, this section identifies the mitigation measures required to alleviate the potential impacts of waste generated during construction of the proposed development.

13.1.2 This section has been informed by the Site Waste Management Plan (SWMP) (PBA, 2018).

13.2 Potential Impacts

13.2.1 The most significant generation of waste from the site will be from site clearance and excavation activities.

13.2.2 Potential impacts associated with waste arising from the construction period of the proposed development have been assessed:

- Transport (i.e. vehicle movements associated with collection / transfer of waste);
- Dust (and odour) (arising from excavation activities, storage of stockpiles and waste); and
- Noise (arising from construction activities, handling of waste);

13.2.3 Specific mitigation measures associated with these are included within the individual topic chapters within this Outline CEMP.

13.3 Mitigation Measures

Site Waste Management Plan

13.3.1 During the excavation and construction phases, mitigation measures will be implemented through a SWMP which has been submitted with this application (PBA, 2018).

13.3.2 It will be the responsibility of the Applicant and the Principal Contractor to deliver the SWMP and meet the required obligations.

13.3.3 The SWMP will help to reduce, reuse and recycle waste materials in accordance with the waste hierarchy approach to meet national waste targets of 70% construction & demolition waste to be recycled. The principles of waste reduction and recycling are represented in the waste hierarchy shown in Figure 13.1 below and should be considered throughout the construction of the development.

13.3.4 “Duty of Care” requirements will be fulfilled by the Principal Contractor. This includes using licensed waste carriers, recovery/recycling/disposal at licensed waste facilities and the recording of waste movements through use of waste transfer notes.

13.3.5 Specific impacts associated with the storage of construction waste on site can be managed through creating designated areas for segregation and storage of waste including providing skips for the separate collection of waste.
Materials Management Plan

13.3.6 Earthworks will be required for each development phase to allow for the provision of foundations, sub-base for roads and amenities. To mitigate these measures, a Materials Management Plan (MMP) should be used to manage the balance of cut and fill on-site in accordance with the CL:AIRE definition of waste. Excess arisings from the earthwork phase may include soil (top and sub soils), clays, limited volumes of sands and gravels, and foundation debris. CIRIA guides offer best practice guidance for the storage and reuse of materials arising from earthworks.

13.3.7 It will be the responsibility of the Applicant and the Principal Contractor to develop and deliver the MMP and meet the required obligations.

13.3.8 The Principal Contractor should obtain agreement from the EA that materials are only normally regarded as waste when they leave the site of production or if they require on-site treatment. Obtaining such an agreement will mean excess materials on site may not become subject to regulatory controls and therefore vastly broadening options for managing the materials.
14 Consideration for Others and the Environment

14.1.1 Membership of the Considerate Contractors Scheme will be sought and contractors appointed to deliver the enabling works will target principles outlined within this scheme. The objectives of such schemes are to foster communication and good relations with the neighbourhood and to seek and check that any construction work is undertaken without making life unpleasant for those who live and work nearby. The appointed contractor will be expected to follow a voluntary code of professional conduct, demonstrating minimum standards for practices that affect the environment around construction sites, including:

- **Considerate** - consideration for residents, workers, pedestrians, visitors, neighbouring occupiers, businesses and highway users at times and in a manner that will minimise disturbance. Special attention is to be shown to the needs of those who have difficulties with sight, hearing or mobility, those in wheelchairs, or pushing prams and pushchairs;

- **Quiet** - Noise from works, machinery, workers, radios, music, vehicles and all other sources is to be kept at a minimum. There are to be no works that are audible at the nearest residential boundary outside permitted hours of work, unless prior agreement has been reached with the Council;

- **Clean** - Footways, carriageways, public areas adjacent to the site, as well as all visible aspects of site activities such as hoardings, scaffolding and warning lights, are to be kept clean and in good order. Dust and smoke are to be kept to a minimum. Mud and spillage are to be cleaned off pavements, roads and public areas immediately;

- **Responsible** - The contractor is to check that all employees, agents, sub-contractors, suppliers, drivers and others working on or near the project or activity maintain all aspects of the Code of Good Practice;

- **Tidy** - Pride in the condition and appearance of the project or activity, adjacent highways and public areas is to be shown in every way, including the tidiness of temporary structures, materials, machinery and the constant removal of litter and rubbish;

- **Safe** - Projects, activities and vehicle movements are to be carried out with utmost care for safety of passers-by, adjacent neighbours and for workers. All plant and machinery items are to be maintained in safe working order and the safety of structures is to be checked frequently; and

- **Accountable** - A contact board is to be clearly displayed by the project or activity giving names and telephone numbers of staff who can be contacted promptly and take immediate action in response to issues raised by residents, businesses, others.
15 Conclusions

15.1 Summary

15.1.1 This document provides an Outline CEMP on which the Principal Contractor should base a more detailed CEMP which will be implemented during construction of the project.

15.1.2 Mitigation measures have been outlined to limit potential impacts of noise, air quality, contaminated land and groundwater, surface water, ecology, waste, landscape and visual amenity and artificial lighting. These mitigation measures should be taken forward for further consideration when preparing the detailed CEMP. A site specific CEMP will be provided for approval as part of any future reserved matters application and will accord with measures presented in this Outline CEMP as appropriate.

15.1.3 It has also outlined a series of general best practice principles which should be adhered to, including; a register of environmental impacts, the production of risk assessments and Method Statements, the adherence to Site Environmental Standards, the monitoring and measurement of construction activities and the roles and responsibilities of key site staff.