



Gatwick Airport Northern Runway Project

Environmental Statement

Appendix 5.3.2: Code of Construction Practice

Book 5

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1 Introduction

1.1 General

1.1.1 This document forms **ES Appendix 5.3.2: Code of Construction Practice (CoCP)** (Doc Ref. 5.3) of the Environmental Statement (ES) prepared on behalf of Gatwick Airport Limited (GAL) for the proposal to make best use of Gatwick Airport's existing runways and infrastructure (referred to within this report as 'the Project').

1.2 Purpose of the CoCP

1.2.1 The CoCP outlines the environmental management system and measures that will be in place through the construction of the Project. It ensures that best practice standards will be applied and that there is a system in place for engaging with the community and managing any complaints.

1.2.2 This CoCP legally secures the implementation of environmental mitigation measures for the construction of the Project. These mitigation measures have been identified through the Environmental Impact Assessment (EIA) process and are reported in the ES (Doc Ref. Book 5). The measures describe how GAL will manage and minimise disturbance and other environmental impacts from construction activities required to deliver the Project (as identified in the ES).

1.3 Scope of the CoCP

1.3.1 The scope of this CoCP applies to construction activities authorised by the DCO. For the purpose of this CoCP, the term 'construction' includes all pre-commencement activities and construction activities required to deliver the Project.

1.3.2 Although multiple construction works will run concurrently throughout the delivery of the Project, the CoCP will act as the overarching document for all construction related activity for the Project. The CoCP presents a consistent approach to the environmental management of construction activities for the entire Project.

1.3.3 A description of the development works proposed as part of the Project is in **ES Chapter 5: Project Description** (Doc Ref. 5.1). The **ES Appendix 5.3.1: Buildability Report** (Doc Ref. 5.3) provides more detail about how the construction of the Project could be delivered. Key construction activities will include the following:

- demolition;
- concrete breaking;
- earthworks;
- stockpiling of excavated and demolished material for re-use;
- concrete crushing/screening;
- concrete/asphalt batching;
- cutting;
- excavation;
- dewatering;
- installation of utilities, including water, power, drainage and lighting;
- piling;
- placement of concrete foundations;
- installation of precast concrete panels;
- erection of buildings including portal frames, cladding and roofing;
- building fit out;
- internal road construction;
- paving; and
- road planning.

1.3.4 The delivery of the Project will comply with appropriate environmental and health and safety legislation at the time of construction. For this reason, the appropriate statutory requirements are not repeated within this CoCP.

1.3.5 Further where an activity requires a specific permit, licence or consent these will be obtained from the relevant regulator at the appropriate time. The requirements of the permits, licences and other consents will be complied with and details can be found in the **List of other Consents and Licences** (Doc Ref. 7.5) and has not been repeated within this CoCP.

1.4 Structure of the CoCP

1.4.1 This CoCP follows the structure below:

- Section 2 – Implementation of the CoCP;
- Section 3 – Environmental Principles: a description of the environmental management system and approach to construction that will be followed through the carrying out of all construction activities;
- Section 4 – General Requirements: sets out the requirements that will apply across the construction project including working hours, construction lighting measures and the use of temporary compounds;
- Section 5 – Environmental Requirements: sets out the measures that will be employed to reduce disturbance from

construction activities, as far as reasonably practicable by environmental topic; and

- Section 6 – Roles and Responsibilities: describes how GAL will manage contractors engaged in delivering the Project to ensure that the necessary measures and methodologies are implemented.

1.4.2 The following management plans form part of the CoCP:

- Water Management Plan (Annex 1);
- Outline Construction Workforce Travel Plan (Annex 2);
- Outline Construction Traffic Management Plan (Annex 3);
- Soil Management Strategy (Annex 4); and
- Construction Resources and Waste Management Plan (Annex 5).

2 Implementation of the CoCP

2.1 General

2.1.1 This CoCP makes reference to legislative requirements and best practice measures to define the standards of construction practice that contractors will be required to adopt and implement. GAL and its contractors will be required to comply with these requirements and best practice measures as well as other legislation and byelaws relating to their construction activities relevant at the time when construction commences.

2.1.2 The CoCP as approved by the Secretary of State and the relevant management plan(s) will be incorporated into the contracts for the Principal Contractors. The Principal Contractors, subcontractors and their suppliers will be required to observe the relevant provisions of the CoCP and management plan(s) and provide evidence to GAL on how they will ensure their requirements are implemented and monitored. This information will be provided to GAL via construction method statements.

2.2 Control documents and management plans

2.2.1 For certain activities or certain sensitive receptors, additional detail of the measures that are required during the construction period has been or will be provided in specific strategies or management plans.

2.2.2 Specific strategies/plans, as listed below, will be updated post consent to reflect site specific construction methodologies/ techniques as identified during the detailed design process. The management plans will also include site-specific control

measures required to mitigate construction impacts that may be encountered at these locations.

2.2.3 The management plans fall within different categories as described below.

Construction Control Documents Outside the CoCP

2.2.4 The following control documents sit outside the CoCP but also contain measures that support the management of the construction process:

- Written Schemes of Investigation (applies in relation to buried archaeology);
- Public Rights of Way Management Strategy; and
- Employment, Skills and Business Strategy.

2.2.5 These management plans accompany this DCO Application and will be secured through requirements of the DCO and Section 106 Agreement.

Management Plans Within this CoCP

2.2.6 The following management plans form part of this CoCP but include additional information about specific measures that must be complied with during construction:

- Water Management Plan (Annex 1); and
- Construction Resource and Waste Management Plan (Annex 5).

Future Management Plans

Plans for Approval

2.2.7 Where further design information is required to identify detailed mitigation measures, management plans will be submitted for approval by the relevant local planning authority (or highway authority) following the grant of consent when more detailed information is available:

- the following management plans will be prepared in general accordance with the outline versions of the management plan submitted as annexes to this CoCP as set out below:
 - Construction Workforce Travel Plan will be in general accordance with the Outline Workforce Travel Plan (Annex 2);
 - Construction Traffic Management Plan (CTMP) will be in general accordance with the Outline CTMP (Annex 3);

- Soil Management Plans which will be in general accordance with Soils Management Strategy (Annex 4);
- the following management plans will be prepared in accordance with the measures set out in this CoCP:
 - Construction Dust Management Plans; and
 - Vegetation Retention Plans.

2.2.8 Where required, management plans will be prepared for specific areas of the Project to reflect any site-specific conditions or measures (e.g. soil management plans) and the plans will be prepared for approval by the relevant local planning authority prior to construction works commencing in those specific areas.

Internal Compliance Plans

2.2.9 As part of ensuring compliance with this CoCP and the other control documents, GAL will require a number of internal compliance documents to be prepared (e.g. Community and Engagement Management Plan, Site Waste Management Plans, Resource Management Plans, Pollution Prevention Plan and adverse weather management measures for construction). These documents do not require approval by local planning authorities.

2.2.10 A process to be followed for construction will be established to address health, safety, site security and the wider environmental issues associated with all construction works. This will include defining any specific environmental control measures to be implemented for certain activities or areas of work in accordance with the requirements of the CoCP or other management plans. It will include risk assessments and details of any necessary environmental consents.

- *Protecting the environment including preventing pollution by managing and minimising pollution risks and continuing our industry leading approach to managing our biodiversity areas; and*
- *Incorporating EHS risk and opportunity identification, into our lifecycle decision-making including the planning, design, construction, operation and decommissioning of our activities, facilities and assets.”*

3.1.3 Each Principal Contractor will be required to have an EMS accredited to ISO 14001. As part of the EMS, the Principal Contractors will be required to plan their works in advance to ensure that, as far as is reasonably practicable, measures to reduce environmental effects and ensure that the principles established in the CoCP are complied with.

3.2 Construction Approach

3.2.1 The Project will be constructed in an environmentally sensitive manner and will meet the requirements of relevant legislation, codes of practice and standards. The construction approach is to achieve the build-out of all the required new and altered facilities with the minimum practicable disruption to the operation of the airport and highways and to limit the adverse impacts on the local community, businesses, road users and the environment as far as reasonably practicable. This will include the impact of the required works on road users, pedestrians, cyclists, and local communities in relation to traffic management, noise, vibration and pollution control.

3.2.2 A **Sustainability Statement** for the Project accompanies the DCO Application (**Appendix D** of the **Planning Statement** (Doc Ref. 7.1). The purpose of the **Sustainability Statement** is to demonstrate that the principles of sustainability have been considered during the design of the Project and how these principles would be embedded throughout the lifecycle of the Project. The Sustainability Statement considers GAL’s sustainability strategy (Second Decade of Change to 2030) (GAL, 2021) which sets a number of sustainability targets. Performance against these targets and other initiatives undertaken are reported on an annual basis.

3.2.3 **ES Appendix 5.4.2: Carbon Action Plan** (Doc Ref. 5.3) contains measures that will mitigate the emissions arising in respect of the Project. It commits to key outcomes and outlines the actions that GAL could take to minimise emissions and in so doing, play a part in the global transition to a low carbon future for the aviation sector. It includes a list of measures to reduce emissions from on-

3 Environmental Principles

3.1 Environmental Management System

3.1.1 GAL’s construction and operation teams currently do and will continue to operate an Environmental Management System (EMS), which is certified to British Standard (BS) EN ISO 14001.

3.1.2 Underlying the EMS is GAL’s Environment, Health and Safety (EHS) Policy (2020), which confirms that GAL will continue to reduce the risk to the environment by:

- *“Driving continuous improvement in our EHS performance by setting and monitoring clear, measurable objectives that are visible and meaningful to our employees;*

site activity (airside vehicles, energy and fixed plant and miscellaneous emissions) and aviation (aircraft emissions).

3.2.4 The Project site is predominantly located within the operational area of Gatwick airport or operational highways. Construction will be carried within the context of the need to remain in compliance with the operating procedures, standards and requirements that are in place at the airport and on the highways.

3.2.5 A key aspect of the construction approach is to ensure health and safety is central to the design and construction of the airport works and the required highway improvements in accordance with the Health and Safety at Work etc. Act 1974 and the CDM Regulations 2015 (CDM 2015). Measures to protect the workforce and the travelling public will be implemented whenever necessary.

3.2.6 In addition to meeting the commitments in the CoCP, GAL will require its Principal Contractors to sign up to, and implement, the Considerate Constructors' Scheme (CCS) or a locally recognised certification scheme. The CCS scheme is a voluntary code of considerate practice which seeks to minimise disturbance caused by construction sites to the immediate neighbourhood and recognises GAL's commitment to raise standards of site management.

3.2.7 Adherence to the Fleet Operator Recognition Scheme (FORS) will also be mandated for all supply chain fleet operators engaged to support the Project. FORS is a voluntary national fleet accreditation scheme designed to help improve fleet operator performance in key areas such as environmental performance, safety, and operational efficiency, delivery management mechanisms will support the employment of FORS standards across the Contractor's supply chain, preventing the use of non-accredited vehicles.

3.3 Environmental Training

3.3.1 Specific training will be provided to all construction staff working on the delivery of the Project. The training will focus on the environmental constraints at the Project site; their responsibilities for minimising the risk to the environment and implementing the measures set out in the CoCP and the detailed management plans. Further information on general training is provided in section 4.8.

4 General Requirements

4.1 Introduction

4.1.1 This section sets out the requirements which apply across the construction sites and activities and includes requirements related to:

- working hours;
- pre-construction surveys;
- enabling works activities;
- temporary construction compounds;
- good housekeeping;
- utilities management;
- trained workforce;
- construction lighting;
- emergency planning and procedures;
- aerodrome safeguarding; and
- community engagement.

4.2 Working Hours

4.2.1 Construction of the Project will be undertaken across a range of shift times. Some of the shift times will be mandated by operational requirements and some will be implemented as mitigation measures to minimise the impacts on the areas surrounding the Airport.

4.2.2 Working hours may vary by activity and sequencing across different construction sites depending on potentially affected land uses and receptors. Shift start and finish times will be staggered where practicable to reduce pressure on local transport services, roads and construction site infrastructure.

Working Hours Within the Airport

4.2.3 During construction, the airport will continue to operate on a 24 hour, seven days per week basis. To maintain safety and minimise disruption to the operation of the airport, any work within the airport boundary may require the closure of facilities as operationally necessary and hence are likely to be scheduled to take place overnight.

4.2.4 This will include use of the construction compounds and construction working areas within the airport on a daily 24-hour basis. It is acknowledged that the use of specified construction equipment and construction processes in sensitive locations, (e.g. near residential properties) and at noise sensitive times,

may need to be subject to restrictions in relation to operating hours and limits for operating noise levels, or other mitigation measures, as necessary and practicable. Potential timing restrictions on the use of specified equipment (if required) will be identified and included as part of the applications for consent from the relevant local authorities under Section 61 of the Control of Pollution Act 1974 for the proposed construction works where necessary.

Working Hours Outside the Airport

Core Working Hours

4.2.5 Outside the airport boundary, the core working hours will be 07:00 to 19:00 Monday to Friday (excluding bank holidays) and 07:00 to 13:00 on Saturdays.

4.2.6 A period of up to one hour at the beginning and end of these core working periods is anticipated to be used for start-up and close-down of activities. This will include (but not be limited to) unloading, site briefings, inspection, refuelling, maintenance and general preparation work and housekeeping works. These activities will not include operation of plant or machinery that is likely to cause a disturbance to local residents or businesses.

Extended Working Hours

4.2.7 In most cases, extended working hours will be from 07:00 to 22:00 Monday to Saturday (excluding bank holidays).

4.2.8 Certain operations such as earthworks are seasonal and weather dependent. In these instances, extended working hours may be necessary for such operations to take advantage of daylight hours. Where necessary, Section 61 consents will be obtained from the relevant local authority.

4.2.9 Certain other specific construction activities will require use of extended working hours for reasons of engineering practicability. These activities include, but are not limited to, major concrete pours and piling/diaphragm wall works. Surveys (e.g. for wildlife or engineering purposes) may also need to be carried out outside of the core working hours.

4.2.10 Repairs or maintenance of construction equipment that is required to be carried out outside core working hours will normally be carried out on Saturday afternoons between 13:00 and 18:00, or Sundays between 10:00 and 17:00. Only essential repairs or maintenance works will be undertaken on Sundays. Repair and maintenance activities will comprise general mechanical maintenance to construction machinery and plant

such as cranes, excavators, compressors, grouting equipment, and dewatering pumps.

Night Working and 24/7 Working Hours

4.2.11 In certain circumstances, works will have to be undertaken outside the core and extended working hours. The relevant local planning authority and the public will be notified in advance in accordance with the Communications and Engagement Management Plan (see section 4.12). Where necessary, Section 61 consents will be obtained from the relevant local authority.

4.2.12 Any activities required to be carried out outside of the core or extended hours within the strategic road network will be agreed with National Highways in advance.

4.2.13 Construction activities outside of core and extended working hours (which may include night working and 24-hour working) are required for:

- activities within the existing highways and railway boundaries such as installation of signage, implementation of traffic management, installation of signage, road resurfacing, demolition works, installation of temporary works and installation of beams on the new bridges and structures;
- activities that require enhanced safety and environmental requirements;
- activities where night working and/or 24 hour working for reasons of safety, operational restrictions, engineering practicability and to minimise disruption to the travelling public;
- utilisation of periods with low demand or flows for utility diversions;
- utilisation of periods of low traffic flows for such as abnormal loads and construction plant delivery; and
- ensuring minimum disruption to ongoing Gatwick operations during the day.

4.3 Pre-construction Surveys

4.3.1 Before starting construction works certain surveys will need to be carried out across the site to either inform detailed design, any additional consents or licences that need to be obtained and/or any specific mitigation measures that need to be provided.

4.3.2 The locations of all pre-construction archaeology, ground investigation and Unexploded Ordnance (UXO) surveys will be assessed for their potential impacts on ecology and nature

conservation and appropriate mitigation will be implemented. This will include altering survey locations to avoid damage to features of high value and watching briefs to ensure such features are not impacted upon.

4.3.3 This sub-section describes those pre-construction surveys that are anticipated.

Archaeological and heritage surveys

4.3.4 Pre-construction archaeological and heritage surveys will be completed in accordance with the approach outlined in the Written Schemes of Investigation to be secured via a requirement in Schedule 2 of the DCO.

Unexploded Ordnance (UXO) surveys

4.3.5 A risk assessment of unexploded ordnance will be completed in advance of the construction works. Risk assessment factors will be based upon the history and previous usage of a site and its surroundings. Appropriate measures to mitigate the risk will be adopted on a case-by-case basis.

Condition Surveys

4.3.6 Condition surveys will be carried out to establish the condition of structures and existing buildings adjacent or near the works site (that may be structurally affected by construction works).

Baseline noise and dust monitoring

4.3.7 Pre-construction baseline noise and dust monitoring will be undertaken to confirm previously recorded noise levels. Further details of the baseline monitoring are provided in section 5.8 of this CoCP.

Ecological surveys

4.3.8 Ecological surveys will be necessary for the advance of the works to support the application for any protected species licenses required. Further details of the pre-construction ecological surveys are provided in section 5.4 of this CoCP.

Utility surveys

4.3.9 A survey of existing utilities that may be affected by the Project, including field drains on agricultural land, will be undertaken prior to construction.

Ground investigations

4.3.10 Further ground investigation and assessment will be undertaken during the detailed design stage. The investigations will be undertaken in specific areas identified in **ES Chapter 10: Ground Conditions** (Doc Ref. 5.1) and **ES Appendix 10.9.1: Preliminary Risk Assessment** (Doc Ref. 5.3).

4.4 Enabling Works Activities

4.4.1 A number of activities will be implemented to create the infrastructure needed for the construction work involved with the Project. This sub-section describes those activities that are anticipated.

Establishment of Temporary Construction Compounds

4.4.2 One of the main activities to enable the construction is the establishment of the temporary construction compounds. Measures relating to this are set out in section 3.5.

Early Tree and Vegetation Protection

4.4.3 Any tree clearance will be planned with the Ecological Clerk of Works (ECoW) in accordance with industry standards and guidelines. Tree clearance works will be undertaken outside of the breeding bird season (see section 5.3).

4.4.4 Within the site, areas that are "out of bounds" to construction activities (e.g. ecologically sensitive areas, retained vegetation) will be fenced off or suitably demarcated to ensure plant and machinery cannot enter.

Obtaining relevant Permits/Licences

4.4.5 Any necessary third-party permissions and approvals will be obtained before commencing the relevant site works. These may be required following the results of the pre-construction surveys or may be required in advance of specific activities taking place. All consents and permits will be obtained and implemented as required throughout the construction period.

4.4.6 The **List of Other Consents and Licences** (Doc Ref. 7.5) describes those that are anticipated to be necessary.

Third party landowners

4.4.7 Where a landowner's assets will be affected by the new section of highway, appropriate accommodation works will be undertaken in advance of the main contract. This will, for example, include

<p>new field access points where the existing entrances and fencing are affected to delineate new or adjusted boundaries as agreed with the landowner(s).</p>	4.5.7	<p>All construction compounds will be secured to protect against unauthorised entry. The type of fencing will be selected to suit the location and purpose, including airport security considerations.</p>	
<p>4.5 Temporary Construction Compounds</p>	4.5.8	<p>All compounds are anticipated to cease use on completion of the relevant works. All temporary compounds will be restored to their previous land use following completion of the works.</p>	
<p>4.5.1 The construction process will be facilitated by the temporary construction compounds and storage areas which are located across the site. Further information about how GAL is intending to use these temporary construction compounds to deliver the Project can be found in the ES Appendix 5.3.1: Buildability Report (Doc Ref. 5.3).</p>	4.6	<p>Good Housekeeping</p>	<p>Construction waste</p> <p>4.6.6 Construction waste from the Project will be managed in accordance with the ES Appendix 5.3.2: CoCP Annex 5 - Construction Resources and Waste Management Plan (Doc Ref. 5.3) which incorporates the principles of the waste hierarchy (i.e. avoid, reduce, reuse, recycle, recover and disposal).</p>
<p>4.5.2 The main temporary construction compounds are:</p> <ul style="list-style-type: none"> ▪ Main contractor compound (known as MA1); ▪ Airfield satellite compound (and laydown area); ▪ Car park Z compound; ▪ Car park Y compound; ▪ South Terminal roundabout contractor compound; ▪ Longbridge roundabout contractor compound; and ▪ Car park B compound. 	4.6.1	<p>A good housekeeping policy will be applied to construction areas at all times. As far as reasonably practicable the following principles will be applied:</p> <ul style="list-style-type: none"> ▪ all working areas will be kept in a clean and tidy condition; ▪ adequate welfare facilities will be provided for construction staff; ▪ smoking areas at site offices/compounds or work sites will be equipped with containers for smoking wastes – these will not be located at the boundary of working areas or adjacent to neighbouring land; ▪ wheel washing facilities will be provided and cleaned frequently; ▪ open fires will be prohibited at all times; and ▪ all necessary measures will be taken to minimise the risk of fire and the contractor will comply with the requirements of the local fire authority and the Health and Safety Executive’s (HSE) HSG 168 Fire safety in construction (HSE, 2010). 	<p>4.6.7 Site Waste Management Plans (SWMPs) will be prepared (following the template in ES Appendix 5.3.2: CoCP Annex 5 - Construction Resources and Waste Management Plan (Doc Ref. 5.3)) during the detailed design stage to record design decisions and construction techniques to minimise waste.</p>
<p>4.5.3 Of these, four would be provided specifically to support the construction of the surface access works.</p>	4.6.2	<p>Access to construction areas will be limited to specified entry points and all personnel entries/exits will be recorded for security and health and safety purposes.</p>	<p>4.6.8 The SWMPs will be maintained during the construction process to record the movement and management of waste from the construction areas and to calculate the overall waste generated from the Project. All waste will be transported and managed by appropriately licenced contractors and subject to the duty of care requirements</p>
<p>4.5.4 All of the above main temporary construction compounds would have a minimum of services in line with CDM 2015 regulations, including site containers, short-term material laydown area and pick-up point for workforce vans.</p>	4.6.3	<p>All boundary fences/screens will be maintained in a tidy condition and will be fit for purpose.</p>	<p>Pollution Prevention</p> <p>4.6.9 Prior to construction GAL will prepare a Pollution Prevention Plan setting out appropriate measures to control the risk of pollution due to construction works, materials and extreme weather events. The measures will consider the risk of pollution from construction activities and present pro-active management practices to ensure that any pollution that may occur is minimised, controlled, reported to the relevant parties and remediated. The Plan will include measures from section 5.5.13 of the CoCP and from ES Appendix 5.3.2: CoCP Annex 1 - Water Management Plan (Doc Ref. 5.3).</p>
<p>4.5.5 Compounds will include the following as necessary:</p> <ul style="list-style-type: none"> ▪ Main office location for project team and site management; ▪ Airside security access gate and associated security provisions; ▪ Welfare facilities for most of the work force (including canteen, toilets, rest rooms and wet rooms); ▪ Batching plant(s) for either or both of concrete and asphalt; ▪ Materials stockpiles; ▪ Limited parking arrangements for senior supervisors and liveried vehicles; ▪ Work force bus facility; and ▪ Waste management areas (see ES Appendix 5.3.2: CoCP Annex 5 - Construction Resources and Waste Management Plan (Doc Ref. 5.3)). 	4.6.4	<p>All temporary screening and fencing will be removed as soon as reasonably practicable after completion of the works.</p>	<p>4.7 Utilities Management</p>
<p>4.5.6 In addition, a number of temporary compounds may be erected to support specific construction activities.</p>	4.6.5	<p>The risk of pest/vermin infestation will be reduced by ensuring any putrescible waste (e.g. food waste) is stored appropriately and is regularly collected from the welfare facilities. Effective preventative pest control measures will be implemented; any pest infestation will be dealt with promptly.</p>	<p>4.7.1 Any field drainage intercepted during construction will be either reinstated on completion of construction or diverted to a secondary channel. Further information on the drainage survey is provided in ES Appendix 5.3.2: CoCP Annex 1 - Water Management Plan (Doc Ref. 5.3).</p> <p>4.7.2 An essential element of preparatory works to enable the completion of the wider works will be the diversion of existing utilities and services.</p> <p>4.7.3 This will typically involve the provision of an alternative route for the service(s), commissioning the new installation and a switch</p>

		<ul style="list-style-type: none"> ▪ The lighting would be limited within the intended task area and will not stray beyond the site boundaries. ▪ This lighting arrangement allows vehicle movement and minimises disruption.
<p>4.7.4 Works will be carried out in line with the safety recommendations of the New Roads and Street Works Act 1991(NRSWA), Highway Authorities and Utilities Committee (HAUC) and Best Practice in Avoiding Underground Services (BPAUS).</p>	<ul style="list-style-type: none"> ▪ Managing health and safety in construction HSE L153 (HSE, 2015); ▪ Building Construction Handbook 12th edition (Building Construction, 2020); ▪ Society of Light and Lighting – Code for Lighting (SLL, 2012); ▪ The Construction and Design Management Regulations (2015); and ▪ BS EN 1264: Light and Lighting – Lighting of Works Places Part 2: Outdoor Work Places (BS, 2014). 	<p>4.9.9 Surface mounted lighting arrangements are typically used for perimeter fencing, footpaths and compounds (see Figure 4.3). In principle the following will be considered in development of the lighting design:</p>
<p>4.8 Trained Workforce</p>	<p>4.9.3 Task-based lighting will be provided for specific high-risk tasks. Task-based lighting will be switched off after use and at the end of the working shift. The design of task based lighting will consider the illuminance recommendations in BS EN 12464 Part 2 (2014).</p>	<ul style="list-style-type: none"> ▪ Luminaires will provide lighting to the area of illumination by directing the light downwards and avoid tilting. ▪ The lighting will be limited within the intended task area and not stray beyond the site boundaries.
<p>4.8.1 GAL will ensure that its contractors employ suitably qualified and experienced personnel (SQEP). GAL will require all relevant staff to hold the appropriate Construction Skills Certification Scheme (CSCS) card (or equivalent) as a minimum requirement. The CSCS card is a key tool to demonstrate that a certain level of health and safety training relevant to the industry has been acquired. Health and safety training in disciplines not using the CSCS will be demonstrated by the contractor’s audit schedules and training matrices.</p>	<p>4.9.4 Lighting will be designed, positioned and directed to account for aesthetic and environmental conditions using horizontal cut-off optics and zero floodlight tilt angles (where practicable).</p>	<p>4.9.10 Effects such as sky glow and light intrusion beyond the construction site will be considered. Lighting will be visually checked from the perspective of sensitive receptors (e.g. nearby to the residential properties) and any necessary adjustments promptly made.</p>
<p>4.8.2 GAL (via its Principal Contractors) will also be responsible for identifying and providing the training needs of their personnel. The training will include site briefings and toolbox talks to equip the workforce with the necessary knowledge on health, safety and environmental topics, and the relevant environmental control measures pertinent to works to be carried out that day</p>	<p>4.9.5 Where practicable, lighting will seek to avoid intrusion on adjacent buildings, sensitive receptors, ecological receptors and structures used by protected species, and additional land uses to prevent unnecessary disturbance. The identified aesthetic and environmental measures will be most applicable to sites where night working will be undertaken.</p>	<p>4.9.11 Lighting will be designed to avoid changes to the apparent colour or visibility of any safety signs or other safety-related items such as fire extinguishers. Where necessary, additional lighting will be provided to illuminate shadow areas where hazards for construction activities are obscured by shadows.</p>
<p>4.8.3 A site induction will be provided for all personnel prior to working onsite. As well as covering safety issues, the site induction will highlight the environmental constraints onsite, environmental protection measures, and good practice measures.</p>	<p>4.9.6 In the event that a complaint is received from a nearby resident, the complaint will be considered and responded to. Where safe and practicable to do so further measures will be taken to mitigate light obtrusion (refer to the complaints procedure in section 4.12).</p>	<p>4.9.12 Where failure of the primary artificial lighting would be a risk to health and safety, emergency lighting will be provided. Where it is not possible to have lighting that comes on automatically when the primary lighting fails, portable battery powered lighting may be suitable, subject to an appropriate risk assessment.</p>
<p>4.9 Construction Lighting</p>	<p>4.9.7 Lighting for construction compounds and workforce areas will incorporate restricted upwards light spillage and energy efficient fittings. Checks will be carried out on a regular basis to ensure that lighting has not been repositioned.</p>	<p>4.9.13 In addition, emergency routes will be kept well-lit while there are workers on the site and emergency lighting provided in case of failure of the primary lighting.</p>
<p>4.9.1 Lighting of construction sites will be required to ensure that construction work is able to continue safely and effectively during the night-time works and other periods of insufficient natural light. This will include lighting to the construction working areas, storage and circulation areas and access points. Where necessary, lighting to site boundaries will be provided and illumination will be sufficient to provide a safe route for the construction workforce and passing pedestrians/vehicles.</p>	<p>4.9.8 Typical site lighting arrangements vary and are dependent on the area of illumination and the activity undertaken. In principle the following will be considered in development of the construction phase lighting designs:</p>	<p>4.9.14 The operation of the airfield is of critical importance. All lighting schemes will be compliant with the relevant aviation requirements and standards. Site lighting will be located and directed so that it will not cause undue interference with airport operations as well as railway operations and highway users.</p>
<p>4.9.2 The design of lighting during the construction process will be in accordance with the following regulations, standards and guidance documents:</p> <ul style="list-style-type: none"> ▪ Health and safety in construction 3rd edition HSE HSG150 (HSE 2006); 	<ul style="list-style-type: none"> ▪ Luminaires would be installed on posts or mast supports to provide lighting to the area of illumination from either one side (see Figure 4.1) or both sides (see Figure 4.2) (as necessary). 	<p>4.9.15 Measures will be considered to enhance the public sense of safety and security within and around the construction sites. For example, measures will be adopted to avoid shadows cast from the site on surrounding footpaths, walkways, roads and amenity areas. Further measures may include lighting combined with smart-technology where appropriate, such as lighting activated</p>

with motion sensors to avoid unnecessary usage and act as a security method.

- 4.9.16 GAL will keep a record of lighting installed on the construction site. The record will be available on request to show that all lighting fixtures comply with the requirements within the CoCP. Where requirements have not been met, the record will explain why and detail why and what alternative approaches have been implemented.
- 4.9.17 Longbridge Roundabout Construction Compound is partially within the Church Road (Horley) Conservation Area. Particular consideration will be given to monitoring and mitigating obtrusive light that would adversely impact on the character of the existing nocturnal lighting scene from the construction compound and works on Longbridge Roundabout and the Brighton Road bridge construction. This will include avoid light spill and light intensity exceeding ILP GN01 thresholds from the construction compound and constructions works of the Longbridge Roundabout and Brighton Road Bridge onto land east of the River Mole.
- 4.9.18 Specific lighting measures to minimise impacts to bats are outlined in section 5.4.

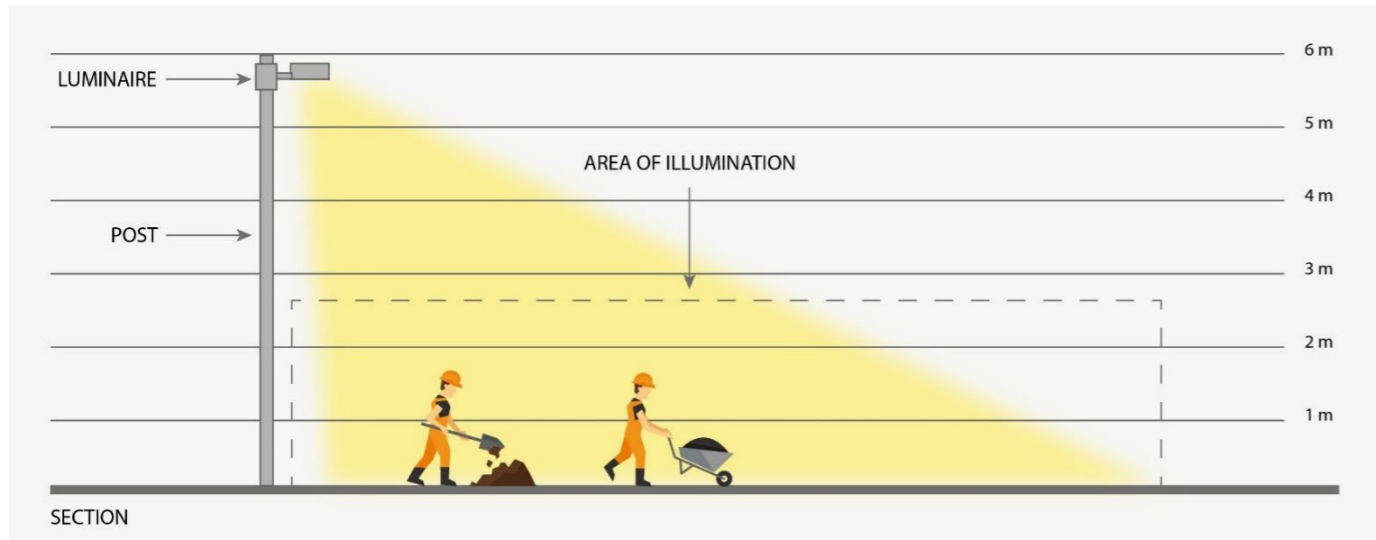


Figure 4.1: Post mounted site lighting arrangement

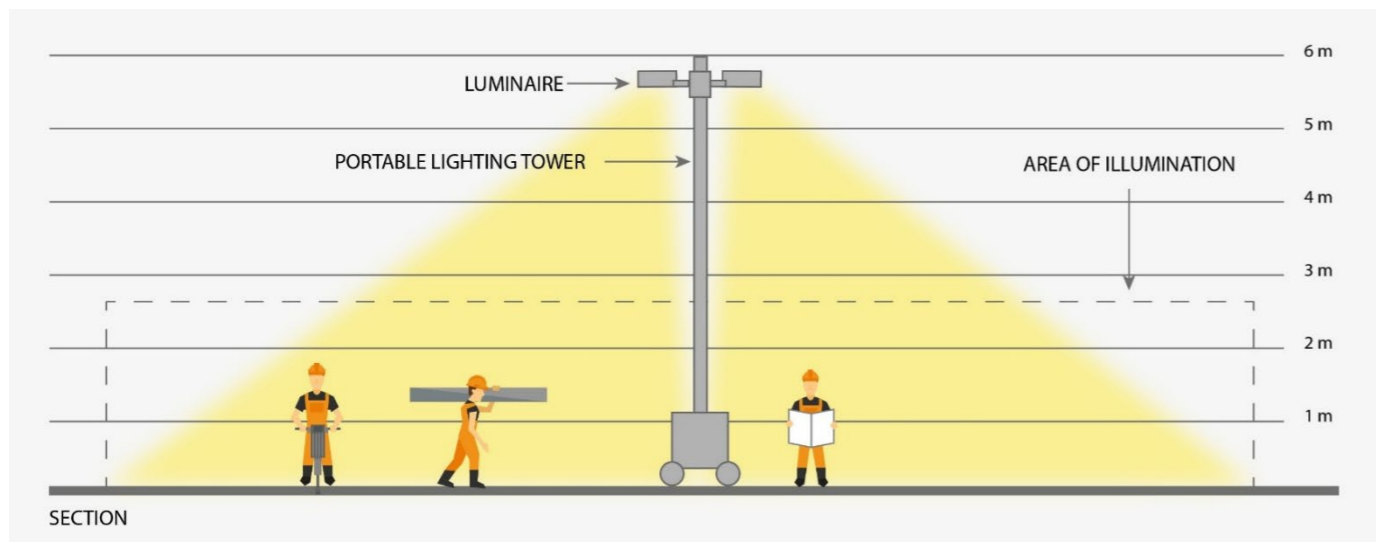


Figure 4.2: Portable mounted site lighting arrangement

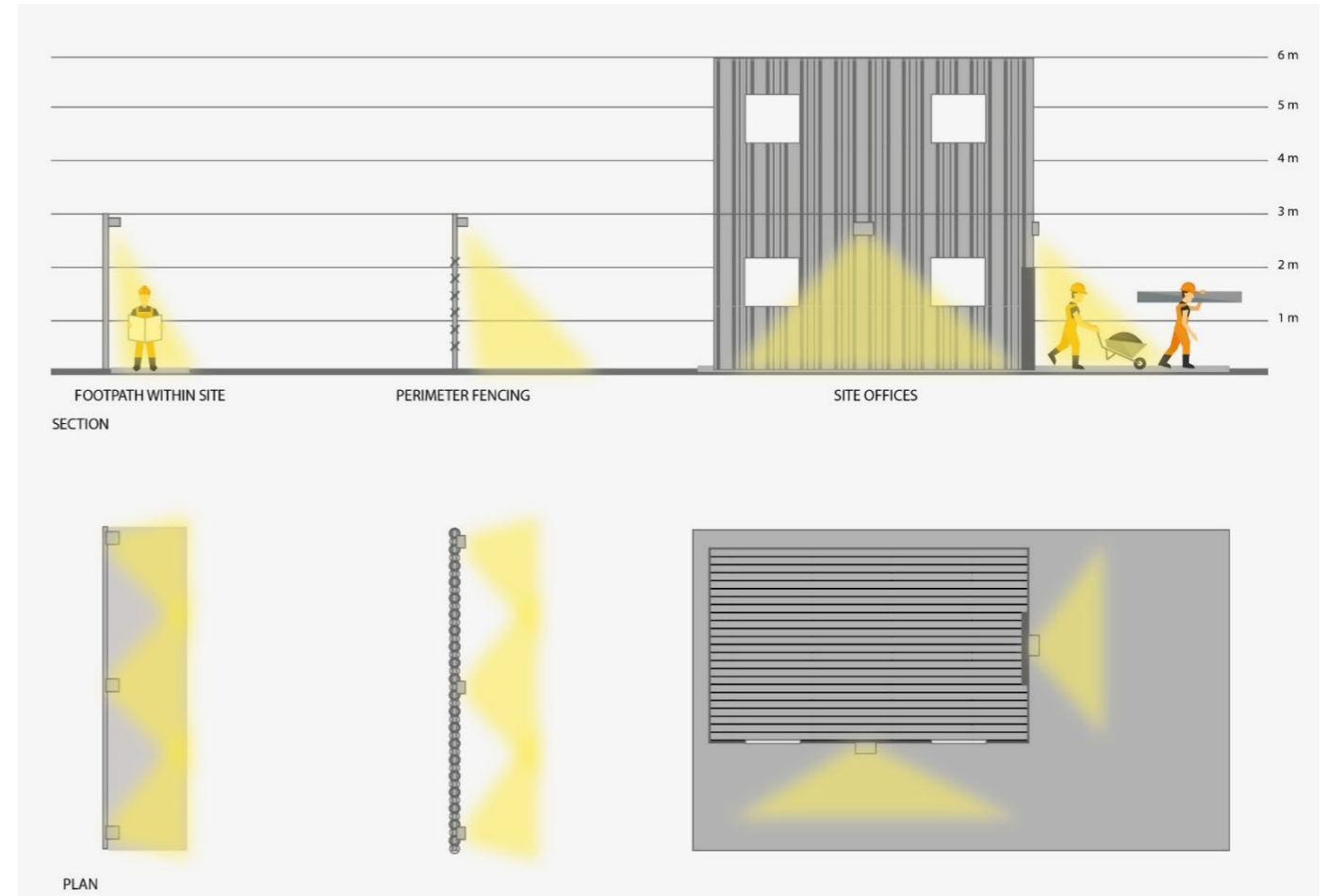


Figure 4.3: Surface mounted site lighting arrangement

4.10 Emergency Planning and Procedure

4.10.1 Emergency procedures will be developed prior to construction of the Project. The procedures will consider the anticipated hazards and the site conditions and will have regard to **Appendix 5.3.4: Major Accidents and Disasters** (Doc. Ref. 5.3) and GAL's existing emergency procedures.

4.10.2 The procedures will include emergency pollution control measures (based on Environment Agency guidelines where appropriate), fire and site evacuation, and instructions to workforce. The emergency procedures will also contain emergency phone numbers and the method of notifying local authorities and statutory authorities. The procedures will be displayed at the work sites and all site staff will be required to follow them.

4.11 Safeguarding within the Airport

4.11.1 The airport will remain operational whilst the Project is being delivered. Therefore, all requirements, standards and procedures which are required to be in place for the operational airport will continue to have effect through the construction of the Project.

4.11.2 Construction works will be undertaken in accordance with the safeguarding requirements of the Aerodrome Manual for Gatwick Airport (GAL, 2019). Construction activities within the airport boundary will be managed through GAL's existing permit and works approval systems. These may require details of the type of activity, start/stop times, location, people required and their competencies, risk assessments and method statements, and any hazardous activities permits. Appropriate construction staff would be required to comply with the relevant airside and personnel rules and instructions given by GAL.

4.11.3 "Safeguarding of Aerodromes" is the process to ensure that the operation and development of aerodromes is not inhibited by new developments in their vicinity. In particular, the process contributes to the safe operation of aircraft during the approach, take-off and landing procedure, whilst flying in the vicinity of the aerodrome, or while manoeuvring on the ground.

4.11.4 The objectives of aerodrome safeguarding at Gatwick most pertinent to the construction of the Project are:

- to ensure the airspace around the aerodrome is maintained free of obstacles to enable aircraft operations to be conducted safely;

- to maintain the integrity of visual and radio-based aids to air navigation; and
- to contain other hazards such as birds, wildlife and the uncontrolled use of construction equipment (e.g. cranes).

4.11.5 To achieve these objectives, the aerodrome has a series of safeguarded surfaces and areas (e.g. obstacle limitation surfaces) that define the height limits for temporary obstacles that may endanger aircraft in flight or interfere with any visual or radio aids to air navigation.

4.11.6 The siting of temporary construction buildings and equipment associated with the construction of the Project will be in accordance with these safeguarded surfaces/areas. Regular checks of temporary obstacles on and around the aerodrome will be undertaken and the use of cranes will be in accordance with the Gatwick Airport Directive (GAD) 'Procedure for the Approval of Cranes and Other Tall Construction Equipment'.

4.11.7 The planning and undertaking of construction activities will take account of GAL's procedures for managing the risk of bird strike. The Principal Contractor(s) will be made aware of the existing sites used by birds within the bird hazard area and appropriate measures will be taken to reduce the risk of construction activities attracting birds (e.g. providing covered storage and regular removal of putrescible waste, and the management of earthworks and spoil storage areas, and work next to water bodies). For further information on birds see section 5.4.

4.12 Community Engagement

4.12.1 A proactive approach will be adopted to communications with the local community and stakeholders. Prior to construction, GAL will develop a Communications and Engagement Management Plan which contractors will be required to adhere to, to ensure that stakeholders are informed of works activities and to maintain good relationships with other parties. The plan will be a GAL internal document and will draw together the different mechanisms of communicating information about the Project.

4.12.2 GAL will take reasonable steps to engage with the community, particularly focusing on those who may be most affected by construction impacts, including community groups, residents, businesses, and landowners.

Regular Meetings

4.12.3 During the construction process, regular updates will be given to the Gatwick Airport Consultative Committee (GATCOM).

4.12.4 GATCOM meetings are generally held every three months and comprise key stakeholders such as local authority members and representatives of the local community and local businesses. Updates will include construction progress, programme and timing of works, and other matters of interest to members.

Advance Notice of Works

4.12.5 Occupiers of nearby residential properties and relevant local planning authorities will be informed at least two weeks in advance of works taking place affecting PRow, local roads and the strategic road network. This notice will include the duration of the works, the nature of the works and the working hours. The means of notification will be confirmed in the Community and Engagement Management Plan.

Community Email Address

4.12.6 GAL and/or its Principal Contractor(s) will maintain a community email address. The email will be monitored during office hours and deal with enquiries and issues arising from members of the public and local businesses.

4.12.7 A complaints procedure will be implemented during the construction process. Complaints will be investigated and, where required, mitigation will be implemented.

5 Management of Environmental Effects

5.1 Introduction

5.1.1 The mitigation measures within the following section relate to environmental topics which have been identified through the EIA process and consultation with stakeholders. Where relevant, signposts have been included to management plans which provide further information about the mitigation measures.

5.2 Historic Environment

Objectives

5.2.1 To eliminate or minimise the effect of the Project on the setting of the existing heritage assets and archaeological remains during construction of the Project.

Management Measures

5.2.2 The approach for mitigating potential impacts to buried archaeology is set out in the Written Scheme of Investigation

(WSI) for Surrey County Council and the WSI for West Sussex County Council. The WSIs include details of when and where further archaeological investigation will be required and how the results of any investigation will be published. The WSI also set out the methodologies for recording historic buildings prior to demolition and identify those buildings for which recording is required.

5.2.3 The establishment of the construction compound at Car Park A North will take into account any archaeological sensitivities. A programme of archaeological evaluation will be undertaken ahead of the establishment of the compound.

5.2.4 If waterlogged channels are encountered during work they will be retained in-situ wherever possible. Appropriate mitigation will be undertaken during construction to ensure that waterlogged conditions are maintained.

Archaeological Protection

5.2.5 In some cases, materials may be placed over known archaeological remains such that the impact of construction activities does not extend as far as the remains. The placement of materials may be permanent or may be temporary, with the materials being removed following completion of the construction activities.

5.3 Landscape, Townscape and Visual Resources

Objectives

5.3.1 To ensure that:

- green infrastructure assets are retained wherever practicable.
- adverse impacts on the important features and locally distinctive patterns of development at Gatwick Airport are minimised;
- adverse impacts on the character of surrounding landscapes and townscapes are minimised;
- important urban green spaces including Riverside Garden Park are protected; and
- visually significant vegetation is retained where practicable to minimise adverse effects on visual receptors, and important views are protected.

Management Measures

5.3.2 Vegetation retention plans will be prepared prior to construction and agreed with the relevant local authority. The Plan will be

implemented for all elements of the Project that coincide with existing significant hedgerows, woodland, trees, shrubs, wetland and amenity planting or elements of the Project that lie immediately adjacent to significant vegetation that may be affected during the construction phase or during maintenance activities.

5.3.3 As part of the plan, buffers will be created around the vegetation to be retained. Fencing will be provided in accordance with BS 5837:2012 (Trees in relation to design, demolition and construction) and machinery/vehicles will be prohibited from entering the buffer areas.

5.3.4 Lighting of the construction sites will be required to ensure that construction work is able to continue safely and effectively during night-time works and other periods of insufficient natural light. Further details on construction lighting are provided in section 4.9.

5.4 Ecology and Nature Conservation

Objectives

5.4.1 To minimise the impact of construction on features of ecology and nature conservation value.

Management Measures

Pre-construction surveys

5.4.2 Surveys will be carried out to identify any protected species (including Great Crested Newts, peregrine, little ringed plover and firecrest) within the area. This will inform any necessary applications for protected species licences and any method statements which are required to be complied with during the construction period.

5.4.3 Any required consents or licences will be obtained and complied with.

Habitats and Species

5.4.4 Measures will be put in place to ensure that a minimum 15 metre buffer is retained between ancient woodland and construction areas. Appropriately sturdy fencing (in accordance with BS 5837) will be erected around the 15-metre buffer to prevent access by people, materials or machinery to avoid compaction of soils or roots and to avoid any accidental damage.

5.4.5 A root protection area around any retained hedgerows/trees will be identified and protected with suitable fencing in general

accordance with BS5837:2012 to ensure that construction traffic/site operatives do not risk damaging the root systems of hedgerows.

5.4.6 Any other existing trees, scrub and hedgerows proposed to be retained and incorporated into the design for the site will be protected during construction. Measures will be put in place to ensure that bat foraging/commuting habitat and retained areas of trees, hedge or scrub are adequately protected from damage or destruction during the construction phase of the Project. Protective fencing (in accordance with BS 5837) will be erected around these features to prevent access by people, materials or machinery. This will reduce the risk of accidental damage during construction activities.

5.4.7 Where practicable, semi-natural broadleaved woodland due to be lost will be cleared sensitively so that bluebell bulbs could be collected and replanted within new woodland.

5.4.8 Surface access works undertaken along the margins of Pond F, or within close proximity to it, will be undertaken following an ecology method statement and with an Ecological Clerk of Works present to reduce the likelihood of effects on pennyroyal.

5.4.9 Measures for the appropriate storage of materials and fuels and the management of dust during construction activities (such as the breaking up of the existing runway) and runoff (including silt) will be implemented to avoid the pollution of designated sites, ancient woodland and the local water environment during construction. Pollution prevention measures are set out within the **ES Appendix 5.3.2: CoCP Annex 1 - Water Management Plan** (Doc Ref.5.3) . Dust control measures will be set out in the Construction Dust Management Plan.

5.4.10 The airfield satellite compound will be located outside the River Mole diversion footprint to allow the new channel to establish. An appropriate buffer will be created along the channel.

5.4.11 Lighting measures will be implemented to ensure that construction lighting is directed to where it is needed and does not significantly increase levels of artificial lighting on sensitive habitats, such as retained woodland and river corridors. Focus areas for the mitigation of light obtrusion are summarised below:

- A23/River Mole bridge construction – avoid light spill over the water and river banks.
- Brighton Road bridge construction - avoid light spill over the water and river banks.

- Riverside Garden Park – avoid light spill into the woodlands during night piling works and traffic management.
- Huntsgreen/Horleyland/Brockley Woods – avoid light spill into ancient woodlands from construction compounds.

5.4.12 Lighting will be designed in accordance with Institute of Lighting Professionals /Bat Conservation Trust guidelines as appropriate. Construction task lighting will be directed to where it is needed only, to avoid light spillage. Accessories such as hoods, cowls and shields will be used to direct light to the intended area only. Light levels will be as low as the guidelines permit. If construction lighting is not needed, it will be avoided.

5.4.13 Temporary construction compounds will be reinstated to their previous use and habitats will be restored to their existing ecological value (as a minimum).

Birds

5.4.14 Suitable habitat for breeding birds will be cleared between October and mid-February (outside of the breeding bird season) as far as practicable. Where this is not feasible, the vegetation, building or structure due to be removed will first be inspected by a suitably qualified ecologist 48 hours prior to removal, to check for the presence of nesting birds. Any active nests will be retained along with an appropriate buffer around them. The buffer around more sensitive birds and birds listed on Schedule 1 of the Wildlife and Countryside Act (1981) will be increased, to avoid disturbance.

5.4.15 Additional breeding bird surveys will be undertaken prior to construction commencing to determine the presence or absence of Schedule 1 species; peregrine, little ringed plover and firecrest. Cutting of meadow and rank grasses will be carried out in early autumn to prevent disturbance to ground nesting birds and all material disposed of off-site. This will help ensure that species such as skylark are able to nest successfully in these areas.

5.4.16 Any nest of a Schedule 1 species found to be active during construction works will be protected by a suitably sized buffer that will be identified by a suitably experienced ornithologist. Where necessary, such nests will be monitored during construction by the ornithologist for signs of disturbance and where necessary methods will be altered to prevent it.

5.4.17 A scheme of new bird boxes will be implemented at the start of construction across the GAL estate. Locations will be detailed in the relevant landscape ecology management plan (see **ES Appendix 8.8.1: Outline Landscape and Ecology**)

Management Plan (oLEMP) (Doc Ref 5.3)) and will include a variety of box types, some for woodland species and some for more urban settings.

Bats

5.4.18 Where trees with potential bat roost features (PRFs) require removal, those trees with Low bat roost potential will be subject to a supervised soft-felling methodology and those with Medium or High bat roost potential will be subject to climbing inspections and/or dusk emergence/dawn re-entry surveys as appropriate to inform where further mitigation is required. If any roosts are identified, this will include an application for a Natural England licence with supporting method statement. A range of bat boxes suitable for the species recorded foraging and commuting in the area and which imitate the type of PRFs present in trees will be installed on retained trees prior to any vegetation clearance to ensure that was not an overall loss of roost features available. The bats boxes will be located within woodland managed by the GAL Biodiversity team.

5.4.19 The illumination of bat roosts and foraging corridors creates disturbance. Therefore, as described in section 4.9, sensitive lighting will be used during construction to minimise disturbance to bats.

5.4.20 The maintenance of a dark corridor during construction along the Gatwick Stream, in particular where it meets the River Mole, will be particularly important in ensuring continuity of connectivity along the Stream for bats. Therefore, as much vegetation will be retained in this area as possible. Also, a 2.4-metre-high timber closed board fence will also be erected along the construction boundary.

Reptiles and Amphibians

5.4.21 Lower value reptile habitat (as identified by the pre-construction surveys) that could support low numbers of grass snake, such as the drainage ditches and tree lines around and within car parks, will be cleared sensitively with an Ecological Clerk of Works present.

5.4.22 Field margins and other vegetation on site will be cut in stages, under the precautionary principle and overseen by a suitably qualified ecologist. Cutting of meadow and rank grasses shall be carried out in early autumn to prevent disturbance to reptile and all material disposed of off- site.

5.4.23 Any higher-value habitat will be cleared through fencing, trapping and translocating of reptiles into pre-prepared receptor sites prior to construction commencing.

Great crested newts

5.4.24 Following a re-survey, and any necessary licensing, great crested newt mitigation will be implemented, according to the method statement within the licence. This will include the preparation of receptor areas for great crested newts, and the species translocated into these areas, using appropriate methods and timings prior to construction commencing within suitable habitats.

Badgers

5.4.25 The following measures will be implemented to ensure that no badgers are harmed during the construction phase:

- suitable sturdy fencing to be erected around all construction works to deter foraging badgers from the works areas;
- any excavated holes will have a wooden board placed in them overnight to provide a means of escape should any badgers accidentally enter the excavation; and
- any hazardous chemicals to be securely stored at night in a locked container (in accordance with regulations).

5.4.26 To avoid attracting badgers to the works area any food waste will be disposed of in appropriate bins or removed from site at the end of each day.

5.4.27 Following a re-survey, any setts that require closure will be appropriately mitigated under a suitable licence from Natural England.

5.4.28 Active badger setts that will be damaged or destroyed, or which could result in badgers using them being disturbed, will be closed using appropriate methods and timings.

5.5 Geology and Ground Conditions

Objectives

5.5.1 To ensure that any contamination on site is identified and dealt with appropriately to avoid adverse impacts to sensitive receptors, eg construction workers, members of the public, and surface and groundwater.

Management Measures

Ground Contamination

5.5.2 A structured approach will be followed to determine which development areas within the Project site require further assessment/ground investigation. The approach comprises the following elements:

- discovery strategy; and
- ground investigation.

Discovery Strategy

5.5.3 A discovery strategy for any previously un-encountered contamination will be implemented as part of the redevelopment. It will also include details of a watching brief to be kept by the Principal Contractor(s).

5.5.4 A suitably qualified environmental consultant (appointed by GAL) will be contacted, where any significant visual or olfactory evidence of contamination, not previously encountered, is identified by construction workers during the development works. The following will be considered indicative of soil contamination that may require:

- the presence of free phase contamination (liquids or sheens;
- fibrous or cement bound materials (potentially asbestos containing materials);
- significant staining and discolouration of exposed soils; and/or,
- visual or olfactory evidence of organic contamination (i.e. hydrocarbons, solvents, etc).

5.5.5 Any construction activities in the area where this material was encountered will cease until an appropriate plan for dealing with the contamination has been put in place.

5.5.6 Schedule 2 of the DCO includes a requirement that any contamination, including contaminated groundwater, that is discovered during construction which was not previously identified must be reported as soon as reasonably practicable to the relevant local planning authority and the Environment Agency and GAL must complete a risk assessment in consultation with the relevant local planning authority and the Environment Agency.

Ground Investigations

5.5.7 Pursuant to a requirement in Schedule 2 of the DCO, where assessment of historical data cannot demonstrate that the risk of

contamination is low, intrusive ground investigations will be undertaken. The scope of the investigation will be agreed with the relevant local planning authority in consultation with the Environment Agency prior to its implementation. Where appropriate, the investigations will include geotechnical testing to provide information on land stability. An appropriate slope stability assessment will be undertaken where considered necessary.

Remediation Strategy

5.5.8 Pursuant to a requirement in Schedule 2 of the DCO, where the results of the ground investigation or as a result of the watching brief determine that remediation is required to ensure that the site is suitable for its proposed use, a remediation strategy will be prepared. The strategy will comprise the following:

- implementation plan setting out the objectives and requirements of the remediation;
- validation sampling to confirm that remediation objectives have been met; and
- a verification report.

5.5.9 The scope of the remediation strategy will be agreed with the relevant local planning authority in consultation with the Environment Agency prior to its implementation and will then be implemented. Before that area is to be used or occupied a verification report demonstrating completion of the works and the effectiveness of the remediation (including results of sampling and monitoring) will be sent to the local planning authority for approval.

5.5.10 Subject to the scope and results of the remediation strategy, the following will be undertaken where appropriate to inform construction activities and the detailed design of buildings:

- piling risk assessment (in accordance with the Environment Agency guidance) including control measures (where appropriate) to mitigate risk to controlled waters during piling installation;
- detailed ground gas risk assessment and gas control measures during construction and to be incorporated into building design (where appropriate); and
- groundwater and/or surface water monitoring.

Soils

5.5.11 Soil management plans will be prepared in accordance with the **ES Appendix 5.3.2: CoCP Annex 4 -Soil Management Strategy** (Doc Ref. 5.3) to document the management of soils on the site. The reuse of non-hazardous excavated soils on the site

will be managed in accordance with the CL:AIRE Code of Practice (CL:AIRE, 2011) and will be documented in a CL:AIRE Materials Management Plan (MMP), including a risk assessment procedure to demonstrate the soils do not present a risk to human health or the environment. The MMP will be developed further during detailed design stage and will be approved by the Environment Agency prior to earthworks commencing through a separate regime.

5.5.12 Opportunities will be explored to reuse offsite the surplus cohesive material of the Weald Clay Formation which cannot be retained on site and/or opportunities with brickworks operators within the county to receive incidentally recovered brick clay. Further information on resource use is provided in **the ES Appendix 5.3.2: CoCP Annex 5 -Construction Resources and Waste Management Plan** (Doc Ref. 5.3).

Contamination from Site Activities

5.5.13 Implementation of measures to prevent and control the spillage of oil, chemicals and other potentially harmful liquids will ensure appropriate storage and handling of materials and products in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001. Measures will include:

- avoidance of oil storage within 50 metres of a spring, well or borehole, within 10 metres of a watercourse or where oil could run over hard ground into a watercourse;
- secondary containment system that can hold at least 110% of the oil volume stored; and
- avoidance of storage of oil in areas at risk of flooding.

5.5.14 Refuelling of machinery will be undertaken within designated areas where spillages can be easily contained. Machinery will be routinely checked to ensure it is in good working condition; and any tanks and associated pipe work containing oils and fuels will be double skinned and be provided with intermediate leak detection equipment.

5.5.15 Measures will be implemented to protect groundwater during construction, including good environmental practices based on guidance on CIRIA C532 Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors (CIRIA, 2001). Further information is provided in **ES Appendix 5.3.2: CoCP Annex 1 - Water Management Plan** (Doc Ref.5.3).

5.5.16 Control measures will be implemented including the use of appropriate personal protective equipment and adoption of high levels of personal hygiene by construction workers. Health and

	Safety risk assessments to be completed prior to construction in line with CDM Regulations 2015.		mitigation measures to control fine sediment laden runoff should be continuously reviewed.	5.6.10	Where river realignment is proposed, construction activities will be planned to ensure no increase in fluvial flood risk, with temporary mitigation provided if required – further details are set out in the ES Appendix 5.3.2: CoCP Annex 1 - Water Management Plan (Doc Ref.5.3).
5.6	Water Environment	5.6.6	Further opportunities relating to the timing of works are set out in the ES Appendix 5.3.2: CoCP Annex 1 - Water Management Plan (Doc Ref.5.3).		
	Objectives				
5.6.1	To prevent increasing flood risk onsite and offsite, along with protecting hydrological receptors. This section should be read in conjunction with ES Appendix 5.3.2: CoCP Annex 1 - Water Management Plan (Doc Ref.5.3) which provides further detail.	5.6.7	Measures to intercept and treat suspended fine sediment in surface runoff will focus on those areas where there will be exposed soils, excavations and storage of topsoil and other aggregate material. The implementation of these measures will be an adaptive process in response to site specific constraints and changing needs onsite. For example, different types and levels of treatment of fine sediment in runoff may occur depending on the time of year, the location of the works, and the nature of works being undertaken at that point in time.	5.6.11	With regards to agricultural land drainage, any field drainage intercepted during construction will either be reinstated following reinstatement of the land or diverted to a secondary channel. Landowners and occupiers will be informed of the design of drainage works required during construction, including: pipe layout, falls, dimensions and outfalls (if required). The drainage will be reinstated in a condition that is at least as effective as the previous condition (as identified in the relevant condition and/or drainage survey) and will follow best practice for field drainage installations taking into account site-specific conditions.
	Management Measures				
5.6.2	Temporary site drainage will be planned to manage the risks associated with heavy rainfall or flood events appropriate to the risk during construction such as the topography, catchment size and duration of the works. Where temporary drainage is required, it will be sized to provide an appropriate standard of flood protection, with a 10% (1 in 10) AEP event standard.	5.6.8	Measures to intercept and treat suspended fine sediments may include: <ul style="list-style-type: none"> ▪ Installation of drains/ditches around the working areas to intercept surface runoff and divert it around the working areas. ▪ Minimising the stockpiling of materials and, where practical, stockpiles are to be located in excess of 10m from any existing watercourse, ponds, boreholes and site drainage, preferably on flat lying land. 	5.6.12	Measures to control the storage, handling, spillages and disposal of potentially polluting substances will be implemented as set out in the ES Appendix 5.3.2: CoCP Annex 1 - Water Management Plan (Doc Ref.5.3).
5.6.3	The specific treatment will be in accordance with good practice Technical Guidance C648 Control of Water Pollution from Linear Construction Projects (CIRIA, 2006a) and would be adapted throughout the works depending on the need and circumstances at any given time.			5.6.13	The storage, dispensing, containment and use of all fuels, oils and Control of Substances Hazardous to Health (COSHH) materials and wastes would be undertaken in accordance with the Control of Substances Hazardous to Health Regulations 2002 and good practice guidance.
5.6.4	Runoff from the construction site will not be allowed into any natural pond. Construction runoff will be discharged into a watercourse under a permit from the relevant authority (where required) and following treatment and attenuation where required. Other principles for water management during construction are set out in the ES Appendix 5.3.2: CoCP Annex 1 - Water Management Plan (Doc Ref.5.3).	5.6.9	Further examples of controlling surface runoff are provided in ES Appendix 5.3.2: CoCP Annex 1 - Water Management Plan (Doc Ref.5.3) which also describes the measures that will be implemented to control flood risk. These measures include: <ul style="list-style-type: none"> ▪ constructing adequate temporary Sustainable Drainage Systems (SuDS) or conventional drainage to contain surface water and silt during the construction period; ▪ locating material stockpiles and storage areas a suitable distance from adjacent watercourses, ponds, boreholes, site drainage, and outside Flood Zone 3, where practicable; ▪ managing the risk from groundwater flooding (during excavation) through appropriate working practices and with adequate plans and equipment in place for dewatering to ensure safe dry working environments; ▪ designing watercourse crossings for construction to meet the 10% (1 in 10) AEP event standard; and ▪ adopting the Environment Agency’s Flood Warning Service and developing a suitable flood risk action plan for the effective and safe evacuation of personnel from areas at risk. 	5.6.14	Designated areas would be set out for the purpose of concrete wash out (i.e. for concrete mixer and associated chute, tools or equipment) and care would be taken to ensure concrete washout areas are sited away from sensitive receptors such as watercourses and drains.
5.6.5	The timing of certain works or the programming of specific tasks on ‘day-to-day’, ‘week-to-week’ and ‘month-to-month’ basis can be important to reduce flood risk and the risk of water pollution occurring during the construction period. Opportunities to reduce the water pollution risk will be adopted where practicable. These opportunities include: <ul style="list-style-type: none"> ▪ Constructing drainage prior to works, where practicable to ensure there is no increase to surface water flood risk as a result of increased surface water runoff. ▪ Avoid undertaking earth moving works during periods of very wet or prolonged wet weather, if practicable, to minimise the risk of generating runoff contaminated with fine particulates. Where this is unavoidable, the adequacy of standard 			5.7	Traffic and Transport
					Objectives
				5.7.1	To carry out construction works in such a way that maintains highway safety and minimises adverse effects on local communities and highway users.
					Management Measures
				1.1.1	Prior to the commencement of construction works associated with the Project, detailed Construction Traffic Management Plans (CTMPs) will be prepared in consultation with the relevant local planning authorities, local highway authority and National Highways. The CTMPs will set out the proposed approach for

- managing construction traffic during the construction of the Project.
- 1.1.2 The CTMP will describe the location and anticipated uses of the construction compounds and provide a summary of proposed access to these. The compounds and effective access to them will ensure efficient logistics and site support for the construction of the Project.
- 1.1.3 The CTMP will identify the proposed construction vehicle routes to the site to ensure the safe and efficient movement of construction vehicles delivering materials to the site while reducing disruption to local and Airport traffic. It will also note restrictions on the use of local roads for construction vehicle access, with exceptions for local suppliers, emergency cases and mandatory construction activities.
- 1.1.4 Alongside routeing, the plan will set out measures to reduce the impact on local communities and traffic. These measures include adoption of contractor and vehicle standards, effective and sustainable delivery management and material procurement measures.
- 5.7.2 The detailed CTMP will be in accordance with Transport for London guidance and will be based on the principles of the **ES Appendix 5.3.2: CoCP Annex 3 - Outline Construction Traffic Management Plan** (Doc Ref.5.3).
- 5.7.3 Where necessary, wheel wash facilities will be provided at the main egress points from the works area onto the existing road network. These will be self-contained facilities using a water recycling feature. The units will be regularly cleaned and maintained.
- 5.7.4 In addition to the CTMP, a Construction Workforce Travel Plan will be implemented with measures to encourage construction workers to use more sustainable travel patterns. The Construction Workforce Travel Plan will be based on the principles set out in the **ES Appendix 5.3.2: CoCP Annex 2 - Outline Construction Workforce Travel Plan** (Doc Ref. 5.3) that accompanies the DCO Application and considers the various transport modes available to the workforce: public transport, including rail and bus services; private car travel; car sharing; and active travel routes like walking and cycling. The plan acknowledges the potential issues with single private car travel and proposes measures to reduce the use of this mode and mitigate the impact of those who continue to use it.

- 5.7.5 A key aspect of the Construction Workforce Travel Plan is the introduction of initiatives to motivate the workforce to transition from single vehicle use to alternative, more sustainable options. These include measures to promote active travel, incentivise public transport usage and encourage car-sharing. It also proposes the use of a low-emission bus fleet to further reduce environmental impact.

5.8 Air Quality

Objectives

- 5.8.1 To ensure that impacts to air quality receptors are minimised.

Management Measures

- 5.8.2 The following measures will be implemented to manage the potential impacts from dust during the construction process. The categories of measures are taken from the Institute of Air Quality Management guidance.

General Measures

- Develop and implement a Construction Dust Management Plan (DMP), which may include measures to control other emissions, approved by the local planning authorities. This will have due regard to all measures provided here and will be site specific, setting out how the works will be carried out to mitigate dust impacts and provide details of monitoring locations and consideration of whether monitoring locations need to change based on phasing and works being carried out (see the Monitoring section below).
- Develop and implement a Community and Engagement Management Plan before works commence on site (see section 4.12).
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
- Display the head or regional office contact information.

Site Management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emission in a timely manner, and record the measures taken.
- Make the complaints log available to the local planning authorities when asked.

- Record any exceptional incident that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book.
- Hold regular liaison meetings with other high risk construction sites within 500 metres 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.

Monitoring

- Undertake baseline monitoring at least three months prior to the commencement of works with suitable automatic (Osiris type) monitoring equipment. Once detailed design plans are available a Construction Dust Management Plan and monitoring plan will be created to determine the location of dust monitors and detailed plans for monitoring during the phasing of the construction activities. Monitoring will be carried out following best practice guidance as defined by the IAQM (Moorcroft et al., 2018) and explained in the bullet points below.
- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local planning authorities when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 metres of site boundary, with cleaning to be provided if necessary.
- Carry out regular site inspections to monitor compliance with the Construction Dust Management Plan, record inspection results, and make an inspection log available to the local planning authorities 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.
- Carry out monitoring using real-time particulate matter (PM₁₀) continuous monitoring equipment at high-risk sites.

Site Preparation/Maintenance

- 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 or the site boundary and cover, seed or fence stockpiles to prevent wind whipping.

- 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 runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on-site. If they are being re-used on-site cover, seed and fence stockpiles to prevent wind whipping.

Operating Vehicle/Machinery and Sustainable Travel

- Ensure all vehicles switch off engines when stationary – no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local planning authorities, where appropriate).
- Produce a Construction Traffic Management Plan to manage the sustainable delivery of goods and materials.
- Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking and car sharing).

Operations/Waste Management

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction (e.g. suitable local exhaust ventilation systems).
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean and dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
- Prohibition of bonfires and burning of waste materials.

Demolition Activities

- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- Ensure effective water suppression is used during demolition operations. Hand-held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
- Bag and remove any biological debris or damp down such material before demolition.

Earthworks

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

Construction Activities

- 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 this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overflowing during delivery.
- For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.

Trackout

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.

- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Inspect hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- Record all inspections of haul routes and any subsequent action in a site log book.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
- Access gates to be located at least 10 metres from receptors where possible.

Odour management

- 5.8.3 As identified in **ES Chapter 13: Air Quality** (Doc Ref. 5.1) the construction works have the potential to uncover areas of ground which may release unpleasant odours.
- 5.8.4 All effects would be expected to be short-term and steps to protect health and safety of workers and members of the public would be the first priority.
- 5.8.5 Any effects would be mitigated following best practice industry guidance with sources being covered to minimise release of odour and where needed an odour management plan would be developed to identify further mitigation if required (for example the use of masking spray or the removal of the source).

5.9 Noise and Vibration

Objectives

- 5.9.1 To control and limit noise and vibration levels, so far as is reasonably practicable, to minimise disturbance to sensitive receptors.

Management Measures

On-Site Measures

- 5.9.2 To manage noise generating construction activities, all works will be carried out in accordance with the following principles.
- 5.9.3 Construction works will be undertaken in accordance with best practicable means (BPM) as defined by the Control of Pollution Act 1974 (CoPA) and Environmental Protection Act 1990 (EPA), which will be applied during construction activities to minimise noise (including vibration) at neighbouring residential properties

	and other sensitive receptors, including local businesses and quiet areas designated by the local authority.		
5.9.4	As part of BPM, mitigation measures will be applied in the following order: <ul style="list-style-type: none"> noise and vibration control at source: for example, the selection of quiet and low vibration equipment, review of construction methodology to consider quieter methods, location of equipment on-site, control of working hours, the provision of acoustic enclosures and the use of less intrusive alarms, such as broadband vehicle reversing warnings; screening: for example, local screening of equipment or perimeter noise barriers or the use of temporary stockpiles; and where the noise exposure exceeds the criteria given below or as defined during the consenting process, despite the implementation of BPM, noise insulation or ultimately temporary re-housing will be offered at qualifying properties. 	<ul style="list-style-type: none"> All deliveries will generally be carried out during normal working hours. Exceptions will be deliveries required of large plant or similar requiring movement orders. Activities likely to generate elevated noise levels will, where practical, be restricted to normal working hours. Plant and equipment will be maintained in good working order, with attention being paid to the condition of silencers and acoustic panels. Static plant (i.e. generators and lighting sets) will be located so as to optimise screening and/or distance attenuation in relation to occupied premises. Rotary drills and bursters activated by hydraulic, chemical or electrical power will be used for excavating hard or extrusive material where practicable. Silenced plant and equipment will be specified. Electrical powered plant will be used (where practicable) rather than plant powered by combustion engine. Mobile plant used on site will be equipped with white noise reversing alarms. All operatives will be briefed on the sensitivity of the site at induction stage and this will be reinforced prior to every shift, where appropriate. Acoustic hoarding/blankets will be installed around the site perimeter and any noisy equipment to help attenuate noise arising from the works. 	<ul style="list-style-type: none"> Leq 1 hr night 65dB
5.9.5	Lead contractors will seek to obtain prior consent from the relevant local authority under Section 61 of the CoPA for the proposed construction works. The Section 61 application will set out BPM measures to minimise construction noise and vibration, including control of working hours. Any work requiring a Section 61 application will not commence until a consent is received from the relevant local authority. The contractors and their subcontractors will comply with the Section 61 consent at all times.		5.9.12 These levels are increased if ambient noise levels are higher in accordance with the BS5228 ABC method.
5.9.6	Contractors will undertake and report monitoring as is necessary to assure and demonstrate compliance with all noise and vibration commitments as described below. Monitoring data will be provided to GAL for review and made available to the relevant planning authority.		5.9.13 Qualification for noise insulation and, where appropriate, temporary re-housing will be confirmed as part of seeking prior consent from the local authority under Section 61 of the CoPA. Qualifying buildings will be identified so that noise insulation can be installed, or where appropriate any temporary re-housing provided, before the start of the works predicted to exceed noise insulation or temporary re-housing criteria.
5.9.7	Contractors will be required to comply with the terms of the CoCP and appropriate action will be taken by the nominated undertaker as required to ensure compliance.		5.9.14 Construction traffic routes will be identified that avoid routing construction HGVs through villages and past noise sensitive receptors (NSRs) on minor roads.
5.9.8	The following general BPM measures will be implemented where appropriate: <ul style="list-style-type: none"> Noise and vibration will be minimised in accordance with BS 5228-1:2009+A1:2014. Code of practice for noise and vibration control on construction and open sites, Noise and Vibration BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites 	<p>Off Site Measures</p> <p>5.9.9 Noise insulation will be offered for qualifying buildings, where noise levels exceed criteria defined below.</p> <p>5.9.10 To be eligible a residential dwelling must be occupied and be one for which the predicted or actual noise exceeds any of the relevant thresholds for: <ul style="list-style-type: none"> a period of 10 or more days of working in any 15 consecutive days during construction; or for a total of 40 days or more in any 6 consecutive months during construction. </p> <p>5.9.11 The key qualifying noise levels are as follows: <ul style="list-style-type: none"> Noise Insulation: <ul style="list-style-type: none"> Leq 10 hr day 75dB Leq 1 hr night 55dB Temporary Rehousing: <ul style="list-style-type: none"> Leq 10 hr day 85dB </p>	<p>Monitoring</p> <p>5.9.15 Noise monitoring will be carried out to confirm the best practicable means to reduce noise impacts are being adopted in areas where adverse noise impacts are predicted. Details of the monitoring scheme will be developed once the main contractor is appointed making use of the programme of works proposed, including: <ul style="list-style-type: none"> baseline monitoring before works commence; and impact monitoring during the works. </p> <p>5.9.16 The site-specific programmes for monitoring, including the type, location and duration will be detailed in the Section 61 applications and will be agreed with the local authority.</p> <p>5.9.17 Baseline monitoring will be undertaken at representative NSRs in all areas where significant noise effects are predicted in the ES. In areas of low impact and daytime works a sampling approach will be adequate, and in areas of high impact or night-time works (for example around the bridge structures) continuous monitoring may be required to capture the diurnal pattern of ambient noise against which to compare noise levels measured when works are taking place.</p> <p>5.9.18 Impact monitoring will be undertaken once works begin to measure noise levels for compliance with the Section 61 consent and to trigger actions to reduce noise if necessary. In area of low impact and daytime works a sampling approach will be adequate, and in areas of high impact or night-time works continuous monitoring may be required. It is expected that at least two continuous monitoring sites will be required for peak period of the highways works.</p>

5.9.19 Monitoring reports will be provided to the local authorities on a monthly basis or as otherwise agreed in the Section 61 prior consent. Monitoring will be made available online.

5.9.20 Should a vibration risk to surrounding properties be identified vibration monitoring during the activity will be undertaken and appropriate trigger levels set. Vibration monitoring will be undertaken and evaluated in line with BS7385: Evaluation and Measurement for vibration in buildings and BS6472: Human exposure to vibration in buildings.

5.9.21 A suitably qualified acoustics practitioner will be appointed to implement and manage the monitoring programme.

5.10 Socio-economic Effects

Objectives

5.10.1 To carry out construction works in a way that minimises disturbance to the community and local business.

Management Measures

5.10.2 Measures for community engagement will be included in the Community and Engagement Management Plan to guide how potential effects on facilities and services could be mitigated through measures agreed with the local community, and to ensure they remain informed as the Project progresses.

5.10.3 Worker Code of Conduct measures will be developed to help mitigate the potential adverse effects of introducing a temporary workforce into the local study by ensuring construction workers conduct themselves in an appropriate manner. The code of conduct will be in line with the Considerate Constructors Scheme (see paragraph 3.2.6).

5.10.4 Construction compounds would provide welfare facilities, including office, meeting room space, canteen/locker rooms and waste processing areas, and health care would also be provided for construction workers on-site.

5.11 Health and Wellbeing

Objectives

5.11.1 To minimise health impacts on local residents and construction staff.

Management Measures

5.11.2 Measures to protect human health are discussed under the topic specific sections (e.g. air quality, noise and vibration and geology and ground conditions).

5.11.3 However, to alleviate the potential for pressure on the local health care system, provision and implementation of a protocol setting out the first point of contact for health queries for construction workers. This will include physical and mental health promotion information, access to on-site first aid and provide information about the appropriate avenues for further healthcare support where necessary. Proportionate to the scale of workforce onsite and the need to supplement the normal 111 service, a dedicated healthcare practitioner would be available for construction workers to consult with. These initiatives would limit the need for workers to travel to use other local community facilities. The objective of the protocol is to minimise use of local NHS primary healthcare providers and inappropriate use of A&E services. The protocol will be prepared during the pre-construction period once a Principal Contractor(s) has been appointed. The protocol would integrate with and complement the Principal Contractor(s)' occupational health and occupational hygiene services that manage workplace health risks.

5.11.4 Appropriate Personnel Protective Equipment will be provided to construction workers as identified through the risk assessment process.

5.12 Agricultural Land Use and Recreation

Objectives

5.12.1 To maintain the quality of agricultural land and maintain the operation of farming enterprises temporarily affected during the construction process.

Management Measures

5.12.2 A **Soil Management Strategy** has been prepared (see **ES Appendix 5.3.2: CoCP Annex 4 -Soil Management Strategy** (Doc Ref.5.3)). The strategy is in accordance with Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra, 2009) and the Institute of Quarrying Good Practice Guide for Handling Soils 2021. The purpose of the procedures set out in the strategy have been developed to ensure, wherever practicable:

- the conservation of soil resources;

- avoidance of damage to soil structures;
- maintenance of soil drainage; and
- the reinstatement, where required, of soil profiles as near as possible to their former condition.

5.12.3 **ES Appendix 5.3.2: CoCP Annex 4 -Soil Management Strategy** (Doc Ref.5.3) sets out procedures for the following:

- management and supervision of the soil handling process;
- methods and sequence of soil stripping and storage;
- methods for placement;
- seasonal consideration and ground conditions for soil handling; and
- aftercare considerations.

5.12.4 Detailed soil management plans for individual areas of the work will be prepared in accordance with the **Soil Management Strategy**.

5.12.5 Measures will be implemented to reduce, as far as possible, the effects of construction activities on farm holdings. Where appropriate, these will include the maintenance of farm access locations; provision of appropriate fencing; maintenance of water supplies; co-ordination of timings of construction works to facilitate farming operations; and measures to address the potential risks of the spread of animal and plant diseases.

5.12.6 With regards to public rights of way (RRoW), the Project has sought to minimise the closure of pedestrian and cyclist routes where reasonably practicable. Where this is not the case, adequate alternate diversion routes will be provided for pedestrians and non-motorised users that are affected by construction works where reasonably practicable to do so. A **PRoW Management Strategy** has been prepared (see **ES Appendix 19.8.2: Public Rights of Way Management Strategy** (Doc Ref. 5.3)) which identifies measures to safely maintain public access along footpaths and National Cycle Route 21 (NCR 21) including proposed permanent and temporary diversions.

5.12.7 Management measures (as set out in the **ES Appendix 19.8.2: Public Rights of Way Management Strategy** (Doc Ref. 5.3)) will be implemented at the following locations to avoid severance and to maintain safe public access:

- along NCR21 and the Sussex Border Path during construction activities associated with the North Terminal roundabout improvements;

- along the Sussex Border Path during construction activities associated with the South Terminal roundabout improvements; and
 - along footpaths around the perimeter of Pentagon Field during construction of the new car parking area and the filling of Pentagon Field.
- 5.12.8 There will also be temporary diversions to safely maintain access along the public rights of way including the Sussex Border Path and NCR 21 during construction activities associated with South and North Terminal Roundabout improvements.

5.12.9 A permanent diversion to the Sussex Border Path will be provided to the south of the A23 arising from the new North Terminal roundabout. There will also be permanent diversion of footpath 367 to the south of the M23 spur.

5.13 Climate Change

Objective

5.13.1 To ensure that any impacts of climate change are taken into account during the construction process.

Management Measures

5.13.2 Cooling and ventilation systems will be included in the design of temporary office buildings that are sufficient to deal with projected climate changes and will follow appropriate guidance from the Chartered Institution of Building Services Engineers (CIBSE).

5.13.3 The effects of climate change projections will be considered in relevant contractor risk assessments.

5.13.4 Prior to construction, GAL will consider the risk of adverse weather during the construction period and will implement measures considered necessary, to appropriately manage extreme weather events including training for staff. This will be linked to the latest, and annual update of, the Gatwick Airside Operations Adverse Weather Plan for operation and look to Eurocode good practice for AWP (Eurocontrol, 2021a) and managing climate risks.

5.13.5 An array of potential adaptation options exist that could be adopted to mitigate the varying climate change risks facing during the construction phase of the Project. The following section details the most pertinent of those measures, mapped against the risks that the respectively address in operational phases of development. The overarching approach to resilience design is also detailed for each respective climate change risk.

Options for Climate Resilience Measures

5.13.6 An array of potential adaptation options exist that could be adopted to mitigate the varying climate change risks facing the Project. The following section details the most pertinent of those measures, mapped against the risks in the construction phase of development. The overarching approach to resilience design will use projected changes over time in climate by the 2030s to inform the measures for each respective climate change risk.

Overheating Risk in Temporary Buildings

5.13.7 The design measures to be considered are:

- Specifically designed passive or active cooling systems, with a preference for low energy and energy efficiency technologies such as natural ventilation and cooling.
- Consideration of the orientation and siting of buildings (eg ensuring that windows, doors and other glazing are not south facing nor oversized).
- Consideration of the window-to-wall ratio of temporary buildings.
- Provision of solar shading via green and/or grey infrastructure (eg green/cool walls; horizontal shading; exterior shutters; deep eaves; brise soleil; use of light/reflective colours and materials).
- Provision of staff working protocols such as access to cool spaces.
- Overheating assessment through to 2030s as appropriate following the latest guidance and best practice.

Risk of extreme weather events: flooding

5.13.8 The design measures to be considered are:

- Avoidance of temporary buildings and other construction spaces being located in high flood risk zones.
- Temporary flood protection or floodwater diversion measures (e.g. mobile floodwater pumps; drainage channels and ponds; alternative site access routes; ground cover storm protection measures and materials).
- Avoidance of operation-critical building systems (e.g. communications and IT services) being located on the ground floor or below projected flood levels.
- Install automatic switch-off features for electrical equipment which are triggered in the case of flood events.

Risk of extreme weather events: storms (i.e. wind/lightning)

5.13.9 The design measures to be considered are:

- Lightning protection for critical mechanical, electrical, and communications equipment, alongside relevant staff working protocols.
- Regular visual inspections of temporary building roofs and canopies.

Risk of extreme weather events: snow, ice and cold

5.13.10 The design measures to be considered:

- Space and access for snow and ice protection measures such as gritting and snow clearance of main access routes, equipment and structures.

Risk of extreme weather events: heatwave related drought

5.13.11 Design measures to be considered:

- Rainwater harvesting systems to capture and store rainwater (e.g. groundwater collection trays) for human water use; the water use of green spaces and nature more generally; and the water demands of built infrastructure (e.g. using water to spray runways, roads, or buildings).
- Use of low water use/water efficiency appliances to mitigate the risk of water stress.

5.14 Greenhouse Gases

5.14.1 The **ES Appendix 5.4.2: Carbon Action Plan** (Doc. Ref. 5.3) contains measures that will mitigate the emissions arising in respect of the project. It commits to key outcomes and outlines the actions that GAL could take in order to achieve such outcomes and in so doing, play a part in the global transition to a low carbon future for the aviation sector. It includes a list of measures that could be implemented to reduce emissions from on-site activity including construction.

6 Roles and Responsibilities

6.1 Project Team

GAL and its contractors

6.1.1 GAL will be responsible for compliance with the CoCP and for producing and maintaining any necessary management plans during the construction process. GAL will appoint Principal Contractors for the project work who will ensure environmental standards are adhered to and monitoring compliance during construction; carrying out regular monitoring and inspections of

construction work activities; and undertaking staff induction courses on environmental issues.

Environmental Co-ordinator

- 6.1.2 The Environmental Co-ordinator will be responsible for the interface between the environmental specialists (i.e. the Ecological Clerk of Works, Agricultural Liaison Officer, Community Liaison Officer and Traffic Safety and Controls Managers) and GAL. They will have the primary responsibility for managing environmental issues through the construction and post-construction monitoring and for obtaining the relevant licences and consents.

Ecological Clerk of Works

- 6.1.3 The Ecological Clerk of Works (ECoW) will report on ecological matters and will be responsible for undertaking pre-construction surveys and monitoring.

Agricultural Liaison Officer

- 6.1.4 The Agricultural Liaison Officer (ALO) will coordinate drainage surveys to understand the existing land drainage and any related farm drainage that may be affected by the Project.

Community Liaison Officer

- 6.1.5 The Community Liaison Officer (CLO) will be the dedicated contact for liaising with residents and local businesses and will be responsible for implementing the Communications and Engagement Management Plan (see section 4.12).

Traffic Safety and Control Managers

- 6.1.6 GAL shall appoint a Traffic Safety and Control Manager (TSCM) and will have several responsibilities relating to traffic and transport management for their site. Responsibilities will include the following:
- Overarching management and implementation of traffic management measures associated with the Project.
 - The management of the layout of construction site access points.
 - Ensuring that all traffic equipment is in place and operationally effective.
 - Monitoring of the traffic management measures employed.
 - Ensuring compliance with all appropriate health and safety directives relating to operations and live traffic, in conjunction with the Contractor's Health and Safety Manager.

6.2 Groups to be Established

Traffic Management Working Group

- 6.2.1 Gatwick will establish a Traffic Management Working Group (TMWG) prior to construction commencing. The TMWG will comprise representatives from GAL and each of its Principal Contractor(s).
- 6.2.2 The TMWG will be responsible for coordinating and managing material and people movement in accordance with this CoCP and other relevant controls including the oCTMP and oCWTP.

7 References

Legislation

- Control of Pollution Act 1974
- Construction (Design and Management) Regulations 2015
- Environmental Protection Act 1990
- Control of Pollution (Oil Storage) (England) Regulations 2001

Published Documents

- Bactec (2013) Explosive Ordnance Threat Assessment Report, June 2013.
- British Standards Institution (2012) BS 5837 Trees in relation to design, demolition and construction. London, British Standards Institution
- British Standards Institution (2014) BS EB 12464-2:2014 Light and lighting. Lighting of work places. Outdoor work places. London, British Standards Institution.
- Construction Industry Research and Information Association (CIRIA) (2001) C532 Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors. London, CIRIA
- Construction Industry Research and Information Association (CIRIA) (2009) C681: Unexploded Ordnance (UXO): A guide for the construction industry. London, CIRIA.
- Contaminated Land: Applications in Real Environments (CL:AIRE) (2011) The Definition of Waste: Development Industry Code of Practice v2, March 2011.

Department for Environment, Food and Rural Affairs (Defra) (2009) Code of Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.

Gatwick Airport (2021) Second Decade of Change to 2030.

Health and Safety Executive (HSE) (2010) HSG 168 Fire safety in construction. Guidance for clients, designers and those managing and carrying out construction work involving significant fire risks.

Institute of Air Quality Management (IAQM) (2014) Guidance on the assessment of dust from demolition and construction.

Institute of Lighting Professionals (2011) Guidance for the Reduction of Obtrusive Light.

Institute of Quarrying (2021) Good Practice Guidance for Handling Soils.

The Office of the Deputy Prime Minister, The Department for Transport, The National Assembly for Wales (2003) Safeguarding Aerodromes, Technical Sites and Military Explosives Storage Areas: The Town and Country Planning (Safeguarded Aerodromes, Technical Sites And Military Explosives Storage Areas) Direction 2002.

8 Glossary

8.1 Glossary of Terms

Table 8.1.1: Glossary of Terms

Term	Description
ALO	Agricultural Liaison Officer
BPM	Best Practicable Means
BS	British Standard
CIBSE	Chartered Institution of Building Services Engineers
CIRIA	Construction Industry Research and Information Association
CL:AIRE	Contaminated Land: Applications in Real Environments
COSHH	Control of Substances Hazardous to Health
CCS	Considerate Constructors Scheme
CSCS	Construction Skills Certification Scheme
CDM	Construction Design Manual
CLO	Community Liaison Officer
CoCP	Code of Construction Practice

Term	Description
COPA	Control of Pollution Act 1974
CSCS	Construction Skills Certification Scheme
CTMP	Construction Traffic Management Plan
DCO	Development Consent Order
CDMP	Construction Dust Management Plan
CTMP	Construction Travel Management Plan
CWTP	Construction Workers Travel Plan
ECoW	Ecological Clerk of Works
EHS	Environment, Health and Safety
EHO	Environmental Health Officer
EIA	Environmental Impact Assessment
EMS	Environmental Management System
EPA	Environmental Protection Act 1990
ES	Environmental Statement
FMP	Flood Management Plan
FRA	Flood Risk Assessment
GAL	Gatwick Airport Limited
HGV	Heavy Goods Vehicles
HSE	Health and Safety Executive
IAQM	Institute of Air Quality Management
LEMP	Landscape and Ecological Management Plan
NRMM	Non-Road Mobile Machinery
NSR	Noise Sensitive Receptor
PRoW	Public Right of Way
PRF	Potential Roost Features
SQEP	Suitably Qualified and Experienced Personnel
SWMP	Site Waste Management Plan
TMWG	Traffic Management Working Group
UXO	Unexploded Ordinance