752215 Blackstone Wastewater Treatment Works (WTW)

Construction Environmental Management Plan (CEMP)

February 2024

Contents

Document history

Revision	Date	Purpose of Issue	Originator	Date	Checker	Date	Reviewer	Date	Approver / Date
1.0	09/02/2024	First Issue	C. Metcalfe	30/01/2024	M. Richardson	01/02/2024	M. Richardson	09/02/2024	C. Stanford 09/02/2024
		Ecology	D. Troy	29/01/2024	R. Aldworth	06/02/2024	N. Ellis	07/02/2024	

Where: purpose of issue is for external issue in support of the planning application. Approver is Project Design Lead.

1 Introduction

1.1 General

This Construction Environmental Management Plan (CEMP) has been produced in order to support the Planning Application submitted to West Sussex County Council for the installation of a new Motor Control Centre (MCC) equipment kiosk.

The proposed works are required as part of an upgrade of Southern Water's Blackstone Wastewater Treatment Works (WTW). The upgrade is necessary to ensure that the community's wastewater is treated to standards required by a new Environmental Permit set by the Environment Agency. Other elements of the upgrade are being delivered with the benefit of Southern Water's Permitted Development Rights.

This document has been developed by Southern Water to avoid, minimise and mitigate the potential construction effects on the environment and surrounding community. It will form the basis of the Principal Contractor's separate Environmental Management Systems (EMS) and associated plans and procedures. It brings together embedded mitigation measures with project-specific measures to minimise and manage the potential impacts during construction. It sets out the responsibilities with regards to compliance with legislation, permissions and consents obtained and implementation of mitigation measures. Where such permissions and consents have been obtained these are appended as appropriate.

The CEMP also provides a framework to guide mitigation measure implementation throughout the project. It is a dynamic document which will be reviewed if activities or conditions on-Site change in a way that may influence these management measures.

For the purposes of this document, the working area is defined as any area where there will be a requirement for temporary or permanent works to facilitate the construction of the development. This includes areas required for access, temporary construction and temporary storage areas.

1.2 Purpose

The purpose of the CEMP is to:

- Identify stakeholder requirements;
- Set out the EMS requirements;
- Ensure compliance with current legislation;
- Effectively minimise any potential adverse environmental effects during construction including how Site-specific method statements will be developed to avoid, minimise and mitigate construction effects on the environment; and
- Translate committed mitigation measures into actions which apply them on-Site.

1.3 Structure

This CEMP has been drafted during the planning/design phase to ensure that the necessary measures are incorporated as the project progresses.

Embedded mitigation measures associated with the construction of the proposed development have been identified and are included within the appropriate section of this CEMP. The CEMP addresses environmental issues associated with:

- Stakeholder interface;
- Land management;
- Pollution prevention;
- Ecology and biodiversity;
- Archaeology and heritage;
- Dangerous substances;
- Air quality;
- Resource management; and
- Nuisance

1.4 Objectives

This CEMP has been developed to detail the environmental management practices and procedures to be followed during construction of the project, to ensure comprehensive and committed management measures are followed, protecting the environment.

2 Project description

2.1 Introduction

Blackstone WTW is a Southern Water operational Site that treats wastewater from the Blackstone catchment. The proposed works include the provision of a conventional solution with lamellas and ferric dosing as part of upgrading the WTW to ensure that the discharge concentration of phosphate is reduced in accordance with new Environmental Permit requirements for the Environment Agency.

2.2 Site location

The Site address is Blackstone WTW, Blackstone Lane, Blackstone, Woodmancote, Horsham, West Sussex, BN5 9SZ. National Grid Reference TQ 24292 16594, Easting: 524292 and Northing 116594.

The application Site is accessed via an existing gated Site entrance located directly off Blackstone Lane as shown on the Site location plan (refer to planning application drawings). The WTW is located approximately 500m north west of Blackstone. The existing Site comprises Southern Water operational land, with existing above and below ground plant and equipment that are used to treat wastewater. There are also areas of hardstanding and short managed grassland.

The land surrounding the WTW is currently predominantly in agricultural use and there are open fields on the north, south and west. An unnamed watercourse and Blackstone Lane borders to the east, beyond which are additional open fields. Cutlers Brook is located approximately 40m north of the Site. The closest residential and commercial properties are approximately 230m south of the Site. The proposed works are well-screened by existing trees bordering the Site.

The proposed works are not within a designated landscape.

2.3 Development description

Table 1: Proposed development infrastructure

Description	Dimensions (l x w x h) in metres	Capacity (m^3)	Finish / Material
Motor Control Centre (MCC) Kiosk	7.75m x 3.3m x 2.7m	69.0m^3	Glass Reinforced Plastic (GRP). Satin finish (GELCOAT) BS 4800-14-C-39 Holly Green
Sampling / Monitoring Kiosk	1.45m x 1.65m x 2.25m (0.45m below ground)	5.4	GRP. Satin finish (GELCOAT) BS 4800-14-C-39 Holly Green
Duty/Standby Lamella Feed Pumps	0.4m x 0.3m x 0.9m	N/A	Cast Iron
Submerged Aerated Filter (SAF) effluent collection Tank	2.2m x 2.2m x 1.7m	3.6m^3	Satin finish – Black HDPE

Description	Dimensions (l x w x h) in metres	Capacity (m^3)	Finish / Material
2 No. Lamella Clarifiers	3.4m x 1.9m x 3.6m	N/A	Stainless Steel 304
Chemical Dosing Tank	1.8m x 0.2m x 2.0m	1.5m^3	Black Polyethylene
Emergency Shower	1.3m x 1.3m x 3.5m high	N/A	Green (typical dimensions)
Delivery Area for the Chemical Dosing System	10m x 3.5m at ground level	N/A	Concrete

The proposed works also include installation of a Flocculation Tank (2.5m^3 Stainless Steel 304) and Chemical Dosing Control and Fill Point Kiosks (PVDF, BS 4800-14-C-39 Holly Green). A new hose reel will also be installed near the new storage and dosing kiosk. The new treatment plant will be connected with existing plant and equipment via new buried connections and ducts. Suitable Site drainage will also be installed.

The outlet of the new proposed equipment shall tie into the existing underground final effluent chamber on Site.

Access is via Southern Water's Site entrance off Blackstone Lane.

2.4 Temporary construction compound

To support construction activities temporary working areas will be established within Southern Water landownership.

For areas of amenity grassland, the topsoil and subsoil would be stripped and stored separately. These compound areas would be surfaced with suitable stone, e.g., Type 1 roadstone (not recycled general demolition stone).

The compound area will be accessed via existing roads. Approximately four cabins will be used, which will be double stacked. The temporary works will include a Site office, canteen, drying room, store and toilet.

At the end of the construction, all areas temporarily affected by the proposed works will be appropriately reinstated.

2.5 Overview of construction activities

An overview of the proposed works is outlined below:

- Mobilisation and site setup
- Foundations and bases for the above structures
- Lamellas
- Flocculation tank
- Ferric dosing: requiring an MCC kiosk, dosing control, ferric storage tank and an emergency shower

- Mechanical and electrical connections

The works will be commissioned and then compensation planting and reinstatement will be carried out.

2.6 Construction programme

A summary of the proposed construction programme for works is provided below:

Construction works are programmed to commence in spring 2024 for the proposed new MCC kiosk and winter/spring for other elements of the project. The works are scheduled to take approximately 45 weeks for Site set up, construction & commissioning (including any repair and reinstatement works) and will be followed by c.12 weeks for optimisation and take-over.

3 Environmental policy and legislation

3.1 Introduction

The Principal Contractor (PC) will work with respect to their organisation's environmental and sustainability policies and will at a minimum adhere to Southern Water's Environmental Management Policy. At Site, all visitors will comply with the Principal Contractor's Site management, health, safety and environmental rules. The Principal Contractor's Environmental Policies will be posted on the Health, Safety and Environment notice boards within the Site compounds, office and communal areas.

3.2 Policy, legislation and best practice guidelines

All mitigation and environmental control measures within the CEMP have been derived from the Planning Application supporting documents, relevant best practice, policies and legislation relating to the specific technical area addressed. The mitigation and environmental control measures are the minimum measures that will be managed and implemented by the PC.

The PC must comply with all relevant legislation that is current at the time of this CEMP and make updates to the CEMP and the Site training and notice boards when any new environmental legislation comes into force.

The PC will be responsible for managing the Site in accordance with any planning permission and conditions.

In order to ensure compliance with the environmental requirements identified and to encourage continual improvement in environmental performance, the PC will develop and maintain an Environmental Policy as part of their EMS. The aims of this policy will be:

- To meet the requirements of all relevant environmental legislation, consents, agreements, planning permissions, authorisations and commitments;
- To ensure that all environmental undertakings and obligations of the PC are fulfilled;
- To adopt working methods that achieve good environmental practice on-Site;
- To ensure that sub-contractors and suppliers are aware of the specific environmental constraints and opportunities of the Site, and follow necessary procedures in order to ensure good environmental practice;
- To identify the responsibilities of staff and sub-contractors in achieving good environmental practice on-Site;
- To mitigate against the effect of the construction works on residents, highway users and the general public; and
- The PC will be required to publicise a summary Environmental Policy statement to all Site personnel and the general public.

3.3 Permits, consents and licences

The following permits, consents and licences may be required and will be obtained and implemented during the construction phase. Table 2 lists some potential requirements but is not exhaustive.

Table 2: Permits consents and licences to be obtained

Name	Description of works requiring consent	Responsible Party for Obtaining Consent	Consenting authority
Planning permission (under Town and Country Planning Act)	Planning application for the proposed development of a new MCC Kiosk.	SWS	Relevant Waste Authority (West Sussex County Council)
Waste permits and/or exemptions	Activities involving use, treatment, disposal or storage of waste (e.g., screening and blending of waste, aerosol crushing, composting, etc.) (where applicable).	PC	Environment Agency
Dewatering of excavations	Environmental Permit required for the movement and discharge of surface/ground water (where applicable).	PC	Environment Agency

Where: SWS is Southern Water Services Ltd. PC is Principal Contractor.

4 Management of construction activities

4.1 Site roles and responsibilities

Southern Water Services Ltd (SWS) will oversee the management of the proposed works as The Client.

The Principal Contractor (PC) is a role defined within the Construction (Design and Management) Regulations 2015. A PC is appointed by the client to control the construction phase of any project involving more than one contractor. The PC has an important role in managing health and safety risks during the construction phase.

The PC will delegate Site supervision roles such as the Environmental Clerk of Works (EcoW) and procure specialist environmental consultants to supervise, monitor or check the PC's Environmental Method Statements and sensitive activities prior to the commencement of works, as required.

This CEMP will form the basis of the PC's separate EMS and associated plans and procedures.

Overall implementation of the CEMP will be responsibility of the PC and their Site Manager. Environmental support and monitoring of construction activities will be supervised by the PC.

Table 3 identifies the overarching project responsibilities. The following roles have been designated to ensure that the delivery of the CEMP is effective and efficient in its role as a tool to minimise environmental impacts during the construction phase. Other key project roles will be defined by the PC and detailed within the PC's separate EMS.

Table 3: Roles and responsibilities

Designated role/ technical area	Responsibilities
Client (SWS)	• Responsible for ensuring any planning conditions are adhered to.
PC Site Manager	• Responsible for ensuring any planning conditions are adhered to by liaising with the Southern Water Project Manager and Environmental Manager regularly. • Overall responsibility on Site for the specific construction activities. Also, responsible for producing detailed CEMP and any subsequent updates. • Monitoring sub-contractors' compliance with the CEMP. • In the event of an environmental incident or emergency, the Site Manager will liaise with the Environmental Manager and inform Southern Water on construction activities and enforce any modifications to methods statements or stops to works required.
PC Health, Safety and Environmental Advisor	• Responsible for ensuring any planning conditions are adhered to. • Responsible for ensuring appropriate environmental monitoring is undertaken. • Liaison will be undertaken with the Site Manager in the event of an environmental incident to advise on actions to be taken.

4.2 Contact details and protocol incidents

In the event of an emergency the PC Site Manager will be contacted in the first instance. The PC will manage the emergency in accordance with their Emergency Preparedness and Response Plan and corresponding procedure. This will include contacting Southern Water and the statutory regulators where appropriate.

4.3 Information for contractors and visitors

All contractors and visitors to the Site will be made aware of the Environmental Policy and the controls applicable to their presence and activities on Site, including but not limited to:

- Method statements;
- Risk assessments;
- Environmental briefings; and
- Toolbox talks.

The PC Site Manager will be responsible for monitoring communications between all relevant parties to the project ensuring that all environmental matters to the project are discussed and managed.

4.4 Site induction

All Site personnel including sub-contractors will be made aware of their responsibilities under the CEMP, and its appropriate implementation. A Site induction will be provided by the PC to all personnel at the start of each construction phase, and to each visitor on an as needed basis. This induction will be updated and refreshed when required. The induction will include the topics such as general health and safety (H&S) and environment, which are detailed below.

A bespoke Site induction will be created by the PC covering the operations required by their construction activities. Personnel will be required to sign a record of their Site induction and these will be kept on file.

The Site induction will cover the following items as a minimum:

- Security;
- Site rules for contractors and sub-contractors;
- Manual handling;
- Working at height;
- Confined spaces;
- Site documentation;
- Smoking/housekeeping;
- Driving;
- Signage;
- Welfare;
- Emergency response and preparedness;
- Ecology; and
- Key contact details.

The PC will be required to produce an H&S Site Management Policy for the Site and an appropriate person must be appointed as H&S Manager who will be responsible for enforcing health and safety measures during construction phases. The H&S Site Management Policy will be reviewed and accepted by SWS before works commence.

In line with SWS procedures, all personnel and visitors to the Site will be given H&S training as part of their Site induction which will include specific measures appropriate to the Site and the construction activity.

As part of the Site induction, a specific section will be dedicated to the ecology of the Site prepared by a competent environmental advisor. The aim of this is to make all personnel working on the Site fully aware of the ecological sensitivities of the Site and surrounding habitats, and the restrictions imposed on working arrangements to safeguard protected species and habitats.

Site staff will be competent to perform tasks that have potential to cause environmental impact. Competence is defined in terms of appropriate education, training and experience. Where project specific training is required, training will be appropriate to the role and seniority of staff.

4.5 Working hours

Construction works will be kept to specified hours to reduce potential noise impacts on nearby residential receptors. These specified hours are:

- Monday to Friday – 07:30 – 18:00. No significant noise generating construction activities would be undertaken outside of these times.
- Saturday – 07:30 – 13:00 (subject to agreement with the SWS Project Manager). Noise would be minimised between 07:30 and 08:00 on Saturdays.

Working at night will be avoided. Advance agreement will be sought from SWS prior to any works outside of these hours.

If there is any need to work out of these hours the PC will discuss this change with the Environmental Health department at Horsham District Council (the Local Environmental Health Authority) at the earliest opportunity and at least one week prior to the works commencing.

4.6 Communication strategy

4.6.1 Internal communication

Site communication boards will be positioned within the Site compound and in Site welfare offices. These boards will display pertinent environmental information including, but not limited to, the Environmental Policy, emergency contact details, location of spill response equipment and environmental briefings.

Key activities and environmental sensitive operations will also be briefed to staff and subcontractors during daily Site briefings.

A schedule of meetings will be developed to include regular Safety, Health and Environment meetings, where any issues or incidents will be raised for the attention of the client, along with proposed remedial action and additional control if required. An environmental register must be

signed and updated to confirm issues and incidents, along with toolbox talks, training and Site briefings.

During the construction phase, internal communication will include reporting on the following: Inspections, audits and non-conformance, environmental performance data including any incidents, near misses and progress on reaching targets.

4.6.2 External communication

The PC will endeavour to minimise the effects on the adjoining properties, neighbours and the public as far as is practical, and will adopt a proactive approach to management of the key issues, such as:

- Communication with neighbours and stakeholders;
- Liaison with Horsham District Council's Environmental Health department;
- Liaison with West Sussex County Council as waste planning authority;
- Planning and management of vehicle routes for deliveries;
- Traffic management and pedestrian routes;
- Control of noise and vibration and fumes;
- Control of works to the Site boundaries and interface with immediate neighbours; and
- Public transport routes and bus stops.

A number of procedures will be put in place to create and maintain lines of communication with neighbours and the local community including:

- Regular contact with the Horsham District Council and Neighbours where required;
- A Stakeholder Manager will be appointed and their contact details publicised in advance of the works for direct correspondence;
- Letters to keep neighbours informed of the progress of the works;
- Periodic letter drops relating to exceptional activities;
- Liaison evenings (if required); and
- Feedback, complaints and positive response procedure.

4.7 Complaints and inquiries

Where construction activities result in a complaint being made to the Site operatives, the customer contact will be reported to Southern Water Stakeholder Manager. Once recorded and reported the PC will liaise with the Horsham District Council (Environmental Health department) in order to develop mitigation measures and discuss and address any residual issues once the actions have been implemented.

Careful monitoring of complaints received, including recording details of the location of the affected party, time of the disturbance and nature of the disturbance shall be undertaken to assist with managing the works to reduce the likelihood of further complaint.

Contact details for the Site office and Stakeholder Manager will be publicised in advance of the works using appropriate measures including Site signage, notice boards or by letter. A detailed reporting procedure will be developed and implemented throughout the construction phase by the PC.

5 Environmental management, mitigation and monitoring

This section identifies the main environmental aspects that are to be managed during construction of the proposed development. The environmental aspects considered herein are as follows:

- Noise and vibration;
- Air quality;
- Biodiversity;
- Landscape and visual;
- Light pollution;
- Cultural heritage and archaeology;
- Soil / land use management;
- Resource management;
- Land contamination;
- Hazardous materials management;
- Transport management;
- Waste management; and
- Water management and flood risk.

5.1 Noise and vibration

Construction activity by its very nature can generate adverse noise and vibration impacts on receptors in close proximity to the development Site. In particular, noise and vibration associated with construction plant and drilling equipment are likely to be potential sources for noise and vibration.

Vibration from construction works can be perceptible to people even when the vibrations are at a low magnitude. Damage to buildings and other structures tend to be caused when vibrations are at a high velocity but a low frequency.

The closest residential / potential commercial property is located approximately 230m to the south of the proposed works. Additional properties are located approximately 280m south south west and c.300m north east.

There is a potential that receptors would be affected by noise and vibration impacts during the construction phase. Construction good practice is required to be implemented during the construction phase. A Communications Plan shall be prepared and implemented.

The potential temporary noise sources include the following:

- Site traffic during construction – heavy goods vehicles, Hiab (truck-mounted loader crane), dumpers, cranes, general staff traffic.
- Excavation and backfilling of trenches.
- Off-loading of assets.
- Break-out and removal of existing road.
- Concreting operations.

5.1.1 Control measures

As a minimum, mitigation shall follow the principles set out in BS 5228-1/2: 2009+A1:2014 Code of practice for noise and vibration control on construction and open Sites. The principles of Best Practicable Means will be employed to minimise noise levels during construction.

The environmental control measures defined below apply to all personnel including company employees, sub-contractors, suppliers and third parties; and all activities and operations associated with the proposed development.

Aspect	Environmental control measure(s)
Noise and vibration controls	• Limit construction activities to agreed working hours. • Notify and consult with all potentially affected parties that may be adversely affected from construction Site noise either via verbal face to face communications or letter drops. • Provide the local authority with advance notice of any works scheduled to take place outside agreed working hours. • Select inherently quiet plant, where appropriate. • Switch off machinery when not in use, where practicable. • Ensure all major compressors are 'sound reduced' models fitted with properly lined and sealed acoustic covers, where appropriate, that are kept closed whenever the machines are in use. • Ensure all ancillary pneumatic percussive tools are fitted with mufflers or silencers of the type recommended by the manufacturers. • Position ancillary plant (e.g., crushers, screeners, generators, compressors, pumps) to reduce noise disturbance, i.e., furthest from receptors or behind noise barriers. • Ensure subcontractors properly maintain and operate all plant according to manufacturer's recommendations to avoid causing excessive noise. • Place vibrating equipment or plant on a base separate to that on which any sensitive structure is located to reduce vibration impacts. • Programme deliveries to arrive during daytime hours only. • Take care when unloading vehicles to minimise noise. • Route delivery vehicles so as to minimise any noise disturbance to local residents as well as reducing potential vibration impacts upon structures. • Do not leave plant engines unnecessarily idling. • Erect Site hoarding, screens or barriers, as necessary and practicable, to shield noisy activities. • Site operatives will be briefed to refrain from shouting on Site. • Materials will be handled with care, e.g., material such as scaffolding and steelwork will be placed rather than dropped.

5.1.2 Monitoring

No construction noise monitoring is proposed unless complaints are received. Where complaints are received, monitoring shall be conducted to investigate and proactive measures undertaken by the construction team to reduce noise levels at source including revised plant and activity schedules, training regarding Site rules or disciplinary action to staff.

The mitigation measures described above will be monitored by the PC throughout construction as set out within the EMP. If a non-conformity with any of the mitigation measures is identified, it will be recorded and appropriate remedial actions will be implemented.

5.2 Air quality

A temporary impact on local air quality may arise during construction as a result of a temporary dust generation from excavations, increase in Site traffic and the use of a temporary generators.

The dust caused by plant and vehicle movement has the potential to create localised pollution.

Exhaust emissions from construction vehicles have the potential to adversely impact local air quality, particularly local ambient concentrations of Nitrogen Dioxide and Particulate Matter: the two constituent pollutants of vehicle emissions which are most likely to breach their respective health-based objectives.

When required, temporary generators will be used for short durations. Only modern units in good working order with a service history are permitted on-Site.

The proposed works are not located within an Air Quality Management Area. The proposed works will not generate sources of odour as part of construction (or operation).

The closest residential property is located approximately 230m to the south of the proposed works. Additional properties are located approximately 280m south south west and c.300m north east.

There is a potential for receptors to be affected by dust, visual and noise impacts during the construction phase. Construction good practice will be implemented during the construction phase. A Communications Plan shall be prepared and implemented.

5.2.1 Control measures

The environmental control measures defined below apply to all personnel including company employees, sub-contractors, suppliers and third parties; and all activities and operations associated with the proposed development.

Aspect	Environmental control measure(s)
Air quality controls	• Ensure all construction traffic follows specifically designated routes. • Implement speed limits for all vehicular movements. • Cover all vehicles carrying loose materials. • Dampen down haul roads, as necessary, to reduce dust emissions. • Conduct all cutting and grinding operations in a manner to reduce the risk of dust migration, e.g., wet cutting techniques. • Adopt dust suppression techniques (e.g., water suppression) to reduce dust emissions from all crushing and screening activities. • Locate stockpiles away from any sensitive receptors, where feasible. • Seed / seal / cover soil stockpiles to reduce the risk of dust migration, where possible. • Carry out regular visual inspection of roads to ensure minimal dust is generated by the construction activities. • Carry out regular visual inspection of the proposed works to ensure minimal effect upon local neighbours and wildlife. • Plant and equipment will be maintained with regular servicing and any dark smoke coming from vehicle/plant exhausts reported and rectified by repair or equipment replacement. • Wheels will be checked and cleaned where required prior to leaving the working area and joining the highways or public areas. • All vehicles carrying loose or potential dusty materials to or from the Site will be fully sheeted.

Aspect	Environmental control measure(s)
	• Deliveries to Site will be controlled to avoid queuing. • No construction plant or vehicle will leave its engine running when not directly in use, except where there are operational or other reasons to justify an exception. • When required, temporary generators will be used for short durations. Only modern units in good working order with a service history are permitted on-Site. • Construction vehicles will comply with emissions legislation, servicing and MOT (Ministry Of Transport) requirements: all vehicles used on Site shall comply with the relevant emissions standards and shall be serviced in accordance with the manufacturer's recommendations. MOT and service documentation shall be available/produced for the local authority's inspection if required. The PC is encouraged to use vehicles and plant that meet the most recent emissions regulations.

5.2.2 Monitoring

No specific survey monitoring for air quality impacts is proposed. The mitigation measures described above will be monitored by the PC throughout the construction phase as set out in the EMP. If non-conformity with any of the mitigation measure is identified, it will be recorded during a Site audit and appropriate remedial actions will be implemented.

5.3 Biodiversity

Designated Nature Conservation Areas

Statutory Designated Nature Conservation Areas

The proposed works are located within Sussex North Water Resource Zone. Natural England issued a Position Statement to West Sussex County Council which included that the Zone includes supplies from a groundwater abstraction which cannot, with certainty, conclude no adverse effect on the integrity of the Arun Valley Special Area Conservation (SAC), Special Protection Area (SPA) and Ramsar Site. As it cannot be concluded that the existing abstraction within Sussex North Water Supply Zone is not having an impact on the Arun Valley site, Natural England advised that developments within this zone must not add to this impact.

Due to the size of the development and the distance from Arun Valley (approximately 18km west), the works will not have any impact on the SPA. A HRA will not be required for the works.

No other statutory designated sites are located within 2km of the proposed works.

There are no Special Area of Conservation (SAC) with bats as a qualifying feature within 10km of the proposed works.

Based on the location and scale of the proposed works, no adverse effects on statutory designated sites are anticipated.

Non-Statutory Designated Nature Conservation Areas

A preliminary ecological appraisal (PEA) prepared by competent ecologists in August 2023 identified that there are no Local Wildlife Sites (LWS) located within 500m of the proposed works. DEFRA mapping shows that there are no areas of ancient woodland within 500m of the proposed works.

Due to the lack of non-statutory designated sites within 500m of the proposed works, no effects on these sites are anticipated.

Habitats

The habitats in proximity to the proposed works have been surveyed using the UK Habitat Classification Professional Edition (UKHab V2, 2023), allowing an appreciation of the likely ecological value of the Site to be determined.

The habitat classifications identified comprised neutral grassland, hardstanding and structures with peripheral hedgerows and trees. Local land use is predominantly arable farmland, with a strong network of deciduous treelines and hedgerows connected to woodland shaws and blocks. A tree-lined stream (Cutlers Brook) is present approximately 25m to the north of the Site.

The following UK Habitats of Principal Importance (HPI) are located within 500m of the proposed works:

- Deciduous woodland located closest at approximately 440m north-east and 470m south west.

The HPI within 500m of the Site is a significant distance from the works so no negative impacts are expected from the works.

The works will require the permanent removal of small areas of neutral grassland.

Protected Species

The following sections outline the required mitigation to manage the residual risk of affecting protected species.

Bats

The PEA walkover survey identified a building and two trees with potential bat roost features (PRFs) with a moderate suitability to support roosting bats. In addition, the hedgerows surrounding the Site were appraised as having suitability to act as aerial commuting and foraging habitat for bats. Further potential roost assessment (PRA) surveys were undertaken.

A ground-level potential roost assessment (PRA) was undertaken on the building noted to have bat roost potential (existing pumphouse). These surveys confirmed the building to be low potential. No direct impacts to the building are anticipated. The proposed works in proximity to the pumphouse shall be undertaken in accordance with a precautionary working method statement (PWMS).

A ground level tree assessment (GLTA) was undertaken completed for the two trees present within the site, which were found to have potential roost features (PRFs). One tree was classed as PRF-I (individual) and the other as PRF-M (multiple). It is anticipated minor lopping, trimming or crown lifting will be required to facilitate construction. These activities shall be undertaken under a PWMS prepared by a suitably experienced ecologist to include ecological supervision to prevent direct impacts to PRFs. Remedial tree works are limited in extent and, as such, are not anticipated to introduce noise-levels which may cause indirect disturbance to roosting bats if present. Direct impacts to PRFs would be avoided.

Hedgerows around the Site are not anticipated to be affected – these would be retained and protected to avoid impacts on commuting bats.

Badger
The PEA identified possible snuffle holes and pushes were identified within the Site and Site boundary. Removal of areas of grassland could affect badger setts if new setts have been constructed following the PEA (August 2023). The works could also impact on the movement of badgers across the Site, for example from open excavations. The proposed works may affect badger and mitigation measures are required.

Breeding birds
The upgrade works are not anticipated to affect vegetation which is suitable for breeding birds (hedgerows, trees and scrub). If potential breeding bird habitat may be affected, suitable mitigation measures will be undertaken.

Reptiles
The Site's hedgerows could act as suitable foraging habitat for reptiles with the adjacent soft estate potentially being used for basking and passage. Ongoing routine landscape maintenance, including regular mowing of grassland to a short sward during the growing season, would prevent adverse effects on widespread reptiles. Precautionary measures would be undertaken where applicable.

Hazel dormouse
The hedgerows surrounding the Site have suitability to act as a habitat for hazel dormouse. This assessment acknowledges the connection between these hedgerows to woodland north east of the Site. No effects on hedgerows are anticipated.

Cutlers Brook
No effects are anticipated on Cutlers Brook. Standard pollution measures shall be implemented (refer to water management 5.12).

Hedgerows
Rural hedgerows are not anticipated to be removed by the upgrade. Standard mitigation measures are required for any works in root protection areas. Appropriate measures are to be undertaken to prevent dust from the works adversely affecting the surrounding hedgerows of the Site (refer to air quality 5.2).

INNS
During the PEA Site visit no invasive or non-native species were noted on the Site.

Biodiversity Enhancements
Provisional biodiversity enhancement opportunities have been identified by a competent ecologist which included installation of habitat piles. These opportunities shall be reviewed in consideration of the areas affected by the proposed development. Proportionate ecological enhancement will be undertaken for the proposed MCC kiosk.

Arboriculture
There are trees located along the boundaries of the Site. An arboricultural survey was carried out 6th December 2023, which was followed by preparation of an arboricultural impact assessment and arboricultural method statement to confirm the RPAs to be avoided for the temporary and permanent works and any required mitigation measures for trees as set out in the table below. No trees are to be affected by the planning application boundary.

Horsham District Council online mapping shows that there are no Tree Preservation Orders (TPOs) and no Conservation Areas within 100m of the SWS landownership. No effects on TPO / Conservation Order trees are anticipated by the upgrade.

Hedgerows
Rural hedgerows are not anticipated to be removed or affected by the proposed upgrade. standard mitigation measures are required for any works in root protection areas.

5.3.1 Control measures

As a minimum, mitigation follows the principles set out in CIRIA Working with Wildlife: guidance for the construction industry (July 2011). All actions below are to be undertaken by a suitably experienced ecologist unless otherwise stated.

Southern Water's ecologists have produced a set of "Precautionary Method Statements" for wildlife and habitat protection which can be followed where risks have been assessed and found to be at a sufficiently low level.

The environmental control measures defined below apply to all personnel including company employees, sub-contractors, suppliers and third parties; and all activities and operations associated with the proposed development.

Aspect	Environmental control measure(s)
Designated Nature Conservation Areas	• Undertake the construction in accordance with Environment Agency pollution prevention guidelines (refer to Water Management below).
Protected species	Breeding Birds Where practicable, works shall avoid impacting vegetation suitable for nesting birds. If removal of this vegetation is required, where practicable, the works should avoid the breeding bird season: to be undertaken between September to February inclusive. If this is also not practicable, then these works shall be undertaken in accordance with a precautionary working method statement prepared by a suitably experienced ecologist, which will include a pre-construction nesting bird check prior to works. Hazel Dormouse • Where practicable, works shall avoid impacting hedgerows. • If works are anticipated to be required to hedgerows, works in this area shall stop until an ecological assessment has been undertaken by a competent ecologist. The results of this assessment may require interventions to suitable habitats - or surveys for hazel dormouse within a suitable survey season (May to late September/early October inclusive). • If hazel dormice are found within hedgerows, and interventions to suitable habitats cannot be avoided, an application for a mitigation licence will be submitted to Natural England by a competent ecologist. • The *Contractor* shall undertake the proposed works in accordance with any required mitigation licence. Bats • Hedgerows around the Site should also be retained and protected where practicable, as to not impact commuting bats. • Works in proximity to a building and two trees with bat roost potential shall be undertaken using a precautionary working methods.

Aspect	Environmental control measure(s)
	• Bat disturbance mitigation including a bat sensitive lighting scheme, avoidance of night-time (including dawn and dusk periods) working, and noise and vibration reduction, may be required dependant on the proximity and details of works in proximity to the PRF-M tree. Dependent on proximity of the works to the PRF-M and specific requirement for machinery, e.g., to install the temporary site compound, it is anticipated that acoustic attenuation barriers will be required as a precautionary measure to reduce potential disturbance to bats within nearby PRFs. • It is anticipated minor lopping, trimming or crown lifting will be required to facilitate construction. These activities shall be undertaken under a PWMS prepared by a suitably experienced ecologist to include ecological supervision to prevent direct impacts to PRFs. • It is anticipated that construction activities will not occur within tree root protection areas. Precautionary sound attenuation should be attached to tree protection fencing in accordance with BS 5837:2012 (such as to appropriate fencing installed around the tree root protection area). Measures will be reviewed, agreed and checked prior to construction commencement by a bat ecologist with a suitable competency level (BCT Level 3 'accomplished'). • Bat disturbance avoidance measures include bat sensitive lighting plans, avoidance of night-time working, and noise and vibration reduction. <u>Badger</u> • A pre-construction badger check will be carried out by a suitably qualified ecologist prior to construction. • Any trenches/pits excavated within the working area of the Site shall either be covered over-night, or fitted with an appropriate escape route such as planks of wood within the trench at a 45-degree angle. • Any temporarily exposed open systems shall be capped or covered to prevent badgers from gaining access. <u>Reptiles</u> In the unlikely event that clearance of vegetation suitable for reptiles is required, this shall be undertaken in accordance with a precautionary method statement for widespread reptiles including that vegetation suitable for reptiles shall be cleared under an ecological a watching brief to check for and translocate any potentially affected reptiles. <u>Biodiversity enhancement</u> A competent ecologist shall review the areas affected by the proposed works and confirm the details of agreed ecological enhancement. <u>General</u> • Staff and subcontractors to report any protected flora / fauna discovered during construction to Site management. Suspend all works within that area until authorised by an ecologist and Site management. • Provide information (e.g., Site induction / toolbox talks) to Site personnel. • Carry out agreed ecological enhancement (e.g., habitat creation) under the supervision of a suitably experienced and qualified ecologist.
Tree and hedgerow protection	• Potential effects on trees and hedgerows shall be avoided where practicable, and where unavoidable, these effects shall be minimised. • Any works in proximity to trees shall be undertaken in accordance with 'Volume 4: Street Works UK Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2)' (National Joint Utilities Group (NJUG) 2007) and British Standard (BS) 5837 recommendations (2012). Hand dig or air spading may be required in root protection zones. • Any tree works shall be undertaken in accordance with BS 3998 (2010).

Aspect	Environmental control measure(s)
	• Suitable fencing not within BS 5837:2012 may potentially be agreed with the Arboricultural Officer, e.g., Heras, Netlon or equivalent. • Provide information (e.g., Site induction / toolbox talks) to Site personnel. • Comply with any mitigation or requirements associated with affected vegetation. • Reinstate areas temporarily affected by the proposed works to pre-commencement conditions. • Works are required to be undertaken in accordance with the recommendations documented within the arboricultural method statement (including tree protection plan),
Invasive Non-Native Species (INNS)	• If the PC suspects INNS during construction, the works in the suspected area shall stop, the machinery shall not move, those working in the affected area shall follow appropriate biosecurity procedures in accordance with Southern Water Environmental Management System Manual 224 and the PC shall contact an ecologist immediately for advice. • Provide information (e.g., Site induction / toolbox talks) to Site personnel.

5.3.2 Monitoring

The following monitoring is to be undertaken during construction of the upgrade works:

- The mitigation measures described above will be monitored by the PC throughout the construction phase as set out in the EMP. If non-conformity with any of the mitigation measure is identified, it will be recorded during a Site audit and appropriate remedial actions will be implemented.

5.4 Visual impact and lighting

Construction activity may require the use of directional and task-specific lighting to allow safe working outside daylight hours and in areas restricted from natural light. This has the potential to cause nuisance and adversely impact upon nearby sensitive receptors including local residents and ecology. Lighting which causes glare can also negatively affect workers.

Controlling the amount of light pollution (backlight / up-light and glare) generated on Site not only reduces and/or mitigates nuisance and disturbance, but also reduces the energy used on Site.

The upgrade works are located within the existing WTW at Blackstone, which is located off Blackstone Lane in Blackstone, Woodmancote, Horsham. The upgrade works are not located within a nationally designated landscape (e.g., National Park or Area of Outstanding Natural Beauty (AONB)) and are outside of a Green Belt.

No ancient woodland or existing trees that contribute to the character of the landscape will be affected by the proposed works.

The upgrade works have been assessed as not leading to likely significant landscape and visual effects on nearby residences, the closest of which is approximately 230m south. Additional properties are located approximately 280m south south west and c.300m north east.

Aspects of the upgrade which are likely to affect landscape and views include:

- The reuse of excavated subsoil and topsoil on-Site.
- Temporary construction works, including compound for welfare cabin, car parking, spoil and material storage areas, signage and vehicle movements. Temporary task lighting in the new working areas is to be provided.
- Permanent above ground features including the new MCC kiosk.

5.4.1 Control measures

Construction-phase mitigation measures are outlined below and include for soil management, setup and maintenance of the temporary construction Site and Site lighting.

The environmental control measures defined below apply to all personnel including company employees, sub-contractors, suppliers and third parties; and all activities and operations associated with the proposed development.

Aspect	Environmental control measure(s)
Visual impact and light controls	• The temporary working area will include a separate subsoil and topsoil stockpiles which will comply with the requirements and recommendations within: BS 8601: 2013 Specification for subsoil and requirements for use; BS 3882: 2015 Specification for topsoil and requirements for use; Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (www.defra.gov.uk). • Erect Site hoarding, screens or barriers, as necessary and practicable, to screen Site activities. • Choose and assemble Site lighting to reduce light nuisance impacts to local neighbours and wildlife. • Position lighting properly and direct light downwards to minimise impacts of light pollution on neighbours and wildlife. • There will be no direct upward lighting. • Switch off Site lighting or minimise its use during periods of Site inactivity. • Keep Site boundaries clean and tidy at all times. Maintain hoarding and / or fencing to be free of graffiti and non-project specific posters. • Repair damaged or unsightly hoarding and / or fencing, as soon as possible. • It is not anticipated that any construction works will be carried out at night, when this is required it will be with prior agreement from the LPA (West Sussex County Council) and will include details of the lighting requirements.

5.4.2 Monitoring

Site management personnel will monitor the construction works on an ongoing basis to ensure that all protective fencing and lighting remains in place and in good condition for the duration of the construction works. Any repairs required will be completed as soon as practicable.

The measures identified above will be monitored by the PC throughout the construction phase as set in the EMS. If non-conformity with any of the mitigation measures is identified, it will be recorded during a Site audit and appropriate remedial actions will be implemented.

5.5 Cultural heritage and archaeology

Archaeological remains are part of the historic environment, but their presence is often unknown. Therefore, wherever excavation is undertaken there is a risk of archaeological finds being discovered.

There is one nationally listed structure within 500m of the upgrade works:

- Blackstone Farmhouse (Grade II Listed) located approximately 500m south.

As the upgrade works are not expected to directly or indirectly impact upon the Listed Building or its' curtilage.

There are no Scheduled Monuments, Registered Battlefields or World Heritage Sites within 500m of the proposed works.

The upgrade works are not located within a Conservation Area.

Southern Water's archaeological specialists were engaged to assess the potential archaeological impact of the works. An initial pre-construction assessment included that the proposed works are located in the north part of the WTW which appears to be comparatively undisturbed grassland. Archaeological potential is unclear, but the area of proposed works overlies an area of alluvium with archaeological potential associated with the adjacent stream.

It was recommended that:
Given the generally unknown potential for archaeological and geoarchaeological remains to be present in the areas of the site which have not been developed, in addition to the absence of previous archaeological investigation at the site, watching brief monitoring should be carried out during new excavations. The watching brief will therefore be maintained until the deposits, level of disturbance and archaeological presence/absence has been characterised in the area of the proposed works. This will also allow for the geoarchaeological potential of the alluvium to be assessed. The superficial alluvium and RTD [river terrace deposits] *may extend into the compound and if so, they are presumed to have some geoarchaeological potential.*

Pre-construction archaeological mitigation is proposed to be undertaken comprising an archaeological watching brief for soil excavations in advance of the main construction activities. These proposals are documented within a Written Scheme of Investigation (WSI) included within the planning application supporting documents. Mitigation measures recommended for construction in the WSI and feedback from the County Council will be adopted during construction to minimise any potential impacts on impact on archaeological features or deposits within the site.

The proposed works during its operational phase is unlikely to impact on archaeological features or deposits within the site and will have no adverse impact on heritage assets.

5.5.1 Control measures

The environmental control measures defined below apply to all personnel including company employees, sub-contractors, suppliers and third parties; and all activities and operations associated with the proposed development.

Aspect	Environmental control measure(s)
Cultural heritage and archaeology	• The proposed archaeological mitigation measures are documented in a Written Scheme of Investigation (WSI). Site works are to be undertaken in accordance with the WSI. • As documented in the WSI: undertake pre-construction archaeological mitigation comprising archaeological watching brief during soil excavations. This would be undertaken in advance of main construction activities. The scope of these works to be determined and developed in consultation with West Sussex County Council archaeologist via the planning application. (A report of the results of any required pre-construction archaeological mitigation would be prepared). • Toolbox talks will be given to contractors to ensure that during excavations contractors will look out for burned or blackened material, brick or tile fragments, coins, pottery or bone fragments, skeletons, timber joists or post holes, brick or stone foundations, infilled ditches. • If unsure about a possible find the PC will call an archaeological specialist to assess it.

Aspect	Environmental control measure(s)
	• Should items of potential archaeological interest be uncovered unexpectedly during excavation, stop works in the immediate area and a photograph of the find shall be e-mailed to the archaeological specialists to recommend appropriate actions. • A schedule of finds will be catalogued, where each was found and a Site archive maintained to include finds, Site notes, plans and other factual detail.

5.5.2 Monitoring

Site management personnel will monitor the construction works on an ongoing basis to ensure that all excavations and intrusive works are undertaken within the confines of the area of proposed development. Well in advance of any excavations being extended outside of the agreed working area advice will be sought from an archaeological officer to review whether any archaeological mitigation measures are required.

The measures identified above will be monitored by the PC throughout the construction phase as set in the EMS. If non-conformity with any of the mitigation measures is identified, it will be recorded during a Site audit and appropriate remedial actions will be implemented.

5.6 Soil and land use management

Soil is a valuable resource and will be a common material involved in the construction of the proposed development. Therefore, it needs to be carefully handled to allow reuse on Site and minimise the amount requiring removal.

This section describes the measures to be taken to minimise the risk of negative impacts on soils resulting from the proposed development. Planned aspects/activities conducted that pose a risk of creating these impacts are:

- Soil stripping;
- Excavation works;
- General Site activities;
- Removal of trees and scrub;
- Removal of amenity grassland;
- Construction of access roads;
- Topsoil stripping; and
- Grading.

It is anticipated that some excavated soils will be re-used onSite.

5.6.1 Control measures

The environmental control measures defined below apply to all personnel including company employees, sub-contractors, suppliers and third parties; and all activities and operations associated with the upgrade.

Aspect	Environmental control measure(s)
Earthworks	• Develop an earthworks method statement where more than 50m^3 of spoil is to be excavated. • Avoid stripping soil following periods of heavy rainfall (i.e., 5mm or more in a 24-hour period), when practicable.

Aspect	Environmental control measure(s)
	• Keep areas of exposed ground to a practicable minimum. • Where temporary soil storage is undertaken topsoil and subsoil stockpiles will be segregated. Where required, temporary fencing will be installed to reduce protected species effects. • Topsoil will be scraped back and stored on-Site for re-use as required. • Handle soils carefully to minimise potential soil structure damage. • Keep temporary stockpile heights as low as possible given space restrictions, e.g., 3m for topsoil and 4m for subsoil. • Stockpiles to have a flat roof. • Minimise run-off from stockpiles by light compaction and at an angle of no more than 45°, use of trenches and locating stockpiles away from drainage systems and watercourses. • Protect stockpiles to minimise erosion losses and weed infestation if storage is to be longer than 6 months (e.g., seeding or light compaction). • Protect stockpiles (e.g., using berms) from flooding to avoid soil losses. • Keep traffic off soil stockpiles, as much as possible, throughout the period of soil storage. • Display clear and unambiguous signage to notify Site personnel of the presence of different types of soil stockpiles. • Avoid reinstating soils following periods of heavy rainfall (i.e., 5mm or more in a 24-hour period), when practicable. • Reinstate subsoil to maintain natural drainage patterns and avoid settlement. • Reinstate topsoil by rendering into a loose and workable condition as well as contouring to maintain the profile with the adjacent undisturbed area. • Implement effective temporary and / or permanent soil erosion control measures, where necessary. • Implement and maintain suitable, adequate and effective control measures to prevent run-off from stockpiles contaminating surface waters.
Export of soils	• Ensure that a Materials Management Plan (compliant with the CL:AIRE Code of Practice) is developed or an Environmental Permit is obtained for the export and use of more than 1,000 tonnes (over a 3 year period) of waste soils. • Ensure all waste Duty of Care legislation is complied with in relation to the transport and disposal of waste soils.

5.6.2 Monitoring

The measures identified above will be monitored by the PC throughout the construction phase as set in the EMS. If non-conformity with any of the mitigation measures is identified, it will be recorded during a Site audit and appropriate remedial actions will be implemented.

5.7 Resource management

5.7.1 Control measures

The environmental control measures defined below apply to all personnel including company employees, sub-contractors, suppliers and third parties; and all activities and operations associated with the proposed development.

Aspect	Environmental control measure(s)
Energy conservation	• When possible, procure electricity supplies through a suitable energy broker. • Ensure time controls and thermostats are set to take account of unoccupied periods so that heaters are off when there is no one around. • Fix any draughts or damage to windows, window frames and / or doors. • Ensure windows / doors are closed when the heating systems are on.

Aspect	Environmental control measure(s)
	• Insulate hot water distribution pipes. • Switch off all non-essential lighting in unoccupied areas. • Switch off external lighting during the day. • Ensure light sensors and timers are correctly set. • Make sure generator(s) are correctly sized for their proposed use. • Ensure generators or other diesel plant are not left unnecessarily idling. • Make sure generator(s) are regularly maintained by the owner / supplier. • Ensure construction plant are well maintained to maximise fuel efficiency. • Ensure compressors correctly sized for their proposed use. • Ensure there are no leaks or damage to compressor systems. • Ensure compressors turned off to avoid being left unnecessarily idling. • Make sure compressor(s) are regularly maintained by the owner / supplier. • Ensure unused office equipment (e.g., printers, mobile phone chargers, fans, coffeemakers, radios) that drain energy when not in use are turned off and / or unplugged. • Ensure power management features are enabled (i.e., sleep mode) on all office equipment (e.g., photocopiers, printers, and computers). • Ensure office equipment (e.g., computers, monitors, photocopiers) are turned off at the end of the work day. • Ensure photocopiers / printers are set to default by printing on both sides. • Ensure electrical appliances (e.g., fridges) have a European Union Energy Rating of A or B. • Provide employees / subcontractors with awareness training regarding conserving energy and hence reducing costs. • Encourage employees / subcontractors to suggest energy saving ideas.
Water conservation	• Turn off hose pipes when not in use. • Switch off taps when not in use. • Ensure there are no water leaks. • Within Site accommodation, use water boilers rather than kettles to encourage water savings. • Where possible, install water efficiency measures, e.g., low water flush toilet cisterns. • Where feasible, implement rainwater harvesting on Site. • Provide employees / subcontractors with awareness training regarding water conservation. • Encourage employees / subcontractors to suggest ideas for saving water.

Storage of raw materials	• Store and handle all construction related materials to prevent:
	  ○ Damage;
	  ○ Degradation of material quality characteristics;
	  ○ Contamination of the material and / or the external environment;
	  ○ Excessively long on-Site storage periods; and
	  ○ Loss through theft and vandalism.
	• Conduct walk-through surveys (using the Workplace Weekly HS&S Inspection) to review construction related material handling and storage practices to ensure that material integrity and quality are being maintained and that their handling and storage is not contributing to an adverse environmental impact.

Import of recycled aggregates	• Ensure that recycled aggregates have been produced in conformance with the Aggregates Quality Protocol: Production of Aggregates from Inert Wastes if more than 5,000 tonnes (over a 3 year period) are to be imported. Retain documentation to verify conformance to the Aggregates Quality Protocol. • Obtain a U1 Environmental Permit Exemption for the import of less than 5,000 tonnes (over a 3 year period) of recycled aggregates that does not conform to the Aggregates Quality Protocol.

Aspect	Environmental control measure(s)
	• Develop and / or obtain a Materials Management Plan (compliant with the CL:AIRE Code of Practice) or an Environmental Permit for the import of more than 5,000 tonnes (over a 3 year period) of recycled aggregates that does not conform to the Aggregates Quality Protocol. • Reject all loads of delivered recycled aggregates that does not appear to meet the defined material specification, e.g., 6F2; 6F5; Type 1; Type 2. • Reject all loads of delivered recycled aggregates that contains more than 1% by mass of Class X materials, i.e., wood, plastic and / or metal. • Reject all loads of delivered recycled aggregates that contains any asbestos materials or smells of hydrocarbons, e.g., oils / diesels.
Crushing inert aggregates	• Ensure that subcontractors' crushing plant has been issued with a PPC Permit issued by a Local Authority. Retain a copy of the issued PPC Permit within Site documentation. • Ensure that recycled aggregates are produced in conformance with the Aggregates Quality Protocol if more than 5,000 tonnes (over a 3 year period) are to be produced. Retain documentation to verify conformance to the Aggregates Quality Protocol. • Obtain an Environmental Permit if more than 5,000 tonnes (over a 3 year period) of aggregates / soils are to be screened on-Site. • Obtain a T5 Environmental Permit Exemption if less than 5,000 tonnes (over a 3 year period) of aggregates / soils are to be screened on-Site. • Obtain a U1 Environmental Permit Exemption for the use of less than 5,000 tonnes (over a 3 year period) of crushed recycled aggregates that does not conform to the Aggregates Quality Protocol. • Develop and / or obtain a Materials Management Plan (compliant with the CL:AIRE Code of Practice) or an Environmental Permit for the use of more than 5,000 tonnes (over a 3 year period) of recycled aggregates that does not conform to the Aggregates Quality Protocol.

5.7.2 Monitoring

The measures identified above will be monitored by the PC throughout the construction phase as set out in the EMS. If non-conformity with any of the mitigation measures is identified, it will be recorded during a Site audit and appropriate remedial actions will be implemented.

5.8 Land contamination

This section advises on how to manage risks due to land contamination and how to avoid spreading contamination. Land contamination can be caused by previous land use, presence of landfill, criminal activity such as fly-tipping or naturally occurring substances in the land.

The existing operational Site receives and treats wastewater which is a potential source of land contamination. Standard construction practice for works on potentially contaminated Sites is required.

Data.Gov.UK mapping shows that there are no current (authorised) or historic landfills within 250m of the proposed works. DEFRA mapping shows that the proposed works are not located within 250m additional potentially contaminative sources, e.g., petrol station.

The upgrade works are anticipated to require a small amount of soil strip and/or landscape restoration.

A Pre-Desk Study Assessment for Unexploded Ordnance (UXO) did not identify a requirement for a detailed desk study. However, although the potential to encounter UXO is not sufficient to require further study, there remains a risk of unexpected UXO discovery.

It is anticipated that hazardous materials are to be required to be stored on-Site during commissioning and operation. The upgrade works will require additional storage on-Site of diesel, petrol, adhesives & solvents and spray paint.

Standard good practice construction mitigation measures are required to be undertaken as described below.

Construction activities physically affect land that may create pathways by which contaminates can reach receptors and cause risks to:

- Site-based staff through direct contact with soils or inhalation of dust or gases;
- Ecological systems;
- Buildings and structures;
- Ground and surface waters; and
- Users of the land through contact with soil or via food grown on the land.

Land contamination may also give rise to leachates that can also pollute ground and surface waters.

5.8.1 Control measures

All the workers on Site will be made aware of potential contamination issues. The environmental control measures defined below apply to all personnel including company employees, sub-contractors, suppliers and third parties; and all activities and operations associated with the proposed development.

Aspect	Environmental control measure(s)
Ground contamination	• Prepare a plan to describe proposed mitigation measures to be adopted in the event of encountering unforeseen potential contaminated land. This should include that excavated material suspected of being contaminated shall be sampled and tested appropriately by the Contractor in accordance with EA Guidance (Appendix D from the Waste Classification: Guidance on the classification and assessment of waste (1st Edition 2015) Technical Guidance WM3). Unexpected contamination to be managed appropriately in accordance with current guidance and legislation. Undertake works in accordance with project documentation to minimise the potential effects from contaminated land. • Prepare an emergency procedure in the event of an unexpected Unexploded Ordnance (UXO) discovery. Undertake works in accordance with the emergency procedure for unexpected UXO discovery. • Where required, provide a UXO awareness briefing, e.g., via a toolbox talk. • Cordon off areas of contamination from those that are uncontaminated. • All the on-Site construction workers on Site will be made aware of potential contamination issues. • Use of Personal Protective Equipment (PPE). • Appropriate storage of fuels and oils and process to manage any leaks or spills from equipment. • Develop and implement a disposal strategy for the management of contamination. • Use competent contractors to implement any defined or disposal strategy.

Aspect	Environmental control measure(s)
	• Ensure all appropriate environmental permissions have been obtained where reuse and / or disposal of contaminated soils is to be undertaken, e.g., a Mobile Plant Licence or an Environmental Permit or Exemption; Waste Acceptance Criteria (WAC) Testing has been undertaken on treated and / or untreated soils when disposing to landfill. • Store contaminated soils in areas effectively demarcated from construction works and access / egress routes. • Place soils on impermeable surfaces to prevent contamination of the underlying ground. • Cover stockpiles to prevent windblown dust or the ingress of rainwater, where practicable. • Implement controls for containing surface water run-off from contaminated stockpiles to prevent the uncontrolled discharge of contaminated effluent. • Display clear and unambiguous signage to notify Site personnel of the presence of contaminated soils. • Should unexpected contamination be encountered, a contaminated land specialist will be contacted for further advice.
Hazardous materials storage	• The handling, use and storage of hazardous materials will be undertaken in line with The Control of Pollution (Oil Storage) (England) Regulations 2001. • Develop a Spill Response Plan. • Store hazardous materials more than 10m from a watercourse or surface water and / or foul water drainage gullies. • Hazardous materials proposed to be used during the construction works will be identified and an appropriate Control of Substances Hazardous to Health (COSHH) Assessment carried out in accordance with COSHH Regulations 2002. • Undertake COSHH assessment for hazardous materials. • Segregate COSHH raw material stores and COSHH waste stores. • Develop a Hazardous Materials & COSHH Register documenting materials stored and handling requirements. • The Site emergency preparedness and response plan will be available on Site. • A COSHH register will be produced and maintained on Site. • Store hazardous material containers on secondary containment systems that will contain 110% of the contents of the largest container or 25% of the total, whichever is greater. • Protect hazardous material containers to minimise the ingress of rainwater and secure them against accidental damage. • Maintain and inspect hazardous material bunds and spill kits. • Monitor hazardous material storage areas for leaks and signs of spillage. • Provide Site spill kits with instructions in areas of high risk. • Undertake spill response exercises / drills at a frequency as defined within the Spill Response Plan. • Train Site personnel in the use of spill kits and the correct disposal of used material. • Residue cement and concrete will be placed in a designated lined and covered skip, the skip will be placed on a plastic liner to collect any spillages. • Drivers delivering concrete will be informed of the brush off facilities and supervised while they use them. • Concrete socks will be used where possible to cover the concrete chutes. • Water collected within the skip will not be allowed to enter any drains or watercourses and will be removed from Site as a waste.
Refuelling	• Undertake all plant refuelling on hardstanding or within defined areas that utilise drip trays / plant nappies. • Provide secure valves and nozzles on fuel storage tanks / bowsers. • Conduct refuelling activities at least 10m away from watercourses or surface / foul water drainage gullies. • Locate spill kits in all appropriate locations, with instructions for use.

Aspect	Environmental control measure(s)
	• Ensure training has been provided to those that conduct refuelling activities on correct refuelling procedures.

5.8.2 Monitoring

The measures identified above will be monitored by the PC throughout the construction phase as set in the EMS. If non-conformity with any of the mitigation measures is identified, it will be recorded during a Site audit and appropriate remedial actions will be implemented.

5.9 Transport management

Construction traffic has the potential to cause nuisance through noise, exhaust emissions, dust, and congestion and to create a safety hazard both on and off-Site.

Access to the WTW is from a private (SWS owned) track extending west from Blackstone Lane – the latter is maintained by West Sussex County Council (National Street Gazetteer (NSG) no. / USRN 17603015, Class C-road).

The nearest public right of way (PRoW) (footpath/bridleway) to the WTW is footpath no. 2541 (Woodmancote CP), which is located closest at approximately 220m south east. No effects on PRoW are anticipated.

There will be a temporary increase in the level of vehicular traffic to and from the WTW during the construction phase. It is anticipated that some excavated spoil will be beneficially re-used on Site to reduce vehicle movements.

5.9.1 Control measures

The environmental control measures defined below apply to all personnel including company employees, sub-contractors, suppliers and third parties; and all activities and operations associated with the project.

Aspect	Environmental control measure(s)
Use of public, temporary and permanent haul roads	• Develop and implement a Traffic Management Plan. • Identify local receptors that may be adversely impacted by traffic related nuisance complaints (e.g., noise, congestion and visual). • Establish and maintain contact with local residents and other potentially affected parties prior to the commencement of, and during, construction works in order to avoid any potential traffic nuisance related complaints. • Ensure all construction related traffic uses agreed access points, as defined within the Traffic Management Plan. • Ensure contractor Heavy Goods Vehicles (HGVs) are in good working order and hold a valid MOT certificate. • Ensure all vehicles carrying loose material are covered. • Obtain permission from the owner of street furniture (e.g., local authority or Local Highway Authority) prior to attaching directional signage. • Install hardstanding to reduce mud transfer onto public roads. • Use wheel wash facilities / road sweepers, where appropriate, to keep public roads clear of dust and mud.

Aspect	Environmental control measure(s)
	• Ensure all material suppliers adhere to agreed working hours in relation to material deliveries. • Ensure all vehicles adhere to the Site speed limits.

5.9.2 Monitoring

The measures identified above will be monitored by the PC throughout the construction phase as set in the EMS. If non-conformity with any of the mitigation measures is identified, it will be recorded during a Site audit and appropriate remedial actions will be implemented.

5.10 Waste management

Construction waste needs to be managed appropriately through its production, storage and disposal. Wastes may result from the following activities:

- Excavated materials (soils or substrata);
- Green waste (from vegetation removal or management); and
- Construction materials (e.g. packaging, concrete, aggregates).

There is a potential requirement for buried redundant structures to require break out as part of the groundworks for the construction of the upgrade works.

Approximately 150m^3 of waste spoil is anticipated to be generated and c.2m^3 would be reused as road base/hardstanding.

Appropriate testing and analysis of waste material will be undertaken to inform a suitable waste disposal route in alignment with applicable guidance and codes of practice. Where safe and appropriate, demolished materials/concrete may be crushed and reused on-Site. Sub-base required for under new structures, roads and footpaths would be imported from a licensed provider. Minimal waste concrete/brick is anticipated to be produced and is planned to be removed from Site to a licensed facility for recycling off-Site.

All waste arising from Site activities will be managed in-line with the Waste Regulations 2011.

Mitigation measures will also include undertaking the works in a manner and time of day that minimises noise impacts and using standard dust suppression measures to minimise windblown dust.

5.10.1 Control measures

Specific mitigation and control measures will be developed by the PC and included in a Site Waste Management Plan (SWMP). The SWMP will be prepared in accordance with the waste hierarchy to minimise generation and disposal and maximise re-use and recycling. For example, through the re-use of excavated soils and green waste on-Site for landscaping and through the recycling of inert material, where possible.

The SWMP will consider the sourcing, transport, use and disposal of materials in a sustainable manner. It will be reviewed to take account of changes as the design is finalised. It will ensure that unavoidable construction waste is identified at an early stage so it can be managed in accordance with the waste hierarchy and other relevant legislative requirements. The SWMP will be used to derive the management options that will achieve the highest practicable performance levels within the hierarchy.

The environmental control measures defined below apply to all personnel including company employees, sub-contractors, suppliers and third parties; and all activities and operations associated with the upgrade.

Aspect	Environmental control measure(s)
Waste storage, handling and segregation	• Store wastes in areas away from surface / foul drains and watercourses. • Segregate all construction wastes, at a minimum, into hazardous and non-hazardous waste streams. • Segregate construction wastes into dry recyclables. • Cover waste containers if there is a risk that wastes may be blown out or the wastes contained therein are water sensitive, e.g., plasterboard wastes. • Use waste signage, i.e., labels that specify waste contents. • Secure waste containers. (Note: on unsecure Sites or in areas where theft and vandalism may occur, skips should be lockable). • Use approved and licenced contractors.
Off-Site disposal of Site waste streams	• Develop, implement and maintain a Site Waste Management Plan (SWMP) throughout the duration of the project. • Use the Waste Transfer Note (WTN) for the off-Site disposal of all non-hazardous wastes. • Use Hazardous Waste Consignment Notes for the off-Site disposal of all hazardous wastes. • Retain all WTNs for at least three years. • The PC will obtain copies of waste carrier registrations and environmental permits including associated schedules of wastes or permit exemptions prior to removing waste from Site. • Every proposed destination Site will be checked to ensure that a valid permit or waste exemption has been issued under the Environmental Permitting (England and Wales) Regulations 2007. • All waste will be disposed of in accordance with the Duty of Care and all other relevant environmental legislation. • Periodic audits will be undertaken to ensure compliance with the Duty of Care. • Only use licensed waste carriers to transport wastes from Site and obtain documentation to demonstrate registration. • Where it is suspected that a waste contractor is not complying with the legal Waste Duty of Care, follow up checks shall be made. Where it is demonstrated that waste is not being managed in accordance with legislation and where this cannot be rectified, the contract with the waste contractor shall be terminated.

5.10.2 Monitoring

Subject to the requirements of the SWMP, waste management will be monitored throughout the construction phase by the Site Manager. Whenever waste is removed from the Site, details will be recorded in the SWMP. The SWMP will also be updated regularly to show the types and quantities of waste that are re-used, recycled, recovered by any other means, sent to landfill or disposed of by any other means.

A thorough review of the waste management records or SWMP will be carried out monthly, to assess performance against the SWS targets. The review should include calculating the costs of waste treatment and disposal.

The Site manager shall allocate responsibility to a nominated person to carry out waste audits/inspections at regular intervals to look at the following:

- Quantities of each type generated, reasons why and its costs implications;
- How wastes are being handled and stored; and
- Recommendations for improving waste management.

Carrying out audits will provide valuable information to help set targets for improvement and will show how well waste management initiatives from the action plan are working on-Site.

5.11 Flood risk management

This section provides a summary of the baseline for the flood risk to the proposed development and identifies either on-Site or off-Site receptors that that could be sensitive to the proposed development.

Gov.uk flood map for planning shows that the proposed new infrastructure works are within Flood Zone 1 (low risk of flooding; less than 1 in 1,000 annual probability of river flooding).

Gov.uk flood map long term flood risk mapping shows that the proposed works are partially located within an area of low-high long term surface water flood risk associated with the Cutlers Brook. The works have been designed to take account of flood risk. The project team will take appropriate measures in the event of surface water and localised flooding.

5.11.1 Control measures

The following industry best practice general measures are to be implemented during the construction phase:

- Construction will not be undertaken during extreme wet weather;
- Construction works will avoid taking place during periods of high groundwater conditions;
- Temporary elements and new infrastructure will be located outside: flood zones 2 and 3; areas at long term risk of surface water flooding; and, at risk of groundwater flooding, where practicable;
- Appropriate measures would be taken in the event of surface water and localised flooding;
- Construction workers will be briefed on areas of high groundwater levels/risk of groundwater flooding.

5.11.2 Monitoring

The measures identified above will be monitored by the PC throughout the construction phase as set out in the EMS. If non-conformity with any of the mitigation measures is identified, it will be recorded during a Site audit and appropriate remedial actions will be implemented.

5.12 Water management

The objective of this section is to secure implementation of working methods to protect surface water and groundwater from pollution and other adverse impacts including change to flow, volume, water levels and quality. Controlled watercourses have legal protection from harm and pollution.

OS mapping shows that are two surface waterbodies within 100m of the proposed works:

- Unnamed ordinary watercourse located along the eastern boundary of the site; and
- Cutlers Brook (Environment Agency Main River) located approximately 25m north of the WTW and c.40m north of the proposed works . This is WFD classified, named 'Chess Stream / Water Body' (reference GB107041012110) and had a Moderate ecological status in 2023.

There will be no direct construction impacts to these features.

DEFRA mapping shows that the proposed works overlie the following areas:

- Bedrock which is classified as an unproductive aquifer.
- Superficial drift which is classified as a Secondary A aquifer in the northern third of the WTW and unproductive for the southern two thirds of the WTW.
- Where the Groundwater Vulnerability is classified as Unproductive and Low.
- The upgrade works are not located within a groundwater Source Protection Zone.

The upgrade works do not include surface water abstraction and no direct effects on surface waterbodies are anticipated to be required.

The upgrade works pose a risk of pollution to surface water and groundwater and appropriate pollution prevention measures will be adopted throughout the development.

The upgrade works are to improve the quality of water discharged which is anticipated to have a positive effect on surface waters.

Pollution can result from any of the following entering a body of surface or groundwater:

- Poisonous, noxious or polluting matter;
- Waste matter (including sediment, concrete, oil, petroleum spirit, chemicals, solvents, sewage and other polluting matter); and
- Other harmful activities detrimentally affecting the status of a water body.

The status of a waterbody can also be affected directly or indirectly, including changes in physio-chemical parameters such as temperature and turbidity or physical modifications to the hydrology of a water body.

5.12.1 Control measures

The environmental control measures defined below apply to all personnel including company employees, sub-contractors, suppliers and third parties; and all activities and operations associated with the upgrade.

Aspect	Environmental control measure(s)
Abstraction, impounding & dewatering	• Obtain an abstraction licence from the EA (Environment Agency) for the abstraction of more than 20m^3 of water / day from any controlled water. It is not anticipated that this volume would be exceeded.

Aspect	Environmental control measure(s)

	• Obtain an abstraction licence if waters from dewatering activities are to be used, e.g. for dust suppression.
	• Methods for management and monitoring of water discharges and prevention of pollution will be included in PC's method statements. The relevant sections of BS6031:2009 Code of Practice for Earthworks for the general control of Site drainage/discharges will be followed.
	• The construction activities associated with the proposed works may require the temporary discharge of water from excavations. All dewatering activities are to be undertaken in accordance with the 'Temporary dewatering from excavations to surface water' Regulatory Position Statement (RPS) published by the EA in February 2018. Where the conditions of this EA guidance cannot be met, an environmental permit may be required for this temporary activity.
	• Under no circumstances will discoloured or contaminated water be allowed to enter drains. All reasonable precautions will be taken to prevent contamination of surface waters either directly or indirectly. Contamination includes, but is not limited to:
	  ○ Oily residues;
	  ○ Chemicals and paints;
	  ○ Concrete washout water;
	  ○ Mud / silty water; and
	  ○ Flushing out of pipework during commissioning.
	• Ensure that a pump head rose is used to reduce the risk of harm to aquatic life.
	• Before any pumping activity the following measures will be undertaken:
	  ○ Each pump will be fitted with filters to ensure that silt and other particulates that may be suspended within the water is removed prior to the discharge of the water;
	  ○ Pumping rates to be controlled so as to avoid erosion or scour of the receiving environment;
	  ○ A visual inspection of the water will be undertaken for signs of pollution (e.g. oil, cement), if any pollution is visible no pumping will take place;
	  ○ Evidence of pumping activity to be recorded and kept within the Site folders.
	• Ensure conformance to requirements of obtained licences / authorisations.

Discharges to surface water or groundwater	• Consult with the EA as to the need for an Environmental Permit for the discharge of effluent to surface waters prior to the discharge proceeding. • Obtain permission to discharge sediment-laden waters to land from the landowner and consult with the EA prior to discharge. • Ensure all effluent discharges from Site cabins are directed into sewers (with permission from the local water company) or holding tanks. • Ensure conformance to requirements of obtained permits / authorisations.
Discharges to sewer	• Obtain a trade effluent discharge consent from the local water company or written permission from the sewer owner prior to the discharge of any trade effluent into a foul sewer. • Ensure that the company's Permit-to-Pump system is used for all effluent pumping activities. • Ensure conformance to requirements of any obtained consent.
Works in, near or over controlled waters	• Obtain formal approval from the EA prior to the use of any herbicide in or near a watercourse (i.e. within 10m of a watercourse). • Plant and equipment entering or working alongside watercourses should be well maintained, clean and free from oil leaks. • Prevent liquid / solid debris falling into a watercourse or onto an embankment during construction activities. • Ensure conformance to requirements of any obtained consent / approval.
Site drainage	• Display surface and foul water drainage systems and nearby controlled waters. • Implement and maintain control measures to ensure Site drainage does not contaminate drains or watercourses, e.g. cut-off ditches / silt fences.

Aspect	Environmental control measure(s)
	• Provide toolbox talks to relevant personnel and contractors that effluent must not be poured down surface / foul water drains without permission.
Washing activities	• Conduct all washing and cleaning operations (including the washing of vehicles and / or plant) in a designated area, which should be isolated from the surface water drainage systems and within hardstanding areas. • Ensure no detergent contaminated wash down effluent is allowed to enter controlled waters unless permitted by the EA. • Direct detergent contaminated wash down effluent via the foul sewer (after having gained permission from the Water Company or ensure that it is contained for off-Site disposal. • Establish an impermeable concrete / mortar washout area at least 10m away from drains; surface waters; or trees.

5.12.2 Monitoring

Regular visual checks of any controlled watercourses and discharge points will be undertaken to check for the following:

- Changes in water colour;
- Changes in water transparency;
- Oil sheen to the water surface;
- Scum or foam build up on the surface;
- Signs of dead plants or animals; and
- The condition or any control measures such as silt fencing.

Daily monitoring will also be undertaken to ensure the settlement tank is working effectively and the water is the desired water quality where used.

The measures identified above will be monitored by the PC throughout the construction phase as set in the EMS. If non-conformity with any of the mitigation measures is identified, it will be recorded during a Site audit and appropriate remedial actions will be implemented.

5.13 Environmental toolbox talks

Courses are run by the PC covering various environmental issues. For Site personnel, the Site induction will be used to promote overall environmental awareness as well as employee and subcontractor environment management responsibilities. The Site induction will be further enhanced through the delivery of a series of toolbox talks as shown in the table below, that should be delivered to relevant Site personnel on an on-going basis.

Environmental toolbox talks	
Tree protection	Soil planning and management
Japanese knotweed	Stripping topsoil
Himalayan balsam	Stripping sub-soil
Giant hogweed	Stockpiling soil
Bats	Spreading soil
Badger	Sourcing topsoil
Great Crested Newt	Manufacturing topsoil
Birds	Soil aftercare
Bees	Use of surplus soil

Environmental toolbox talks	
Spill control	Working with previously developed land
Petrol, diesel and oils	Unexploded Ordnance
Water pollution prevention	Dust and air quality
Water pollution – silt / sediment	Materials management and housekeeping
Water pollution - cement and concrete	Energy conservation – construction Site good practice
Pumping and over-pumping	Timber procurement
Washing down plant and machinery	Waste management
Bentonite	Storage of waste
Noise and vibration	Waste segregation
Be a good neighbour	

The delivery of these environmental toolbox talks should be planned during the '4-week planning meeting' that is held between the Operations Management Team and the HS&S Advisor.