



United Utilities

WOODGATE HILL WATER TREATMENT WORKS

Proposed Chemical Building

Construction Environmental Management Plan





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Construction Environmental Management Plan

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CONTENTS

1.	INTRODUCTION	3
1.1.	BACKGROUND	3
1.2.	PURPOSE OF THE CEMP	3
1.3.	STRUCTURE	3
2.	SITE INFORMATION	5
2.1.	SITE AND SURROUNDING AREA	5
2.2.	THE PROPOSED DEVELOPMENT	6
2.3.	SENSITIVE RECEPTORS	6
	RESIDENTIAL RECEPTORS	6
	COMMUNITY AND RECREATIONAL RECEPTORS	7
	ECOLOGICAL RECEPTORS	7
	WATER RECEPTORS	7
	HISTORIC ENVIRONMENT RECEPTORS	7
	AIR QUALITY MANAGEMENT AREAS (AQMAS)	8
3.	GENERAL ENVIRONMENTAL REQUIREMENTS	9
3.1.	OBJECTIVES AND TARGETS	9
3.2.	MANAGEMENT STRUCTURE	9
3.3.	CONTACT INFORMATION	10
4.	CONSTRUCTION INFORMATION	11
4.1.	CONSTRUCTION WORKS	ERROR! BOOKMARK NOT DEFINED.
4.2.	HOURS OF WORK	11
4.3.	SITE ACCOMMODATION AND WELFARE FACILITIES	11
4.4.	SITE ACCESS AND EGRESS	11
4.5.	PLANT AND MATERIAL STORAGE AND COMPOUND AREAS	12

4.6.	WASTE AND MATERIALS MANAGEMENT	12
4.7.	CLEANLINESS OF SURROUNDING AREA	14
4.8.	SECURITY ON SITE	14
4.9.	VISITOR AND SITE PARKING	14
4.10.	HEALTH AND SAFETY ARRANGEMENTS ON SITE	14
4.11.	EMERGENCY PROCEDURES	14
5.	KEY ENVIRONMENTAL ISSUES	16
6.	ENVIRONMENTAL CONTROL MEASURES	18
7.	MONITORING	28
7.1.	MONITORING, CONTINUAL IMPROVEMENT AND REVIEW	28
7.2.	REPORTING	28
7.3.	COMMUNICATIONS AND COMPLAINTS	28
7.4.	AUDITS AND INSPECTIONS	28
7.5.	HEALTH AND SAFETY	29
8.	SUMMARY	30

TABLES

Table 5-1 - Potential Environmental Effects	16
Table 6-1 - Environmental Control Measures	18

1. INTRODUCTION

1.1. BACKGROUND

- 1.1.1. This Construction Environmental Management Plan (“CEMP”) has been prepared by WSP in support of a full planning application under the Town and Country Planning Act 1990 (as amended) (“the Act”) for the installation of a Chemical Building at Woodgate Hill Water Treatment Works (WTW) (“the Proposed Development”).
- 1.1.2. This CEMP should be read in conjunction with other documents submitted in support of the Planning Application, namely:
- Planning, Design and Access Statement, WSP on behalf of United Utilities, July 2022;
 - Noise Impact Assessment, WSP on behalf of United Utilities, July 2022;
 - Landscape Mitigation Drawings, WSP on behalf of United Utilities, July 2022;
 - Ecological Assessment Report, The Environment Partnership (TEP) on behalf of United Utilities, June 2022.

1.2. PURPOSE OF THE CEMP

- 1.2.1. This CEMP sets out the overarching principles for environmental management during the construction of the Proposed Development. It also provides an initial set of mitigation measures proposed to manage potential impacts during construction. It is intended to be a live document used by the Principal Contractor during the implementation of the Proposed Development. It would be developed further during the pre-construction phase and would be incorporated in the Principal Contractor’s site-specific Quality Management System (QMS) and/or Environmental Management System (EMS).
- 1.2.2. The CEMP will be reviewed and updated on a monthly basis throughout the construction phase as new environmental construction measures are identified and implemented.
- 1.2.3. This CEMP is based on established good management practice and includes the following information:
- Site Information: including management structure, roles and responsibilities, and the location of any potentially sensitive receptors;
 - Construction Information: a description of the works, construction programme, proposed working hours, details of access for construction traffic, equipment to be used etc;
 - Environmental Management: details of the audit programme, methods for managing environmental risks and reducing effects, waste storage procedures, liaison with the local neighbourhood, and specific management plans; and
 - Monitoring: procedures for recording and reporting monitoring results and taking remedial action when required.

1.3. STRUCTURE

- 1.3.1. This CEMP is based on established good management practice through British Standards and CIRIA guidance and includes the following information:
- **Site information:** including a description of the Site and surroundings are, the Proposed Development, and details of community engagement arrangements;

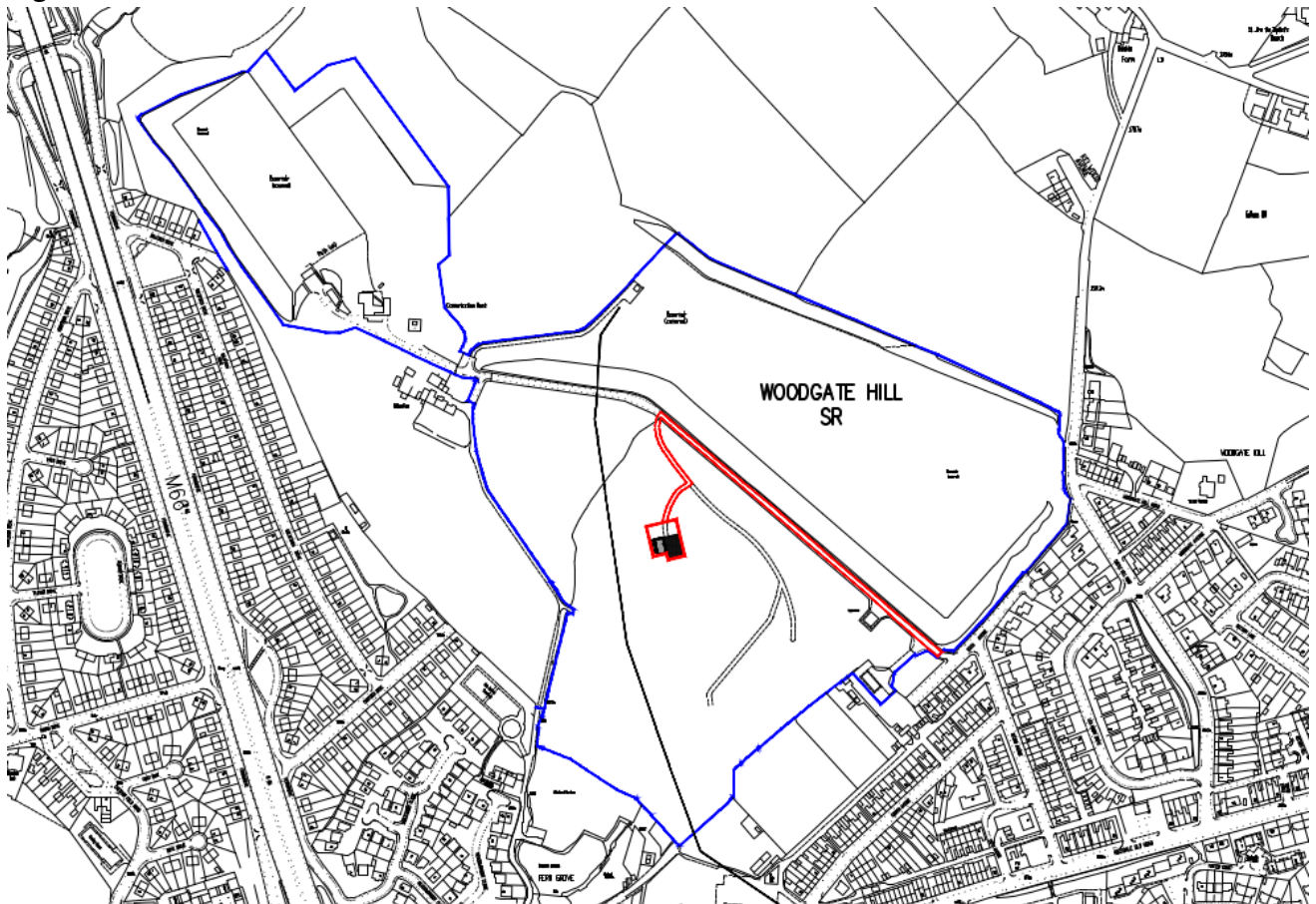
- **Construction information:** a description of the works, construction programme, proposed working hours, construction plant, and machinery, including an overview of general requirements and consents, roles and responsibilities, competence and training requirements, communication protocols, method statement requirements, and incident response protocol;
- **Key environmental issues:** summary of the potential significant environmental effects that require controlling, mitigating, and managing;
- **Environmental control measures:** methods for managing environmental risks including from dust, ecology, noise and vibration and landscape and visual effects;
- **Monitoring:** procedures for recording and reporting monitoring results and taking remedial action in the event of any non-compliance, details of receptors, threshold values and analysis, and reporting methods; and
- **Summary:** a summary of the purpose of the CEMP and key environmental considerations that will need to be taken into account during demolition and construction.

2. SITE INFORMATION

2.1. SITE AND SURROUNDING AREA

- 2.1.1. The Proposed Development is located at Woodgate Hill WTW, an established operational site to the north of Fairfield in the east of Bury. The general location of the Proposed Development and surrounding uses is shown on the Site Location Plan (**Figure 2-1**).
- 2.1.2. The Site consists of open vacant land on a gradient.

Figure 2-1 - Site Location Plan

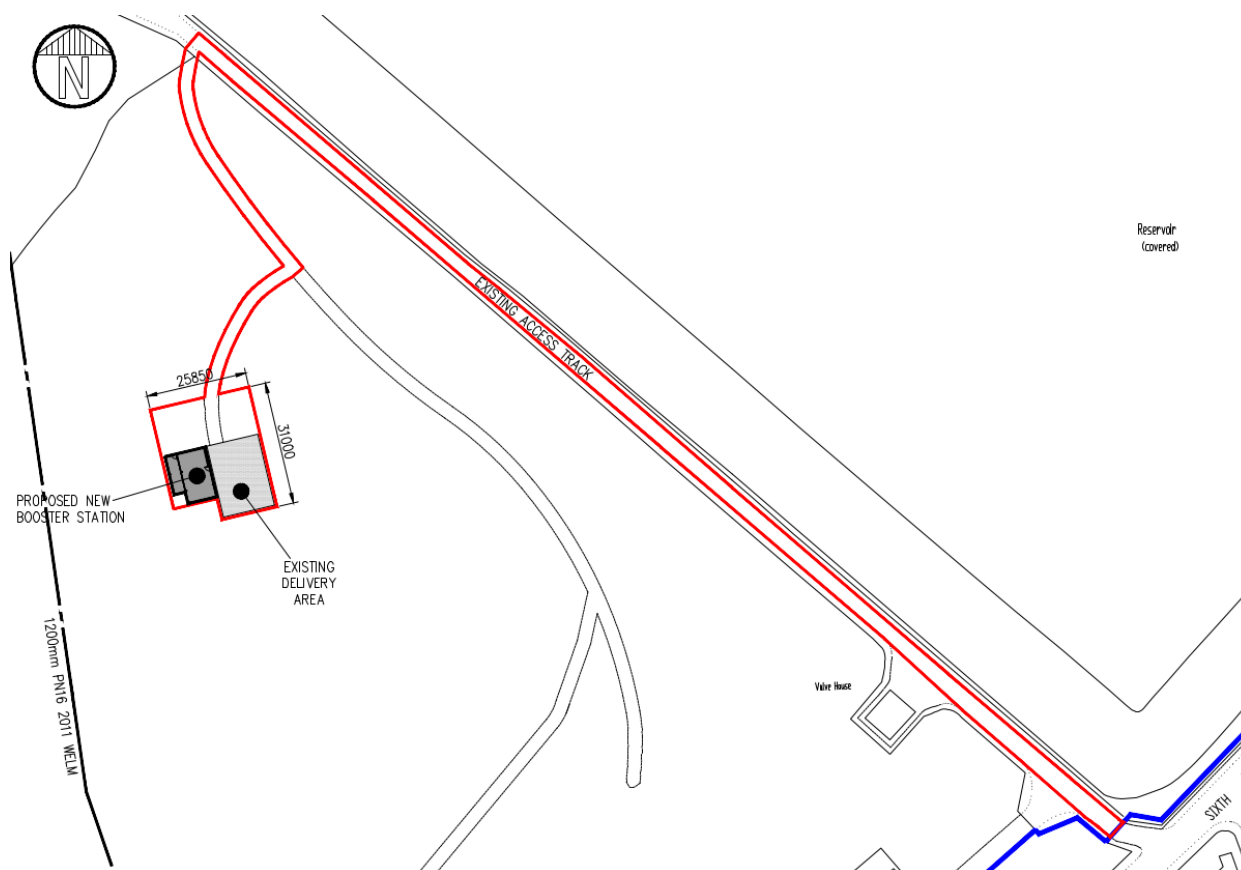


- 2.1.3. Access to the WTW is via the access off Sixth Avenue, and the Site of the Proposed Development is accessible via a network of access tracks within the WTW.
- 2.1.4. The nearest residential properties are located approximately 175 metres (m) to the southwest of the proposed Chemical Building's location. The properties are part of a residential area that is located to the east of the M66 motorway. There is also an area of residential properties approximately 275 m to the southeast of the proposed Chemical Building's location, including those on Sixth Avenue, close to the main access point to the WTW.

2.2. THE PROPOSED DEVELOPMENT

- 2.2.1. The layout and extent of the Proposed Development is shown in **Figure 2-2**. Principally, the Proposed Development comprises a new Chemical Building. The building will comprise of two sections, the Main Building and Motor Control Centre (MCC) Room Annex.

Figure 2-2 - Layout and Extent of the Proposed Development



2.3. SENSITIVE RECEPTORS

- 2.3.1. This section identifies receptors that may be potentially sensitive to works during construction, due to their location in relation to the Proposed Scheme.

RESIDENTIAL RECEPTORS

- 2.3.2. A number of residential receptors may experience temporary impacts during construction due to noise, dust or visual intrusion by virtue of their proximity to the Proposed Development. The list below is not intended to be exhaustive but represents the residential areas in closest proximity (within 500 metres):

- Sixth Avenue;
- Second Avenue;
- Fourth Avenue;
- Chaffinch Drive;
- Goldfinch Drive;
- Inglewood Close;
- Meadowbrook Close; and

- Woodgate Hill Road.
- Chaffinch Residential Care Home
- Bury Hospice

COMMUNITY AND RECREATIONAL RECEPTORS

2.3.3. Users of the following community and recreational amenities may experience temporary impacts during construction due to noise, dust or visual intrusion:

- Finchy Park (250 metres from Proposed Development);

ECOLOGICAL RECEPTORS

2.3.4. There are no internationally or nationally designated sites within 5km of the Proposed Development.

2.3.5. Five locally designated Biological Heritage Sites (Chesham Woods also being designated as a Local Nature Reserve) are within 2km of the Proposed Development site:

- Ashworth Valley;
- Chesham Woods (also a Local Nature Reserve);
- Gorse Quarry;
- Smethurst & Elbut Woods; and
- Tack Lee & Gristlehurst Woods

2.3.6. All of these sites are located over 500m from the Proposed Development and there is no connective habitat or hydrological links. On this basis, they would not be impacted by the Proposed Development.

WATER RECEPTORS

2.3.7. There are no ponds on site or within 250m of the Proposed Development site. There are two ponds, within 500m, as detailed in the Ecological Assessment Report, however given the small scale of the Proposed Development it is not anticipated these would be impacted by the proposals.

2.3.8. In terms of flooding, the land surrounding the Proposed Development at Woodgate Hill falls within a Flood Zone 1, based on the Environment Agency (EA) flood maps.

HISTORIC ENVIRONMENT RECEPTORS

2.3.9. There are no designated heritage assets within the boundary of the Proposed Development, and none have been identified within a 500-metre radius. The search included the following:

- Listed Buildings;
- Registered Battlefields;
- Registered Parks & Gardens;
- Scheduled Monuments; and
- World Heritage Sites.

2.3.10. There are no known archaeological assets recorded within the Site. Furthermore, due to the developed nature of the surrounding area, there are no recorded archaeological assets that would be impacted by the Proposed Development.

AIR QUALITY MANAGEMENT AREAS (AQMA's)

- 2.3.11. The Site is not located within an Air Quality Management Area (AQMA) designated by Bury Council. The nearest AQMA is the M66 motorway, which runs north-south due approximately 375 m west of the Site.

3. GENERAL ENVIRONMENTAL REQUIREMENTS

3.1. OBJECTIVES AND TARGETS

- 3.1.1. The objective of this CEMP is to ensure all those involved in the demolition and construction phases of the Proposed Development follow a specific framework which outlines all environmental impacts associated with the implementation of the proposed work activities. It ensures the environmental risks are properly identified and outlines the mitigation to be employed throughout both the demolition and construction phases of the Proposed Development.

3.2. MANAGEMENT STRUCTURE

- 3.2.1. It is expected that this CEMP will be adopted by the Principal Contractor and used for the Proposed Development.
- 3.2.2. The anticipated roles and responsibilities of the parties involved in the construction works are set out below.

THE CLIENT

- 3.2.3. The Client is responsible for the delivery of the Proposed Development. In order to achieve this, the Client will appoint a Principal Contractor who will assign a Site Manager to manage and monitor the implementation of the CEMP.

PRINCIPAL CONTRACTOR

- 3.2.4. The Principal Contractor will be responsible for implementing the CEMP, including monitoring the performance of sub-contractors and maintaining records to demonstrate compliance with the measures contained therein. The Principal Contractor will appoint a Site Manager.

SITE MANAGER

- 3.2.5. A designated Site Manager will be nominated by the Principal Contractor and will be responsible for the effective implementation of the CEMP. This will include resource allocation, third party liaison, and overseeing the periodic review and update of the CEMP. The Site Manager will conduct routine audits and ensure any potential non-conformance matters are addressed without delay.

ALL STAFF AND SUBCONTRACTORS

- 3.2.6. All staff and subcontractors have the responsibility to:
- Work to agreed plans, methods and procedures to minimise environmental effects and nuisance to receptors during construction;
 - Understand the importance of avoiding pollution onsite, including noise and dust, and how to respond in the event of an incident to avoid or limit environmental effects;
 - Report all incidents immediately to their line manager;
 - Monitor the workplace for potential environmental risks and alert their line manager if any are observed; and
 - Co-operate as required during site inspections and audits.

3.3. CONTACT INFORMATION

- 3.3.1. A contact telephone number that the public can use will be displayed prominently on the site board and provided at entrances, on perimeter hoardings and, where possible and appropriate, at community locations.

4. CONSTRUCTION INFORMATION

4.1. PROGRAMME

- 4.1.1. It is anticipated that construction would commence in October 2022 and that it would last a minimum of 12 months.

4.2. HOURS OF WORK

- 4.2.1. Normal construction activities would take place between 0800hrs-1800hrs Monday to Friday. By exception, construction activities would take place between 0800hrs-1800hrs on a Saturday and/or Sunday.
- 4.2.2. Delivery times would be co-ordinated to avoid sensitive periods (avoid between 0700hrs-0800hrs and 1700hrs-1800hrs Monday to Friday, and all-day Sundays).
- 4.2.3. There may be a requirement for one-off activities to be undertaken outside these hours. In these instances, the Principal Contractor will notify both the Local Authority EHO and local residents potentially impacted by the activity in advance of works commencing.

4.3. SITE ACCOMMODATION AND WELFARE FACILITIES

- 4.3.1. An area within the boundary of the Proposed Development of the Woodgate Hill WTW operational site has been identified as a contractor's compound for the duration of the works. The compound is located immediately adjacent to the Proposed Development and will be accessed via the main Woodgate Hill WTW access point off Sixth Avenue.
- 4.3.2. Staff welfare facilities will be located within the contractor's compound and the existing operational site. All construction staff will benefit from site accommodation and welfare facilities.

4.4. SITE ACCESS AND EGRESS

- 4.4.1. Access for construction plant and site traffic will be via the main Woodgate Hill WTW access point off Sixth Avenue, as shown in **Drawing Ref. 80062068-02-EW-WOODG-99-DR-C-10005**. The route will be via Second Avenue, off the B6222 Rochdale Old Road.
- 4.4.2. Site access will be along a clearly marked route to minimise disturbance and all construction traffic must stay within the route defined.
- 4.4.3. In order to ensure safety control measures to be implemented on site as part of the CEMP will include:
- All plant and site operators to be made aware during their induction of pedestrian routes, site speed limits, and areas where plant can be operated;
 - Pedestrian routes will be shown on the site plan;
 - All plant operators will be made aware of the restriction on utilising mobile phones and similar when operating site plant;
 - All site visitors will attend a site induction and, if required, will be escorted around the site by a member of the site team. Pedestrians may not go through any closed barriers or remove any cones preventing access;
 - The hazards associated with plant/vehicle movements and the risks they present must be identified and assessed at the planning stage of individual tasks;
 - Full PPE must be worn on site at all times;

- Warning signs are to be erected in advance of access/egress points and work activities where there is an interface with the public; and
- People, vehicle, and plant interface must be planned and controlled by the application of the hierarchy of control (Eliminate (1), Substitute (2), Minimise (3) and Mitigate (4)).

4.4.4. Any fuel deliveries will be supervised by the Site Manager, or responsible person with delegated responsibility. Any fuel storage tanks will be checked before and during delivery to prevent overfilling.

4.4.5. In order to reduce the risks associated with construction traffic and deliveries, the following measures will be implemented:

- All subcontractors and suppliers will be provided with clear instructions regarding deliveries to site, unloading, storage and site distribution of materials. The requirement for any abnormal or large loads (if required) will be discussed in advance with the Highway Authority, with routing and timings agreed.
- Construction traffic will be directed via designated routes and is under the direction of a banksman if the need for reversing is undertaken;
- Any vehicles used for routine delivery of material to site will be fitted with a reversing alarm and provisions for all round vision;
- All reversing delivery vehicles must be under the control of a trained vehicle marshal, irrespective of any alarms or visual aids fitted;
- Construction deliveries will be staged, if required. This will be as directed by the Principal Contractor;
- Deliveries will be restricted to time that will reduce disruption to local residents and businesses, generally during site working hours;
- Plant operations and deliveries which are adjacent to areas such as pedestrian routes, non-site vehicular routes or work areas will be supervised by a designated banksman at all times during operation;
- Designated pedestrian crossing points will be established where necessary to allow safe crossing over vehicular routes; and
- Pedestrian walkways will be established.

4.5. PLANT AND MATERIAL STORAGE AND COMPOUND AREAS

4.5.1. A secure storage area will be located onsite within the Site Compound and will be provided for the duration of the construction period. Plant and equipment will be stored in designated areas of hardstanding within the compound and spill kits will be available for use in the event of an incident. All equipment will be inspected daily by the plant operator for leaks and an onsite fitter will be available for repairs as required. Plant nappies and/or drip trays will be utilised during refuelling. Wherever possible, refuelling will be undertaken at a designated location within the Site Compound and no refuelling will take place within 30m of a watercourse.

4.5.2. Chemicals will be stored in a dedicated, lockable container with an inventory of contents. Secondary containment must be used with a capacity of no less than 110% of the container's storage capacity.

4.6. WASTE AND MATERIALS MANAGEMENT

4.6.1. The Principal Contractor will establish a dedicated Waste Management Coordinator who will be tasked with the removal of all waste from the Site. A recycling regime for materials and packaging will aim to

achieve a minimum of 70% recovery. The waste management coordinator will compile a report quantifying the materials recovered.

- 4.6.2. It is planned that site waste will be reduced through segregation and recycling.
- 4.6.3. United Utilities intends to segregate the following materials in the material recovery programme:
- Wood;
 - Brick and rubble;
 - Metal;
 - Mixed waste; and
 - Hazardous waste.
- 4.6.4. Dedicated skips will be provided for the collection of the listed materials within specific site locations.
- 4.6.5. All contractors working on the site will be supplied with refuse bins by the waste management coordinator. Once the bins are filled the waste management team will consolidate the waste and remove it from the site.
- 4.6.6. The consolidated waste will be collected from site by licensed waste carrier. Waste materials fall into three categories for management, these are:
- Prevent;
 - Reduce;
 - Reuse;
 - Recycle;
 - Recover and
 - Landfill.
- 4.6.1. Prevent – If the prevention of waste by using fewer and avoiding unnecessary materials during design, manufacturing and packaging products. It also means using less hazardous waste materials where you can.
- 4.6.2. Reduce – If surplus materials can be minimised prior to entering site, this is reducing. Reducing waste refers to any action related to the design, manufacture, purchase or use of materials or products that can lead to a reduction in the amount of waste generated in the first place.
- 4.6.3. Reuse – If surplus materials can be used in the permanent works, they are classified as materials that have been reused. If they are surplus to requirements and need to be removed from the site and they can be removed and used in their present form, they can be removed from the site for subsequent reuse.
- 4.6.4. Recycling – If a surplus material cannot be reused in its present form but could be used in a different form, it is sent for recycling. An example is recycled timber to make chipboard
- 4.6.5. Landfill – If either of the above cannot be satisfied, then the only option left is to send the waste materials to landfill. Landfill is only a last resort.
- 4.6.6. Waste certificates will be collated for all waste deposited at Environmentally Controlled Waste Reception Centres. Copies of all waste transfer notes will be kept for two years. Records will be kept about the waste gathered on site including volume, type and cost including how it was packaged, when it was transferred, where it went to and who it was transferred to. These are all requirements of the duty of care.

- 4.6.7. Any hazardous waste that is removed from the site will be monitored and tracked to record compliance with the duty of care provisions.
- 4.6.8. Site Security – The Principal Contractor will take reasonable steps to ensure site security measures are in place to prevent the illegal disposal of waste at the site.
- 4.6.9. Monitoring – Skips will be monitored continuously to ensure that contamination of segregated waste does not occur. During this monitoring how the waste management system is working will also be monitored.
- 4.6.10. A record will be kept to continually review the type and amount of surplus material being produced and where possible/practical alter the site set up to maximise material reuse or recycling and to ensure that disposal to landfill is a last resort.
- 4.6.11. The plan shall be communicated to the whole project team (including the client) prior to commencement and at every revision stage. Business wide updates including the KPIs will be communicated and discussed at management meetings.
- 4.6.12. The Principal Contractor will aim to reduce the amount of waste generated, both through product design and on-site management. Any waste that is produced will be carefully segregated and reused/recycled wherever possible and where it cannot be reused/recycled it will be disposed of in the correct manner in accordance with their duty of care.

4.7. CLEANLINESS OF SURROUNDING AREA

- 4.7.1. The spread of mud and debris onto the highway network will be prevented by:
 - vehicle marshal control and inspection at site accesses; and
 - use of a road sweeper during the works to clean any mud/materials deposited on the surrounding roads by vehicles egressing site.

4.8. SECURITY ON SITE

- 4.8.1. The perimeter of the Woodgate Hill WTW operational area is subject to security fencing and gates. Within the Woodgate Hill WTW, the boundaries of the Site will be further secured by hoarding/fencing where possible and will be adapted, monitored, and maintained throughout the duration of the project. Only authorised persons will be allowed access to the Site.

4.9. VISITOR AND SITE PARKING

- 4.9.1. Visitor and site parking will be located within the Site on the land labelled as an Existing Delivery Area (see Site Block Plan Ref. 80062068-02-EW-WOODG-99-DR-C-10006 Rev P06).

4.10. HEALTH AND SAFETY ARRANGEMENTS ON SITE

- 4.10.1. Barriers, platforms, and/or hoardings will be erected, adapted, and maintained throughout the construction phase to completely segregate the public and Woodgate Hill WTW staff from construction activity.

4.11. EMERGENCY PROCEDURES

- 4.11.1. The whole Site team will be committed to silt prevention and control and will recognise that there is a strict requirement to prevent pollution of controlled waters and the environment generally. Measures would be employed to manage surface water runoff from site.

- 4.11.2. A Site Pollution Incident Response Plan would be implemented by the Principal Contractor. Emergency contact details will be briefed to staff and posted on site notice boards. Site personnel will undertake training to ensure they fully understand the steps they must take in the event of an emergency. In the event of an incident, the Client and relevant third parties will be notified.
- 4.11.3. In the event of an emergency evacuation, the Site Manager will account for all persons.

5. KEY ENVIRONMENTAL ISSUES

5.1.1. A schedule of potential environmental effects is provided in **Table 5-1** below.

Table 5-1 - Potential Environmental Effects

Environmental Discipline Area	Potential Effects
Noise and Vibration	- Noise arising from construction works; - Increase in noise levels associated with increased traffic as a result of construction vehicles, particularly bulk material movements; and - Increase in vibration effects during construction.
Local Air Quality	Potential impacts associated with the Proposed Scheme include: Potential fugitive dust emissions during construction (dust soiling impacts associated with earthwork activities and a medium to low risk associated with construction and trackout).
Landscape and Visual	Potential temporary visual impacts associated with construction activities, including vehicle movement, tall machinery, site compound, temporary fencing and lighting;
Water Resource	- Increased pollution risks from spillage of fuels or other harmful substances that may migrate to local surface water and groundwater receptors; - Site topography causes surface water flooding which, unless managed effectively, could lead to increased flood risk on site or elsewhere.
Transport	- Increased construction vehicle traffic and HGV movements; - Increased congestion of the local highway network; - Transfer of mud and other materials by vehicles onto the local road network.
Materials and Waste	- The generation of surplus material on site has the potential to result in waste to landfill unless managed at an early stage in accordance with the Waste Hierarchy. Failure to reuse material effectively on site may also increase the need for virgin material. - Vehicle movements associated with the disposal of material off site and import of virgin materials – associated transport and carbon effects.
Archaeology and Cultural Heritage	Ground works during construction could affect unknown below-ground archaeological remains.

Ecology

- Loss of habitat, and;
- Disturbance to species from lighting, noise and vibration.

6. ENVIRONMENTAL CONTROL MEASURES

- 6.1.1. In order to avoid or mitigate environmental effects resulting from the Proposed Development, a series of Project Environmental Procedures will be developed by the Principal Contractor and included in the CEMP.
- 6.1.2. **Table 6-1** sets out the environmental control measures, by topic, to be employed on site. The measures outlined will be developed further to the Principal Contractor in the CEMP.

Table 6-1 - Environmental Control Measures

ID No. (Unique Ref)	Objective	Action	Responsibility
A1	Minimise disturbance and disruption to residential amenity	Normal construction activities would take place between 0800hrs-1800hrs Monday to Friday. By exception, construction activities would take place between 0800hrs-1800hrs on a Saturday and/or Sunday. Delivery times would be co-ordinated to avoid sensitive periods (avoid between 0700hrs-0800hrs and 1700hrs-1800hrs Monday to Friday, and all-day Sundays). One-off activities which need to be undertaken outside these hours will be first agreed with the Local Authority EHO and local residents notified.	Principal Contractor
A2	Minimise disturbance and disruption to residential amenity and wildlife	Task lighting will be employed to minimise lighting impacts on the overall site. Where reasonably practicable, task lighting will face away from nearby properties. The type of task lighting employed for different activities will vary depending on the nature of those activities and be commensurate with the works being undertaken. Whilst providing a work environment to meet the illuminance levels, the below measures will be employed by the Principal Contractor to minimise the effect on the surrounding area and wildlife: Glare caused by poorly directed security and flood lighting will be mitigated by positioning lights at less than 70 degrees and directing them away from the boundary	Principal Contractor

		of any operational construction area. The installation of ballasts or shields on the lights will be used, where appropriate; Sky glow from flood lights will be mitigated through the use of appropriate shields to avoid light spilling upwards.	
A3	Establish and maintain communication with the community and stakeholders throughout the construction period.	Develop and implement a stakeholder communications plan, including community engagement, before work commences on site.	Principal Contractor
B1	Mitigate potential adverse visual effects arising during construction	The following measures will be implemented to mitigate potential adverse visual effects arising during construction: ▪ High standards of housekeeping to be maintained to reduce visual clutter associated with the works; ▪ The use of hoardings will be adopted where appropriate to minimise visual intrusion; ▪ Land clearance and occupation to be limited to the minimum necessary to enable safe construction; ▪ Appropriate location, organisation and phasing of construction activities; and ▪ Large plant will be located away from the most sensitive receptors, where there are viable alternative locations.	Principal Contractor
C1	Reduce nuisance from construction dust and pollution to sensitive receptors.	The following measures will be implemented on site: General Site Control Measures ▪ Keep site perimeter, fences etc. clean; ▪ Consideration of weather conditions i.e., application of control measures during dry weather to be increased; ▪ Consideration of dust generating potential of material to be excavated prior to commencement of works; ▪ Plan site layout to maximise distance from plant/stockpiles etc. to sensitive receptors; ▪ Dusty materials will be removed from the site as soon as possible; ▪ No bonfires or burning of any material will be permitted anywhere onsite;	Principal Contractor

	▪ Plant will be well maintained to ensure they are working correctly and efficiently; ▪ Wherever possible, during excavation works unnecessary handling and stockpiling of material will be reduced; ▪ Damping down of any earthworks, stockpiles and the use of water bowsers to spray larger areas of the site will be implemented to suppress dust generation; ▪ Surface areas of stockpiles will be minimised (subject to health and safety and visual constraints regarding slope gradients and visual intrusion) to reduce area of surfaces exposed to wind pick-up; ▪ Where appropriate, windbreak netting/screening will be positioned around material stockpiles and vehicle loading/unloading areas, as well as exposed excavation and material handling operations, to provide a physical barrier between the site and the surroundings; ▪ Containers will be totally enclosed or covered by tarpaulins or nets where possible to prevent escape of dust or waste materials; ▪ Areas where soil has been exposed (e.g., during landscaping) will be re-vegetated as quickly as is practicable to form part of the naturalisation of the development; ▪ There will be a preference for mains electricity or battery powered equipment where possible; ▪ Skips, chutes and conveyors will be covered to ensure that dust does not escape. Material drop heights to and from such equipment will also be minimised where practicable; ▪ Site fencing, barriers and scaffolding to be cleaned using wet methods; ▪ Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; ▪ Water suppression or dust extraction technology will be fitted to drilling and grinding equipment where possible; ▪ Sand and aggregates will be stored away from sensitive receptors and screened/shielded. Similarly, concrete batching should take place away from receptors; ▪ Where practicable, specific operations where there is a high potential for dust will be enclosed; Construction Traffic ▪ Loads with dust generating potential accessing or egressing the site will be covered; ▪ Vehicles to comply with site speed limits;	
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		- Regular inspection of local highways and site boundaries to check for dust deposits will be conducted. Road sweepers to be employed as necessary; - Hard surfacing to be utilised wherever reasonably practicable and maintained in good condition; - All construction plant and equipment will be maintained in good working order and not left running when not in use; - Construction vehicle access arrangements will be designed to avoid sensitive streets or narrow, congested roads (to be set out in TMP); and - Materials deliveries and vehicle access to the site will be staged to avoid the need to queue outside the site. Monitoring and Reporting Visual dust monitoring during the construction phase will be carried out in order to ensure successful implementation of dust control measures. Daily on-site and off-site inspections will be undertaken, where receptors (including roads) are nearby to monitor dust. Should any visual dust be observed, corrective mitigation will be implemented. Records of dust and air quality complaints to be kept, including likely causes and mitigation measures to reduce impacts if appropriate.	
D1	Protection of nesting birds	No vegetation clearance works to be undertaken within the period March to September (inclusive). Where works within this period are unavoidable, a suitably competent ecologist will first attend site (immediately prior to the activity being carried out) in order to confirm there are no active nests in the vicinity likely to be disturbed. If any active nests are identified, no works in the vicinity may commence until the ecologist has confirmed that all chicks have fledged and left the nest.	Principal Contractor
D2	Protection of badgers	A pre-construction badger survey will be undertaken by a suitably competent ecologist to confirm the absence of badgers within the vicinity of any work areas. All site personnel will receive a toolbox talk (TBT) for badgers. The TBT will include the ecology of badgers, how to identify them and their setts and what to do if either is encountered during works.	Principal Contractor
D3	Minimise potential for liquid or solid	Material generated on site (e.g., excavated material) will be stored appropriately in accordance with Pollution Prevention Guidance. Appropriate storage of fuels and other liquids and management of refuelling to reduce potential for spills to occur.	Principal Contractor

	contaminants to enter controlled waters		
E1	Potential for Disturbance of Contaminated Ground / Groundwater Resulting in Harm to Human Health as well as Release of Contaminated Soil / Dust / Groundwater to Surrounding Environment	The movement of excavated Made Ground around the Site will be undertaken under a Contaminated Land: Applications in Real Environments (CL:AIRE) compliant Materials Management Plan (MMP) to ensure material re-used does not present a risk to human health or the environment.	Principal Contractor
F1	Manage material in accordance with the Waste Hierarchy	Prior to commencing work on site, the Principal Contractor will produce a waste estimate, detailed anticipated volumes of waste by individual stream. In accordance with the Waste Hierarchy, the Principal Contractor will then consider options to minimise generation before planning for reuse as part of the works. For example, the Principal Contractor will consider whether earthworks and hardcore waste streams can be incorporated as part of the permanent works and will hold discussions with the supply chain to minimise packaging waste as far as possible. For remaining waste streams which cannot be avoided or reused, the Principal Contractor will provide segregated skips on site to maximise waste recovery potential at an appropriately licensed off site facility.	Principal Contractor
F2	Reduce waste generation and disposal to landfill	Identify areas for stockpiling and storing construction materials and wastes that will minimise quality degradation and leachate, to limit damage and loss. Ensure hazardous and non-hazardous waste are appropriately segregated.	Principal Contractor
F3	Reduce consumption or raw/virgin materials and embodied carbon involved in delivery	The Principal Contractor will seek to minimise the use of raw/virgin materials on site by: Maximising the use of secondary and/or recycled aggregates	Principal Contractor

		▪ Maximise recycled content of imported materials (such as aggregates, cement replacements, steel). ▪ Maximise local sourcing of materials in line with the Proximity Principle to reduce fuel consumption and cost; and ▪ Maximising the use of pre-fabricated structures and components, encouraging a process of assembly rather than construction.	
G1	Mitigate noise during construction – Noise and Vibration Management Plan	The Principal Contractor will assess, consider and implement best practicable means (“BPM”) at all times throughout the construction of the Proposed Scheme in order to control noise and vibration resulting from the construction works. The following measures will be employed on site: Plant and Equipment ▪ Appropriate selection of plant: Only plant conforming with or better than relevant national or international standards, directives or recommendations on noise or vibration emissions will be used; ▪ Construction plant will be operated and maintained appropriately, having regard to the manufacturer's written recommendations or using other appropriate operation and maintenance programmes which reduce noise and vibration emissions; ▪ Positioning of construction plant and activities to minimise noise at sensitive locations; ▪ Vehicle and mechanical plant used for the purpose of the works will be fitted with effective exhaust silencers and operated in such a manner as to minimise noise emissions. Plant items that comply with the relevant EU/UK noise limits applicable to that equipment will be used; ▪ Compressors will be fitted with properly lined and sealed acoustic covers which will be kept closed whenever in use; ▪ Pneumatic percussive tools will be fitted with mufflers or silencers of a type recommended by the manufacturers; ▪ Equipment and vehicles will be shut down when not in use; ▪ Semi-static equipment will be sited and oriented as far as is reasonably practicable away from noise sensitive receptors and will have localised screening if deemed necessary; ▪ Where practicable, mains electricity will be used instead of generators; ▪ Screens or barriers will be provided where practicable;	Principal Contractor

		▪ Equipment that breaks concrete by munching or similar, rather than by percussion, will be used as far as is practicable; and ▪ Where practical, non-percussive pilling methods will be used to minimise vibration levels. Methods of Working ▪ Design and use of site hoardings and screens, where necessary, to provide acoustic screening at the earliest opportunity. Where practicable, gates will not be located opposite buildings containing noise sensitive receptors; ▪ Choice of routes and programming for the transport of construction materials, spoil and personnel to reduce the risk of increased noise and vibration impacts due to the construction of the Proposed Development (to be detailed in TMP as part of CEMP); ▪ Activities within 50m of noise sensitive receptors which have the potential to generate high levels of vibration, will be subject to prior notification to affected individuals; ▪ Site inductions will highlight the need for vehicle horns and alerts to only be used when necessary; ▪ No work which is audible at the site boundary will be undertaken outside the specified hours, except where a prior agreement has been reached with the Local Authority EHO and prior notification to affected individuals provided; ▪ Burning equipment will be used in preference to cold cutting (where possible and appropriate to do so); ▪ Large concrete pours will commence as early as possible within normal working hours; ▪ All trade contractors will be made familiar with current noise legislation and guidance which will form a prerequisite of their appointment; ▪ Unless agreed in advance, all deliveries will be during the normal working hours and on a “just-in-time” basis to avoid / minimise vehicles waiting outside or on the site with engines running; ▪ Loading and unloading of vehicles, dismantling of equipment, such as scaffolding, or moving equipment or materials around the site will be conducted in such a manner as to minimise noise generation; ▪ A contact number which the public may use will be displayed prominently on the site board and any noise complaints will be reported to the Principal Contractor and immediately investigated; ▪ The TMP will seek to mitigate impacts from construction vehicle movements on the highway; and	
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		▪ The site layout will create maximum distance between traffic and noise sensitive locations, where possible.	
H1	Prevention of pollution to surface water receptors	The following control measures will be employed on site: ▪ Management of water that collects on site or within excavations; ▪ Management of surface water runoff to intercept and, where necessary, treat runoff to prevent the migration of pollutants to receiving water features; ▪ The implementation of sensitive working methods for working within, and in close proximity to, surface water receptors; ▪ Designated areas for concrete washout; ▪ Storage of construction plant, equipment, fuels, oils and other chemicals away from surface water receptors; ▪ Fuels and oils will be stored in bunds or secondary containment systems capable of holding at least 110% of the container's capacity; ▪ Any refuelling of plant using the mobile fuel bowser will be undertaken a minimum of 30m from watercourses, and ensuring that an appropriate spillage kit is provided; ▪ Static self-bunded fuel bowzers will be located in a dedicated area in the main site compound and ensuring that an appropriate spillage kit is provided; ▪ Maintenance of construction plant or equipment will be undertaken in designated areas on site and away from watercourses; ▪ All wastes will be stored in designated areas that are isolated from surface water drains, open water and bunded to contain any spillage; ▪ Care will be taken during storage and transportation of materials to ensure no loss or spillages into the water environment; ▪ Any vehicles used in association with the works will be well maintained to reduce the risk of hydrocarbon contamination; ▪ Drip trays (or Plant Nappies) used for diesel pumps and standing plant will be regularly maintained to prevent leaks; ▪ Oil interceptors will be installed in areas that may be used for temporary oil storage and refuelling; ▪ As a remedial measure, spill kits containing absorbent materials will be stored onsite; ▪ Any mixing of construction materials will be conducted in designated areas located away from watercourses; ▪ Stormwater will be diverted around and away from stockpiles using diversion channels and bunds; ▪ Site induction training will be undertaken to brief site operatives on the measures outlined above;	Principal Contractor

		▪ Cut off drains around the perimeter of working areas will be installed as necessary to prevent sediment entering surface water receptors; ▪ Silt fences will be installed as necessary to enable the settlement of suspended solids; ▪ Topsoil stockpiles will be seeded to further prevent sediment entering the watercourses during periods of heavy rainfall; ▪ Disturbed areas will be kept to a minimum and the gradient kept as shallow as possible to prevent material being washed into the water environment during periods of heavy rainfall; ▪ Any areas which are exposed will either be re-covered/surfaced as soon as practicable; and ▪ All works will remain within the site boundary.	
11	Protection of below ground archaeology	Should any unexpected below ground archaeological finds be encountered all work in the area will cease immediately and the relevant authorities notified. No work will recommence until an appropriate course of mitigation has been agreed and adopted.	Principal Contractor

7. MONITORING

7.1. MONITORING, CONTINUAL IMPROVEMENT AND REVIEW

- 7.1.1. The Principal Contractors' Site Manager will hold the responsibility for maintaining a register of all environmental monitoring, which will be made available for auditing and inspection.

7.2. REPORTING

- 7.2.1. Reporting procedures will be defined by the Principal Contractors' Site Manager who will hold overall responsibility for providing feedback to the Principal Contractor and the Client on the environmental performance of the construction works.

7.3. COMMUNICATIONS AND COMPLAINTS

- 7.3.1. The Principal Contractor will define procedures for managing incidents. A centralised register of all reported complaints and incidents will be maintained by the Site Manager.

- 7.3.2. The formal procedure for handling project complaints/concerns will follow procedure will be based on the following key components:

- Site contact details will be provided at site entrances, on perimeter hoardings and possibly at appropriate community locations to allow stakeholders to report any concerns, complaints or other comments to the Site Manager in writing, by email or in person at the site office;
- The Site Manager (or nominated representative) will take full details of the concerns expressed and an initial response will be issued to the complainant confirming receipt. The Site Manager will record the date and contact information associated with a complaint/concern on a standard form and place a copy in a project complaint register;
- Dependent on the nature of the issue, the Site Manager may instigate an investigation to assess what corrective or preventative action, or further investigation is necessary;
- The Site Manager (or nominated representative) will respond within a reasonable timescale and place details of the completed corrective and preventative actions within the project complaint register;
- The Site Manager (or nominated representative) will notify the relevant stakeholder of the proposed corrective or preventative actions to be adopted;
- Any corrective or preventative measures/actions will be implemented with associated implementation dates being recorded;
- For long term corrective or preventative action, the complainant will be informed of any proposed action; and
- Following the implementation of the corrective or preventative action and agreement with the relevant stakeholder that the complaint has been adequately addressed, the case will be closed and date recorded.

- 7.3.3. In the event that a complaint cannot be adequately addressed by the Site Manager, the matter will be escalated to the Client.

7.4. AUDITS AND INSPECTIONS

- 7.4.1. Once work commences, internal environmental inspections and audits on the Proposed Development will be conducted on a regular basis. Audits will be carried out in accordance with the Environmental

Management System (EMS) to assess the environmental performance of the Proposed Development and to check compliance with the legal and contractual requirements.

- 7.4.2. Environmental inspections will take place in accordance with the EMS to ensure the Site is assessed and requirements set out within this CEMP are adhered to whilst demolition and construction activities are taking place

7.5. HEALTH AND SAFETY

- 7.5.1. This CEMP provides an overview of the measures and processes that are likely to be adopted during the demolition and construction phases of the Proposed Development. However, it is not intended to fulfil any legislative obligations of the PC with regard to occupational health and safety. These obligations will be met within a standalone Construction Health and Safety Plan.

8. SUMMARY

- 8.1.1. This CEMP has been developed to ensure appropriate environmental management measures are adopted during construction of the Proposed Development.



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