



OMEGA ZONE 8, ST HELENS

Omega St Helens Ltd / T J Morris Ltd



Construction Environmental
Management Plan – UNIT 1
UNIT 1 DOC. 7.



CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (DETAILED APPLICATION AREA)

OMEGA ZONE 8, ST. HELENS

APRIL 2020

Quod
Ingeni Building
17 Broadwick Street
London
W1F 0DE

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1 Introduction

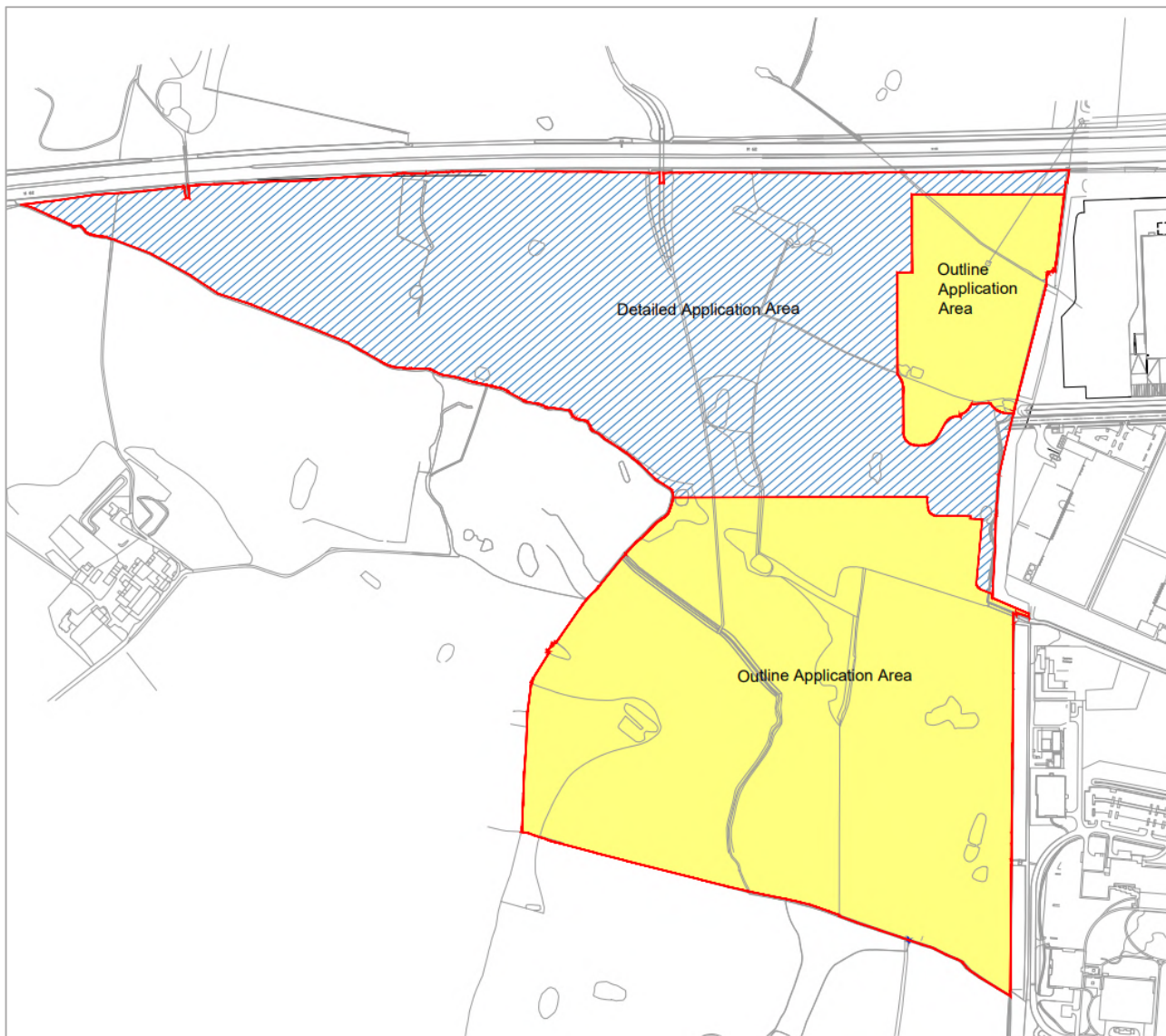
1.1 Purpose

- 1.1.1 This Construction Environment Management Plan ('CEMP') has been prepared by Quod, on behalf of Omega St Helens and T.J. Morris Limited (the 'Client'), in conjunction with the Client and the design and consultant team.
- 1.1.2 This CEMP details the principles which will be in place to avoid, reduce and manage temporary environmental effects associated with the construction of the 'detailed component' of the hybrid planning application (Ref. No. P/2020/0061/HYBR) for the proposed westward expansion of the Omega Business Park into Zone 8 (the 'Development') in St. Helens Council ('St. Helens'). A full description of the Development is provided within Section 2 of this CEMP. The detailed application area for the Development (the 'Site') is identified in Figure 1.1 and described further in Section 2.
- 1.1.3 A separate CEMP has been prepared by Omega Warrington Ltd (OWL) for the infrastructure works (the 'infrastructure CEMP') (Ref. No. SHEQ/OWL/I9.R1.4 / REV0). As such, the principal works associated with the infrastructure CEMP, detailed below, are not considered further within this CEMP as they are dealt with by the infrastructure CEMP:
- Construction of the access junction and internal road network that will serve the Development from the existing termination point of Catalina Approach to the boundary. This road network will provide access to the Development via a circulatory roundabout junction at Catalina Approach, and will provide a footway, cycleway provision and soft verges as well as the future access point for the outline component;
 - Construction of pedestrian and cyclist shared path route linking Omega South and Omega West to the existing pedestrian M62 overbridge to the west;
 - Installation of surface water drainage and attenuation in the form of a series of attenuation ponds to be situated within the wider landscape areas to the north and west of the Site.
 - Construction of foul pumping station (located in Omega West) and a rising main from this pumping station to connect with the existing foul drainage system located in Catalina Approach;
 - Removal of the earthwork embankment from the southern approach to the farm access bridge crossing over the M62 motorway, and carry out any works required to close off and make safe the bridge structure;
 - Construction of temporary haul road from Catalina Approach to the property;
 - Diversion of the existing overhead electricity network cables;
 - Installation of services for gas, domestic cold water, fire mains water, HV electricity and telecommunications;
 - Civils works required for the Utility Services installations will include Installation of Ducts, Excavation and Backfilling of Trenches for Services Cables and Pipes, Construction of SPEN Substation and Gas Meter Housings, Water Meter & Valve Chambers and Ground Formation / Levelling to the Final Finished Ground Levels along the length of the 132KV Line Diversion Routes; and
 - Structural landscaping.
- 1.1.4 The 'outline component' of the hybrid planning application includes for a combination of B2 Manufacturing and B8 Logistics development across the remainder of the application site, which measures approximately 40 hectares (ha). Information on construction phasing and methods have not been defined by the hybrid planning application for the outline component and will be dealt with through subsequent reserved matters applications. As such, a condition on the hybrid planning permission will be secured which will require

CEMP(s) to be produced for the outline component prior to construction commencing. As such, the outline component is not considered further within this CEMP.

- 1.1.5 The CEMP details the environmental management, controls and safety procedures that will need to be adopted during the construction of the Development, thereby providing a tool to ensure the successful management of the likely environmental effects as a result of the construction activities. The CEMP seeks to ensure that all enabling, and construction works cause the minimum disruption to the local residents and members of the public. More specifically, the CEMP aims to:
 - Ensure that relevant mitigation measures set out in the Environmental Statement (Volumes I to III, December 2019) submitted as part of the hybrid planning application are implemented during all enabling and construction activities; and
 - Ensure that relevant legislation, Government and industry standards, and construction industry codes of practice and good practice standards are implemented and adhered to.
- 1.1.6 This CEMP has been prepared to enable St. Helens and third parties to understand the nature of the environmental management and control measures that are to be implemented during construction works.
- 1.1.7 The Principal Contractor, and any sub-contractors working on the Site, will comply with all relevant legislative controls, construction health, safety and environmental standards and other relevant best practice methodologies.
- 1.1.8 The CEMP demonstrates the commitment of the Client to undertaking the Development in such a way as to avoid or minimise environmental effects and disruption to neighbours (commercial and residential) and provides a mechanism for the implementation of recommended mitigation measures and monitoring throughout the works.

Figure 1.1: Detailed Application Area Site Boundary (Drawing No. 05105)



1.2 Structure of this document

1.2.1 This CEMP includes the following:

- **Site Information:** including description of the Site, surrounding environment, as well as an environmental management structure, roles and responsibilities;
- **Enabling and Construction Information:** a description of the anticipated enabling and construction works, anticipated programme, working hours, details of haulage routes, equipment to be used, etc.;
- **Environmental Management and Control Measures:** potential environmental issues related to the enabling and construction works, details of the Site inspection and audit programme, methods for managing environmental risks and reducing impacts, emergency procedures, waste and hazardous materials storage procedures, liaison with the local community, and specific project environmental procedures relating to waste and soil management, dust and air quality, noise and vibration, vehicle management and protection of water quality; and,
- **Monitoring:** procedures for recording and reporting monitoring results and taking remedial action in the event of any non-compliance.

1.3 Basis of this CEMP

1.3.1 This CEMP is based on the following documents, legislation, Government and industry standards, and construction industry codes of practice and good practice standards:

- Environmental Statement ('ES') (Volumes I to III, December 2019) – submitted with the planning application and which includes assessments of the environmental effects of the Development during the construction works and includes relevant mitigation measures to eliminate, reduce or offset any effects;
- Detailed planning application drawings and relevant plans, including but not limited to the Detailed Landscape Scheme (December 2019), Drainage Scheme (December 2019), Arboriculture Assessment (December 2019), a Ground Investigation Report and Remediation Strategy (December 2019);
- Environment Agency Guidance for Pollution Prevention (GPP) notes (i.e. GPP13: Vehicle Washing and Cleaning and GPP22: Dealing with Spills and others);
- Construction Industry Research and Information Association (CIRIA) – Control of Pollution from Construction Activities and other documents such as the SuDS Manual;
- Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, 2009;
- UK Forestry Standard and UK Woodland Assurance Standard; and
- Relevant British Standards including:
 - BS 5228-1:2009, BS 5228-2:2009 'Code of practice for noise and vibration control on construction and open sites';
 - BS 42020: 2013 'Biodiversity: Code of Practice for Development';
 - BS 5837: 2012 'Trees in relation to design, demolition and construction. Recommendations';
 - BS 3882: 2015 'Specification for topsoil and requirements for use';
 - BS 3998:2010 'Tree work. Recommendations';
 - BS 3936:2010 'Nursery stock – Specification for trees and shrubs'; and
 - BS 6031:2009 'Code of Practice for Earthworks'.

2 Site Description and Description of Development

2.1 Site and Surrounding Area

- 2.1.1 The Site is located approximately 6.5km to the south east of St. Helens town centre and 5.5km to the north west of Warrington town centre. The Site is located within the administrative boundary of St. Helens, and adjoins the administrative boundary of Warrington Borough Council ('Warrington BC') to the east.
- 2.1.2 The detailed planning application Site comprises an area of land approximately 35ha in size, of arable land with adjoining agricultural and industrial land uses. The Development is situated immediately west of the Omega Business Park and Lingley Mere Business Park. The Omega Business Park houses a variety of large scale warehousing and industrial businesses, whereas the Lingley Mere Business Park comprises a mixture of office buildings and small local businesses.
- 2.1.3 The Site is bound by the M62 between Junction 7 and 8 to the north, with arable land located beyond and to the south and west with scattered areas of deciduous woodland (UK Biodiversity Action Plan (UK BAP) priority habitat¹).
- 2.1.4 An unnamed watercourse, which is a designated Main River with associated areas of flood zone 2, forms the western boundary of the Site. The unnamed watercourse flows through Booth's Wood and the outline application area in the southern end of the application site, continuing south for 330m before merging with the Whittle Brook (designated Main River). It should be noted that landowners are considered riparian owners of adjacent watercourses and are therefore responsible for maintenance (up to the midpoint of the watercourse).
- 2.1.5 There are several residential areas surrounding the Site, including Lingley Green (370 m south east), Clock Face (1 km north west), Bold Health (1.5 km south-west) and Westbrook (1.8 km east). Figure 1.1 shows the Site's location and boundary.

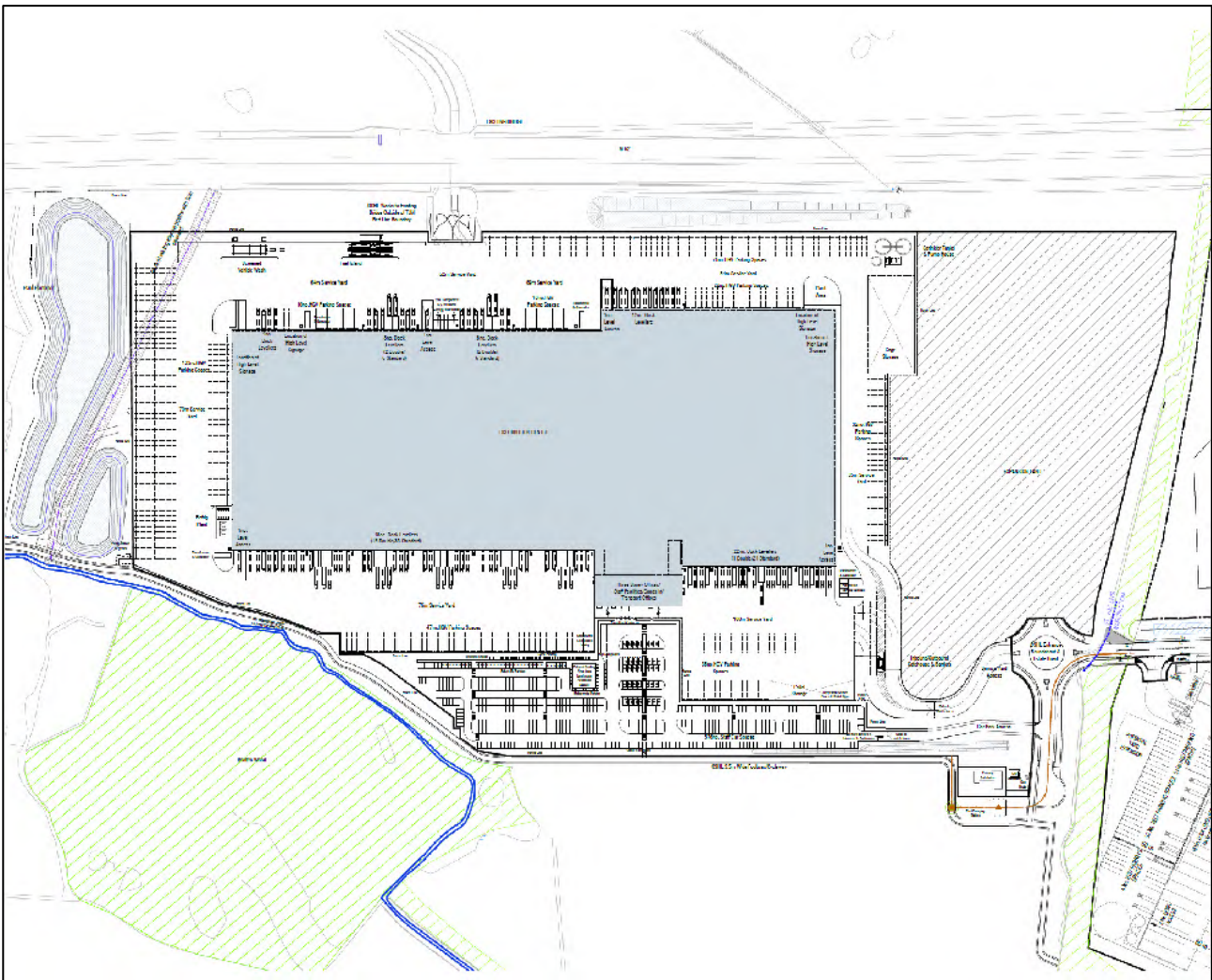
2.2 The Development

Detailed Component

- 2.2.1 The detailed component of the Development includes for the erection of a B8 logistics warehouse, referred to as Unit 1 hereafter, comprising of a 77,084 sq.m (829,725 sq.ft) warehouse with 4,486 sq.m (48,287 sq.ft) of ancillary office development warehouse within a 3-storey structure, overall total 81,570 sq.m (878,012 sq.ft), associated car parking, infrastructure, landscaping and access.
- 2.2.2 Unit 1 will be located to the northern part of the Site, immediately to the south of the M62 and west of the existing Omega South development (Figure 2.1). Detailed drawings of Unit 1 and associated car parking, landscaping and access are provided within Appendix A.

¹ Habitat identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan (UK BAP).

Figure 2.1: Development Site Layout Plan (Drawing 6385-181-E)



- 2.2.3 Unit 1 will be served by a private car park containing 576 parking spaces, including up to 35 disabled spaces, 48 motorcycle and 156 cycle spaces. Provision has been made for up to 39 electric vehicle spaces. The warehouse will also incorporate a service yard with 383 HGV / trailer parking spaces.
- 2.2.4 The maximum building height for Unit 1 will be 41m to the ridge, with the high-bay area located at the eastern end of the building, closet to the existing Omega site. This high-bay area will house a fully automated storage and racking system, which is a bespoke occupier requirement and is integral to the design and operation of Unit 1. The remainder of Unit 1 will be approximately 29.4m in height.
- 2.2.5 Surface water drainage and attenuation is provided in the form of a series of attenuation ponds to be situated within the wider landscape areas to the north and west of the Site. Surface water drainage and attenuation structures are to be constructed by the Principal Contractor appointment by OWL and these works would be managed under the Infrastructure CEMP.

Sensitive Receptors

- 2.2.6 The following sensitive receptors have been identified that may be impact by construction works and have formed a key consideration in developing this CEMP:

- Residential properties – including dwellings on Bembridge Close, approximately 350 m south; and Isolated dwellings approximately 500 m to the west, including Old Bold Hall Farm and Old Hall Farm. Other residential areas are located in Lingley Green, Bold Heath, Westbrook, Park Road and Godshill Close;
- Stepping Stones Day Nursery – located approximately 350m south east of the Site from its closest point;
- Public using the Public Right of Way (PRoW) 102 which crosses the Site at the north western extent and runs north to south via a footbridge over the M62;
- Workers – within Omega Business Park and Lingley Mere Business Park to the east of the Site;
- Ecology on and near the Site, including Booth’s Wood Local Wildlife Site (LWS) which is adjacent to the western boundary of the Site;
- An unnamed watercourse, which is a designated Main River with associated areas of flood zone 2, runs from the north-west along the western boundary of the Development to Booth’s Wood, and through the southern end of the application site, continuing south for 330 m before merging with the Whittle Brook (designated Main River);
- Broad-leaved woodland on the Site throughout, ponds and hedgerows which are Priority Habitats;
- Designated heritage assets – including Old Ball Hall moated site, the Grade II listed Farmhouse at former Bold Hall Estate (LB1031890) and the Grade II listed Farm outbuilding, formerly Stables, at Former Bold Hall Estate (LB1031889); and
- Non-designated heritage assets – including site of medieval and post-medieval park, Old Bold Hall and Bold Hall, Bold (MME8654), Booth’s Wood possible ancient woodland (WSP001) and Site of “Big Dam” (WSP002).

3 Construction Programme

3.1 Construction Period

- 3.1.1 The delivery programme for Unit 1 will be approximately 3 years, with construction works anticipated to commence in September 2020 and completion anticipated in August 2023. Construction works on the 3-storey logistics warehouse structure that forms Unit 1 and the associated car parking, infrastructure, landscaping and road access will commence in September 2020 and be completed in April 2022. This amounts to a construction period of 83 weeks. The internal fit out ('Fit Out') of Unit 1 would commence in January 2022 and be completed in August 2023. This amounts to a construction period of 86 weeks.
- 3.1.2 The Development is expected to be complete and operational from September 2023. The anticipated programme for Unit 1 is provided in Appendix B of this CEMP.

3.2 Construction works

- 3.2.1 The following sections provide an overview of the anticipated enabling and construction works for the Development, with the Development anticipated to follow standard construction techniques:
- Construction compound establishment;
 - Hoarding or safety fencing would be erected around the boundary of construction areas, with fencing to protect sensitive features (e.g. vegetation to be retained, heritage assets, watercourse buffers);
 - Enabling works to utilities will be carried out and this will involve capping-off or removal of redundant utilities, diversions, new supplies and connections as agreed with statutory undertakers;
 - To achieve the required Site levels there will be some general civil engineering groundwork activities including soil stripping, vegetation and tree removal, excavation, grading and preparation of surfaces, and the placement/compaction of fill undertaken to achieve desired ground levels;
 - During engineering groundwork activities for the Site, infrastructure and services, including (but not limited to) electrical, telecommunications, potable water and drainage infrastructure, will be installed;
 - Internal Access Roads / pedestrian and cyclist shared path – works would involve the construction of the road surface (known as the 'pavement') over an earthwork foundation (known as the 'formation layer') over the area allocated for the internal road network, access junction and pedestrian and cyclist shared path. The installation of kerbing and paved areas e.g. footways, road restraint systems (such as vehicle and pedestrian safety barriers), road markings (e.g. white lining) and road signs would also be undertaken during construction of the pavement and formation layer;
 - Foundations (Unit 1) - Due to the need to limit settlement of the Unit 1 and its associated internal slabs within very strict tolerances, the anticipated foundation solution for the Unit 1 will comprise a 'suspended' piled slab and foundations. The proposed piling method will be finalised during the tender period with the Principal Contractor to suit the Site constraints and geotechnical considerations. A Piling Statement is attached at Appendix C of this CEMP and provides additional details on the proposed piling method for Unit 1. A piling mat – a platform providing a stable base on which piling rigs can move around the Site and operate – would be prepared for the rig, following which piled foundations to support Unit 1 would be installed;
 - Structures – It is expected that scaffolding and/or mobile cranes would be used to progress construction vertically up Unit 1;
 - Fit Out – Once the Unit 1 structure is sufficiently progressed, interior fit out and installation of mechanical, electrical and plumbing systems would then commence; and,

- External Works and Landscaping – Areas of landscaping and open space would be prepared to establish the green spaces within the Site. This would include soil preparation, tree and vegetation planting, seeding and the sustainable drainage systems.

4 Responsibilities and Management Structure

4.1 Roles and Responsibilities

- 4.1.1 The Construction (Design and Management) Regulations 2015 (CDM Regulations) came into force on 6th April 2015, replacing CDM 2007. As per the requirements of the CDM Regulations, the Client will appoint a Principal Designer and Principal Contractor prior to the commencement of works on-site. Should the Client fail to appoint either a Principal Designer or Principal Contractor, the Client must carry out their duties in respect of the CDM Regulations.
- 4.1.2 The roles and responsibilities of the Client, Principal Designer and Principal Contractor, as required by the CDM Regulations, are not outlined within this CEMP and will be confirmed in writing upon the appointment of the Principal Designer and Principal Contractor by the Client.

4.2 Management Structure

- 4.2.1 Responsibility for all environmental issues relating to the redevelopment of the Site rests with the Client, the Principal Designer and Principal Contractor appointed for the construction; individual responsibilities will be delegated throughout the management team relating to the co-ordination of inspection, monitoring or reporting. This will include, as a minimum, a Construction Manager and an Environmental Manager. In addition, a Project Ecologist/Clerk of Works and Project Arboriculturist will form part of the team to advise on ecological and tree matters.
- 4.2.2 The Principal Contractor will have the central role in managing Safety, Health, Environment and Quality (SHEQ) issues during enabling and construction activities. The Principal Contractor and all sub-contractors will be required to implement the environmental management and control measures set out within this CEMP.
- 4.2.3 All works are to be carried out in compliance with the Construction (Design and Management) Regulations 2015, current legislation and guidance, and Clients' requirements.
- 4.2.4 A full contact list containing names, job titles and contact numbers of the project team members, shall be produced and maintained. This will include the Client's Environmental Representatives.

4.3 Individual Requirements

- 4.3.1 The duties of the Principal Designer, Project Manager, Construction Manager, Works Manager, Environmental Manager/Representative, Ecological Clerk of Works and other personnel are detailed below.

Principal Designer (can be the Client /or nominated party)

- Assign appropriate resources to construction activities; and
- Undertake regular site inspections which will include compliance with environmental requirements. See Section 7 of the CEMP for further details on monitoring and reporting.

Project Manager (can also be Principal Designer)

- Allocate appropriate project resources to deal with environmental issues;
- Ensure that the CEMP is effectively established and implemented throughout the project;
- Review and approve environmental action plans; and
- Designate representative responsible for environmental issues.

Works Manager (part of Principal Contractor team)

- Understand the major environmental constraints and implications for the project;
- Ensure that the need for compliance with environmental issues is communicated to the rest of the project team and sub-contractors;
- Act on findings of internal and external audits;
- Ensure complaints are being addressed and responded to;
- Ensure appropriate pollution response provision is made;
- Report to Senior Management (Principal Designer/Project Manager) on any environmental breaches; and,
- Implement and maintain the operation of the CEMP.

On-Site Environmental Manager/Representative/Ecological Clerk of Works (ECW) (part of Principal Contractor team)

- Implement and maintain the CEMP;
- Understand the environmental issues associated with the project;
- Maintain and review the environmental risk register;
- Co-ordinate and maintain consultation with the St Helens, local residents/businesses, and other interested parties on environmental issues including complaints process;
- Maintain the complaints log;
- Comply with the CEMP;
- Ensure environmental audits are carried out and pursue any corrective actions;
- Report on environmental incidents to Senior Management and Environmental Regulators as required;
- Co-ordinate with the Project Manager, regular reviews of the CEMP during the project to ensure its continued effectiveness throughout construction activities (See Section 7 for further details);
- Co-ordinate environmental awareness training and ensure relevant responsibilities are included within site induction; and

Ecological/Arborist Clerk of Works (ECW/ACW)

- See Appendix D for the ECW Method Statement that includes the addition duties of the ECW.
- See Appendix E for the ACW Method Statement that includes the addition duties of the ACW.

Health and Safety Advisor (note: could be same as Environmental Manager/Representative)

- Undertake regular site inspections (See Section 7 for further details);
- Carryout audits at regular intervals defined within the CEMP (See Section 7 for further details); and
- Provide advice and support to Project Management Team.

Environmental Specialists

- Relevant specialists will be employed if necessary during the project to undertake specialist monitoring, undertake surveys and advise the construction staff.

4.4 Collective Responsibilities

Project Management Team (Outlined above, including Works Manager, Sub-Agents, Quantity Surveyors, Site Engineers, Section Foremen) and Sub-contractors

- Comply with the CEMP;
- Maintain CEMP document control system;

- Implement the requirements of the CEMP and its supporting documents on-site;
- Report immediately to Environmental Representative/Manager on any environmental incidents;
- Ensure Site personnel are aware of their environmental obligations and have undergone Site environmental awareness training;
- Implement the action necessary to resolve non-compliance issues; and
- All subcontractors should comply with the CEMP, its operational control and procedures while on site.

All Personnel – to be communicated during induction training

- Comply with all operational controls and working procedures implemented by this CEMP;
- Undergo environmental awareness training;
- Report to supervisor immediately on any environmental incidents; and
- Suggest potential modifications and improvements to CEMP.

5 Training and Site Rules

- 5.1.1 Contractual agreements require that the Principal Contractor and all sub-contractors provide suitability qualified staff to manage and execute works for which they are responsible. The Principal Contractor and all sub-contractors will require that all employees demonstrate an appropriate awareness of local sensitivities (e.g. location of residents/ businesses), expected code of conduct, working knowledge of the legislation, codes of practice, and guidance relevant to the activities in which they are engaged.
- 5.1.2 A training regime shall be implemented to ensure that all staff members, including sub-contractor's personnel, receive focused environmental training to ensure their competence in carrying out their duties on the project.

Site Induction

- 5.1.3 The Principal Contractor will operate an induction scheme for all personnel to ensure that they are aware of their individual responsibility to comply with this CEMP. Inductions will outline the key Site issues, personnel activities, hazards and controls and rules and regulations. The Principal Contractor will be responsible for identifying the training needs of his/her personnel and will ensure that appropriate training is provided. Training will include information on local considerations and the Client's expectations of Site behaviour, "toolbox talks" for Site operatives to maintain an appropriate level of awareness on safety, health and environmental topics and to advise employees of changing circumstances as work progresses. Records will be kept of attendance.
- 5.1.4 General Site induction shall be developed to introduce all Site personnel to the environmental issues connected with the Development, the sensitive receptors and important environmental controls associated with the day to day operation e.g., boundary control, housekeeping, waste management and the emergency procedures. A full register of induction attendance shall be maintained on-site.

Toolbox Talks and Method Statement Briefings

- 5.1.5 Toolbox talks and method statement briefings will be given weekly as the work proceeds and will cover the environmental management and control measures related to specific activities undertaken during the works, for example refuelling, hazardous waste removal, spill response etc. A full register of toolbox talks and method statement briefing attendance shall be maintained on-site.

- **Responsibility:** Environmental Manager/Representative:
- **Action:** Develop general Site induction to include environmental issues and ensure induction records are maintained.

Training Records

- 5.1.6 All training records will be maintained and filled on-site. The records shall include the content of the courses (all induction and toolbox training), record of attendance and schedule of review.
- **Responsibility:** Environmental Manager/Representative
 - **Action:** Regularly assess Site activities and ensure relevant training requirements are met. Develop and deliver specialised toolbox talks as required to ensure Site activities are carried out in accordance with CEMP.

Emergency Procedures and Incident Reports

- 5.1.7 Procedures will be implemented to respond to any emergency incidents which may occur on-site in order to ensure that compliance with the requirements of the relevant legislation and to avoid or mitigate against any significant environmental impacts. As a minimum the 'Emergency Procedures' outlined within Section

8.5 of this CEMP are to be implemented. However, it is expected that as part of the Principal Contractor's SHEQ system a detailed Emergency Preparedness Plan (EPP) will be developed for the project.

- 5.1.8 All staff will be trained and made aware of the Emergency Procedures within this CEMP and the EPP. In the event of any incident, the Principal Contractor's Environmental Health and Safety Team will be notified as well as the Client. Additionally, the Environmental Health Officer (EHO) from St. Helens and any other interested bodies will be notified.

General Site Arrangements

- 5.1.9 The Principal Contractor and all sub-contractors shall ensure that the Site layout and appearance is designed according to the following principles:

- All personnel visiting or working on-site must complete induction training prior to accessing the Site;
- All plant/ equipment used during the construction activities must be compliant with the Provision and Use of Work Equipment Regulations 1998 (PUWER), maintained and relevant certificates must be retained on-site;
- All substances to be used or handled on-site must have the Control of Substances Hazardous to Health (COSHH) assessment available on-site for staff members to consult;
- At the end of each working day all means of access, e.g. steps, ladders left in position must be secured/removed to prevent unauthorised persons and hazardous areas;
- Smoking is prohibited on-site, except in designated areas, and the possession of use of alcohol or drugs is prohibited;
- Staff members must maintain the Site welfare facilities for the duration of the works;
- A qualified First Aider/Emergency First Aider to be present on-site at all times;
- Standard Personnel Protective Equipment (PPE) is required on-site at all times, as well as additional Protective Equipment as required for specific works;
- Use of audio equipment is not permitted on-site, except in designated areas;
- All staff members must work to their safety method statements and abide by all safety signs at all times;
- The Principal Contractor and all Sub-contractors on-site must co-operate in the interest of health and safety;
- The Principal Contractor and all Sub-contractor staff members will conduct themselves and perform their duties on-site in a safe manner;
- All work areas must have clear, maintained signage;
- Appropriate firefighting equipment must be maintained on-site;
- No fires are permitted on-site;
- All waste materials must be collected and removed from Site at regular intervals; and
- Acts of threat or violence will not be tolerated, and any offender will be removed and permanently excluded from the Site.

6 Communication and Community Engagement.

6.1 Statutory Authorities and Interested Parties

- 6.1.1 The Construction Manager in conjunction with the Client and with the support of the Environment Manager or any appointed specialists will be responsible for the liaison on environmental matters with statutory and non-statutory authorities.
- 6.1.2 Consultation will be established and maintained with a number of regulatory bodies with regard to the environmental aspects of the Site, as required. These will include: the St. Helens EHO, the Environment Agency, the Health and Safety Executive and emergency services, as required.
- **Responsibility:** Construction Manager / Environmental Manager/Representative
 - **Action:** Establish and maintain consultation with the St. Helens and other interested parties about the status of the project, potential impacts, mitigation measures, predicted time scales of activities etc.

6.2 Local Community Engagement

- 6.2.1 The Principal Contractor should commit to providing community relations personnel, who will be the first line of response to resolve issues of concern or complaints. Reasonable steps will be taken to engage with local residents during each Phase or Sub-phase of development. Occupiers of neighbouring properties will be informed in advance of works taking place.
- 6.2.2 Site boards outlining information on the project and forthcoming works will be erected at the entrance to the Site and at other key locations around the Site. Site contact numbers and e-mail addresses will be displayed as appropriate, along with the complaint's procedure.
- **Responsibility:** Environmental Manager/Representative
 - **Action:** Establish and maintain consultation with local residents, and other interested parties about the status of the project, potential impacts, mitigation measures and predicted time scales of activities.

6.3 Complaint Management

- 6.3.1 A formal complaints procedure will be developed. The Principal Contractor will be responsible for receiving, recording and responding to external complaints.
- 6.3.2 The Principal Contractor will take appropriate action to address the cause of the concern and will give feedback to explain what action has been taken. If action cannot be taken, the Principal Contractor would attempt to identify alternative mechanisms for addressing concerns. A response to complaints raised would be provided within ten working days.

6.4 Considerate Constructors Scheme

- 6.4.1 The Principal Contractor will register the project under the Considerate Constructors Scheme. This project will target a score of 5 in each section of the scheme's Code of Considerate Practice. A score of 5 demonstrates adherence to the minimum requirements of the Scheme's Code of Considerate Practice. Should the Principal Contractor be found to be non-compliant in one or more sections, the following will apply:

- A letter highlighting the area(s) of failure will be sent with a request to address the issue(s) detailed in the Monitor's report. In instances of gross failure or multiple instances of failure, the Scheme will request a meeting to discuss the issue(s) detailed in the Monitor's report.
- A further subsequent visit may be required so that the Monitor can establish that compliance has been achieved. However, where minor non-compliance is identified, no reassessment is required and the company will be trusted to take the necessary steps to address the issues identified.

6.4.2 Failure to take appropriate action to address the identified non-compliance issue(s) may result in removal from the Scheme.

7 Monitoring and Reporting

7.1 Monitoring

- 7.1.1 Scheduled monitoring of environmental performance and for all compliance auditing will be conducted throughout the works undertaken on-site. This will enable the overall effectiveness of established environmental measures and compliance procedures to be assessed and allow areas of underperformance to be identified so corrective actions can be taken to strengthen environmental safeguards or improve outcomes.
- 7.1.2 Regular inspections will be carried out on all activities and work areas in order check compliance with this CEMP and regulatory conditions. Inspections are expected to be undertaken by the appointed member of the project team as follows:
- The Works Manager will conduct an inspection on general good order and security on a daily basis;
 - The Works Manager will conduct an inspection of all environmental controls on a fortnightly basis, this will be alternated with the external inspection described below;
 - External Consultants will conduct an inspection of all environmental controls on a fortnightly basis;
 - The Project Manager will conduct an inspection of environmental controls on a monthly basis.
- 7.1.3 In addition to the above, event based checks will be conducted following any significant event such as rainfall of sufficient quantity to generate run off, high winds, the receipt of an environmental complaint, issue of non-compliance report or any exceedance in monitoring results. Event based checks will be recorded on separate inspection forms detailing the reasons, observations, findings and outcomes of the inspection which should be recorded, and actions closed out.

7.2 Reporting

- 7.2.1 A monthly environmental monitoring report will be prepared and submitted by the Principal Contractor for review to the Client and Project Team. The report shall include a summary of environmental issues and actions during the period to ensure compliance with this CEMP, including details of an action item requests, complaints received incidents and associated investigations and corrective actions, and environmental inductions and awareness training provided during the period.

7.3 Performance

Progress Meetings

- 7.3.1 Performance against the objectives and targets outlined in this CEMP will be reviewed at regular progress meetings. Progress meetings can include internal Principal Contractor meetings and Project Team meetings with Client and Client representatives. Performance against 'rolling' targets can be reviewed and corrective actions agreed, as required. These actions should be monitored to demonstrate continuous review and improvement.
- **Responsibility:** Project Manager/Principal Designer
 - **Action:** Environmental issues to be added to the agenda of all internal progress meetings and external progress meetings (Client /Principal Contractor/Principal Designer).

CEMP Review

- 7.3.2 The Client, Principal Designer and Principal Contractor will ensure that controls outlined in this CEMP are properly implemented and regularly monitored to ensure their effectiveness. This CEMP will be revised and refined to ensure it remains consistent with environmental regulatory requirements.

8 General Construction Management Measures

8.1 Hours of Work

8.1.1 The standard working and delivery hours for all activities will be:

- 08:00am – 18:00pm hours weekdays;
- 08:00am – 14:00pm hours Saturday; and
- No working or deliveries on Sundays or Bank Holidays without the prior written permission of the St Helens Council.

8.1.2 These hours will be strictly adhered to unless or in the event of:

- An emergency demands continuation of works on the grounds of safety;
- Minor internal works are being carried out within the confines of the building envelope; and
- Completion of an operation that would otherwise cause greater interference with the environment /general public if left unfinished.

8.1.3 The following enabling activities are likely to take place between the hours of 07:00am - 8:00am and 18:00pm – 19:00pm:

- Arrival and departure of workforce on Site;
- Deliveries and unloading;
- Check and examinations of plant and machinery (including test running) and the carrying out of essential repairs / maintenance to plant and machinery;
- Site inspections and safety checks; and
- Site clean-up.

Exclusions

Concrete Pours

8.1.4 It is not always possible to construct concrete floors within the hours stated above due to the following limitations of the working method:

- Floors must be constructed in large units to meet the engineering specification as joints weaken the floor;
- Each floor unit must be constructed in one continuous concrete pour;
- Floors must be finished by power floating on the day of the concrete pour while the concrete is still malleable; and
- Power floating cannot commence until the concrete is sufficiently cured to give enough strength to physically hold the site workers and power float machine and to create a hardened skin to create the floor finish.

8.1.5 As concrete is a variable material it is not possible to be entirely accurate on the length of the operation which may be affected by the following factors:

- Concrete pouring time may be affected by natural variation in aggregate shape, size and skin friction and variations in plasticiser used to keep the concrete fluid;
- Concrete pouring time may be affected by the time it takes to be delivered to Site from the concrete plant which may result in some early curing and delays between deliveries during the pour;

- Concrete curing time may be affected by natural variation in the materials used, variations in the performance of the concrete plant and temperature;
- Power floating time will be affected by the level of curing of the concrete (too soft will require additional passes and too hard will require a longer application of the tool); and
- Concrete will be affected by the weather (bad weather may impact the length of time for the power floating activities).

8.1.6 It is expected that the daily programme of works relating to concrete pouring activities required for the Unit 1 warehouse will be:

- Concrete Pour – 07:30am to 6:00pm;
- Additional Curing – 12:00pm to 05:00pm; and
- Power floating – 05:00pm to 05:00am.

8.1.7 The works will be sequenced to reduce the amount of concrete poured in any given day which in turn will reduce the amount of work required after 6:00pm. This is governed by engineering requirements for the structural slab being cast due to the slab being open this will also dependant on the weather.

8.1.8 The St Helens Council EHO will be notified in writing no less than two weeks in advance of concrete pouring commencing on Site.

Internal Fit Out

8.1.9 In order to achieve the proposed operational date of September 2023, 24 hour a day seven day a week works will be required for the internal fit out of the Unit 1 warehouse. As outlined above within Section 3, the works for the internal fit out are expected to commence in January 2022 and be completed in August 2023.

8.1.10 The internal fit out of Unit 1 involves the installation of a state of the art fully automatic distribution system. All works associated with the internal fit out would take place within the building envelope of Unit 1, barring the transportation of equipment and materials to the Site. Deliveries will be sequenced to reduce the number of vehicles accessing the Site after 6:00pm, however it may not always be possible for deliveries to arrive prior to 6:00pm due to shipping schedules.

8.1.11 A Night-Time Construction Noise Technical Note, prepared by WSP, attached as Appendix H of this CEMP confirms no significant noise effects at sensitive receptor locations in close proximity to the Site as a result of any night-time construction works proposed. See Section 9: Noise and Vibration for further details.

8.2 Welfare Facilities, Construction Compound and Material Storage

8.2.1 Welfare facilities will be provided for all employees. Welfare facilities will be equipped with heating, tables, chairs, a means of heating food and boiling water, wash basins, showers, drying, toilets facilities and hand sanitiser equipment. Welfare facilities will be located with good access, lighting and ventilation and will be maintained and cleared on a regular basis.

Construction Compound and Material Storage

8.2.2 The construction compound will include the following:

- Parking areas for site operatives and visitors;
- Loading and unloading areas;

- Plant and machinery storage areas;
- Material storage areas; and
- Site Office and Welfare facilities.

8.2.3 The location of the construction compounds and material storage areas are shown within Figure 8.1.

Figure 8.1: Construction compound location plan



8.3 Security On-site

- 8.3.1 Hoarding will be erected around the perimeter of work or works areas in advance of the commencement of construction, with gated access put in place.
- 8.3.2 All deliveries will be scheduled through the Site management team, with the Gateman being made aware prior to the arrival of deliveries. This is to ensure that a banksman is available to control the access and egress from the on-site Zone 8 temporary haul road (Figure 8.1), and constructed by the Principal Contractor appointment by OWL, which is being used while the new infrastructure is being constructed and these works would be managed under the Infrastructure CEMP.
- 8.3.3 Banksman will aid HGVs in entering and exiting the Site and help with opening and closing the gates.
- 8.3.4 Only authorised personnel will be permitted on Site. All visitors will be required to enter through the main entrance gate to the Site and report to the Construction Manager/Site Manager. All visitors will be required to sign in and out to ensure that Site management are aware of the number of people on-site in the event of an emergency.
- 8.3.5 Visitors will be required to undergo induction training, wear necessary PPE i.e. safety helmet, hi-visibility attire, safety footwear and will be accompanied by representative on-site at all times.

- 8.3.6 The hoarding and all storage areas will be checked on a daily basis to ensure that it is maintained in good condition and remains secure. All entrance and exit gates into the Site will be secure at all times.
- 8.3.7 All mobile plant/equipment will be parked safely and locked within a designated area to prevent tampering and keys to all plant/equipment will be kept in a secured location.
- 8.3.8 The hoardings will be lit with energy efficient LED lighting sited so to minimise visual intrusion and light spillage/ pollution at the nearby properties but will comply with regulations to ensure safe passage around the perimeter.

8.4 Fire Prevention

- 8.4.1 The Principal Contractor and all sub-contractors will ensure that construction work is carried out in compliance with the Regulatory Reform (Fire safety) Order 2005. All necessary measures will be taken to minimise the risk of fire and the Principal Contractor and all sub-contractors will comply with the requirements of the local fire authority and the Health and Safety Regulations.
- 8.4.2 To reduce the risk of fire occurring within the Site:
 - All designated work areas will be non-smoking;
 - A specific area within the Site Offices will be designated as a smoking area and will be equipped with containers for smoking waste. This will not be located at the boundary adjacent to neighbouring land (i.e. the woodland areas); and,
 - Open fires will be prohibited on-site at all times.
- 8.4.3 Fire prevention facilities must be present and easily accessible at all storage facilities. Firefighting equipment is to be present on-site at all times as per the Health and Safety regulations.

8.5 Emergency Procedures

Fuel/Oil (or other potentially damaging substance) Spillage

- 8.5.1 In the event of a spillage incident the following procedure must be followed:
 - Eliminate sources of ignition and cordon off area;
 - Attempt to contain the spillage without risk to personal health and safety;
 - Inform a member of the SHEQ team of the approximate volume of the spillage, location and measures taken at present;
 - Where necessary, use plant from the locality to form bunds, excavate to dump trucks or any other action which may contain/mitigate the spillage;
 - Use spill kits from the plant to clean up or if necessary use adjacent soils;
 - Do not allow the spillage to enter a watercourse;
 - Works Manager to inform Project Manager and, if necessary, contact the following:
 - Fire 999
 - Environment Agency 0800 807060
 - United Utilities 0845 746 2200
 - Works Manager to liaise with the above and agree measures to remediate area; and
 - Works Manager to complete an 'Incident Report Form'.

Surface Water Release

8.5.2 In the event of surface water release the following procedure must be followed:

- Attempt to contain the release without risk to personal health and safety;
- Inform a member of the SHEQ team of the approximate volume of water released, location and measures taken at present;
- Where necessary/possible, use plant from the locality to form bunds or excavate a sump (remembering to check permit to dig prior to breaking ground);
- SHEQ team to call in bowser or pumps to ensure that the release is contained in the bund/sump and does not overflow;
- Works Manager to inform Project Manager and, if necessary, contact the following:
 - Environment Agency 0800 807060
 - United Utilities 0845 746 2200
- Works Manager to liaise with the above and agree further/improved mitigation measures;
- Project / Works Manager to complete an 'Incident Report Form'.

8.5.3 These emergency procedures should be brought to the attention of all Site personnel and, at a suitable time during the works, drills should be carried out to ensure that the emergency arrangements are effective and understood by all personnel.

8.6 Construction Plant and Equipment

8.6.1 Table 8.1 sets out the plant type to be used during the construction phase.

Table 8.1: Plant type to be used during construction phase

Plant and Equipment	Stage of Works					
	Infrastructure	Earthworks	Roads	Foundation	Buildings (including fit out)	Landscaping
360° Excavator	✓	✓	✓	✓	X	✓
Tower / Mobile Crane	X	X	X	X	✓	X
Breaker	X	X	✓	✓	✓	X
Compressor & Air Tools	✓	✓	✓	✓	✓	✓
Drills / Cutters	✓	✓	✓	✓	✓	✓
Compacter / Roller	X	✓	✓	X	X	✓
Piling Rigs	X	X	X	✓	X	X

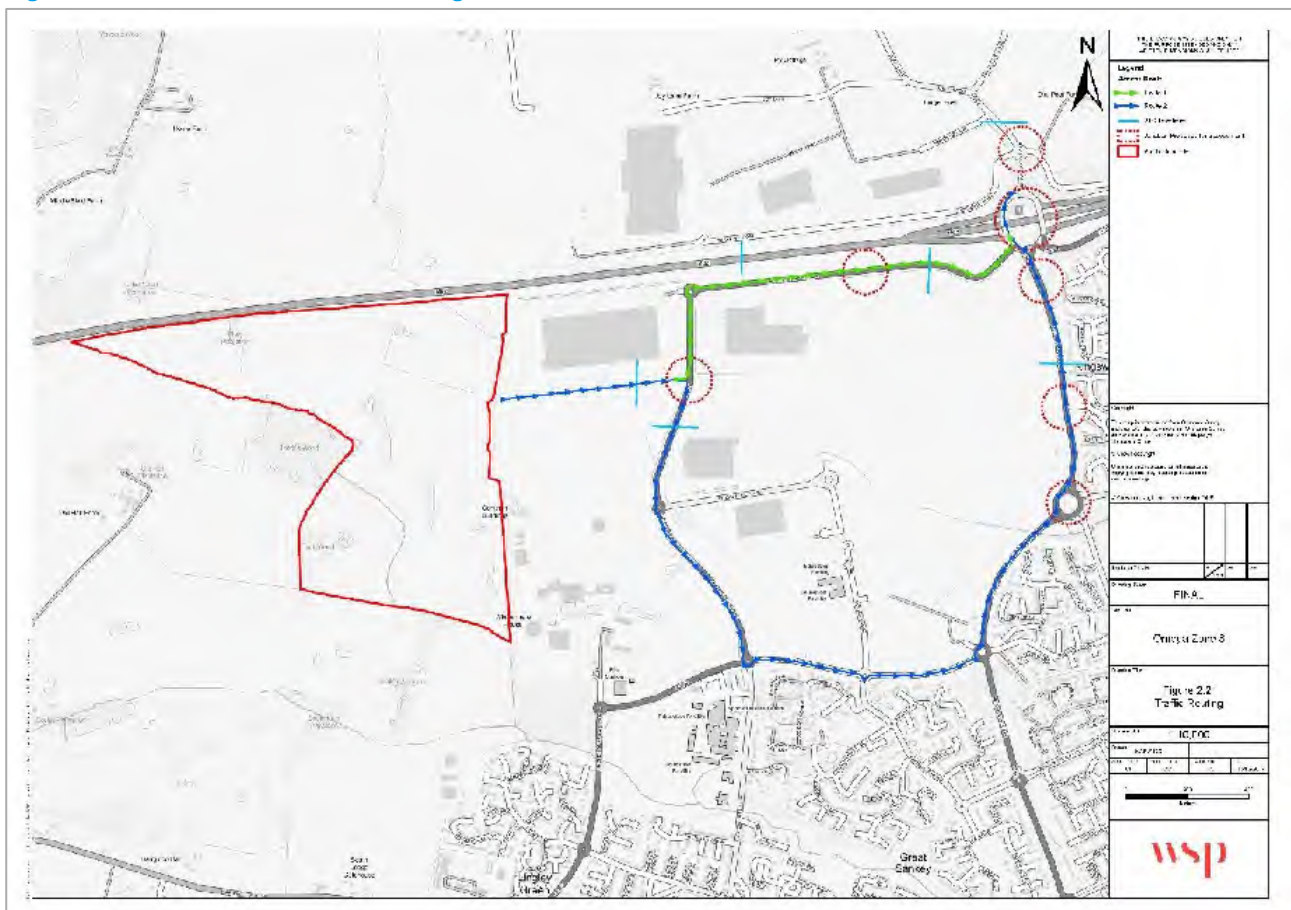
Plant and Equipment	Stage of Works					
	Infrastructure	Earthworks	Roads	Foundation	Buildings (including fit out)	Landscaping
Concrete Pumps	✓	X	✓	✓	✓	✓
Generators	✓	✓	✓	✓	✓	✓
Concrete Vibration Equipment	✓	X	✓	✓	X	X
Scaffolding	✓	X	X	✓	✓	X
Fork Lift Truck	✓	✓	✓	✓	✓	✓
Mechanical Road Sweeper	✓	✓	✓	✓	✓	✓
Floodlights	✓	✓	✓	✓	✓	✓
Hydraulic benders and cutters	✓	✓	✓	✓	✓	X
Lorries and Vans	✓	✓	✓	✓	✓	✓
Ready mix concrete trucks	✓	X	✓	✓	✓	X

8.7 Access and Haulage Routes

- 8.7.1 The majority of vehicles will access the Site from the east the existing Omega South internal road known as Catalina Way, which connects to Skyline Drive (A5280) which then provides a direct link to Junction 8 of the M62. Most vehicles entering and leaving the Site will be HGVs but there will also be vans and cars. Figure 8.2 below shows the proposed offsite vehicular routing for construction traffic during development to the Site. Figure 8.1 shows the location of the 8m wide tarmac haul road that will be constructed as part of the Infrastructure Works which will be used to access the Site whilst the new Junction and road with Catalina Way is constructed.
- 8.7.2 Directional signage will be implemented to ensure that construction traffic utilises designated routes to minimise the effect on the surrounding road network. Locations for temporary signage for the approved route will be discussed with the St. Helens Highway Network Traffic Management Team and will include input/agreement with Warrington BC.
- 8.7.3 HGV movements will be restricted as far as reasonably possible so as to avoid peak traffic flow periods (i.e. from 08:00-09:00am and 17:00-18:00pm).

- 8.7.4 All construction traffic entering and leaving the Site will be closely controlled and during delivery times, banksmen will be positioned at the existing gatehouse to control and record entry and exit movements. Deliveries will be on a 'just-in-time' basis.
- 8.7.5 There will be no operatives or visitor parking on the surrounding highways. Access gates to the construction Site will be kept locked. Access and egress from the Site for operatives and deliveries / collections will be controlled by a banksmen. The gates will be immediately locked after access and egress by a banksmen. Contact numbers for access will be displayed at the Site entrance.
- 8.7.6 For security purposes, a member of staff will record the vehicle details and direct deliveries to report to the reception office where appropriate personnel will direct the driver to deliver the material in a specific area of the Site.
- 8.7.7 A segregation barrier will provide a pedestrian walkway into and out of the Site and where possible, pedestrian routes will be created to separate vehicles from personnel.

Figure 8.2: Construction Vehicle Routing for Construction Traffic



8.8 Lighting

- 8.8.1 Lighting on construction sites whether natural or artificial is essential to health and safety. Poor lighting can represent significant risks to staff members which can result in accident and injury, the quicker and easier it is to see a hazard the better the likelihood of avoiding it.

- 8.8.2 As outlined within section 35 of the CDM Regulations (2015), the Site must be provided with suitable and sufficient lighting, which must be, so far as is reasonably practicable, by natural light. This relates to both the construction site as well as the approach and traffic route to the development site.
- 8.8.3 Site lighting provided will comply with the Institution of Lighting Engineers' guidance notes for the reduction of light pollution and the provisions of BS 5489, Code of Practice for the Design of Road Lighting, where applicable.
- 8.8.4 In determining any temporary construction lighting arrangements for the Site, due consideration will be given by the Principal Contractor to residents and other sensitive receptors that may experience a nuisance by the light.
- 8.8.5 General control measures for the use of lighting on site are outlined below:
- Temporary Site lighting when used adjacent to residential areas must be fixed with a noise screen to keep noise levels to a minimum;
 - As far as is practical, lighting must be directed away from residential and ecological sensitive areas;
 - Lighting should always be positioned to prevent glare;
 - Luminaires used around the perimeter of the Site will be mounted within the Site boundary, so that the main photometric distribution of the luminaire is towards Site works, thereby keeping all light within the boundary and preventing artificial light spill;
 - Wherever possible consideration will be given to minimise the need for lighting in areas of ecology habitat or in areas situated directly adjacent to ecology habitat. Should health and safety require artificial lighting to these areas all luminaires will be directed away from the habitat area;
 - Wherever possible and subject to landscape design, natural and solid screen perimeters will be included to reduce obtrusive light to adjacent sensitive areas and light will be extinguished when not in use;
 - Wherever possible, all artificial lighting used during the construction phase will be directed below the horizontal to prevent unwanted upward light;
 - When not in use all artificial lighting used for construction will be extinguished;
 - Modern, high efficiency lamps and luminaires will be employed to ensure energy efficient; and
 - Illuminance levels will be designed in accordance with BS EN 12464-2: 2014 and CIE 129; No area will be over lit.

9 Environmental Control Measures By Topic

9.1 Introduction

- 9.1.1 The following section of the CEMP describes the general mitigation control measures to be implemented throughout Development, on a topic by topic basis, to ensure the protection of the environment from potential adverse and negative effects from the Development as identified within the ES (Volume I-III, December 2019).
- 9.1.2 Each topic is dealt with independently. However, there is overlap between topics and therefore they must be read in conjunction with each other. Activities that require a 'Management Plan', namely the Site Waste Management Plan (SWMP), Air Quality and Dust Management Plan (AQDMP), and Soil Management Plan (SMP), are discussed in detail within Sections 10 to 12 below.

9.2 Traffic and Transportation

Wheel Washing

- 9.2.1 On-site measures will be implemented to minimise any mud and detritus being deposited on the roads around the Site. These will include wheel washing facilities at the Site egress or egress of the construction compounds.
- 9.2.2 Wheel washing facilities could include, but not limited to, drive-over dry ramp system, drive through bath system, and high pressure spray wash systems. Drive-over dry ramp system works on the vibration effect created by the vehicle tyres driving over inverted steel bars on a raised platform, the vibrations and motion flexes open the tyre treads enabling dirt and debris to fall to the ground.
- 9.2.3 A drive through bath system comprises of the central bath section which contains internal metal grids that are submerged in water. As the vehicle drives through the bath and over the metal grids, the tyres flex enabling dirt to fall out while the water effectively washes the tyres.
- 9.2.4 A high pressure spray system comprises of either the manual washing of the vehicle, by Site staff member, in a designated wash area; or the installation of an automated drive through wheel washing facility that sprays water over the tyres of the vehicle as it drives through or stand on a raised platform.

Mitigation Measures

- 9.2.5 Measures to be adopted to reduce traffic and transportation effects include:
- The sheeting of loads will ensure that any material which is removed from Site is secure;
 - Fire and emergency access routes will be kept free from obstruction at all times;
 - Agreed access and egress routes on the Site will be observed at all times;
 - Footpaths and roads will always be kept clear of obstructions, including parked cars;
 - Footpaths and roads will be protected and maintained in a condition suitable for vehicular and pedestrian traffic;
 - Materials will not be stored on or near roadways, paths or other areas where they may constitute a hazard;
 - Should it be required, banksmen will be employed to assist in traffic movements on and off the Site;

- In the event of an emergency, a nominated person will meet the emergency services at the entrance to the Site and guide them to the emergency;
- Wherever possible, traffic will enter the Site in forward gear and, after unloading/loading, drive round and leave the Site without the need to reverse;
- Vehicles not fitted with an audible reversing alarm/flashing beacon will have a banksman present when reversing or carrying out difficult manoeuvres on Site;
- Banksman will always wear high visibility clothing;
- A designated parking area will be established and personnel will be made aware of its location;
- Delivery vehicle movements will be controlled on Site and will follow the Site rules;
- Safety signs will be clearly posted to make personnel on site aware of traffic hazards;
- The use of mobile phones whilst driving or operating plant is prohibited;
- Drivers must obey the on-site speed restrictions;
- Pedestrian accesses which leads onto any traffic route will be sufficiently separated to enable pedestrians to see approaching plant and vehicles;
- Adequate separation between vehicles and pedestrians will be established to ensure safety or, where not reasonably practicable, other means of protecting pedestrians and effective arrangements for warning; and
- Every traffic route, where necessary for reasons of health or safety, will be clearly indicated by suitable signs regularly checked and properly maintained.

9.3 Noise and Vibration

9.3.1 All works must comply with BS 5228: Noise and Vibration Control and the construction and Open Sites Part 1: Noise and Part 2: Vibration. The primary method for the control of noise will be a Section 61 agreement under the Control of Pollution Act 1974 ("COPA") with St. Helens. A Section 61 agreement sets out a dispensation and variation procedure under which consent can be applied for to carry out works which it is considered would exceed the agreed noise limits or must occur at times when such work is otherwise not approved.

9.3.2 In order to ensure compliance with BS 5228 the following monitoring will be conducted:

- A regime of noise monitoring will be adopted by the Principal Contractor over the duration of the works, above which consideration would be given to the use of alternative techniques and / or other means of controlling noise levels. Readings will be recorded on-site and made available for review by St Helens, if requested, or as required by the Section 61 agreement.

Night-time Works

9.3.3 Night-time construction works are potentially required during the construction of the Development. The findings of the Night-Time Construction Noise Technical Note (Appendix H) confirms that any night-time works would comply with the BS 5228-1 thresholds at the closest sensitive receptors. Therefore, no further mitigation measures other than those outlined below would be required for night-time construction activities.

Mitigation Measures

9.3.4 Best practicable means (BPM) will be applied during construction works at all times to minimise noise (including vibration) at neighbouring residential properties and other sensitive receptors. BPM are defined in Section 72 of the Control of Pollution Act 1974 and Section 79 of the Environmental Protection Act 1990 as those measures which are *"reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to financial implications"*.

9.3.5 The following measures will be adopted to reduce noise and vibration during the works:

- All plant brought on to Site will comply with the relevant EC/UK noise limits applicable to that equipment or will be no noisier than would be expected based on the noise levels quoted in B2 5228-1. Each plant item will be well maintained and operated in accordance with manufacturers' recommendations and in such a manner as to minimise noise emissions;
- Plant which is known to emit noise strongly in one direction will be orientated in such a way that noise is directed away from sensitive areas wherever possible;
- Engine covers will be kept closed when machines are in use and idling;
- Compressors will be silenced or sound reduced models fitted with acoustic enclosures, and will be silenced or screened as appropriate (e.g. when in use close to sensitive receptors);
- Pneumatic tools will be fitted with silencers or mufflers when in use close to sensitive receptors;
- Care will be taken when erecting or striking scaffolds to avoid impact noise from banging steel;
- Loading and unloading of vehicles, dismantling of equipment or moving equipment or materials around the Site will be conducted in such a manner as to minimise noise/vibration generation;
- Shouting and raised voices shall be kept to a minimum;
- 2.4 metre hoarding will be erected around the construction Site, where feasibly and practicable, and will continue to be maintained throughout the works. The hoarding will consist of 2.4 metre high plywood sheets or similar, with joints sealed to minimise the escape of noise;
- In the event that it is not possible to erect hoarding around the development area due to the nature of the works, i.e. earth works, mobile hoarding will be erected to reduce the effect on receptors. In addition, temporary acoustic barriers and other noise containment measures such as screens, sheeting and acoustic hoarding will be erected where appropriate to minimise noise breakout and reduce noise levels at potentially affected receptors
- Toolbox talks will instruct workers on noise and vibration issues;
- Electrically powered plant will be preferred, where practicable, to mechanically powered alternatives;
- Deliveries to Site will be programmed and routed to minimise disturbance to local residents;
- Items of plant operating intermittently will be shut down in the periods between use;
- Where feasible, all stationary plant will be located so that the noise effect at receptors is minimised and, if practicable, every item of static plant, when in operation, will be noise attenuated using methods based on the guidance and advice given in BS 5228;
- There will be a considerate and neighbourly approach to relations with local residents;
- Vehicles will not wait or queue up with engines running on the Site or on the public highway;
- Where it is logistically practicable to do so, noisy works will be programmed to take place during normal daytime hours; and
- A Site inspection will be undertaken daily to identify and rectify any issues which may increase noise and/or vibration.

Children's Day Nursery

9.3.6 The Stepping Stones Day Nursey has been identified as a receptor which may be subject to disturbance during driven piling works. Other activities are unlikely to cause disturbance in respect of noise and vibration due the distance of the nursey from the Development works (circa. 350m at its closet point). The following mitigation measures will be employed to minimise disturbance to the children's day nursery:

- Once the required locations for any driven piling works (or similarly vibration generative construction operation) are finalised, a revised predictive assessment of groundborne vibration impact will be undertaken;

- The revised assessment will reflect the nature/type of the works to be undertaken at the Site, including the types of plant to be utilised, piles to be inserted and the local ground conditions;
- Where the results of the revised assessment identify a likelihood of groundborne vibration levels in excess of 1mm/s PPV (Medium magnitude of impact) at the Children's day nursery, then the proposed working method shall be revisited (e.g. a low vibratory piling method such as auger bored piling shall be adopted where such an approach would result in the required pile performance);
- Where adoption of a low vibratory working methods is not possible (e.g. due to pile performance requirements), the Children's day nursery will be provided with notice of when all such works within 100m of their facility shall be undertaken. Groundborne vibration monitoring shall also be undertaken for the duration of those works, to provide confirmation of the levels that are generated in practice, either at the Site boundary, or at the Children's day nursery itself. The measurement results shall be made available to the Children's day nursery where required; and
- Where the live measurement results identify that vibration levels in excess of 2mm/s are arising in practice (at the Children's day nursery), the works shall cease unless it can be demonstrated to St. Helens that the works are being undertaken in accordance with the principles of BPM.

9.4 Biodiversity

Habitats

- 9.4.1 Table 9.1 details the areas of habitat and vegetation loss as a result of construction of the Development, with the location of the habitat and vegetation shown in Appendix F.

Table 9.1: Habitat and Vegetation loss within the Site

Habitat and Vegetation	Name/ID or Area
Woodland	Woodland A, Big Belt Wood
Scattered trees	3546m ²
Hedgerow	HR 3
Grassland (Improved)	2459m ²
Grassland (Poor Semi- Improved)	1105m ²
Ponds	Ponds 1, 4, C, A, AZ, D, Z

Protected Species

- 9.4.2 The following protected species or species of note were identified on the Site or within the surrounds following detailed species surveys undertaken to support the ES:

- Bats;
- Breeding birds;
- Brown hare; and
- Purple ramping-fumitory.

Legislation

- 9.4.3 Prior to the start of works commencing all construction Site members will receive a briefing on the species and habitat protection measures by the Site Manager/Ecologist and will include reference to the following legislation:

- Schedule 1, Part 1, of The Wildlife and Countryside Act 1981 (and amendments) lists birds protected by special penalties at all times. It prohibits intentional killing/injuring, taking, possessing, disturbing and selling (including parts and derivatives, eggs, nests, etc. as applicable) as well as damaging, destroying or disturbing nests in current use or dependent young, etc.;
- Schedule 5 of The Wildlife and Countryside Act 1981 (and amendments) prohibits deliberate killing, injuring, taking, possessing, disturbing and selling (including parts and derivatives) as well as

damaging, destroying or obstructing any structure or place of refuge of listed fauna, such as bat species;

- Under the Conservation of Habitats and Species Regulations 2017 it is illegal to kill, disturb, destroy eggs, breeding sites or resting places, to pick, collect, take cuttings, uproot or destroy in the wild as well as keep, transport, sell/exchange and offer for sale/exchange species listed;
- The Countryside and Rights of Way Act 2000 increases the protection given by The Wildlife and Countryside Act 1981 (and amendments). The offence to intentionally damage any structure or place that a wild animal listed in Schedule 5 of the Act uses for shelter or protection or deliberately disturbing any such animal while in such a structure or place is extended so that the offence also covers reckless damage or disturbance; and,
- The Natural Environment and Rural Affairs Act 2006 Section 14 provides a list of Priority Habitats and Species that will be specially protected by the construction activities

Environmental Protection Measures

9.4.4 Appendix F of this CEMP includes the following documents produced the Ecology Practice:

- CEMP: Biodiversity;
- CEMP: Biodiversity (Unit 1) Pond Clearance Method Statement; and,
- CEMP: Biodiversity (Unit 1) Woodland, Tree & Hedgerow Clearance Method Statement.

9.4.5 The CEMP: Biodiversity, which follows the requirements set out by BE 42020: 2013¹, includes all the necessary mitigation measures to mitigate construction effects on Biodiversity during construction activities. The CEMP: Biodiversity (Unit 1) Ecological Clerk of Works Method Statement provides a description of the duties of an Ecological Clerk of Works (ECW) during construction. The CEMP: Biodiversity (Unit 1) Pond Clearance Method Statement provides a method statement for clearance of ponds to facilitate construction. The CEMP: Biodiversity (Unit 1) Woodland, Tree & Hedgerow Clearance Method Statement provides a method statement for tree and hedgerow removal to facilitate construction.

9.5 Arboriculture

9.5.1 Appendix E of this CEMP includes the ACW method statement, produced the Ecology Practice, for tree works/removals and provides a description of the duties of an Arborist Clerk of Works (ACW) during construction. It also provides a summary of the recommended tree works and mitigation measures.

Tree Protection Measures

9.5.2 Tree protective fencing, or similar, will be installed at the positions shown in the Tree Protection Plan (Appendix A of the ACW method statement) at the commencement of works, before any vegetation removal, ground works or soil stripping are carried out or materials are brought onto Site. The areas enclosed are to be maintained as a total exclusion zone to all construction activity.

9.5.3 The following measures will be adopted to reduce the potential to impact retained vegetation and trees during the works:

- All-weather warning notices will be attached to the fencing to clearly identify the area as a protection exclusion zone into which access is not permitted;
- No working activity, storage of materials, ground level changes, excavations or vehicular access is permitted within the protected area;
- All construction activities will be designed as to avoid retained woodland areas and Root Protection Areas (RPAs) where possible;

- Tree and hedgerow removal will only take place outside the bird breeding season (March – August, inclusive);
- Tree works will be undertaken in accordance with BS5837: 2012, Trees in relation to design, demolition and construction; and
- No entry will be permitted within RPAs unless prior written agreement from the ACW.

9.5.4 The above mitigation will be implemented and delivered by the Principal Contractor with compliance visits undertaken by the ACW.

Booth's Wood

9.5.5 A detailed written working method statement (the 'Booth's Wood Drainage Discharge Method Statement') will be produced by the Principal Contractor, for review by St. Helens, and strictly adhered to during any vegetation removal or digging within Booth's Wood LWS or associated RPA for the installation of drainage discharge and outfall into Whittle Brook. Once approved by St. Helens the Booth's Wood Drainage Discharge Method Statement will be appended to this CEMP as Appendix G.

9.6 Landscape and Visual

9.6.1 Temporary landscape and visual impacts from construction activities within the Site will be managed as necessary through the implementation measures outlined within Sections 6 to 12 of this CEMP. No additional mitigation measures are required.

9.7 Ground Conditions and Contamination

9.7.1 Given that the Site has had a continuous agriculture use and only localised pockets of Made Ground may exist where historical ponds were infilled, the ES assessed that the Site does not have a significant potential to be contaminated with chemical compounds which would pose an unacceptable level of risk to controlled waters or human health.

9.7.2 Work will be carried out in accordance with relevant CDM Regulations 2015, details of these measures will be presented within the Emergency Response Procedure (ERP) included within the Principal Contractors SHEQ plan.

9.7.3 All the workers on-site will be made aware of potential contamination issues on the Site during the induction and will use best practice techniques during all construction activities.

9.7.4 The operation of construction vehicles and the handling, use and storage of hazardous materials will be undertaken as follows:

- Vehicles and plant will be well maintained to prevent accidental pollution from leaks. Static machinery and plant will include drip trays beneath oil tanks/engines/gearboxes/hydraulics, which will be checked and emptied regularly via a licensed waste disposal operator;
- Refuelling would be undertaken in specified areas. Drip trays will be installed to collect leaks from diesel pumps;
- The handling, use and storage of hazardous materials will be undertaken in line with the current best practice;
- Adequate bunded and secure areas with impervious walls and floors, with a capacity of 110% of substance volume, are to be provided for the temporary storage of fuel, oil and chemicals on Site during construction. Valves and trigger guns will be protected from vandalism and kept locked up when not in use;

- Provision of spill containment equipment such as absorbent material on-site;
- The appropriate utility company will be consulted on the potential requirement for an oil interceptor and sediment trap at the point where Site surface water runoff enters the sewerage network;
- Store all construction, oil, fuel and diesel materials as far from the nearby water bodies and drainage as possible; and
- A spillage ERP will be produced in advance of commencement on-site which Site staff will be required to have read and understood. On-site provisions will be made to contain a serious spill or leak through the use of booms, bunding and absorbent material.

- 9.7.5 A member of staff will be nominated to control and monitor the COSHH system. Suppliers must send data sheets for every hazardous substance to the site. Supervisors and Safety Managers will brief staff members who will be using hazardous materials, on its safe use, disposal and any emergency procedures. Written records of these briefings will be kept in the COSHH file held on the Site.
- 9.7.6 A COSHH / fuel inventory will be maintained and key contacts listed to be notified in the event of a significant pollution incident, which may subsequently lead to the contamination of controlled waters. Directly and indirectly purchased bulk fuel and COSHH items will be stored in accordance with the relevant Environment Agency PPG/GPPs. Tanks and dispensing pumps will be locked when not in use to prevent unauthorised access. Information regarding spill prevention and disposal of COSHH items will be provided as part of the standard Site induction presentations and during regular toolbox talks and the works progress.
- 9.7.7 A competent/licensed contractor will survey (pre-site preparation survey as defined by the HSE) and safely remove asbestos containing materials and other materials and structures contaminated with asbestos fibres, if found on-Site.

Unanticipated Ground Conditions

- 9.7.8 During Site redevelopment, construction workers shall remain vigilant to the possible risk of encountering isolated areas of contaminated material. Should potentially contaminated material be encountered works in this area must immediately cease, a phased programme of assessment should be established and the St. Helens will be notified.
- 9.7.9 Advice from an specialist ground conditions consultant will be sought in this event. Examination and possible further testing of the soils will be completed to assess the risk to health and safety of Site workers and the environment, which will be carried out by a competent person. A Remediation Strategy may need to be produced if additional areas of contamination are encountered, which will also need to be documented in any validation reports.

9.8 Hydrology and Water Quality

Whittle Brook

- 9.8.1 There are two ordinary watercourses which cross into the Site from the northern boundary. The first crosses in a north to south direction and discharges to Whittle Brook. The second, known as Barrow Brook, crosses the north east corner of the Site before running in a southerly direction along the Site boundary. It then runs in a south easterly direction along Orion Boulevard and eventually joins the Whittle Brook. The watercourses drain the upstream catchment and are being retained.
- 9.8.2 All operatives would be made aware of the need to protect the Whittle Brook watercourse from contamination, including Environment Agency guidance and legal obligations.

Management of Construction Site Runoff

- 9.8.3 Water management will be a high priority on this project. Localised bunding and lagoons may be required to prevent surface water adversely affecting the works. It may also be necessary to excavate 'grips' or 'v' ditches to capture water and channel towards a holding area (lagoon), preferably the permanent works swales. It will be necessary to implement silt mitigation measures to filter water prior to its potential release to any nearby watercourse.
- 9.8.4 Mitigation measures outlined below would be required for the management of excessive fine particulates in runoff:
- Minimise the area of exposed ground – strip vegetation and topsoil only when needed;
 - Minimise the time ground is exposed – less opportunity for water to drain from exposed ground, undertake reinstatement at earliest opportunity;
 - Identify and protect water courses – remember 10m (min) buffer zone;
 - Identify any existing land drains and sources of water that cross the works area – install culverts to allow water to bypass the works area, locate outfalls of land drains and monitor (ongoing), isolate land drains if necessary;
 - Identify low points in works area – keep 'clean' and silt contaminated water separate, access road run off will naturally drain to these locations;
 - Water must be as clean as possible at discharge point, and regularly monitored by the Site team;
 - Filtering will be achieved using check dams and silt nets. Dug in to ensure integrity;
 - Where water has collected in excavations or sump holes and is required to be pumped clear, the water will be recharged to adjacent grassed areas of Site in order to prevent its release into any watercourse. If any is suspected to be contaminated (it has oily residues apparent, odour or discolouration) then it must not be pumped until verified;
 - A 10m buffer strip will be maintained around all watercourses using appropriate temporary exclusion fencing other than where specific works are required closer to the channel;
 - When undertaking earth moving works periods of wet weather should be avoided where possible to minimise the risk of generating runoff contaminated with fine particulates. However, it is assumed some wet weather periods may be unavoidable, in which case other deployed mitigation measures (see below) would be implemented to control fine sediment laden runoff;
 - A temporary drainage system would be developed to prevent runoff containing high levels of fine sediment from entering surface water drains or water bodies without the necessary level of treatment. Measures would include drain covers, sand bags, earth bunds, geotextile silt fences, straw bales, or proprietary treatment (e.g. lamella clarifiers). The temporary drainage system shall also be designed to ensure that construction site runoff is adequately attenuated and does not result in an increase in flood risk downstream (i.e. adequate temporary storage will be provided);
 - Topsoil/subsoil and other stockpiling of particular or potentially friable construction materials would be stored away from watercourses and preferably on flat lying land (minimum 20 m on flat land, with increasing distance on steeper topography subject to risk assessment and appropriate controls). Where this is not possible and it is to be stockpiled for longer than a two-week period, the material would, as soon as possible either be covered with geotextile mats, seeded to promote vegetation growth, or drainage provided to a suitable settlement area;
 - Appropriately sized runoff storage areas for the settlement of excessive fine particulates in runoff would be provided, with reference to the best practice guidance (e.g. CIRIA C648 - Control of water pollution from linear construction projects). For larger construction areas it may be necessary to have multiple storage/treatment areas to ensure adequate capacity on site to manage construction runoff. It is assumed that treated water from here would then be pumped (after settlement/treatment) directly to nearby watercourses under a temporary Water Activity Permit from the Environment Agency;

- Mud deposits would be controlled at entry and exits to the Site using wheel washing facilities and / or road sweepers operating during earthworks or other times as considered necessary;
- Tools and plant to be washed out and cleaned in designated areas within the Site compound where runoff can be isolated for treatment before discharge to surface water drainage under appropriate consent and / or agreement with Environment Agency and / or St. Helens, or otherwise removed from Site for appropriate disposal at a licenced waste facility;
- Debris and other material would be prevented from entering surface water drainage, through maintenance of a clean and tidy Site, provision of clearly labelled waste receptacles, grid covers and the presence of Site security fencing. Netting will need to be provided beneath any works across watercourses (including the canal) whilst maintaining access for boat users; and
- Weather forecasts will be monitored and used to plan works in channels avoiding periods of high flow. The Principal Contractor will also monitor Environment Agency flood alerts and sign up the Environment Agency's flood warning system.

9.8.5 Any works adjacent to or within watercourse will require careful monitoring to ensure that pollution does not occur and that temporary drainage systems are coping adequately with river flows etc. Additional pumps and equipment must be on stand-by at all times. When heavy rainfall is forecast works in channel should stop and flows restored through the channel, where possible.

Management of Spillage Risk

9.8.6 To allow chemicals, fuels / oils and other such substances to enter the water environment could be in breach of the Water Resources Act 1991 (as amended). As such measures to control the storage, handling and disposal of these substances would need to be put in place prior to and during construction. The following mitigation measures relating to the control of spillages and leaks will be implemented during construction works:

- Fuel would be stored and used in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001;
- Fuel and other potentially polluting chemicals would either be in self bunded containers or would be stored in a secure impermeable and bunded area (minimum capacity 110%);
- Refuelling of mobile plant to be done only on hard standing in an allocated area of construction compounds. No refuelling to take place within 20m of a watercourse on flat land or 50m where there is an incline towards a watercourse;
- Any plant, machinery or vehicles would be inspected before use and maintained to ensure they are in good working order and clean, especially where working near water. This maintenance is to take place off Site if possible or only at designated areas within site compounds;
- All fixed plant used on Site to be self bunded. Mobile plant to be fitted with plant 'nappies' at all times;
- Spill kits and oil absorbent material to be carried by mobile plant and located in waterproof storage bins at high risk locations across the Site (e.g. close to watercourses). Spill kit storage bins should be regularly topped up. All construction workers would receive spill response training;
- The Site is to be secure to prevent any vandalism that could lead to a pollution incident;
- Construction waste / debris is to be prevented from entering any surface water drainage or water body;
- Surface water drains on roads or the Site compound area would be identified and where there is a risk that fine particulates or spillages could enter them they would be protected (e.g. covers or sand bags);
- Where possible, concrete will not be batched on Site and will instead be delivered on an 'as and when' basis in ready mixed lorries. If on-site batching is required these facilities will be located on flat impermeable hardstanding at least 50m from any watercourse and with a surface water

drainage system that is isolated so that no runoff may enter any natural water body and is collected and stored for disposal off-site at a suitable licenced waste facility;

- Where possible pre-fabricated concrete headwalls will be used; and
- Suitable facilities for concrete wash water (e.g. geotextile wrapped sealed skip, container or earth bunded area) would be adequately contained, prevented from entering any drain, and removed from Site for appropriate disposal at a suitably licenced waste facility.

9.8.7 In addition, any site welfare facilities would be appropriately managed and all foul waste disposed of by an appropriate contractor to a suitably licenced facility. Any liquids exposed and / or spilt from redundant pipework / infrastructure would also be disposed of at a suitably licenced facility.

Management of Flood Risk

9.8.8 Construction Site runoff will be carefully managed across the site to avoid increasing any flood risks on Site or off Site, as well as to prevent pollution of receiving water bodies. The following measures are proposed:

- Floodplain working will be kept to a minimum; with temporary land-take required for construction including any stockpiling of materials or stripped soils to be located out of the flood plain as far as reasonably practicable or allowances made for floodplain control measures and contingency actions;
- Where construction works do impede on the floodplain works will be undertaken to ensure water flows are unobstructed and that flood risk does not increase elsewhere;
- It is expected, particularly in the vicinity of watercourses and drainage lines that shallow groundwater might be encountered during any excavations below ground level. Where groundwater is encountered suitable de-watering methods will be used to maintain a dry working area, with the water discharged in accordance with the Environment Agency's Regulation Position Statement or otherwise under a suitable Environmental Permit;
- During the construction phase, the Principal Contractor will monitor weather forecasts on a daily, weekly, and monthly basis, and plan works accordingly. For example, works adjacent the channel of any watercourse will be avoided or halted (and equipment and materials removed) where high flows or even flooding is forecast;
- The Principal Contractor will sign up to Environment Agency flood warning alerts and describe in the ERP the actions it would take in the event of a possible flood event (based on weather forecasts, flood alerts and observations on Site). These actions would be hierarchal meaning that as the risk increases the Principal Contractor would implement more stringent protection measures. This is important to ensure all workers, the construction Site and third party land, property and people are adequately protected from flooding during the construction phase;
- The ERP will be enforced from the first day of construction works through to the end of all works on site, 24 hours per day, seven days per week (i.e. if action is required on non-working days procedures and resources will be available as required by the action plan in the ERP); and
- The risk from groundwater flooding will be managed accordingly through appropriate working practices and with adequate plans and equipment in place for de-watering to ensure safe dry working environments and safe working in confined spaces (such as the provision of escape routes and banksmen to monitor works).

9.9 Built Heritage

9.9.1 Designated heritage assets within the Site will be protected from indirect/direct harm through the management of construction traffic, site hoardings etc. as necessary through the implementation measures outlined within Section 6 to 12 (i.e. control noise and vibration, site lighting, dust and construction traffic) of this CEMP.

9.9.2 In addition to measures outlined within Sections 6 to 12, the following measures would be expected to be implemented, where applicable:

- Vegetation currently to be retained and which serves as a visual screen to heritage assets adjacent to the Development (i.e. Booth's Wood), will be protected during construction using standard tree protection measures, where applicable; and
- Existing vegetation to be retained which is within scheduled areas or the curtilage of listed buildings will be protected.

Monitoring

9.9.3 No specific monitoring of the effects on the heritage assets is considered necessary, although inspections of the scheduled monuments and other heritage assets may be undertaken as part of routine Site inspections undertaken, if requested by the St. Helens.

9.10 Archaeology

9.10.1 In the event that human remains, treasure, or potentially nationally significant archaeological resource are encountered, all works at that location will cease until further instruction is provided by Clients appointed archaeologist. The Principal Contractor will inform the archaeologist immediately by telephone or in person.

9.10.2 The Principal Contractor would confirm the circumstances of the discovery in writing within 24 hours to the Clients appointed archaeologist, providing digital photographs and as much information as is available that would assist in determining the heritage significance of the discovery.

Human Remains

9.10.3 Any discovered human remains would in the first instance be left *in situ*, covered and protected. The Clients appointed archaeologist will inform the local coroner as appropriate.

9.10.4 The appointed archaeologist would obtain advice from the Ministry of Justice as to whether a licence may be required to exhume any or all remains. Where possible, preservation *in situ* would be preferred to exhumation.

9.10.5 Where possible, visible grave goods and other obvious artefacts would be recorded and removed before the end of the day of discovery, to avoid the risk of vandalism or theft.

9.10.6 All treatment of human remains would follow best practice guidance^{ii,iii}, or equivalent guidance at the time of writing.

Treasure

9.10.7 Under the Treasure Act 1996^{iv}, "treasure" is objects other than coins containing at least 10% gold or silver and at least 300 years old, coins found together (but not single coins) that contain at least 10% gold or silver, groups of 10 or more coins of other metals that are at least 300 years old, any object found associated with treasure except unworked natural objects, and any other object that would have been treasure trove before the Treasure Act.

9.10.8 Any finds made that are identified under the Treasure Act would be reported to the Client's appointed archaeologist.

Potentially significant archaeological remains

- 9.10.9 In the event that unexpected, potentially significant archaeological resource are identified during the construction phase, the employer's appointed archaeologist would be contacted immediately, as well as the Merseyside Environmental Advisory Service. The Clients appointed archaeologist would investigate, with the consultees whether preservation *in situ* is feasible.
- 9.10.10 If preservation *in situ* is not feasible, the Clients appointed archaeologist would produce an updated risk assessment method statements to include works appropriate to conduct an archaeological excavation on the Site and achieve preservation by record. A time period for archaeological recording and excavation, which would be determined in consultation with the statutory consultees, but shall not be less than 14 days.

9.11 Population and Health

- 9.11.1 Footpath 102 and Bold Loop will remain open throughout the construction period where practicable, with diversions put in place where required for public safety reasons and access. Should a temporary diversion or closure be required, agreement and consultation will be made with St. Helens. Diversions or closure undertaken during construction will be clearly advertised, and any diversionary routes will have appropriate signage so as not to lead to route uncertainty.

9.12 Climate Change

- 9.12.1 Mitigation opportunities for reducing embodied carbon are included within Section 6 to 12 of this CEMP.

Monitoring

- 9.12.2 No specific monitoring of the effects on the climate is considered necessary.

10 Site Waste Management Plan (SWMP)

10.1 Overview

- 10.1.1 This SWMP has been developed to enable the control of waste throughout the construction phases of the Development. The document has been prepared in accordance with the Site Waste Management Plan Regulations (2008), however, the Regulations were repealed on the 1st of December 2013 by The Environmental Noise, Site Waste Management Plans and Spreadable Fats etc. (Revocations and Amendments) Regulations 2013.
- 10.1.2 The SWMP Regulations' (2008) aim was to make the construction industry more sustainable by ensuring that those responsible for development projects are aware of the waste being produced so that it can be reduced. Although no longer required by legislation, it is recognised that an SWMP would support the identification of actions to minimise construction waste from the Development being sent to landfills. Accordingly, the SWMP will be implemented by the Principal Contractor, once appointed, as an internal waste management and monitoring tool, and as a means of implementing best practice.
- 10.1.3 This SWMP uses the legal definition of waste as defined in the 2008 Waste Framework Directive (2008/98/EC);

“Any substance or object which the producer discards or intends or is required to discard”.

- 10.1.4 This definition of waste also covers substances and objects that fall outside of the commercial cycle, in particular, items that are sold or taken off-Site for recycling are wastes, as they require treatment before they can be resold or reused. Therefore, waste includes, but not limited to, surplus spoil, scrap, recovered spills, unwanted surplus materials, packaging, office waste, wastewater, broken, worn-out, contaminated or otherwise spoiled plant, equipment and materials, and general waste.

10.2 Waste Management Procedures

General

- 10.2.1 Waste produced during all construction activities on Site will be subject to the 'Duty of Care' under the Environmental Protection Act (1990). It is the joint responsibility between the Principal Contractor and the Client to ensure that waste produced on-site is disposed of in accordance with legislation.
- 10.2.2 The transportation of waste from Site will comply with the 'Duty of Care' requirements. This includes ensuring waste is transported by registered waste carriers to appropriately licensed sites for processing or disposal. It also involves ensuring legally compliant waste transfer note documentation has been completed for each removal of waste from Site, which is kept for a minimum of three years.
- 10.2.3 The Principal Contractor will audit waste carriers and disposal facilities and maintain documentary evidence that these requirements are being met. A register of waste carriers, disposal sites (including transfer stations) and relevant licensing details will be produced and maintained on Site.
- 10.2.4 Materials that can be beneficially used in the future development of the Site will be segregated directly on Site.

Storage at Construction Site Compounds

10.2.5 The construction Site compound will incorporate a designated Waste Storage Area (WSA). This will be surfaced with an impermeable barrier, such as hardstanding/tarmac or using impermeable membranes, and the location of any existing drainage will be noted.

10.2.6 At the WSA, waste will be segregated into the following as a minimum:

- Recyclable Materials – Wood, Metals, Paper/Cardboard, Glass, Plastic;
- Plasterboard;
- Batteries;
- Aerosols;
- General Waste;
- Hazardous Solid Wastes; and
- Hazardous Liquid Wastes.

10.2.7 The following waste management procedures will be implemented:

- All skips will be enclosed and lockable to ensure no waste is allowed to escape;
- All containers for waste storage shall be clearly labelled using a colour coding system so that users know what wastes can be placed in each container. Waste storage skips shall be appropriately colour coded system;
- Lockable storage will be provided for all hazardous waste;
- All waste containers will be sited at least 20m away from watercourses, ditches and other areas of environmental sensitivity;
- Liquid wastes will be stored in containers and stored within a suitable bunded area, or otherwise provided with secondary containment;
- Separate containers will be provided for each type of hazardous waste; and
- Portable toilet facilities on Site (Portaloos etc) will be emptied by the facility provider as per their service agreement.

Non-Hazardous Waste Management

10.2.8 Non-hazardous waste will be removed and placed into open waste bins located within WSA. Non-hazardous wastes will consist of, but not limited to:

- Fixtures and fittings;
- Ferrous and non-ferrous materials;
- Plaster board;
- Waste electronic and electrical equipment;
- Glass;
- Wood;
- Paper;
- Plastic; and
- Food waste.

10.2.9 All generated waste will be sorted for reuse, recycling or disposal, and placed into their respective storage areas. All non-hazardous waste that is not suitable for reuse on Site will be loaded out onto waste trucks

from the registered waste contractor, and once full, transported to a licensed recycling centre or nominated landfill site.

Hazardous Waste Management

- 10.2.10 Where any hazardous waste is to be handled for disposal this shall be carried out in accordance with developed risk assessments, and where a potential hazardous waste cannot be identified then a waste management company or consultant will be employed to determine what the substance is, the required control measures for handling it, means of transportation and method of disposal.
- 10.2.11 All identified hazardous waste will be removed and placed into separate secure and sealed waste bins/skips which will be located within their own designated area within the WSA, which is restricted from public access.
- 10.2.12 A maximum of 80 cubic meters of hazardous waste shall be permitted to be stored on Site at any given time.

Waste Carriers

- 10.2.13 All waste generated on the project shall be dealt with in accordance with legal requirements. Each waste carriers licence details for each waste stream will be recorded by the Principal Contractor's Waste Champion (WC) and appended to the Site Waste Management File (SWMF).

Waste Transfer Notes – All Waste

- 10.2.14 All movements of waste from Site must be accompanied by a Waste Transfer Note (WTN), which will detail specific information. The Principal Contractor's WC or other competent person will check that each WTN contains the following:
- The name of the person receiving the waste and what they are authorised to do with that waste as a registered waste carrier can only transport waste;
 - Type of waste produced;
 - The 2007 Standard Industrial Classification (SIC) code (2003 SIC if hazardous waste);
 - The six-digit European Waste Catalogue (EWC) number;
 - Address of the producing site and details of the waste producer;
 - Waste carrier's details including WCL number;
 - Quantity of waste;
 - How it is contained (e.g. 8 yard skip);
 - Address of the receiving site (e.g. landfill) and the Environmental Permit or Exemption No. Associated with the receiving site;
 - The date to which the WTN applies;
 - If the material is non-hazardous waste and it is destined for disposal directly to landfill, pre-treatment must have been applied and a declaration detailing treatment applied appended to the WTN; and
 - A declaration that the waste has been treated in line with the requirements of the waste hierarchy.
- 10.2.15 The WC or other competent person signing the WTN shall ensure all WTNs are placed in the SWMF and kept for a minimum period of three years. The WC or other competent person signing the WTN shall additionally ensure that the waste carrier is using a suitable vehicle with adequate, covered containment for the waste.

Waste Transfer Notes – Hazardous Waste

10.2.16 A Hazardous Waste Consignment Note (HWCN) shall be completed for every movement of hazardous waste.

10.2.17 Prior to signing, the WC or other competent person shall ensure that the HWCN includes:

- Hazardous Waste Premises Code (for sites in England and Wales only);
- Consignment note code;
- SIC Code;
- Name and address of site from which waste is being moved;
- Date of removal;
- Type of waste produced, including the quantity and the EWC code;
- The name of the person who is receiving the waste and what they are authorised to do with that waste e.g. a registered waste carrier can only transport waste; and
- A final disposal site that is authorised to accept the waste.

Disposal Sites

10.2.18 When obtaining quotations for waste disposal contracts, where possible, the Principal Contractor will consider the implications of long distance travel in terms of health and safety risk, commercial terms and increased emissions from vehicles. Wherever possible, contracts should be awarded as locally as possible.

10.2.19 All non-hazardous and hazardous wastes should be pre-treated prior to disposal to landfill. The methods of pre-treatment will enable the waste to meet the ‘three-point test’:

- It must be a physical, thermal, chemical or biological process – including sorting;
- It must change the characteristics of the waste; and
- It must do so in order to:
 - reduce its volume, or
 - reduce its hazardous nature, or
 - facilitate its handling, or
 - enhance its recovery.

10.2.20 Source segregation or sorting is seen as a pre-treatment option and as such can be applied to waste generation on Site including general waste and arisings. A declaration stating the pre-treatment method applied to the waste will be appended to any WTN for non-hazardous waste being disposed of to landfill, and will accompany the WTN.

Fly-Tipping

10.2.21 Fly-tipping of waste on or adjacent to ongoing construction projects is prohibited. Any waste carrier found to be fly-tipping will have their contract terminated immediately and reported to the appropriate authorities.

10.2.22 Should waste be fly-tipped onto the Site, the Principal Contractor has a ‘Duty of Care’ to ensure it is dealt with safely and disposed of correctly even though not the producer of the waste.

Burning of Waste

10.2.23 No burning of any waste will be permitted on Site or at the Site compound/storage areas.

Waste Documentation

10.2.24 All waste documentation will be retained at the main Site compound, and following completion of the project at the Principal Contractor's head office. This includes:

- SWMP (2 years after end of construction);
- Waste transfer documentation (2 years for WTNs and 3 years for hazardous waste consignment notes);
- Copies of any exemptions or permits; and
- Copies of waste carrier and disposal site licences.

11 Air Quality and Dust Management Plan (AQDMP)

11.1 Overview

- 11.1.1 As identified within ES Chapter 6: Air Quality, the main source of potential adverse dust impacts associated with the development of the Site are due to particulate emissions which are deposited as dust particles and PM₁₀ and PM_{2.5} arising from construction activities.
- 11.1.2 Therefore, a Site wide scheme for monitoring of dust levels is proposed, the measures for dust control are set out within this AQDMP with general provisions and specific mitigation measures to reduce potential impacts on local air quality and dust from activities. It also provides information on the monitoring to be undertaken during development to ensure that mitigation measures are suitable and effective.
- 11.1.3 As outlined within ES Chapter 6: Air Quality, the air quality effects listed within Table 11.1 are not considered to give rise to significant effects as a result of the construction of the Development and therefore specific mitigation measures are not included within this AQDMP. However, mitigation measures included under 'General Measures' would ensure that no significant effects would arise.

Table 11.1: Construction air quality effects not considered significant

Potential impacts on local air quality regarding changes in concentrations of nitrogen dioxide (NO ₂), particulate matter (PM) that have a diameter of less than 10 micrometers (PM ₁₀) and less than 2.5 micrometers (PM _{2.5}) at existing receptors because of exhaust emissions arising from construction plant and non-road mobile machinery.
Road vehicle exhaust emissions generated during the construction phase.
Potential impacts at ecological designations regarding dust nuisance and changes in concentrations of NO ₂ , PM ₁₀ and PM _{2.5} due to exhaust emissions arising from construction activities.
Potential impacts regarding dust nuisance in regard to demolition activities during the construction phase as demolition activities are required.

- 11.1.4 Particulates are referred to within this document as follows:
- Dust – Defined as all particulates up to 75 µm in diameter (according to BS6069) and comprising both suspended and deposited dust;
 - PM₁₀ – Comprising coarse particles (2.5 -10 µm in diameter) which are primarily from non-combustion sources;
 - PM_{2.5} – Fine particles (<2.5 µm) from both non-combustion and combustion sources; and
 - PM₁ – Ultrafine particles (<1 µm) primarily from combustion processes.
- 11.1.5 This AQDMP provides a mechanism to judge the effectiveness of any in-use dust control techniques and therefore it should be reviewed regularly. The AQDMP will outline the following components:
- Potential air quality impacts;
 - Mitigation measures; and
 - Management, reporting and review.

11.2 Potential Air Quality Impacts

- 11.2.1 Four Air Quality Management Areas (AQMAs) were declared by St. Helens within their administrative area. The Site is not situated within a St. Helens AQMA. Two AQMAs were declared by Warrington BC within their administrative area. The north east corner of the Site is bounded to the Warrington BC 'Motorway

AQMA' which is described as; *"A 50 m continuous strip on both sides of the M6, M62 and M56 corridors, due to the potential exceedances of the annual mean NO₂ objective."*

11.2.2 As such, there is potential for the AQMA's to be indirectly affected during construction activities.

11.2.3 Construction activities that have the potential to generate and/or re-suspend dust and particulate matter include:

- Site clearance and preparation;
- Preparation of temporary access/egress to the Site and haulage routes;
- Earthworks;
- Materials handling, storage, stockpiling, spillage and disposal;
- Movement of vehicles and construction traffic to, from and within the application Site confines including excavators and dumper trucks);
- Construction of the Development and additional road surface and car parking to facilitate the Development;
- Internal and external finishing; and
- Site landscaping after completion.

11.2.4 The main potential air quality effects that may arise from those activities are:

- Dust deposition, resulting in the soiling of surfaces; and
- Dust plumes, affecting visibility and amenity.

11.2.5 Dust generation is Site-specific. It must be noted that the level and distribution of construction dust emissions will vary according to factors such as the type of dust, duration and location of dust-generating activity, weather conditions and the effectiveness of suppression measures. Dust nuisance is normally experienced as a result of dust deposition upon clean surfaces such as windows, car, laundry and environmental receptors.

11.3 Construction Risk Assessment

11.3.1 As part of the Air Quality Assessment (AQA), which formed part of the ES, submitted with the hybrid planning permission, a construction phase dust assessment was produced to determine the dust emission magnitude for the emission sources mentioned above. The construction phase dust assessment was completed in line with Institute for Air Quality Management, 2014, Guidance on the Assessment of Dust from Demolition and Construction' ('IAQM guidance'), with the extent of the study area being up to 350 m from the Site boundary and within 50 m of the routes used by construction vehicles up to 500 m from the Site entrance(s) for human receptors.

11.3.2 The construction phase dust assessment determined the risk class for the Development as follows:

Earthworks

11.3.3 Earthwork activities will be required in all phases of the redevelopment of the Site. Earthworks can include soil-stripping, ground-levelling, excavation and landscaping, all of which can potentially generate dust. The movement of vehicles and plant around the Site which are involved in earthworks can lead to dust emissions and re-suspension of dust during movements. With no mitigation in place the potential dust emission magnitudes was considered to be 'Large'.

Construction Activities

- 11.3.4 Construction activities required will vary from each activity undertaken during works. However, numerous construction works can potential generate dust, examples include; vehicle and plant movement, on-site concrete batching, and stockpiling activities. With no mitigation in place the potential dust emission magnitudes was considered to be 'Large'.

Track-out

- 11.3.5 Construction vehicles moving to and from the Site over unpaved ground can transport and deposit dust and dirt onto the public road network. Once deposited on the public road network it can then be re-suspended by other vehicles using the network and transferred further afield. With no mitigation in place the potential dust emission magnitudes was considered to be 'Large'.
- 11.3.6 However, the sensitivity of the study area, and its receptors, was assessed as being 'Low' for Earthworks, Construction Activities and Track-out. As such, the construction phase dust assessment has determined the Site as being of 'Low Risk' for construction activities for the Development.

Mitigation Measures

- 11.3.7 All works will be undertaken in accordance with IAQM guidance. A number of mitigation methods will be implemented to minimise the nuisance and impact arising from dust and maintain air quality levels, which are outline below.

11.4 General Measures

Site management

- Contractors will be instructed to use all reasonable means available to keep dust to a minimum;
- Avoid dry sweeping of large areas;
- All staff will receive appropriate training on the AQDMP;
- Wind speed and direction must be taken into account when organising on Site operations;
- The use of damping down equipment must be employed where dust may be generated to control dust at source. Water runoff from dust suppression activities will be controlled;
- Materials with the potential to produce dust will be stored away from the Site boundaries;
- Undertake daily on-site visual inspection to monitor dust, record inspection results;
- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner and record the measures taken;
- Make the complaints log and/or daily logs available to the local authority, when asked;
- Take appropriate remedial action in a timely manner with a record kept of actions taken;
- Dust Site inspections must be increased in particularly hot and windy conditions; and
- Record any exceptional incidents that cause dust and/or air emissions, both on- or off-site and action taken to resolve the situation in the log book.

Site maintenance

- As far as possible, plan Site layout so that machinery and dust causing activities are located away from sensitive receptors;
- Where practicable, erect solid screens or barriers around dusty activities or the Site boundary that are at least as high as any stockpiles on Site;
- Avoid Site runoff of water or mud;

- Burning of any material is prohibited anywhere on-site;
- Remove materials that have a potential to produce dust from Site as soon as possible, unless being re-used on Site; and
- Cover, seed or fence stockpiles to prevent wind erosion of materials.

Transportation

- Select suitable haul routes away from sensitive areas, if possible;
- Reduce the width of haul roads (while still allowing two-way traffic) to minimise surface area from which dust may be produced;
- All vehicles will switch off engines when stationary and not involved in construction activities;
- Material deliveries and vehicle access to the Site will be timed to avoid the need to queue outside the Site prior to opening or whilst other deliveries are completed;
- Vehicles on Site will use hard standing areas for deliveries and removal of material(s) from Site. These surfaces will be kept clean to avoid the build up of dust and regularly damped down;
- All vehicles carrying loose or potentially dusty materials to and from the Site will be covered;
- All vehicles and plant will be well maintained and serviced with accurate records available for inspection;
- All vehicles must comply with current emission standards; and
- Impose and signpost a maximum speed limit of 15mph on surfaced and 10mph on un-surfaced haul roads and work areas within the Site.

Construction

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques, such as water sprays or local extraction;
- An adequate water supply should be provided on Site for effective dust suppression, using non-potable water where possible and appropriate;
- Before concrete pours, vacuum dirt in form work rather than blowing it out;
- Use enclosed chutes and conveyors and covered skips; and
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.

11.5 Specific Measures

Earthworks

- Minimise drop heights when unloading and loading material into vehicles;
- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable; and
- Use hessian or mulches where it is not possible to re-vegetate or cover topsoil as soon as practicable.

Construction

- Locate stockpiles of fine grained material out of the wind (or provide wind breaks) to minimise the potential for dust generation;
- Stockpiles and mounds must be at an angle no greater than the natural angle of repose of the material, and stockpiles/mounds must not have sharp changes in shape;
- Prevention of wind-borne dust from stockpiles/mounds should be achieved through suitable and sufficient use of water sprays, wind barriers, and protective fences of a similar size and height to the stockpile/mound;
- Short-term storage of stockpiles/mounds should be enclosed or kept under sheeting;

- Bulk cement and other fine powder materials should be delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery; and
- Smaller supplies of fine power materials should be sealed after use and store appropriately to prevent dust.

Plant and Machinery

- All Site plant should have upward facing exhaust and radiator cowls to reduce the generation of dust;
- Minimise on-site transportation distances;
- Install hard surfaced haul routes, where practicable;
- Water sprays to moisten unpaved and water-assisted dust sweepers on paved on-site haulage routes to be implemented;
- Low emission vehicles will be used where possible, with plant fitted with catalysts filters or similar devices;
- The discharge from screens onto conveyors or into other equipment should be enclosed as far as is practicable;
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use the fine water sprays on such equipment wherever appropriate; and
- Deposits of dust on external parts of the plant should be cleaned off at the end of each working day in order to minimise the potential for wind entrainment.

Track-out

- Use water-assisted dust sweeper on the entrance/exit points and access/local roads to remove, as necessary, any material tracked out of the Site;
- Vehicles entering and leaving the Site should be covered to prevent escape of materials during transport;
- Inspect internal haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;
- Record all inspections of internal haul routes and any subsequent action in a Daily Site Environmental Form (DSEF);
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the Site); and
- Provide an adequate area of hard surfaced road between the wheel wash facility and the Site exit, wherever Site layout permits.

11.6 Management, Reporting & Review

- 11.6.1 This AQDMP is intended to be used by construction staff and contractors on a day-to-day basis. The nominated person, normally the Works Manager, in conjunction with the Environmental Manager/Representative will be responsible for the management, control and implementation of the AQDMP on site. The full list of roles and responsibilities for all members involved during the redevelopment of the Site are outlined within Section 4 of this CEMP.
- 11.6.2 Scheduled monitoring of environmental performance and formal compliance auditing will be conducted throughout construction activities. The frequency of Site inspections should be increased when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. The monitoring programme for the redevelopment of the Site is outlined in Section 7 of the CEMP which includes daily, event and monthly based inspections. Monitoring of this AQDMP will be included within these inspections and reported upon in monthly environmental monitoring reports.

12 Soil Management Plan (SMP)

12.1 Overview

- 12.1.1 This SMP sets out the principles and procedures for general good practice for the handling, storage and reinstatement of soil to be used on the Development. The Site is largely under agricultural use and contains large reserves of topsoil and subsoil. Therefore, as part of the measures to manage environmental impacts, it is the intention to recover, store and re-use the existing topsoil and subsoil reserves for the soft landscape scheme.
- 12.1.2 It is envisaged that following the earthworks phases, that the new landscape areas will be constructed on new (reinstated) soil profiles which are constructed entirely using stored topsoil and subsoil. The soil within the Development is of 'multi-purpose' grade in terms of BS3882:2015 'Specification for Topsoil' and therefore would be suitable for re-use for landscaping provided it is handled appropriately.
- 12.1.3 Therefore, the quality and quantity of soil within the Development will be maintained by implementing appropriate techniques for stripping, storing and re-use.
- 12.1.4 This SMP has been prepared in line with the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites^{vi} (Defra, 2009) (CoCP), which is the overarching guidance governing the management of soil in construction. The aim of the CoCP is to assist everyone involved in the construction sector with the protection and enhancement of the soil resource. Additional consideration has been given to British Standard: Specification for Topsoil (BS 3882:2015) and British Standard: Specification for subsoil and requirements for use (BS 8601:2013).
- 12.1.5 Mitigation has also been identified with reference to the Good Practice Guide for Handling Soils (MAFF, 2000), the British Standard: Specification for Topsoil and Requirements for Use (BS 3882: 2015) and the British Standard: Specification for Subsoil and Requirements for Use (BS 8601:2013).

12.2 Potential Impact on Soils

- 12.2.1 Many general construction activities have the potential to damage soils. These include:
- Compacting soils through trafficking of plant or vehicles;
 - Mixing soil with construction materials such as cement, aggregate and, lime-stabilisation; and
 - Mixing different qualities of soil during handling and storage, including subsoil with topsoil.
- 12.2.2 Failure to protect soils during disturbance can lead to their degradation with consequential environmental impacts both on-site and off-site, such as:
- Soil erosion;
 - Loss of soil organic matter leading to loss of nutrients and a decline in soil fertility;
 - Soil compaction leading to loss of soil structure and permeability to water (waterlogging) and restricted aeration and rooting potential;
 - Loss of soil biological activity;
 - Poor re-establishment of vegetation; and
 - Visual impact of slope failure or soil erosion (bare soil surfaces).

12.3 Soil Management Operations

General Principals for Soil Handling

12.3.1 To minimise the risk of damage to soil structure, the following main rules must be observed during all soil handling tasks:

- No trafficking of vehicles/plant or materials storage to occur outside demarcated working areas;
- No trafficking of vehicles/plant on reinstated soil (topsoil or subsoil);
- Only direct movement of soil from donor to receptor areas (no triple handling and/or ad hoc storage);
- Soil handling methodology to be determined based upon soil moisture content. Where practicable soil handling when soil moisture content is above the lower plastic limit (the moisture content at which soil begins to behave as a plastic material and the soil is deemed too wet to handle without causing damage to the soil structure), should be avoided;
- Where soils are wet or damp, to minimise compaction, soils should be handled using excavators rather than dozers;
- No handling of soils to be carried out during periods of prolonged, heavy rainfall, where possible;
- No mixing of topsoil with subsoil, or of soil with other materials;
- Soil only to be stored in designated soil storage areas;
- Plant and machinery only work when ground or soil surface conditions enable their maximum operating efficiency (i.e. when machinery is not at risk of being bogged down or skidding causing compaction or smearing);
- All plant and machinery must always be maintained in good working condition to ensure that the soil is stripped correctly;
- Low ground pressure and tracked vehicles should be used where possible when working directly on bare or vegetated soils; and
- Daily records of operations undertaken, and Site and soil conditions should be maintained during soil handling activities.

Pre-Construction Site Preparation

12.3.2 Pre-construction Site preparation includes the removal of vegetation; minimising working areas and vegetation clearance within designated sites and areas of protected habitat to only that essential for works as discussed within this CEMP; and the clear marking and signposting of access tracks and all areas to remain undisturbed during construction activities.

12.3.3 Soil storage areas for different types of topsoil and subsoil will be identified prior to construction activities to avoid the mixing of these resources. In some locations, the excavated soil profile may contain more than one distinct subsoil horizon (i.e. upper and lower subsoil). Where excavations are required to extend below the upper subsoil, due to the different properties of the horizons, they must be excavated and stored separately.

12.3.4 To reduce the likelihood of anaerobic conditions developing within the topsoil stockpile prior to the soil strip commencing, the topsoil surface should either be bare, under stubble, or have only short surface vegetation. To achieve short surface the area should be mown with all cuttings disposed of off-site to a suitably licensed facility. Cuttings must not be added to or mixed with the stripped soil, as the presence of excessive amounts of plant material in the stockpile will be detrimental to its quality due to its putrefaction (rotting) in anaerobic conditions.

Soil Stripping

- 12.3.5 The soil stripping method should follow the guidance set out in Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. This method uses back-acting excavators, generally fitted with toothed buckets, in combination with dump trucks to strip the topsoil and subsoil (upper and lower where identified) progressively down to the sub-base (basal layer).
- 12.3.6 Topsoil can be stored on either topsoil (of the same type) or on subsoil. Subsoil can only be stored on subsoil and therefore the topsoil must be stripped from subsoil storage areas in advance of subsoil stripping.
- 12.3.7 Where soils are to be stored away from the excavation area, it is expected that multiple excavators and transport vehicles will be required for soil stripping operations. The size of the earthmoving plant to be used will be tailored to the size of the area to be stripped and the space available within the working area. The use of a long reach excavator, which will minimise the need for movement across the soil surface, and the use of tracked vehicles will further reduce soil compaction.
- 12.3.8 During the strip, the excavator should stand on the surface of the topsoil, digging the topsoil to the required depth and forming the stockpile or loading it into the transport vehicle (dump truck). Following topsoil removal, the subsoil can be excavated (if required).
- 12.3.9 Topsoil should be recovered to the full width of the strip without contamination with the subsoil. The boundary between the topsoil and subsoil is usually very clearly visible through a change in colour (the topsoil being much darker due to greater organic matter content). However, this may not always be the case, as oftentimes the topsoil gradually transitions into subsoil, and their colours are similar.

Stockpiling

- 12.3.10 Soil stockpiling will be required during construction activities in order to enable the reuse of the soil resource, limit soil damage from weather and other construction activities and soil loss.
- 12.3.11 A pre-determined stockpile-area will be selected prior to the start of construction. Topsoil and subsoil will be stockpiled separately. Soils will not be stockpiled within 8m of surface water features, will not block surface runoff pathways, and will preferably be located in Flood Zone 1. In addition, sufficient gaps will be left in/between stockpiles so as to not impede flood flow pathways.
- 12.3.12 The area that is to be used for storing the topsoil should be cleared of vegetation, in-situ topsoil and any waste arising from the development e.g. building rubble and fill materials. Stockpiles must be appropriately marked out and clearly signed to ensure that they are easily identifiable for reinstatement.
- 12.3.13 Stockpiled soil must not be vulnerable to compaction nor erosion; must not cause pollution to surrounding watercourses; and must not increase flood risk to the surrounding area.
- 12.3.14 The topsoils should be stored temporarily prior to re-spreading into landscape areas when they become available. The topsoils should be stored in an area of the Site where they should not interfere with other Site operations so that they can be left undisturbed during other construction activities.
- 12.3.15 Generally, topsoil stockpiles should not exceed 4 m in height and subsoil stockpiles should not exceed 5m in height.
- 12.3.16 There are two options for stockpiling the topsoil depending on the moisture content and plasticity. These are dry soil stockpiling and wet soil stockpiling. These methods are each considered and detailed below.

Dry Soil Stockpiling

12.3.17 Stockpiles are formed by loose-tipping followed by shaping to form a level surface on top of the pile and uniform gradients down the sides. During forming, the top and sides are smoothed with the bottom of the excavator bucket along the stockpile surface so that they can shed water more easily. This ensures that entry of water into the stockpile is limited and that the stored soil remains dry; and helps prevent erosion and ponding.

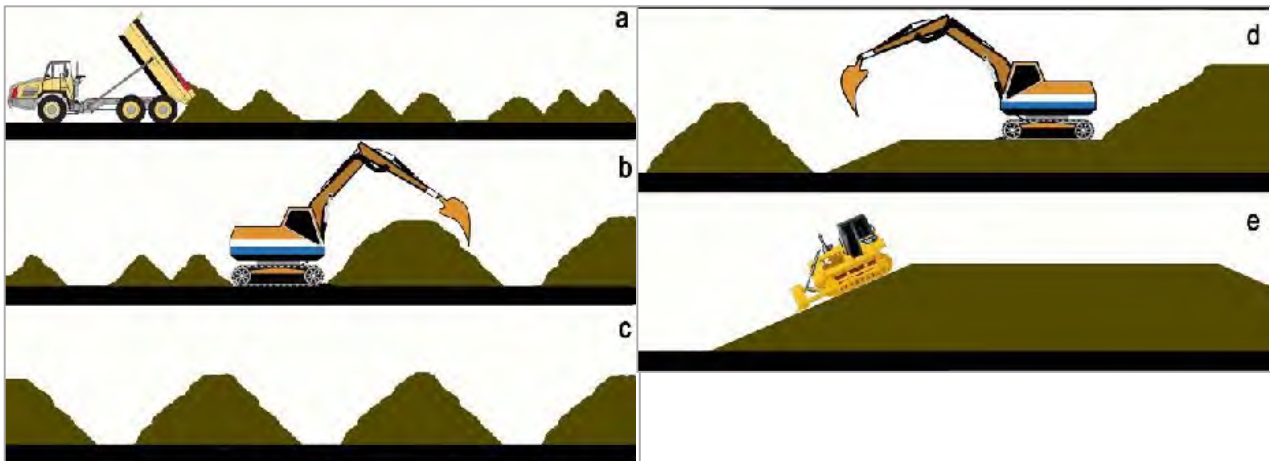
12.3.18 The natural angle of repose of a soil, and hence the maximum gradient of the stockpile sides, depends upon its texture and moisture content. The maximum achievable slope angle is 40° however, shallower angles are often more appropriate. With the exception of stockpiles with a lifetime of less than 3 months, all stockpiles will be seeded to reduce runoff, those in place for shorter durations will be covered to reduce the risk of silty runoff. As a result, a maximum slope of 25° (1 in 2) is considered appropriate for seeded soil stockpiles.

Wet Soil Stockpiling

12.3.19 Stockpiles are formed by loose-tipping in a line of heaps to form a 'windrow' up to a maximum height of 2m. Additional windrows, as required, can be created, spaced sufficiently apart to allow tracked plant to gain access between them (Figure 12.1 (a – c)).

12.3.20 Once the soil has dried out and is non-plastic in consistency (typically after several weeks of dry and windy or warm weather), the windrows can be combined to form larger stockpiles, as described under the dry stockpiling method above, using a tracked excavator. The surface of the stockpile is then regraded and compacted (Figure 12.1 (d-e)).

Figure 12.1: Wet Stockpiling Method



Source: Defra, (2009); 'Construction Code of Practice for the Sustainable Use of Soils on Construction Sites'

12.3.21 This technique minimises the amount of compaction caused by stockpiling as well as maximising the surface area of the stockpile to enable soil to dry out. The reconditioning operation would be timed during the summer months (May to September), to allow enough time for the topsoil to dry out effectively.

Stockpile Maintenance

12.3.22 It is expected that the soil will be stored for a period of more than three months. Therefore, the stockpiles should be seeded with an appropriate low maintenance grass/clover mixture. Seeding of stockpiles is required to protect the soil against erosion, minimise soil nutrient loss, and maintain soil biological activity. Appropriate seeding will also help prevent colonisation of the stockpile by weeds, including noxious / injurious weeds, that could spread seed onto adjacent land.

- 12.3.23 In the period when grass cover is establishing on the stockpiles, and where required during dry weather, the stockpiles will be sprayed with water to prevent wind erosion (generation of dust) and to ensure that the seeds establish.
- 12.3.24 The stockpile vegetation cover is to be managed to prevent the spread of seeds from the stockpile onto adjacent land.
- 12.3.25 The condition of the stockpiles will be regularly monitored. If rainwater gathers on the stockpile surface or in areas directly adjacent to them, drainage pathways to soakaway areas away from the stockpile should be provided.

Reinstatement

- 12.3.26 Soil reinstatement is the reverse of soil stripping with topsoil being replaced over subsoil. The specifications for reinstated soil profiles are to be determined on a location by location basis. Care must be taken to ensure that soil horizons are replaced to the correct thickness (with an allowance of up to 20% to allow for settlement).
- 12.3.27 In most locations, direct excavation and reinstatement of the soil from the stockpiles using a long-reach back-acting excavator will be possible. In this method, the subsoil will be replaced first, with the excavator travelling on the subsoil and gradually taking the topsoil from the stockpile, and depositing it on the subsoil. The deposition is to be carried out by loose tipping and a toothed digger bucket is to be used.
- 12.3.28 Prior to topsoil placement, subsoil decompaction will be required. For the decompaction to be effective, the moisture content of the soil must be below the lower plastic limit, so that the soil is dry enough to shatter and for fissures to be created.
- 12.3.29 Soil replacement will follow the methodology set out by Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.
- 12.3.30 Surplus soils will be disposed of in a sustainable manner – as close to the Site as possible and to an after use appropriate to the soil's quality, in accordance with the Code of Construction Practice for the Sustainable Use of Soils on Construction Sites.

12.4 Management, Reporting & Review

- 12.4.1 This SMP is intended to be used by operational staff and contractors on a day-to-day basis. The nominated person, normally the Works Manager, in conjunction with the Environmental Manager/Representative will be responsible for the management, control and implementation of the SMP on Site. The full list of roles and responsibilities for all members involved during the redevelopment of the Site are outlined within Section 4 of this CEMP.
- 12.4.2 Scheduled monitoring of environmental performance and formal compliance auditing will be conducted throughout construction activities. The monitoring programme for the redevelopment of the Site is outlined in Section 7 of the CEMP which includes daily, event and monthly based inspections. Monitoring of this SMP will be included within these inspections and reported upon in monthly environmental monitoring reports.

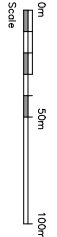
Appendix A: Unit 1 detailed drawings

THE DRAWING IS NOT TO BE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT. THE ARCHITECT'S LIABILITY IS LIMITED TO THE DESIGN OF THE BUILDING AND THE ARCHITECT'S LIABILITY IS LIMITED TO THE DESIGN OF THE BUILDING. THE ARCHITECT'S LIABILITY IS LIMITED TO THE DESIGN OF THE BUILDING. THE ARCHITECT'S LIABILITY IS LIMITED TO THE DESIGN OF THE BUILDING.



Schedule of Accommodation

Domestic Office	823,725 sq.ft	77,004 sq'
Three Storey Office	48,287 sq.ft	4,488 sq'
Start screen 6.00m / 19.68ft	878,012 sq.ft	81,570 sq'
Overall total	578,938 sq'	53,538 sq'
inc. Data and Parking	578,938 sq'	53,538 sq'
Car parking	168,938 sq'	15,638 sq'
Cycle parking	48,938 sq'	4,538 sq'
Motorcycle parking	48,938 sq'	4,538 sq'



- G 31-07-20 Balance ponds amended. Km/
- F 24-08-20 Footway/cycleway updated. and 3m
- E 23-04-20 Footway/cycleway updated. 3m
- D 20-04-20 Footway/cycleway updated. 3m
- C 11-02-20 Scale bar added. Km/
- B 20-01-20 Scale bar added. Km/
- A 18-12-19 Scale bar added. Km/



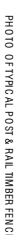
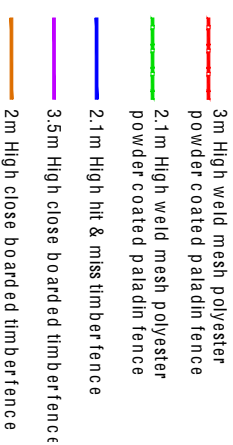
GPO ARCHITECTS
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Omega St Helens Ltd/
TJ Morns Ltd

Unit 1
Omega Zone 8
St. Helens

Proposed Site Layout Plan
UNIT 1 DWG. 1

\$-6385-181 G

[illegible]

q|a architects llp
1170 Elliott Court
Herald Avenue
Coventry Business Park
COVENTRY CV5 6UB
E: q|a@q|a-architects.com
W: www.q|a-architects.com
T: 024 7625 3200
F: 024 7625 3210

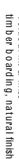
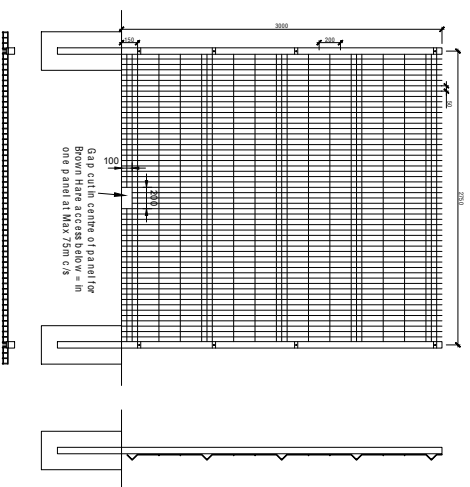
Omega St Helens Ltd /
TJ Morris Ltd

Unit 1
Omega Zone 8
St. Helens

Fencing Details
UNIT 1 DWG. 14

scale	various A1	drawn	mp
checked	sp	date	12-12-19

6385-191 H



PLAN

Scale 1

Typical detail for 2.1m high
timber hit & miss fence to
rear of pallet storage

Do not scale from this drawing.

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.

RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO. CONSTRUCTION

NOTE THAT A COMPETENT CONTRACTOR WOULDNT ALREADY BE AWARE OF:

HAZARD/RISK: A COMPETENT CONTRACTOR WOULDNT ALREADY BE AWARE OF:

FOR INFORMATION RELATING TO USE, CLEANING AND MAINTENANCE SEE THE HEALTH AND SAFETY FILE.

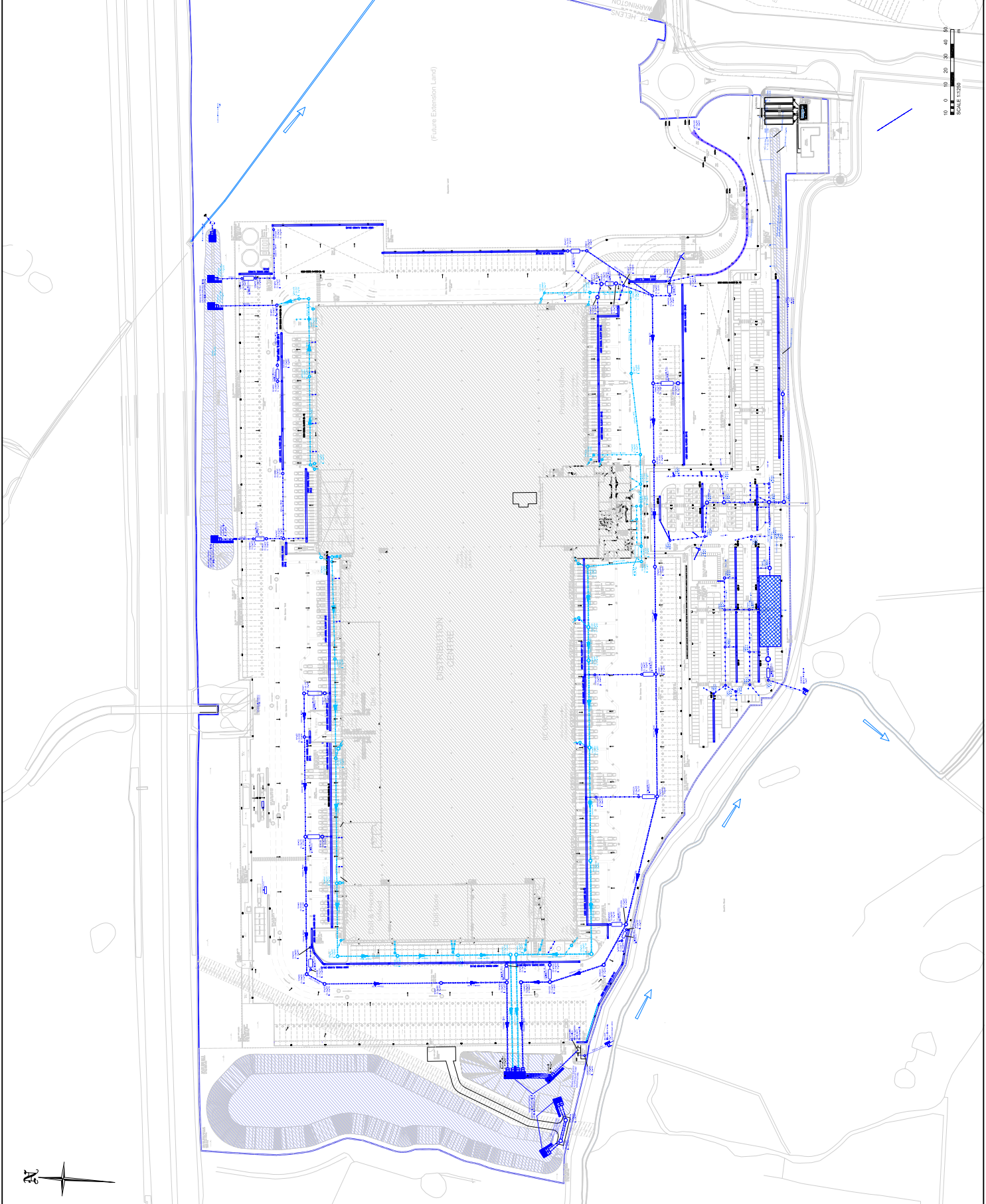
IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

NOTES

- PIPE SIZES AND SEPARATORS SHOWN ARE INDICATIVE AND ARE SUBJECT TO CONFIRMATION.

KEY

- BYPASS SEPARATOR
- SURFACE WATER DRAINAGE
- LINEAR DRAINAGE
- CHANNEL DRAINAGE



No.	Date	Description	Drawn	Check	Approved
E		DESIGN UPDATED TO REF THE LATEST ARCHITECTS SITE LAYOUT	PAU	DT	DT
D		WORK REFERRED TO SURVEY ARCHITECTS LAYOUT	WOF	PAU	DT
C		PLAN DRAINAGE ADDED TO PLANNING CONSULTANTS COMMENTS	WOF	PAU	DT
B		PLAN DRAINAGE ADDED TO PLANNING CONSULTANTS COMMENTS	WOF	PAU	DT
A		PLAN DRAINAGE ADDED TO PLANNING CONSULTANTS COMMENTS	WOF	PAU	DT

FAIRHURST

CRANE HUBS
CRANE WEST
BARNET
TEL: 01717 905 029
FAX: 0204 301 4471

TI MORRIS

Project Ref: **OMEGA ZONE 8**
ST. HELENS
NEW DISTRIBUTION HUB

Drawing Title: **TJM PLOT**
SURFACE WATER
DRAINAGE LAYOUT

Scale of A3:	Scale:	Drawn:	Check:	Approved:
1:1250	1:1250	PAU	DT	DT
NS	NS	PAU	DT	DT
Date:	Date:	Date:	Date:	Date:
03.12.2019	03.12.2019	04.12.2019	04.12.2019	04.12.2019
Drawing No:	Revision:			
131504	UNIT 1 DWG.24			E

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SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDOUSNESS NORMALLY ASSOCIATED WITH THE TYPES OF WORK
DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.

RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO.
CONSTRUCTION

NOTE THAT A COMPETENT CONTRACTOR WOULDN'T ALREADY BE AWARE OF:

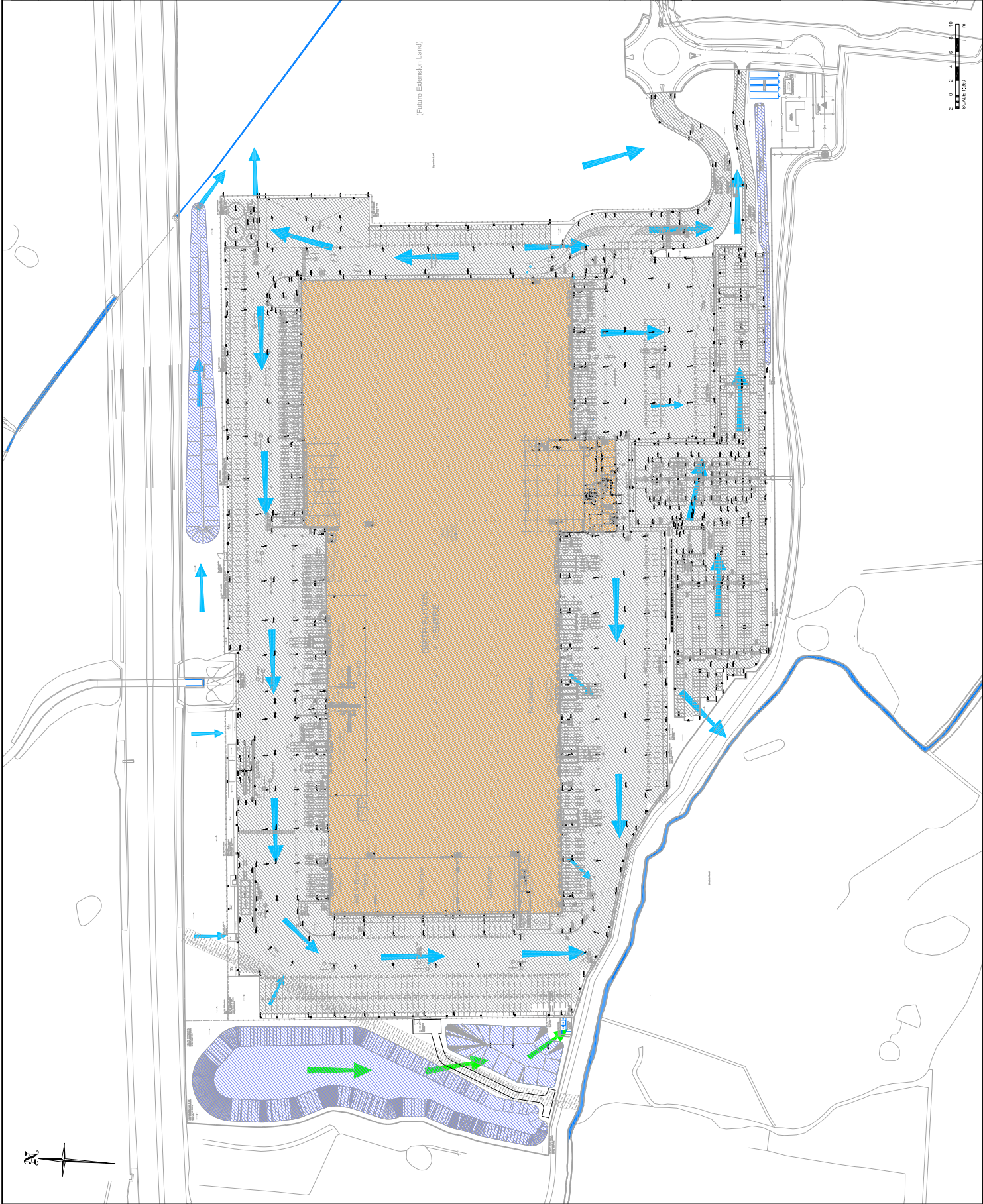
HAZARD FROM
WORKING IN A COMPETITIVE CONTRACTORS WOULDN'T ALREADY BE AWARE OF

FOR INFORMATION RELATING TO USE, CLEANING AND MAINTENANCE SEE THE HEALTH AND
SAFETY FILE.

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR
WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

KEY

-  FLOOD EXCEEDANCE
FLOW DIRECTION.
-  FLOOD EXCEEDANCE
SHOULD STORM WATER
PUMPS FAIL AND
PONDS OVERFLOW.



E	DESIGN REVIEWED TO SAT LATEST ARCHITECTS LAYOUT	PA	DT
D	DESIGN REVIEWED TO SAT LATEST ARCHITECTS LAYOUT	PA	DT
C	DESIGN REVIEWED TO SAT LATEST ARCHITECTS LAYOUT	PA	DT
B	DESIGN REVIEWED TO SAT LATEST ARCHITECTS LAYOUT	PA	DT
A	DESIGN REVIEWED TO SAT LATEST ARCHITECTS LAYOUT	PA	DT
Rev	Date	Drawn	Check

FAIRHURST

Chris Hopley
Director
Tel: 0117 905 0029
Fax: 0117 905 0472

THORPE

Project Title:
**OMEGA ZONE 8
ST. HELENS
NEW DISTRIBUTION HUB**

Drawing Title:
**TJM PLOT
OVERLAND FLOOD FLOW
EXCEEDANCE ROUTE**

Scale of All:	Scale	Drawn	Check
1:2500	1:2500	PA	DT
NS	NS	PA	DT
Date:	Date:	Date:	Date:
03.12.2019	04.12.2019	04.12.2019	04.12.2019
Drawing No:	Revision		
131504	UNIT 1 DWG.26		E

Appendix B: Construction Programmes

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TASK NAME	Start	Finish	2022												2023																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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Appendix C: Piling Statement

131504: Omega Zone 8 New Distribution Hub for TJ Morris**Piling and Earthworks Statement – Ethylene pipeline in northwest of the site.****Site Description:**

Omega Zone 8 comprises an area to the west of the wider site known as 'Omega South' located to the south of the M62 motorway. A portion of the land in the east is designated as 'future expansion land'. The proposed development scheme comprises a large Distribution Centre (DC) over the central portion of the site with associated infrastructure including service yards, offices and HGV parking. The development site is bounded to the north by the M62 Motorway, to the east 'Omega south' to the south undeveloped land and a main watercourse and to the west open agricultural fields. An ethylene pipeline crosses the northwest corner of the site. Due to the nature of the product this pipeline conveys it is considered a potential major accident hazard.

Building Foundation Solutions:

It is anticipated that the foundation solution for the new DC will comprise a 'suspended' piled slab and foundations. The proposed piling method will be selected during the tender period to suit the site constraints and geotechnical considerations. It is likely, dependent on the outcome of detailed settlement modelling, that piling operations for the superstructure and foundations will be required within the zones indicated on drawing 131504-9000 attached to this note. It is also noted that the current site layout indicates that no piling will be installed within approximately 50.0 metres of the ethylene pipeline easement.

The following salient points related to piling operations that may be undertaken on site are noted as follows:

- The proposed piling method may be either Continuous Flight Auger (cast in-situ concrete) or driven (precast concrete).
- The piling rig used will be determined by the selected contractor.
- The piling rig will be supported on a stable piling matt to be designed, constructed and maintained in accordance with recognised design and construction guidance throughout the works (Design guidance within BRE470 'working platforms for tracked plant' will be specified for its design)
- Collapse radii for piling rigs can be requested following selection of a piling method and rig but based on the likely maximum rig size will be more than 20 metres from the ethylene pipeline easement.
- The use of piling rigs will be completed at some distance from the M62 and ethylene pipeline.

Characteristics of Potential Piling Methods:

CFA piles are 'non-displacement' methods and based on the information presented within relevant guidance their main features are as follows:

- There is minimum displacement (soils are removed by auger)
- The piles are cast insitu on site.
- There is negligible downward vertical movement of soil either beneath the toe of the pile or due to drag down along the sides of the pile shaft.
- There is minimum vibration created.
- Noise levels during installation are lower relative to a driven pile installation.

Driven Piles are 'displacement' methods and based on information presented in relevant guidance their main features are as follows:

- Earth surrounding them is displaced during installation
- The pile sections are cast off site and delivered to site in set lengths
- Greater but limited vibration is created relative to the installation of a CFA
- Greater noise is generated during installation, relative to CFA

Earthworks local to pipeline:

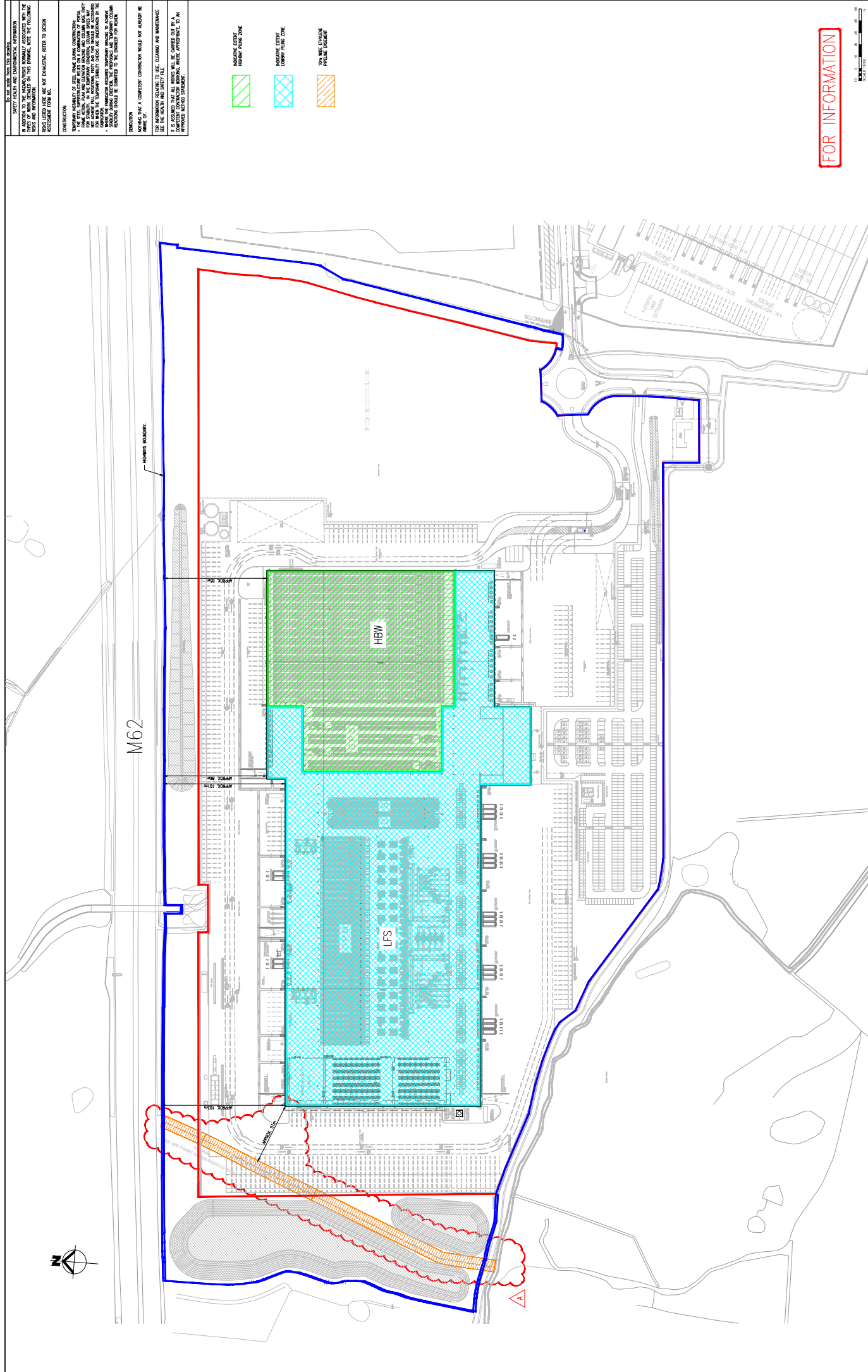
To ensure the pipeline is unaffected by both construction works and the permanent design solution, where it, and its easement, cross the new concrete hard standing the new pavement levels have been set so as to maintain a minimum cover to pipeline crown of 1000mm in all situations and also to allow new drainage pipework, associated with the proposed attenuation features, to pass over it. These clearances are clarified on drawing 131504-sk9999 attached to this note.

No other major excavation works, outside of these areas, will occur within the 10m wide easement, set about the pipeline's surveyed centreline. The presence and significance of the pipeline will be clearly conveyed on design drawings to allow appropriate mitigation measures to be taken to highlight its route and provide the required protection during construction works.

CONCLUSIONS AND RECOMMENDATIONS:

The potential methods of piling and the extent of earthworks have been considered in the context of the ethylene pipeline in the northwest of the site. On the basis of this assessment there do not appear to be any un-manageable risks presented by the proposed piling works or earthworks. It is clear that the presence of the pipeline needs to be fully considered as part of the detailed design and also be clearly communicated to the selected constructor. It is recommended that on appointment of the specialist Piling Contractor, they are provided with a copy of this statement, in addition to the site's Ground Investigation Report, to properly assess all potential hazards and provide appropriate mitigation. Control and management of any excavation work in the vicinity of the pipeline will be required to ensure the identified clearance zones are not encroached upon.

If any assumptions made within this report in respect to foundation methods are amended, a Geo-Environmental Engineer should be consulted and this statement updated as necessary.



FOR INFORMATION

NOTES:

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT PROJECTS AND ENGINEERS DRAWINGS, DETAILS AND SPECIFICATIONS.
- CONTRACTOR IS TO CHECK AND CONFIRM ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORKS.
- ANY DISCREPANCIES BETWEEN THE ENGINEERS DRAWINGS AND SITE CONDITIONS TO BE REPORTED TO THE ENGINEER IMMEDIATELY AND INSTRUCTIONS RECEIVED BEFORE PROCEEDING.
- TEMPORARY WORKS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. PROPOSALS TO BE SENT TO THE ENGINEER FOR COMMENT.

A	REPORT FROM PLANT AREA TO DISTRICT FIRE COMMANDER TO PLAN.	94	95	96
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NOTES:

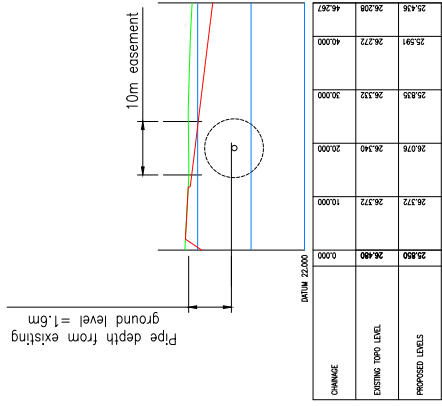
1. THE DRAWING IS TO BE READ IN CONNECTION WITH ALL RELEVANT SPECIFICATIONS, CONDITIONS OF CONTRACT, GENERAL CONDITIONS, PARTICULAR CONDITIONS, ADDENDUMS, VARIATIONS, AMENDMENTS, ADDITIONAL CONDITIONS, AND ANY INSTRUMENTS BETWEEN THE ENGINEER'S DRAWINGS AND SET CONDITIONS TO BE REFERRED TO THE ENGINEER IMMEDIATELY AND INSTRUCTIONS RECEIVED BEFORE PROCEEDING.

2. CONTRACTOR IS TO CHECK AND CORRECT ALL DIMENSIONS ON SITE PRIOR TO COMMENCEMENT OF WORK.

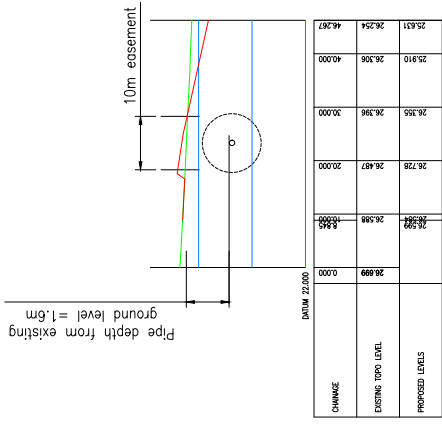
3. ANY DISCREPANCIES BETWEEN THE ENGINEER'S DRAWINGS AND SET CONDITIONS TO BE REFERRED TO THE ENGINEER IMMEDIATELY AND INSTRUCTIONS RECEIVED BEFORE PROCEEDING.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE CONDUCTIONS. ANY DAMAGE TO THE CONDUCTIONS SHALL BE REPAIRED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE CONDUCTIONS. ANY DAMAGE TO THE CONDUCTIONS SHALL BE REPAIRED BY THE CONTRACTOR.

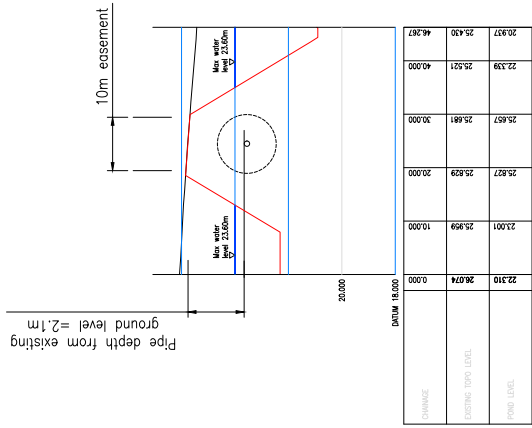
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OMEGA ZONE 8 STRENGTHENERS NEW DISTRIBUTION HUB	INDICATIVE EXTENT OF PILING GENERAL ARRANGEMENT				
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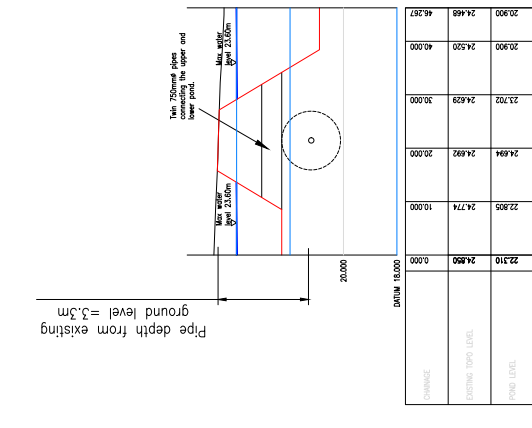
Section B-B



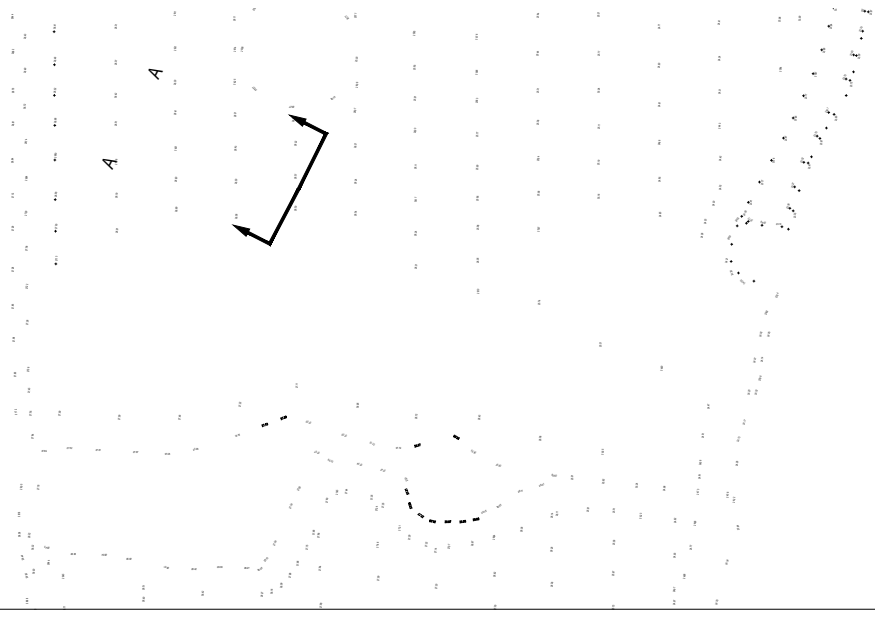
Section A-A



Section C-C



Section D-D



LEVELS SHOWN ARE SUBJECT TO DETAIL DESIGN, PLANNING AND TECHNICAL APPROVAL.

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARD/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING RISKS AND INFORMATION.

RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DESIGN ASSESSMENT FORM NO. CONSTRUCTION

NONE THAT A COMPETENT CONTRACTOR WOULDN'T ALREADY BE AWARE OF.

DEMOLITION

NONE THAT A COMPETENT CONTRACTOR WOULDN'T ALREADY BE AWARE OF.

THE INFORMATION RELATING TO USE, CLEANING AND MAINTENANCE SEE THE HEALTH AND SAFETY FILE

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Project Title

Drawing Title

Scale of A1:

Drawn:

Checked:

Agreed:

Date:

Date:

Date:

Drawn No.:

Revision:

Appendix D: ECW Method Statement

CEMP: Biodiversity (Unit 1)

Ecological Clerk of Works

Method Statement



Plot 1, Omega Zone 8

St Helens, WA5 3UG



Consultant Report on behalf of:



Ecological Assessments

Environmental Statements (Biodiversity)

Species Surveys

Phase I Habitat Survey

National Vegetation Classification

Planning Guidance





Habitat Regulation Assessment

Protected Species Licensing

42020 CEMP: Biodiversity

BREEAM LE01 - 05

REPORT STATUS

Issue/revision	Issue 1: DRAFT TO CLIENT	Issue 2: FINAL	Issue 3: AMENDED FINAL
Project No.	169-03		
Report Ref.	16903-ECW(Unit 1)_A	16903-ECW(Unit 1)_B	16903-ECW(Unit 1)_C
Date	11 th March 2020	17 th March 2020	31 st March 2020
Prepared by	Andrew Arnott	Josh Cartlidge	Josh Cartlidge
Signature			
Reviewed by	Josh Cartlidge	Andrew Arnott	Andrew Arnott
Signature			

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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1. The following report has been prepared on behalf of Omega Warrington Ltd and provides a description of the duties of an Ecological Clerk of Works (ECW) overseeing construction of Plot 1 and associated landscape at Omega Zone 8, St Helens ('The Site').
- 1.1.2. This document has been prepared following the British Standard 42020:2013¹. It should be read in conjunction with the CEMP: Biodiversity².

Location

- 1.1.1 The Site forms part of the Omega business estate located west of Warrington, falling just within St Helens District. It is immediately south of the M62, west of Junction 8, and immediately west of the Warrington Borough boundary and Lingley Mere. The location is shown in Figure 1.

Proposals

- 1.1.2 The ECW will work with Full Planning Permission for the erection of a B8 warehouse, with ancillary offices, associated parking, infrastructure, and landscaping. The configuration of these proposals is complex and are therefore shown in Figure 2.

Site description

- 1.1.3 The Site (30.64ha) is dominated by arable land with woodland belts, a network of ponds and ditches improved grassland and scrub habitat present. A brook along the Southern boundary of the Site from the northwest. Off-site woodland is present to the south, east and west of the Site.

¹ **The British Standards Institution 2013** BS 42020:2013 Biodiversity - Code of practice for planning and development. Published by BSI Standards Limited 2013. ISBN 978 0 580 77917 6

² **Ecology Practice, 2020a.** *Omega Zone 8 Unit 1 CEMP: Biodiversity.* Consultant Report to Omega Warrington Ltd. Report ref. 16903-CEMP (Unit 1) _C

1.2 ECOLOGICAL CLERK OF WORKS

Competencies

- 1.2.1 Any individual dealing with ecological issues should be able to demonstrate that they have sufficient technical competence and experience to carry out the particular tasks and activities for which they are responsible in the role that they are performing. They should only attempt to offer a bona fide ecological opinion if they have the necessary knowledge, skills and experience to do so, or have secured appropriate competent assistance.
- 1.2.2 Where the ECW has line management responsibilities, they should ensure that their staff are competent to undertake all work assigned to them and are appropriately supervised and supported where necessary, especially where junior or inexperienced staff are involved.
- 1.2.3 Evidence of qualifications, additional training and experience should be available on request.

Proportionality

- 1.2.4 The ECW should take a proportionate approach to ensure that the provision of information is appropriate to the environmental risk associated with the development and its location.
- 1.2.5 The work involved in preparing and implementing all ecological surveys and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the ECW should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the ECW and their consultees should ensure that any comments and advice made are also proportionate.

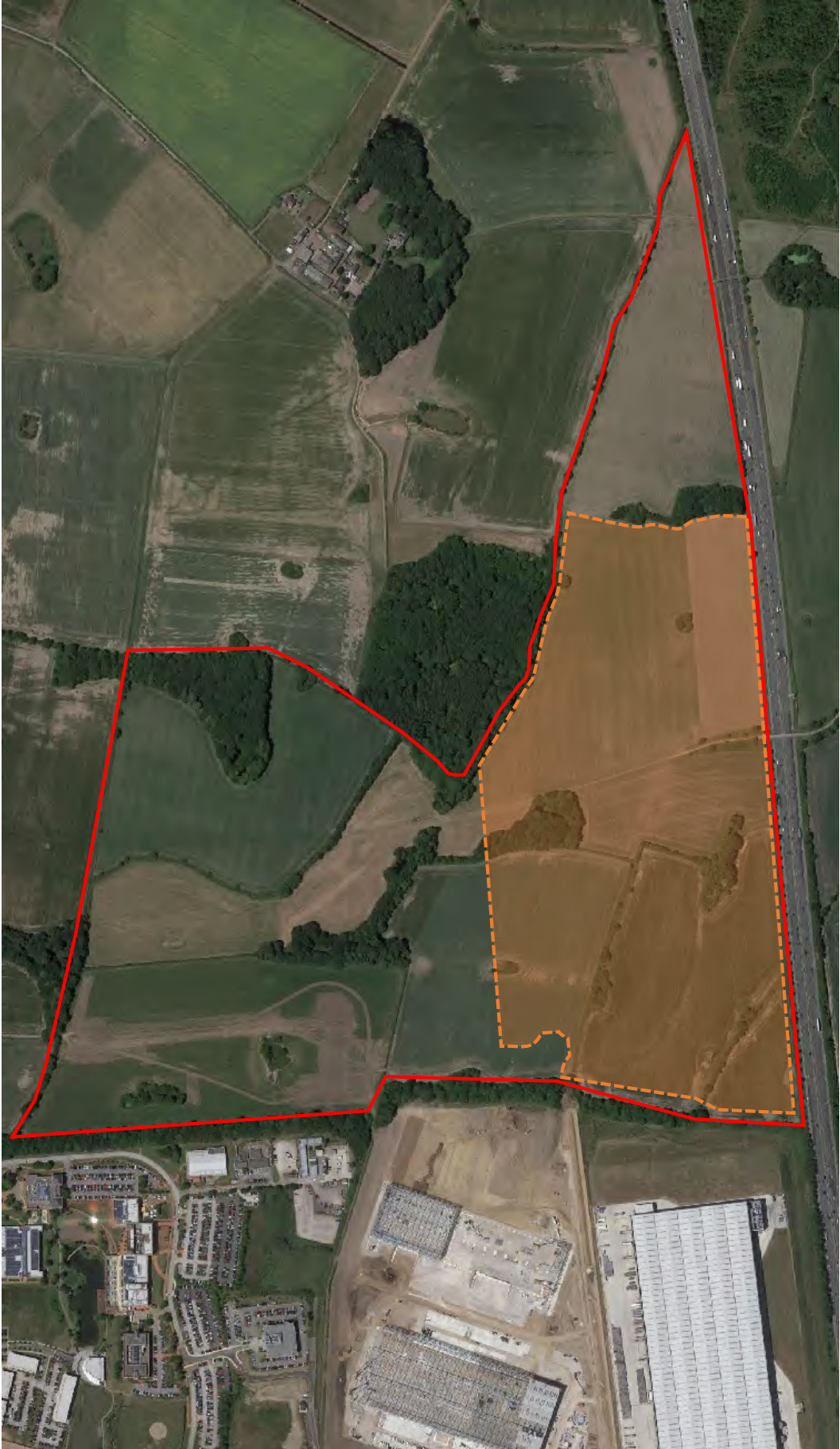



Figure 1
Location

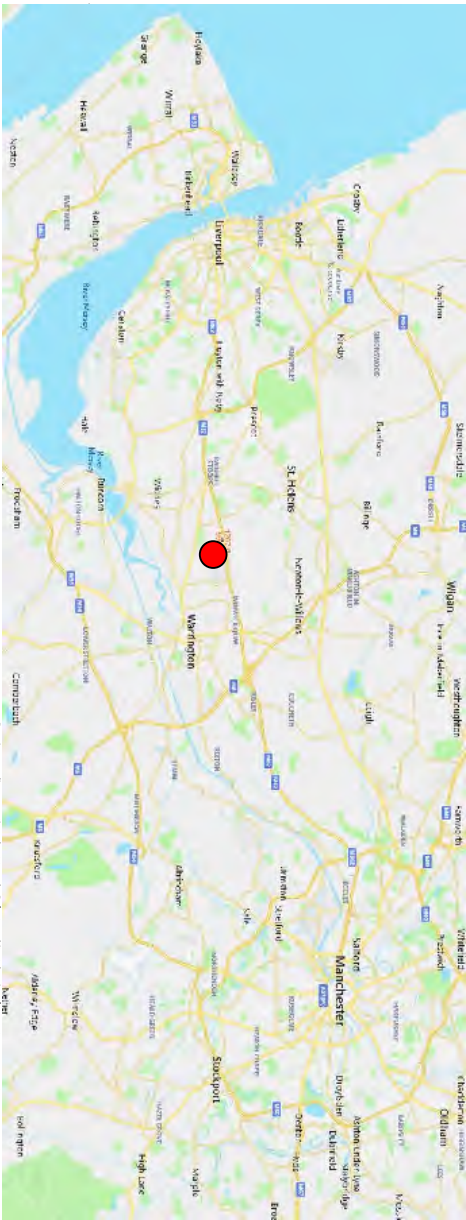
Omega Zone 8, St Helens

Legend

 Plot 1 Area

 Construction footprint

 Site location



Drawings are diagrammatic and not to scale. Refer to architect drawings for exact measurements.

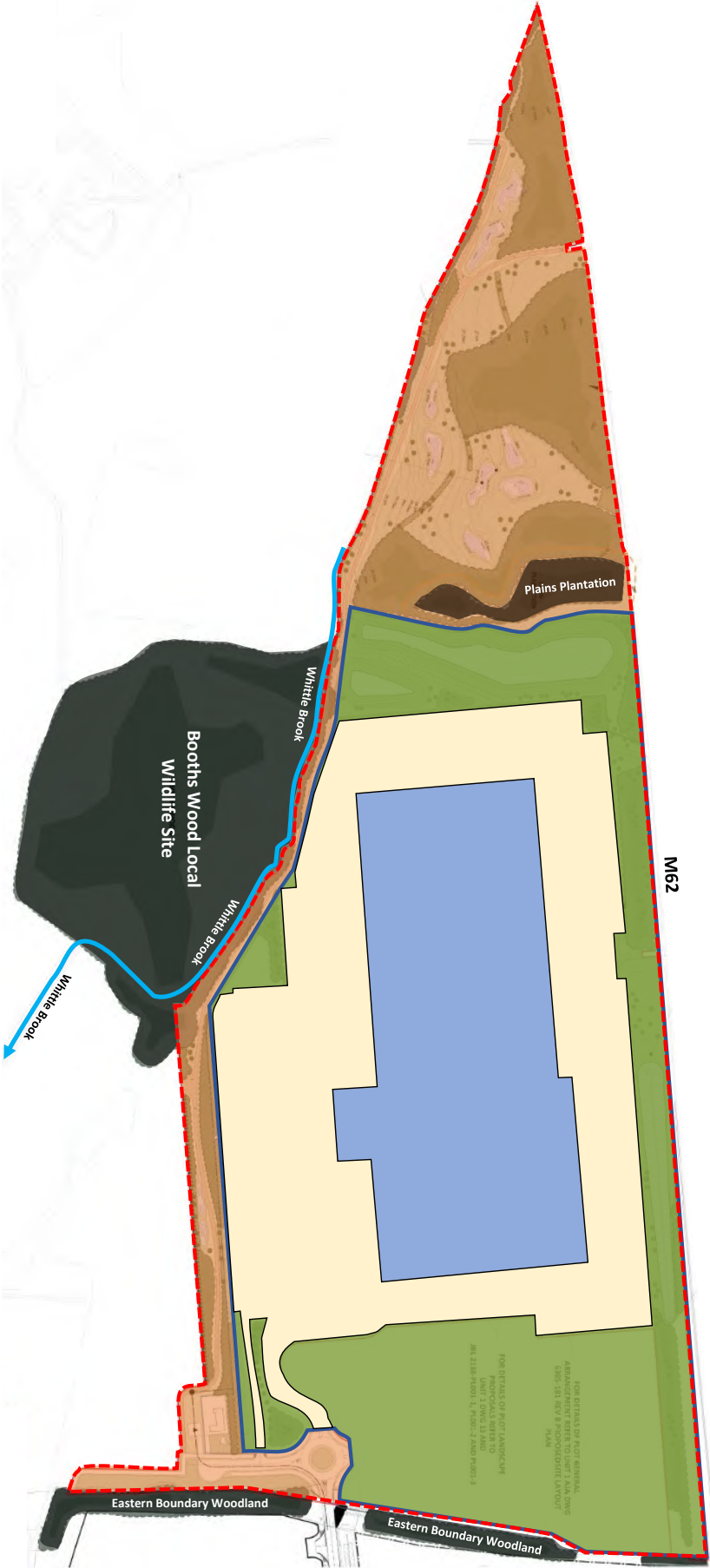
Figure 2
Plot 1

Configuration

Omega Zone 8, St Helens

Legend

- Application Area
- Off-plot landscaping and mitigation zone
- On-Plot landscaping
- Building
- Hardstanding
- Peripheral habitat to be protected from construction
- Construction Boundary
- Whittle Brook



Drawings are diagrammatic and not to scale. Refer to architect drawings for exact measurements.

Drawing No.: 16903-01LEMP_A

Revision Dates

A	B	C	D
10/09/20			

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2 THE ROLE OF THE ECOLOGICAL CLERK OF WORKS

2.1 SITE AND PROJECT FAMILIARIZATION

2.1.1 The ECW will ensure they are familiar with all plans that support the proposals, including any biodiversity reports, assessments and the results of any surveys that have been carried out. In particular:

- The ECW will read and implement the CEMP: Biodiversity².
- The ECW will oversee the preparation of a Biodiversity Risk Assessment.
- The ECW will establish and/or review boundaries for Biodiversity Protection Zones, which are areas that require different levels of protection from construction.
- A comprehensive list of measures to avoid and reduce impacts during construction will be produced by the ECW including the preparation of a schedule of time-sensitive works.

2.2 SITE WORKS

2.2.1 The ECW will oversee the installation of protective fencing to surround the Construction Zone. No works will take place until this fencing is in place and fit-for-purpose.

2.2.2 The ECW will supervise key works that are a potential risk to biodiversity. For the Omega Site these will be as follows:

- Woodland clearance: a method statement has been produced which will guide the way in which woodland clearance will take place (refer to EP 2020c³)

³ **Ecology Practice, 2020c.** *CEMP: Biodiversity Woodland, Tree & Hedgerow Clearance Method Statement.* Consultant Report to Omega Warrington Ltd. Report ref.16903-TR(Unit 1)_C

- Pond clearance: a method statement has been produced which will guide the way in which pond clearance will take place (refer to EP 2020e⁴)
- Landscape and Ecology Management: a Landscape and Ecology Management Plan (LEMP) has been produced which will guide the way in which management will take place (refer to EP 2020k⁵)
- Installation of headwalls into Whittle Brook
- Oversee protection measures as provided in the CEMP: Biodiversity²
- Advice on the placement of any marine works and ensure these are kept downhill of Whittle Brook and the surrounding Biodiversity Protection Zones or suitable shoring is provided.
- Advice on the placement of the construction compound including accommodation, welfare facilities and parking.
- Ensure the routes chosen for access, including hauling and temporary works, do not impinge on Biodiversity Protection Zones (refer to CEMP: Biodiversity²)
- Monitor and report on compliance with legal, planning and contract requirements
- Investigate and report unplanned incidents (e.g. pollution, damage to habitats, unexpected occurrence of protected species, implications of delays due to bad weather)
- Be prepared to rescue any unrecorded wildlife such as reptiles

2.3 LIAISON

Principle Contractor

Toolbox Talk

- 2.3.1 The ECW will provide a toolbox talk to the key staff members of the work force, providing suitable commentary on potential risks to biodiversity, the location of

⁴ **Ecology Practice, 2020e.** *CEMP: Biodiversity Pond Clearance Method Statement*. Consultant Report to Omega Warrington Ltd. Report ref. 16903-PC(Unit 1)_C

⁵ **Ecology Practice, 2020k.** *Landscape & Ecology Management Plan (LEMP): Plot 1 - Unit 1*. Consultant Report to Omega Warrington Ltd. Report ref. 16903-LEMP_A

biodiversity protection zones and their reason for designation. They will provide guidance on key activities such as the placement of marine works and how to avoid pollution incidents.

Biodiversity Champion

- 2.3.2 The ECW will advise on the appointment of a Biodiversity Champion, who will be responsible for ensuring the contents of the CEMP: Biodiversity are upheld. The BC will be responsible for ensuring protective fencing is in place and fit-for-purpose, that open trenches and pipes are covered each evening, or a means of escape is provided. The BC will liaise directly with the ECW.

Site Meetings

- 2.3.3 The ECW will make provision for a meeting on site prior to works taking place on site between the developer, developer's relevant contractors and Ecological Clerk of Works / Supervisor, the biodiversity Champion and the St. Helens Countryside Development and Woodlands Officer.
- 2.3.4 A schedule of progress meetings with these parties will be arranged by the ECW.



WILLOWGATE

WELSH NEWTON COMMON

HEREFORDSHIRE

NP25 5RT

TELEPHONE: 0845 602 3822

WEBSITE: www.ecologypractice.co.uk

Appendix E: ACW Method Statement

CEMP: Biodiversity (Unit 1 & Infrastructure)

Arborist Clerk of Works Method Statement

Ecological Assessments

Environmental Statements (Biodiversity)

Species Surveys

Phase I Habitat Survey

National Vegetation Classification

Planning Guidance

Habitat Regulation Assessment

Protected Species Licensing

42020 CEMP: Biodiversity

BREEAM LE01 - 05



Plot 1, Omega Zone 8


St Helens, WA5 3UG



Consultant Report on behalf of:



REPORT STATUS

Issue/revision	Issue 1: DRAFT TO CLIENT	Issue 2: FINAL	Issue 3: AMENDED FINAL
Project No.	169-03		
Report Ref.	16903-AMS(Unit 1)_A		
Date	30 th March 2020		
Prepared by	Josh Cartlidge		
Signature			
Reviewed by	Andrew Arnott		
Signature			

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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1. The following report has been prepared on behalf of Omega Warrington Ltd and provides an Arborist Clerk of Works (ACW) method statement for tree works/removals within Plot 1 and associated landscape at Omega Zone 8, St Helens ('The Site').
- 1.1.2. This document has been prepared following the British Standard 42020:2013¹. It should be read in conjunction with the CEMP: Biodiversity², Arboricultural Impact Assessment and Tree Protection Plan³. In addition, Ecology Practice 2020c⁴ provides the accompanying ecological methods when tree felling and this document should be read in conjunction with that.

Location

- 1.1.1 The Site forms part of the Omega business estate located west of Warrington, falling just within St Helens District. It is immediately south of the M62, west of Junction 8, and immediately west of the Warrington Borough boundary and Lingley Mere. The location is shown in Figure 1.

Proposals

- 1.1.2 There is Full Planning Permission for the erection of a B8 warehouse, with ancillary offices, associated parking, infrastructure, and landscaping. The configuration of these proposals is complex and are therefore shown in Figure 2.

¹ **The British Standards Institution 2013** BS 42020:2013 Biodiversity - Code of practice for planning and development. Published by BSI Standards Limited 2013. ISBN 978 0 580 77917 6

² **Ecology Practice, 2020a.** CEMP: Biodiversity (TJM). Report No. 16903-CEMP (Unit 1) _A

³ **Ecology Practice, 2020b.** Arboricultural Impact Assessment, Method Statement and Tree Protection Plan. Report No. 16903_AR_B

⁴ **Ecology Practice, 2020c.** Method Statement: Woodland, Tree & Hedgerow Clearance. Report No. 16903-TR_A

Site description

- 1.1.3 The Site (30.64ha) is dominated by arable land with woodland belts, a network of ponds and ditches improved grassland and scrub habitat present. A brook along the Southern boundary of the Site from the northwest. Off-site woodland is present to the south, east and west of the Site.

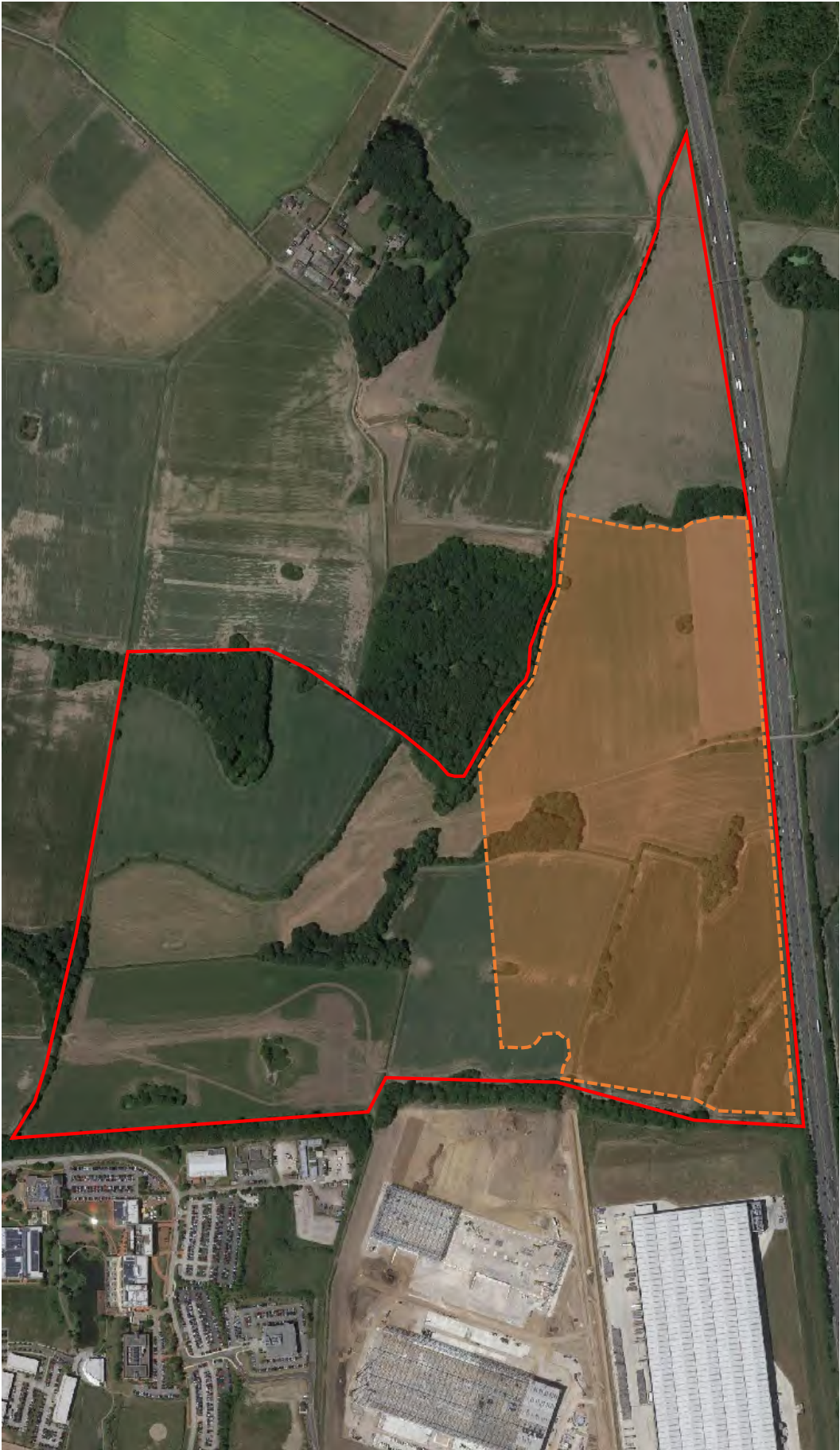
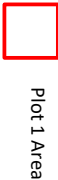


Figure 1

Location

Omega Zone 8, St Helens

Legend



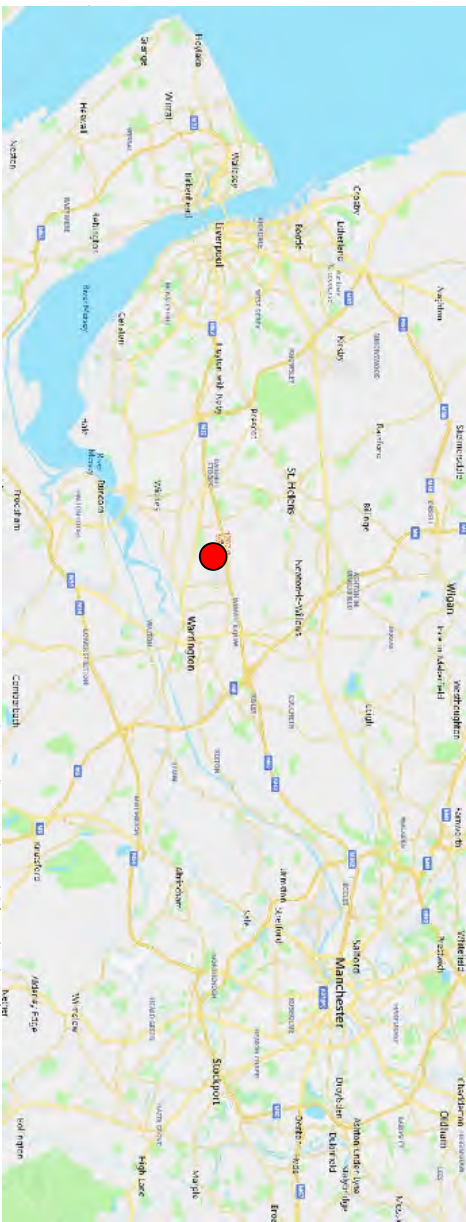
Plot 1 Area



Construction footprint



Site location



Drawings are diagramsmatic and not to scale. Refer to architect drawings for exact measurements.



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Revision Dates

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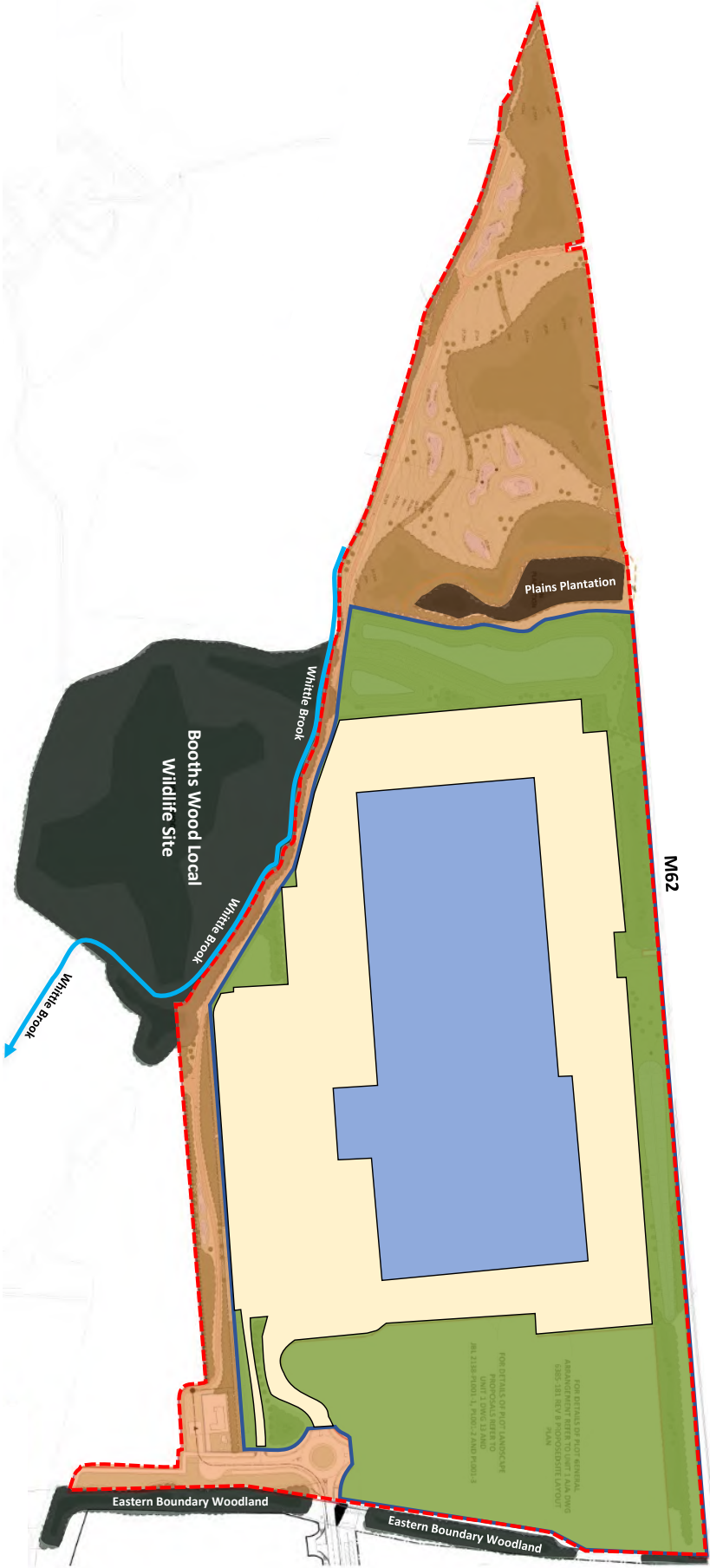
Figure 2
Plot 1

Configuration

Omega Zone 8, St Helens

Legend

- Application Area
- Off-plot landscaping and mitigation zone
- On-Plot landscaping
- Building
- Hardstanding
- Peripheral habitat to be protected from construction
- Construction Boundary
- Whittle Brook



60m

300m

Drawings are diagrammatic and not to scale. Refer to architect drawings for exact measurements.



Drawing No.: 16903-01LEMP_A

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2 ARBORICULTURAL METHODOLOGY

2.1 ARBORIST CLERK OF WORKS

Competencies

- 2.1.1 Any individual dealing with ecological issues should be able to demonstrate that they have sufficient technical competence and experience to carry out the particular tasks and activities for which they are responsible in the role that they are performing. They should only attempt to offer a bona fide arboricultural opinion if they have the necessary knowledge, skills and experience to do so, or have secured appropriate competent assistance.
- 2.1.2 Where the ACW has line management responsibilities, they should ensure that their staff are competent to undertake all work assigned to them and are appropriately supervised and supported where necessary, especially where junior or inexperienced staff are involved. Evidence of qualifications, additional training and experience should be available on request.

Proportionality

- 2.1.3 The ACW should take a proportionate approach to ensure that the provision of information is appropriate to the environmental risk associated with the development and its location.
- 2.1.4 The work involved in preparing and implementing all arboricultural surveys and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to woodlands, trees and hedgerows and to the nature and scale of the proposed development. Consequently, the ACW should only request supporting information and arbor measures that are relevant, necessary and material to the application in question. Similarly, the ACW and their consultees should ensure that any comments and advice made are also proportionate

2.2 RECOMMENDED TREE WORKS/REMOVALS

2.2.1 Tree works tabled below (Table 1) have been identified as a result of one or more of the following reasons:

- to directly implement the proposal,
- to facilitate the implementation and construction of the proposals,
- to assist in the creation of a balanced and desirable layout juxtaposition and
- in the interests of reasonable arboricultural management.

2.2.2 All tree works should be carried out by qualified and competent Arborists working to BS 3998:2010 'Tree Work – Recommendations'.

Table 1: Summary of Recommended Tree Works

Tree No.	Species	BS5837:2012 Category	Recommended Works
T10	English oak	U	If within proximity to development reduce to standing dead wood poles and retain as habitat to benefit biodiversity.
T4	English oak	C1	Remove - to accommodate the proposed development. Note: W4 and W5 are covered by the TPO 5/2.
T7	Beech	C1	
T8	English oak	B1	
G4	Mixed species*	C2	
G5	Mixed species*	C2	
G9	Mixed species*	C2	
W4	Mixed species*	A2	
W5	Mixed species*	B2	
G3	Mixed species*	C2	Partial Removal - to accommodate the proposed development.
G8	Mixed species*	B2	
G9	Mixed species*	C2	
G10	Mixed species*	B2	

*Reference Tree Schedule for mixed species within groups and woodlands.

2.3 SUMMARY OF MITIGATION

2.3.1 The table below summaries the mitigation methods required for The Site, specific to any trees where their RPA may be subject to impact by the proposed development.

2.3.2 Each specific requirement is detailed further in the subsequent sections of this report.

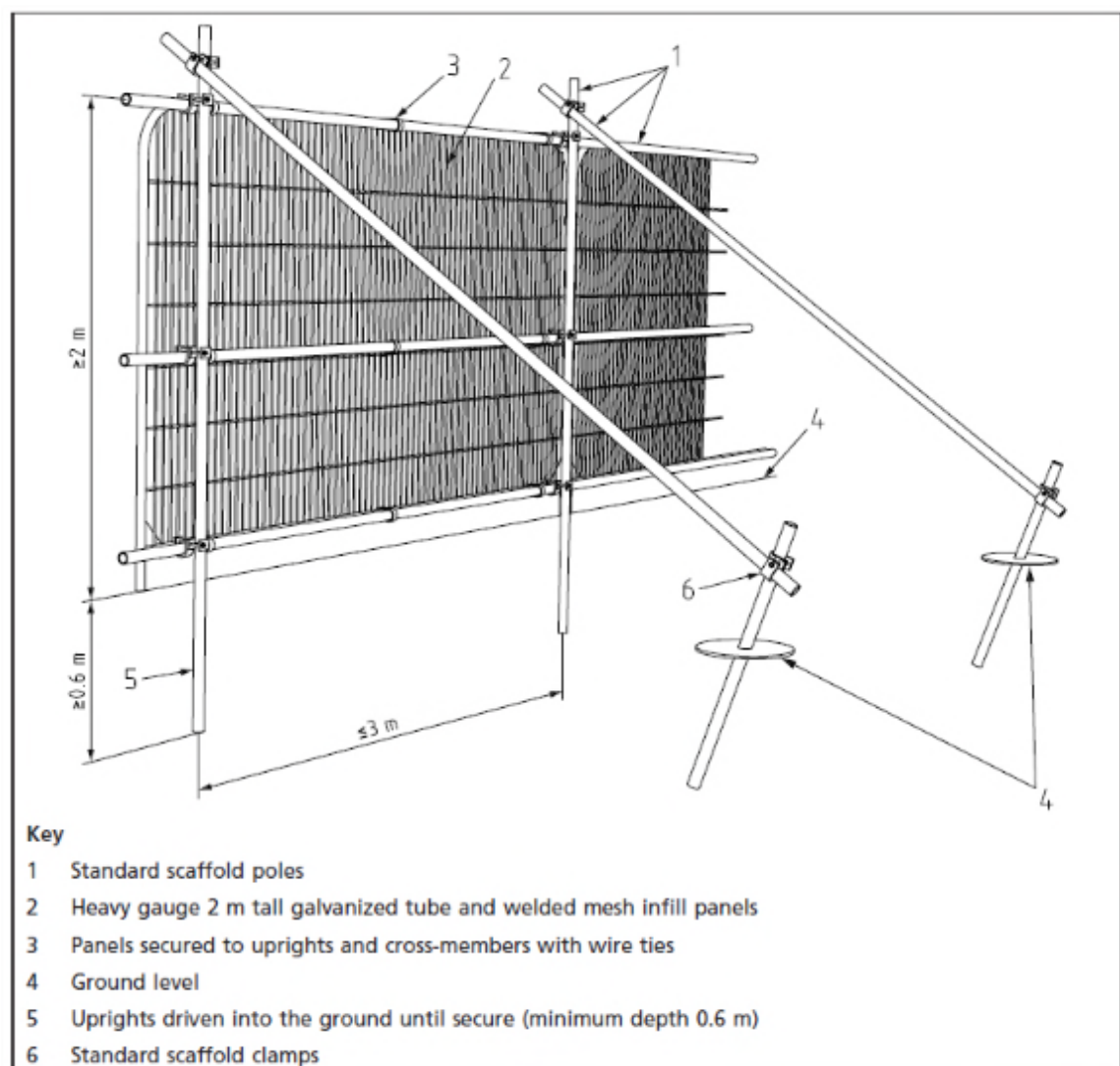
Table 2: Summary of Mitigation Requirements

Tree No.	Works effecting	Mitigation Required
Throughout the Site	Retained trees in general proximity to the proposed construction works	Create a construction exclusion zone, by erecting and maintaining temporary tree protection fencing for the duration of the construction works.
		The tree protection fencing should be installed as detailed on the Tree Protection Plan (Appendix A).
		The specification for the new hardstanding should follow the guidance in Section 6.13 with a 'no-dig' construction method and three-dimensional cellular containment system to be used within the RPA.
Along southern boundary	A small percentage of the RPA is within the proposed hard standing.	Temporary protective fencing should be installed at the edge of the new hardstanding for the duration of the construction works, as shown in the Tree Protection Plan (Appendix A).
		The areas enclosed by the protective should be maintained as a total exclusion zone to all construction activity. No working activity, storage of materials, ground level changes, excavations or vehicular access is permitted within the protected area.

2.4 ERECTION OF PROTECTIVE FENCING

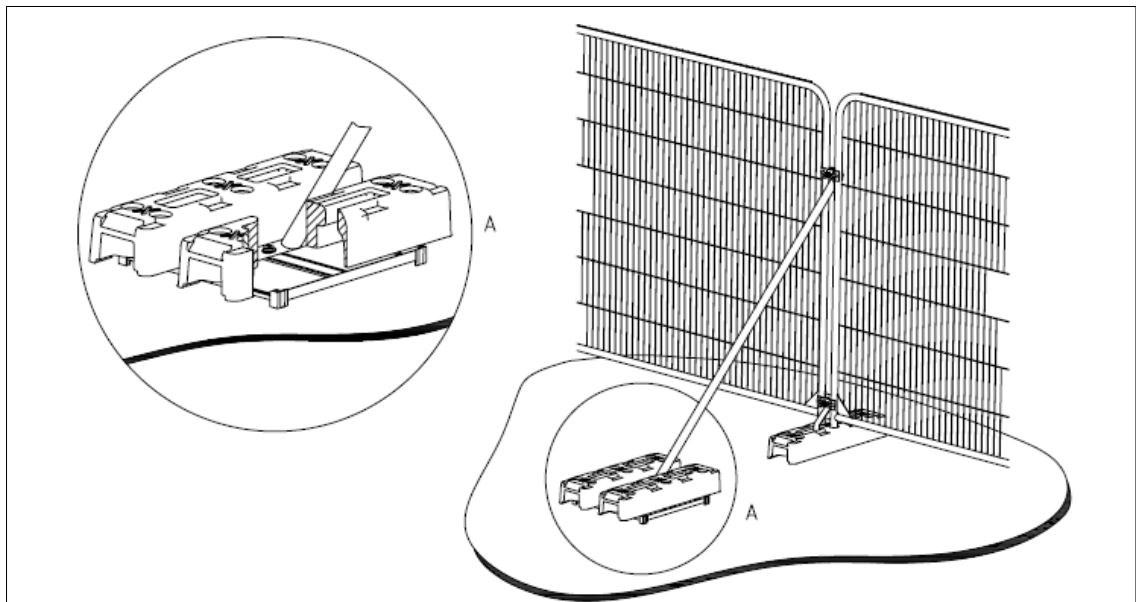
- 2.4.1 It is recommended that temporary protective fencing should be erected in order to create a construction exclusion zone which adequately protects the retained trees from damage during the construction works. This fencing should be erected at the outset of the development works, before any activities (including demolition and ground works) are carried out or materials and plant brought onto site.
- 2.4.2 The recommended position for protective fencing is detailed on the Tree Protection Plan (Appendix A).
- 2.4.3 The fencing should consist of a vertical and horizontal scaffold framework which is well braced to resist impacts as seen below in Figure 3.

Figure 3. Default specification for protective barrier © British Standards Institute



- 2.4.4 All-weather warning notices should be attached to the fencing to clearly identify the area as a tree protection exclusion zone into which access is not permitted
- 2.4.5 Once erected, the protected area should be regarded as sacrosanct and the fencing should not be removed or altered unless recommended by the project Arboriculturist and, where necessary, approval from the local planning authority.
- 2.4.6 Where the Site circumstances and associated risk of damaging incursion into the RPAs do not necessitate the default level of protection, an alternative specification may be considered to be appropriate. For example, 2m tall welded mesh panels on rubber or concrete feet as illustrated below in Figure 4.

Figure 4. Alternative Specification for Protective Fencing © British Standards Institute



- 2.4.7 In this instance, it is considered that the associated risks to trees from the proposed development are such that the default specification for temporary protective fencing should be used.

2.5 ADDITIONAL GENERAL PRECAUTIONS OUTSIDE OF THE EXCLUSION ZONE

- 2.5.1 Fires on site should be avoided wherever possible. Where they are unavoidable, they should be kept well away from the exclusion zone, and only lit in positions where heat will not affect foliage or branches. The potential size of a fire and wind direction should be taken into account and it should be attended at all times until safe to leave.
- 2.5.2 Any materials, fuel or chemicals whose accidental spillage would cause damage to a tree should be stored and handled well away from the exclusion zone.

2.6 SITE MONITORING

Site Meetings

- 2.6.1 The ACW will make provision for a meeting on site prior to works taking place on site between the ACW, the developer, developer's relevant contractors and Ecological Clerk of Works (ECW) / Supervisor, the biodiversity Champion and the St. Helens Countryside Development and Woodlands Officer. A schedule of progress meetings with these parties will be arranged by the ACW/ECW.
- 2.6.2 It is considered necessary for the proposed works to be monitored as a number of retained trees are likely to be impacted by construction activities. A four-stage visit must be arranged with the ACW at:
- **Phase one:** prior to any works.
A visit should be arranged to mark out the trees to be felled and discuss the work that will be undertaken. Also, to answer any questions and queries the contractors may have regarding the works to take place. The ACW will use the method statement to form a toolbox talk and have all site operatives sign off on the statement.
 - **Phase two:** to arrange The Site layout/protective barrier (prior to any construction activity).
A visit should be arranged to mark out The Site in regard to the location of the protective barriers, the RPA's and where the safe working zones are, and areas of works within any RPA whereby mitigation must be adhered to.
 - **Phase three:** a mid-construction unannounced spot check to ensure The Site work force are adhering to the mitigation requirements

- **Phase four:** nearing completion.

A visit should be arranged for the ACW to monitor The Site nearing completion to assess the mitigation. Also discuss the aftercare and monitoring that will take place.

- 2.6.3 Random site monitoring can take place throughout the duration of the construction to check that all guidelines are being adhered to.

2.7 GROUND WORKS, DEMOLITION & CONSTRUCTION WORKS

- 2.7.1 Installation of the recommended protective mitigation measures prior to the commencement of any works, combined with use of temporary ground protection and/or the retention of existing hard surfacing within the RPAs, will allow the ground works to take place whilst minimising any adverse effect or impact on the retained trees.
- 2.7.2 All plant and vehicles engaged in ground works should either operate outside the RPA, or run on temporary ground protection or existing hard standing, where appropriate.
- 2.7.3 During ground works and demolition, the utmost caution should be used to not sever any roots, especially those measuring $\geq 25\text{mm}$ in diameter. Any roots uncovered roots should be wrapped/covered to prevent them from desiccation and rapid temperature changes (any wrapping should be removed prior to backfilling).
- 2.7.4 In the case where plant or wide/tall loads are being used, it must be ensured that all parts of the equipment remain outside of the RPAs, in order that they can operate without coming into contact with any of the on-site or adjacent trees. All works must have appropriate supervision by a banksman, to ensure that adequate clearance from trees is maintained at all times.
- 2.7.5 Access facilitation pruning should not be necessary on this site but if it does become necessary to maintain a safe clearance. All work must be approved by the project Arboriculturist and carried out taken by a qualified and competent Arborist working to BS 3998:2010.

- 2.7.6 If damage occurs to part of a tree during the works, the project Arboriculturist must be contacted without delay.

2.8 SOIL COMPACTION AND REMEDIATION MEASURES

- 2.8.1 Soil that has been compacted will not provide suitable conditions for the survival and growth of vegetation, whether existing or new, and is a common cause of post-construction tree loss on development sites.
- 2.8.2 Compacted soil will adversely affect drainage, gas exchange, nutrient uptake and organic content, and will seriously impede or restrict root growth.
- 2.8.3 Soil compaction should be avoided around existing vegetation, including trees, and in areas where new planting or seeding is proposed.
- 2.8.4 Where soil compaction has occurred near to existing trees, remedial works might include sub-soil aeration using compressed air, and the addition of other materials, preferably of a bulky, organic nature (but excluding peat), to improve structure.
- 2.8.5 Heavy mechanical cultivation such as ploughing or rotavating should not occur within the RPA.
- 2.8.6 Any cultivation operations should be undertaken carefully by hand to minimize damage to the tree, particularly the roots.
- 2.8.7 Decompaction measures include forking, spiking, soil augering and tilled radial trenching. Care should be taken during such operations to minimize the risk of further damage to tree roots.

2.9 CONTRACTORS STORAGE, PARKING & ACCESS

- 2.9.1 Provision should be made for welfare facilities, The Site office, contractor parking, storage for materials, plant and spoil and space for mixing outside of the RPAs of retained trees.

- 2.9.2 In this instance, it is considered that there is sufficient space for provision of the above, without placing significant constraints on the working space available for the construction and its associated activities.

2.10 COMPLETION

- 2.10.1 At the completion of the construction works, before removal of any of the tree protection measure at the completion of the project it is recommended that the advice of the project Arboriculturist is sought regarding whether a re-survey of the retained trees is necessary for signs or symptoms of damage and/or stress that the construction may have caused.
- 2.10.2 The protective fencing and ground protection measures should remain in position until its use is considered unnecessary and any risk of damage to the retained trees and/or their respective RPAs e.g. soil compaction from vehicular plant or machinery, has completely passed.

2.11 TREE PLANTING & AFTER CARE

- 2.11.1 When planning or implementing any new tree planting scheme, it is recommended that the guidance within BS 8545:2014 'Trees: from nursery to independence in the landscape – Recommendations' is followed.
- 2.11.2 The following points summarise good after care for newly planted trees with an additional consideration to any necessary formative, corrective and maintenance pruning:
- 2.11.3 Water immediately after planting and weekly throughout the first growing season by allowing 10 – 20 litres of water for each tree. This is especially important during prolonged periods of dry weather in which case the frequency of watering may need to be increased.
- 2.11.4 Do not allow weeds or grass to grow within a 500mm radius of the stem.

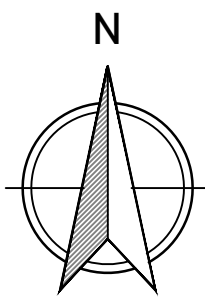
- 2.11.5 Maintain an organic mulch (e.g. composted woodchip or bark) to a minimum depth of 75mm for a radius of 500mm around the base of new trees.
- 2.11.6 At the end of each growing season, check that tree-ties are not damaging the tree stems and loosen if necessary.
- 2.11.7 Ensure that the tree stakes remain firm while the new planting becomes established and only remove when the tree can support itself, usually after a period of 2 -3 years.
- 2.11.8 Carry out formative pruning to the young trees by removing dead or crossing branches, suckers arising from the roots or weak shoots on the stems.

2.12 CONTACT


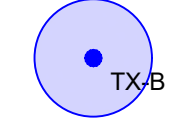
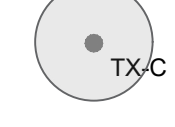
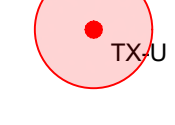

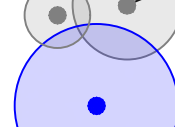
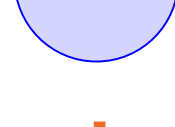

- 2.12.1 Ecology Practice, 01989 770457, enquiries@ecologypractice.co.uk.

3 APPENDICIES

3.1 APPENDIX A: TREE PROTECTION PLAN



LEGEND:

-  Category A - Trees of High Quality
-  Category B - Trees of Moderate Quality
-  Category C - Trees of Low Quality
-  Category U - Trees Unsuitable for Retention
-  Trees proposed for removal
-  Tree Trunk
-  Tree Canopy Spread
-  Tree Protection Fencing

POTENTIAL HERITAGE/LANDSCAPE ECOLOGY MITIGATION/BUFFER

Tree protection fencing is to be installed at the positions shown at the commencement of works, before any ground works or soil stripping are carried out and before vehicles or materials are brought onto site.

No working activity, storage of materials, ground level changes, excavations or vehicular access is permitted within the protected area. Once erected, the protected area is to be regarded as sacrosanct and the fencing must not be removed or altered unless recommended by the project Arboriculturist and, where necessary, approval from the local planning authority.

Tree protection fencing is to be installed at the positions shown at the commencement of works, before any ground works or soil stripping are carried out and before vehicles or materials are brought onto site.

No working activity, storage of materials, ground level changes, excavations or vehicular access is permitted within the protected area. Once erected, the protected area is to be regarded as sacrosanct and the fencing must not be removed or altered unless recommended by the project Arboriculturist and, where necessary, approval from the local planning authority.

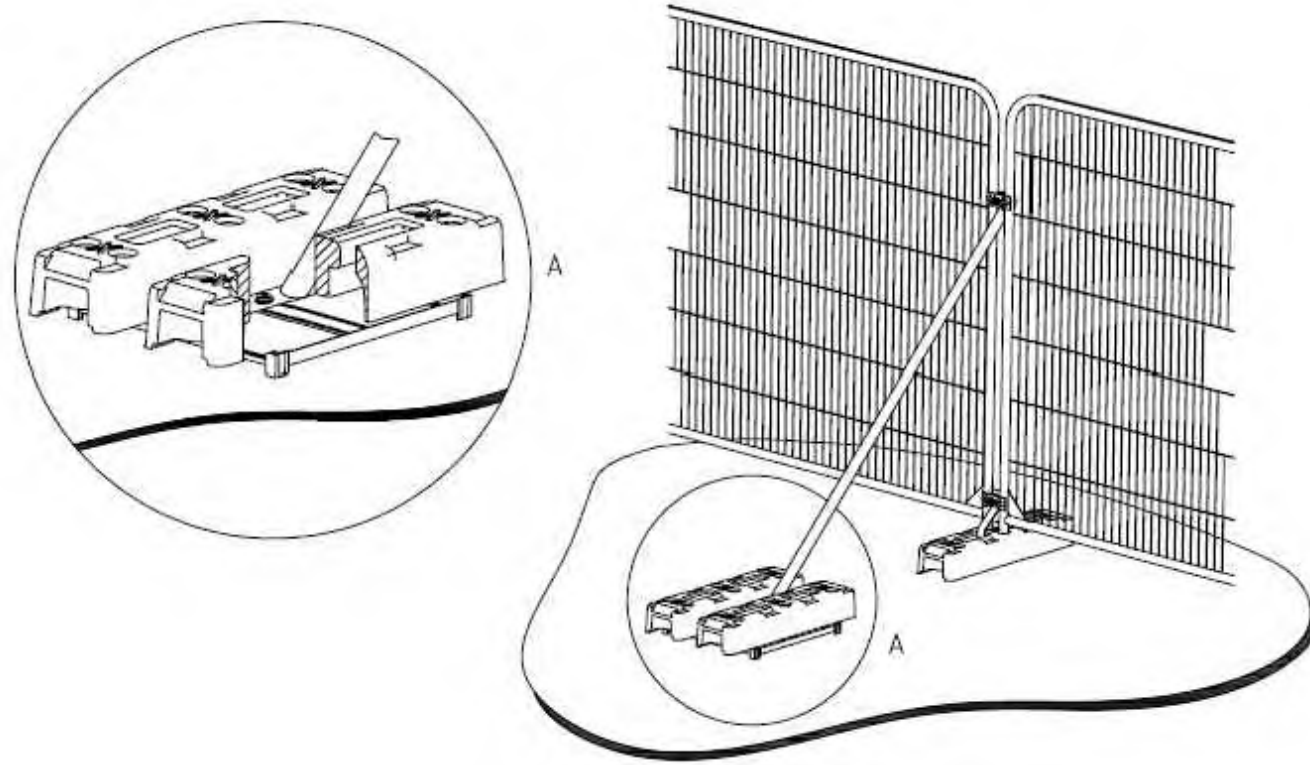
Grade II listed moat & bridge

Tree Protection Fencing

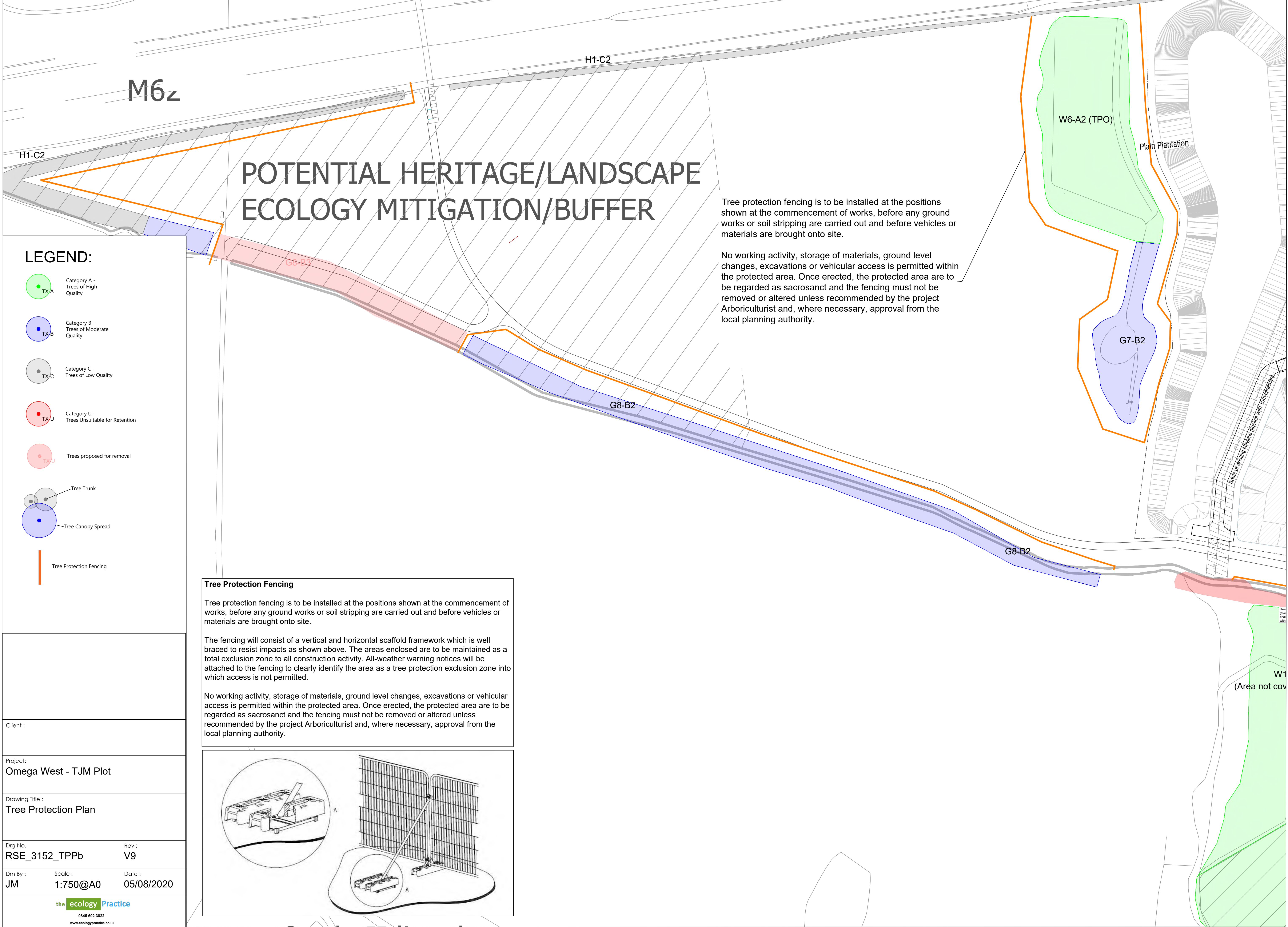
Tree protection fencing is to be installed at the positions shown at the commencement of works, before any ground works or soil stripping are carried out and before vehicles or materials are brought onto site.

The fencing will consist of a vertical and horizontal scaffold framework which is well braced to resist impacts as shown above. The areas enclosed are to be maintained as a total exclusion zone to all construction activity. All-weather warning notices will be attached to the fencing to clearly identify the area as a tree protection exclusion zone into which access is not permitted.

No working activity, storage of materials, ground level changes, excavations or vehicular access is permitted within the protected area. Once erected, the protected area are to be regarded as sacrosanct and the fencing must not be removed or altered unless recommended by the project Arboriculturist and, where necessary, approval from the local planning authority.



Client :		
Project: Omega West - TJM Plot		
Drawing Title : Tree Protection Plan		
Drng No. RSE_3152_TPPa	Rev : V9	
Drn By : JM	Scale : 1:2000@A0	Date : 05/08/2020
the ecology Practice 0845 602 3822 www.ecologypractice.co.uk		



Client :		
Project: Omega West - TJM Plot		
Drawing Title : Tree Protection Plan		
Drg No. RSE_3152_TPPb	Rev : V9	
Drm By : JM	Scale : 1:750@A0	Date : 05/08/2020
the ecology Practice 0845 602 3822 www.ecologypractice.co.uk		



WILLOWGATE

WELSH NEWTON COMMON

HEREFORDSHIRE

NP25 5RT

TELEPHONE: 0845 602 3822

WEBSITE: www.ecologypractice.co.uk

Appendix F: CEMP: Biodiversity; CEMP: Biodiversity (Unit 1) Pond Clearance Method Statement; and, CEMP: Biodiversity (Unit 1) Woodland, Tree & Hedgerow Clearance Method Statement.

Ecological Assessments

Environmental Statements (Biodiversity)

Species Surveys

Phase I Habitat Survey

National Vegetation Classification

Planning Guidance

Habitat Regulation Assessment

Protected Species Licensing

42020 CEMP: Biodiversity

BREEAM LE01 - 05

CEMP: Biodiversity (Unit 1)



Plot 1, Omega Zone 8




St Helens, WA5 3UG



Consultant Report on behalf of:



REPORT STATUS

Issue/revision	Issue 1: DRAFT TO CLIENT	Issue 2: FINAL	Issue 3: AMENDED FINAL
Project No.	169-03		
Report Ref.	16903-CEMP(Unit 1)_A	16903-CEMP(Unit 1)_B	16903-CEMP(Unit 1)_C
Date	10 TH March 2020	17 th March 2020	31 st March 2020
Prepared by	JC	JC	JC
Signature			
Reviewed by	AA/Client	AA	
Signature			

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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1. The following report has been prepared on behalf of Omega Warrington Ltd and provides a Construction and Environmental Management Plan (CEMP): Biodiversity for construction works to be undertaken at Unit 1, Omega Zone 8, St Helens ('The Site').
- 1.1.2. This document has been prepared following the British Standard 42020:2013¹. It should be read in conjunction with the CEMP: Biodiversity (infrastructure)².

Location

- 1.1.3. The Site forms part of the Omega business estate located west of Warrington, falling just within St Helens District. It is immediately south of the M62, west of Junction 8, and immediately west of the Warrington Borough boundary and Lingley Mere. The location is shown Figure 1.

Proposals

- 1.1.4. The works are to support Full Planning Permission for the erection of a B8 warehouse, with ancillary offices, associated parking, infrastructure, and landscaping. The configuration of these proposals is complex and is therefore shown in Figure 2.

Site description

- 1.1.5. The Site (30.64ha) is dominated by arable land with woodland belts, a network of ponds and ditches improved grassland and scrub habitat present. There is a brook

¹ **The British Standards Institution 2013** BS 42020:2013 Biodiversity - Code of practice for planning and development. Published by BSI Standards Limited 2013. ISBN 978 0 580 77917 6




² **Ecology Practice, 2020b.** *Omega Zone 8 Unit 1 [Infrastructure] CEMP: Biodiversity.* Consultant Report to Omega Warrington Ltd. Report ref. 16903-CEMP (Unit 1-Infra)_C

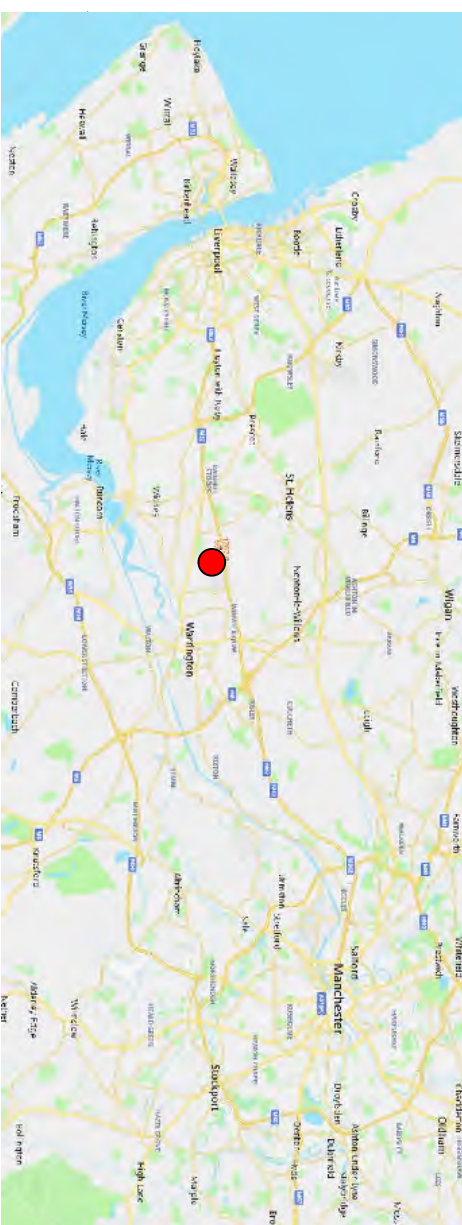
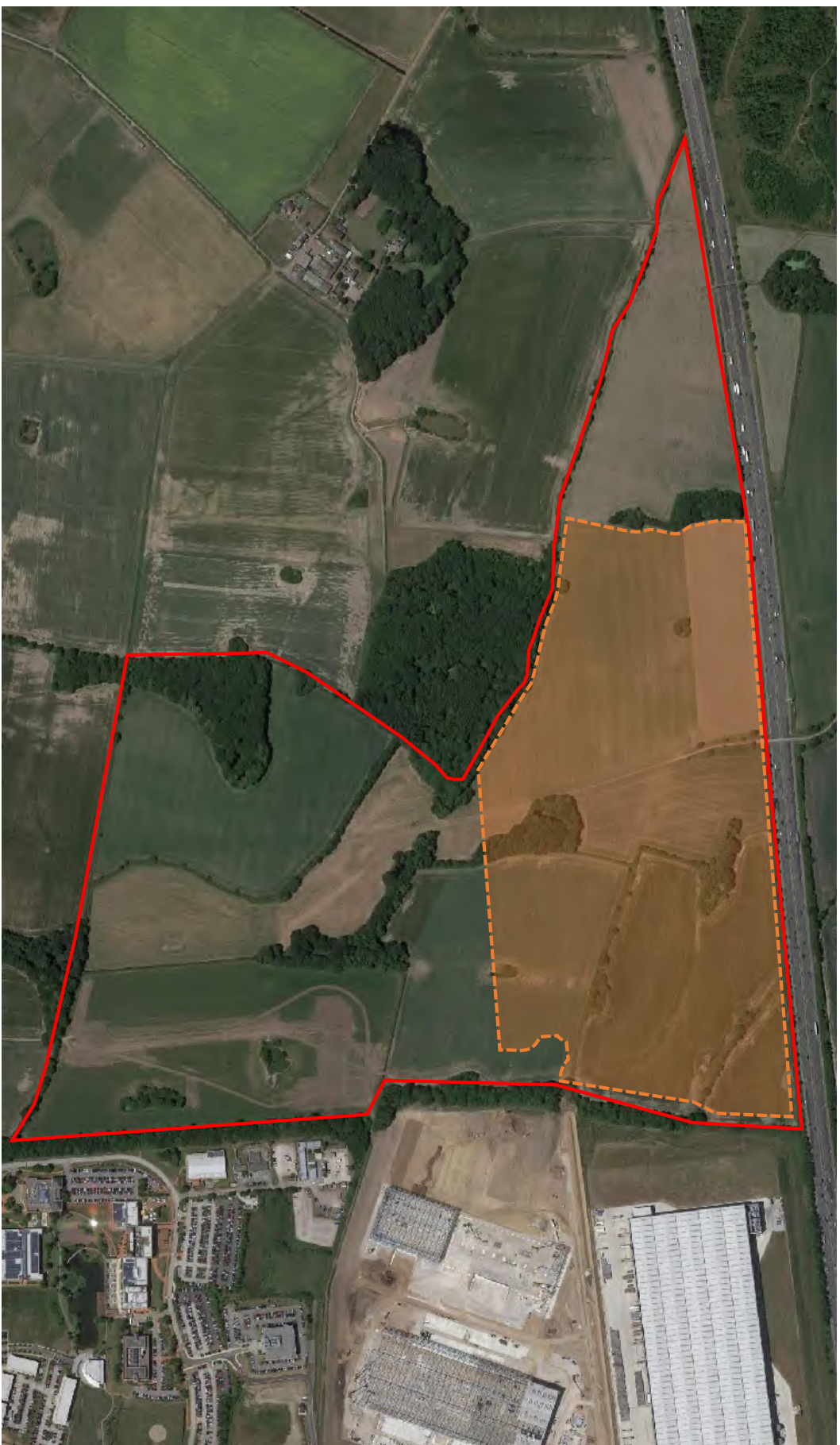
along the Southern boundary of the Site from the northwest. Off-site woodland is present to the south, east and west of the Site.

Figure 1
Location

Omega Zone 8, St Helens

Legend

-  Full Hybrid Proposals Area
-  Construction footprint
-  Site location











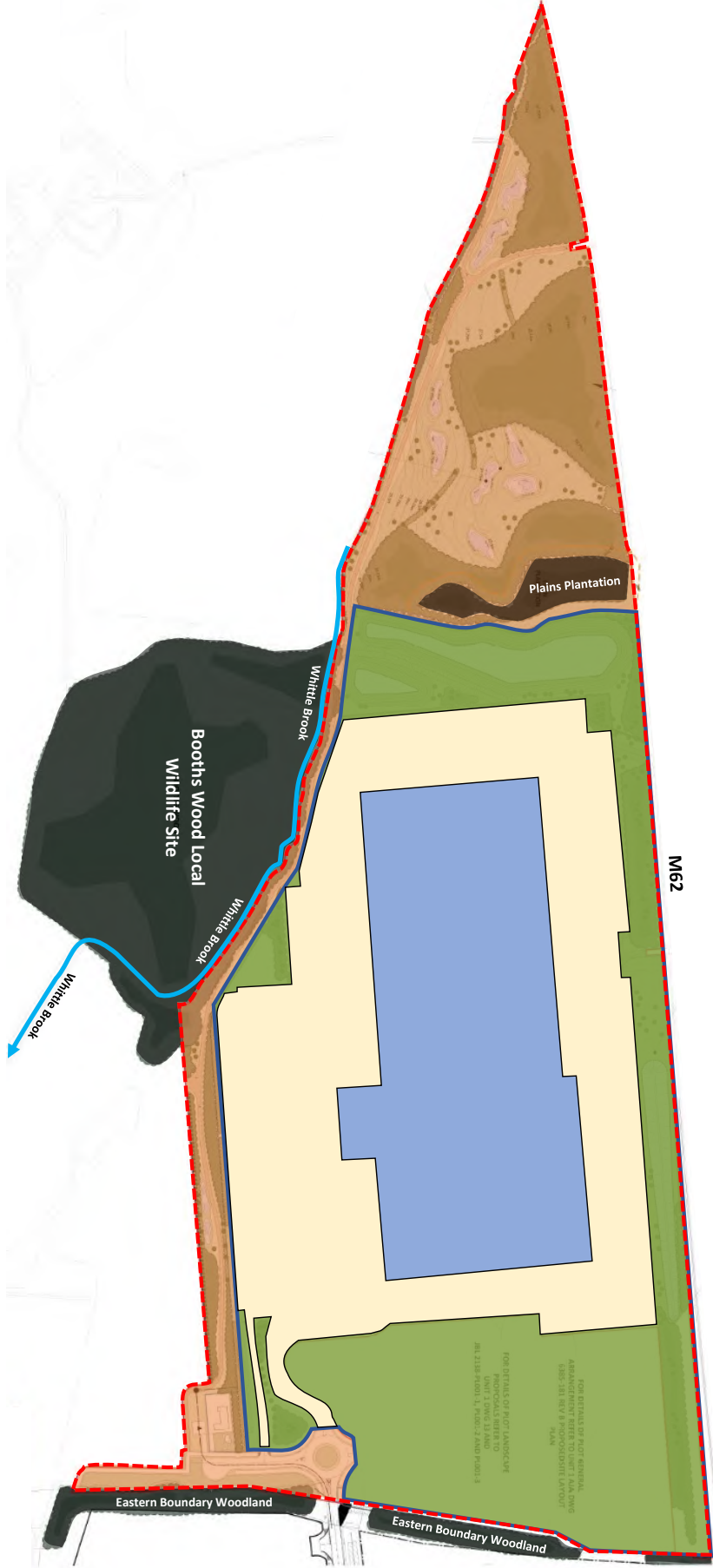
Drawings are diagrams and not to scale. Refer to architect drawings for exact measurements.

Figure 2
**Detailed
Application
Configuration**

Omega Zone 8, St Helens

Legend

-  Application Area
-  Off-plot landscaping and mitigation zone
-  On-Plot landscaping
-  Building
-  Hardstanding
-  Peripheral habitat to be protected from construction
-  Construction Boundary
-  White Brook



60m

300m

Drawings are diagramsmatic and not to scale. Refer to architect drawings for exact measurements.

2 BIODIVERSITY PROTECTION DETAILS

2.1 RISK ASSESSMENT OF POTENTIALLY DAMAGING DEVELOPMENT ACTIVITIES

Table 1: Risk Analysis and Resolution

(L = Likelihood, S = Severity, R = Risk; Values = 0 [lowest] – 5 [highest]) Residual risk to be managed (refer to

Activity	Existing Risk (L X S = R)			Mitigation	Residual Risk (L X S = R)		
Site clearance							
Removal or pruning/cutting of trees, shrubs and ground vegetation (e.g. during bird breeding season);	5	5	25	Carry out removal 1st September - 1st March	0	5	0
				Where this period is extended, ecology method statement is required (hedgerows only)			
				Tree & Woodland removal subject to Arboricultural Mitigation Report			
				Woodland felling subject to Woodland Clearance Method Statement			
				Woodland felling to avoid concentric circle approach; to be carried out in a single direction for the entirety of the removal of a woodland block.			
Hedgerow removal to be in 2 stages: removal of hedge to 30 cm then leave overnight before remainder is removed. Not to be left for more than 24 hours.							
Removal of soil, rubble and other materials	5	1	5	Use dedicated haulage route and public highways	0	1	0
Purple ramping-fumitory	5	5	25	Plant protected under Biodiversity Protection Zone 2	0	5	0
Site set up							
Location of site offices, site huts, temporary	5	4	20	Welfare facilities to be self-contained and emptied off-site	0	4	0

Activity	Existing Risk (L X S = R)			Mitigation	Residual Risk (L X S = R)		
latrines (including their drainage);				All associated works restricted to within the heras fencing (refer to box 1, and Figure 4)	0	4	0
Temporary storage areas and stockpiles for soils, materials, spoils and waste;	5	3	15	All associated works restricted to within the heras fencing and bunded where necessary	0	3	0
Site lighting spillage onto neighbouring habitat	5	5	25	Avoid illumination of maintained habitat	0	5	0
Areas for plant maintenance and for storage of oils, fuels and chemicals;	5	3	15	Provide Construction Phase Environmental Management Plan	0	3	0
Establishment of haul roads (e.g. construction of rubble or concrete temporary roads);	5	2	10	Provide Construction Phase Environmental Management Plan	0	2	0
Site fencing (e.g. disruption/severance of animal runs and paths).	5	1	5	Provide egress underneath	0	1	0
Groundworks							
Ground investigations, foundations, excavations and piling, temporary earthworks, tunnelling (including the necessary space to operate cranes and large machinery);	5	2	10	Leave escape from trenches, cover wet excavations and pipe apertures	0	2	0
Installation of underground services (e.g. pipes, electricity, gas, telecommunications cables, foul and surface water drains);	5	2	10	Leave escape from trenches, cover wet excavations and pipe apertures	0	2	0
Assembly areas for dry trades (e.g. Steel works and reinforcements);	5	1	5	All associated works to be restricted to within the heras fencing	0	1	0
Assembly areas for wet trades (e.g. Concrete pours and batching).	5	3	15	All associated works to be restricted to within the heras fencing	0	3	0

Activity	Existing Risk (L X S = R)			Mitigation	Residual Risk (L X S = R)		
				Concrete to be delivered ready-mixed			
Marine works							
Piling or other works relating to foundations.	5	1	5	Concrete to be delivered ready-mixed	1	5	5
Construction - general							
Increase in traffic movements	5	1	5	Driver awareness	1	1	1
There may be damage or destruction of maintained trees or woodland	3	4	12	Maintain Tree Root & Construction Exclusion Protection Zones	0	4	0
Neighbouring habitat outside the development footprint may be adversely affected.	5	5	25	Heras fencing will delineate the construction footprint	0	5	0
General construction may impede animal movement throughout the Site	3	2	6	Provide egress underneath fencing Works limited to daytime hours	0	2	0
Construction - Drainage							
Drainage may decrease off-site water quality	2	4	8	Construction drainage subject to an agreed methodology	0	4	0
There may be insensitive destruction of waterside habitat to provide outfall(s).	4	5	20	Ecology survey within 48 hours of outfall construction on natural watercourse	0	5	0
Environmental Incidents							
Vandalism	4	4	16	24-hour security	0	4	0
Fires and burning of wastes	1	5	5	Burning piles moved on day of burning	0	5	0
Pollution (air, water and ground);	5	5	25	Provide Construction Phase Environmental Management Plan	0	5	0

Activity	Existing Risk (L X S = R)			Mitigation	Residual Risk (L X S = R)		
Erosion and sediment run-off;	5	5	25	Provide Construction Phase Environmental Management Plan	0	5	0
				Measure water quality	0	5	0
Accidents (e.g. Fuel leaks and spills).	5	5	25	Provide Construction Phase Environmental Management Plan	1	5	5
Final Site Works							
Disposal of wastes, removal of site offices and final site clearance after Construction	5	2	10	Provide Construction Phase Environmental Management Plan	0	2	0

Table 2: Secondary mitigation for residual risks

Risk	Front-line mitigation	Residual Risk/25	Secondary Mitigation
Piling or other works relating to foundations.	Concrete to be delivered ready-mixed	5	Avoid use of dangerous liquids uphill from any watercourse
Increase in traffic movements	Driver awareness	1	Speed limit signs
Accidents (e.g. Fuel leaks and spills).	Provide Construction Phase Environmental Management Plan	5	Be vigilant and ensure you read the CEMP.

2.2 BIODIVERSITY PROTECTION ZONES

- 2.2.1 All Biodiversity Protection Zones (BPZs) are shown in Figure 3. These include areas where there is strictly no access, areas where mitigation is required prior to any works taking place and areas where there may be controlled, restricted access. Access is controlled by permission from the Ecological Clerk of Works (ECoW), whose details are:

Mark Morgan
Ecology Practice
Tel. 01691 600908
Mobile: 07398 24346

Josh Cartlidge
Ecology Practice
Tel. 0845 602 3822
Mobile: 07776 742209

BPZ 1 – Important Habitats

- 2.2.2 These are important habitats, species and/or other biodiversity features, that are to be retained and protected during construction or implementation of the development, with strictly no access allowed.

Booths Wood LWS

- 2.2.3 A Local Wildlife Site protected from all access.
- Root Protection Areas (RPAs) and placement of protective fencing are shown in the Tree Protection Plan³
 - Limit of landscaping is shown in JBA drawing 2138-PL001-1 Unit 1 DWG.13a.
 - Booths Wood Method Statement⁴
 - Post and rail fence required to separate Booths Wood LWS from all construction activities, fitted with appropriate signage identifying 'No Access to Wildlife Site'

Plains Plantation

- 2.2.4 A woodland that benefits from a Tree Preservation Order and there is no access.

³ **Ecology Practice, 2020i.** *Arboricultural Impact Assessment and Tree Protection Plan.* Consultant Report to Omega Warrington Ltd. Report ref. 16903_AR_B

⁴ **Ecology Practice, 2020c.** *CEMP: Biodiversity Woodland, Tree & Hedgerow Clearance Method Statement.* Consultant Report to Omega Warrington Ltd. Report ref.16903-TR(Unit 1)_C

- Root Protection Areas (RPAs) and placement of protective fencing are shown in the Tree Protection Plan³.
- Limit of landscaping is shown in JBA drawing 2138-PL001-1 Unit 1 DWG.13a.
- Heras fence required to separate Plains Plantation from all construction activities, fitted with appropriate signage identifying 'No Access to Woodland'

BPZ 2 – Important Habitats

- 2.2.5 These are areas that are to be restricted for some or all construction-type activities for the whole or part of the construction/implementation process.

Northern Semi-Improved Grassland

- 2.2.6 An area of semi-improved grassland with no special protection but is a priority habitat and contains rare plant Purple ramping-fumitory. Therefore, access is controlled by the ECW.

- Limit of landscaping is shown in JBA drawing 2138-PL001-1 Unit 1 DWG.13a.
- Heras fence required to separate grassland area from all construction activities, fitted with appropriate signage identifying 'No Access to grassland area'.

Eastern Tree Belt

- 2.2.7 An area of deciduous woodland with no special protection but is a priority habitat and therefore access is controlled by the ECW.

- Root Protection Areas (RPAs) and placement of protective fencing are shown in the Tree Protection Plan³.
- Limit of landscaping is shown in JBA drawing 2138-PL001-2 Unit 1 DWG.13b.

BPZ 3 – Off-Site habitat

- 2.2.8 Whittle Brook is designated a main river by the Environment Agency and therefore falls into the guidance provided by the Water Framework Directive (WFD). Access is controlled by the ECW.

- Marine works such as cement washing, fuel oil etc. do not wash into Whittle Brook especially where there is sloped ground; all such works will be bunded to avoid this.
- Outfall to the Brook will be guided by the ECW to avoid tree RPAs and headwall installation will be subject to ECW agreement on location.

2.3 PRACTICAL MEASURES TO AVOID IMPACTS DURING CONSTRUCTION

General Construction Awareness

Biodiversity Champion

2.3.1 To ensure there is a daily watch on biodiversity issues, a biodiversity Champion will be nominated by the Principle Contractor. The Champion will liaise directly with the ECoW and be responsible for daily biodiversity protection tasks that do not necessarily require ecological expertise and can be delegated by the ECoW. For example, as follows:

- Inspections to ensure that wildlife does not become trapped in pipes, excavations an inspection shall regularly be carried out at the end of each day and items such as trenches will contain a means of escape for wildlife where left overnight (refer to 2.3.6 onwards).
- The Heras fencing will be inspected weekly to ensure it provides the necessary protection to habitats to remain (refer to Figure 4). Lost or damaged signs should be replaced at the earliest possible opportunity.
- The Biodiversity Champion will enforce the protection status of BPZs on a daily basis (see section 2.2).
- The Biodiversity Champion will be the daily point of contact for the construction team, able to interpret and police the contents and instructions in this CEMP: Biodiversity Appendix. This includes:
 - Regular review of mitigation measures that have been put in place to ensure their effectiveness and compliance with legal, planning and contractual requirements where necessary.
 - Maintenance of records and regular review of environmental procedures to report to the Site Manager.

Construction Good Practice

2.3.2 For all areas of woodland off-site, construction activities are restricted as follows:

i) The extent of an RPA may be up to 10m in radius or the width of the tree canopy for trees and should exclude all construction by way of temporary protective fencing.

- ii) The fence should be installed prior to any works (including ground works) are carried out or materials and plant are brought onto site, and not be removed until all construction works are complete, and all plant and temporary accommodation have been removed from the site.
- iii) No vehicle shall be parked or driven within the RPA.
- iv) No storage of any new building materials or equipment within the RPA.
- v) All static plant placed within 10m of a tree is to be fully banded to ensure no fuel leakage is possible into the water table close to the habitat. It is essential that allowances are made for the slope of the ground so that damaging materials such as concrete washings, mortar or fuel oil cannot run towards a habitat such as grassland or a tree.
- vi) No fires to be lit beneath or in close proximity to a canopy of a tree (10m).
- vii) The lighting design shall be constructed to avoid illuminating the trees on the east, south and western border, in order to reduce potential impacts on wildlife (Bat Conservation Trust guidance⁵).
- viii) Care should be exercised when using cranes or similar equipment near the spread of a tree. In the case where plant or wide/tall loads are being used, it must be ensured that all parts of the equipment remain outside of the RPAs, in order that they can operate without coming into contact with any of the on-site or adjacent trees. All works must have appropriate supervision by a banksman, to ensure that adequate clearance from trees is maintained at all times.
- ix) During any works close to the RPA fence any root smaller than 35mm diameter should be pruned carefully with a propriety cutting tool such as saw or secateurs and roots larger than this will require consultation with an arboriculturist before severing.
- x) If damage occurs to part of a tree during the works, the project Arboriculturist must be contacted without delay.

⁵ <https://www.bats.org.uk/about-bats/threats-to-bats/lighting>

Siting and timing of all construction activities

2.3.3 Works to affect bird breeding habitat should not take place during the period 1st March to 31st August, or:

- bird breeding habitat should be removed outside the bird breeding season in advance of the works, or
- where clearance of vegetation likely to support nesting birds takes place between 1st March and 31st August a method statement will be agreed in writing by the Local Planning Authority.

Security & other construction lighting

2.3.4 Security/construction lighting will be directed away from surrounding natural habitat, and avoid illuminating any trees, except where health & safety requires illumination.

General monitoring and provision of advice by an ecologist

2.3.5 Advice in advance from a suitably qualified ecologist should be obtained for specified destructive activities, as follows:

Woodland, Tree & hedgerow Clearance

- All Woodland, tree and hedgerow clearance is subject to a Method Statement⁴.
- Woodland clearance be restricted to those wooded areas and individual trees as shown in the Tree Protection Plan³.

Pond Clearance

- All pond clearance is subject to Method Statement: Pond Clearance⁶.
- Pond clearance be restricted to those ponds as shown in the Method Statement⁶.

⁶ **Ecology Practice, 2020e.** *CEMP: Biodiversity Pond Clearance Method Statement*. Consultant Report to Omega Warrington Ltd. Report ref. 16903-PC(Unit 1)_C

Excavations

2.3.6 During the wider construction period particular care must be taken when creating trenches or similar excavations, as these could act as 'pitfall traps' and/or may fill with water and pose a threat to mobile or nocturnal animals such as badgers from drowning, even when excavations are not deemed to be very deep.

- i) Dry excavations left open overnight will have a means of escape for any animals that might fall in (e.g. a simple plank or a soil ramp).
- ii) Where an excavation already holds water (e.g. the entry and exit pits) these must be fully and securely covered at night to ensure an animal cannot accidentally fall in and a means of escape should also be provided.
- iii) Daily inspection of such excavations **MUST** be carried out by the contractor at the end of each day prior to dusk, allowing enough time to install the necessary mitigation before nightfall. The ECW will visit the Site randomly to ensure that the Site is left in a manner which does not put animal welfare at risk.
- iv) Should any excavation be left in an unsafe manner, the contractor will have an obligation to rectify this to the satisfaction of the ECW at the time of visit, and certainly before dusk of the day of that visit. Should it be determined that the contractor is unable to make safe any excavation prior to dusk at any time throughout the course of the entire works, then the ECW will take the necessary steps to make that excavation(s) safe and the cost of this will be borne by the contractor.

2.3.7 Similar threats exist with pipes. Open ends of pipes must be blocked from animal access at the end of each day.

Non-native and invasive species

- 2.3.8 These are subject to a method statement prepared by WSP (ref).

Biosecurity protocol

- 2.3.9 When working with water, contractors should ensure all clothing and footwear is free of spoil & vegetation. The clothing should be freshly worn attire each day, with worn clothing being dispensed for washing at the end of each day. On no occasion should personnel enter more than one water feature with the same clothing/boots. This applies to all utensils and all other equipment.

Training and awareness

- 2.3.10 The Principal Contractor should acknowledge the contents of this CEMP.
- 2.3.11 A simple toolbox presentation should be provided by the ECoW, providing the initial guidance and preparation details on biodiversity protection, woodland removal and any other point of importance for biodiversity.

Procedures to avoid pollution incidents

- 2.3.12 No oil, bitumen, cement or other material likely to cause an adverse effect shall be stored or discharged within 10 metres of a tree or hedgerow.
- No such material will be stored or discharged uphill from any watercourse
 - Use of spill kits with machinery
 - Use of silt fencing when excavating within 10m of a watercourse.

Reporting of unexpected occurrence of protected species

- 2.3.13 The ECoW will be informed should a previously unrecorded protected species such as a reptile be found during construction/implementation. The Ecological Clerk of Works can be contacted at The Ecology Practice 01989 770457.

Locational items

- 2.3.14 Where intrusion into a Root Protection Area is unavoidable, then an arboriculturist is to be present and a photographic record is to be made of any works during its construction. Heras fencing will delineate the working easement to protect neighbouring vegetation.

2.4 THE ROLE OF AN ECOLOGICAL CLERK OF WORKS

- 2.4.1 The ECW role is subject to a Method Statement provided in Method Statement: ECW⁷.

2.5 USE OF PROTECTIVE FENCES, EXCLUSION BARRIERS AND WARNING SIGNS

Location

- 2.5.1 All areas outside the construction will be protected by fencing to prevent disturbance from construction activities, and appropriate hazard signage used. The location of all protective fencing is shown Figure 4.
- 2.5.2 The use of plastic tape, etc., instead of fixed fencing should be considered only in situations where very temporary protection is needed and should be restricted to operations where on-site ecological monitoring and advice is available throughout the operations that pose a risk.

Timing

- 2.5.3 Protective fencing will be erected before any materials or machinery are brought onto the whole or part of a site where a risk has been identified, and before any demolition, development or removal of soil or vegetation commences. Once erected,

⁷ **Ecology Practice, 2020I.** *CEMP: Biodiversity Ecological Clerk of Works Method Statement.* Consultant Report to Omega Warrington Ltd. Report ref.16903-ECW(Unit 1)_C

barriers will not be removed or altered without prior recommendation by an ecologist and approval in writing by the decision-maker.

Type

- 2.5.4 Generally temporary security and protective fencing will consist of a typical heras fence such as that shown in Box 1 below.

Signage

- 2.5.5 Warning signs should be fixed securely in appropriate locations (e.g. next to sensitive features such RPAs) and should explain to construction site personnel why certain areas or features are being protected for part or for the whole duration of the development. They should be written in plain language and should be large enough to be visible and clearly legible from the cab of any construction machinery that might be operating in close proximity. Lost or damaged signs should be replaced at the earliest possible opportunity.

Security & other construction lighting

- 2.5.6 All temporary lighting used during construction will ensure low emission are below 3 lux at ground level, to avoid disturbance to bat flight paths (BCT 2007⁵). Directional lighting (e.g. cowls, baffles and shields) will be used to ensure there is no light spill towards natural habitat (e.g. BPZ 1).

Box 1: Typical heras fencing

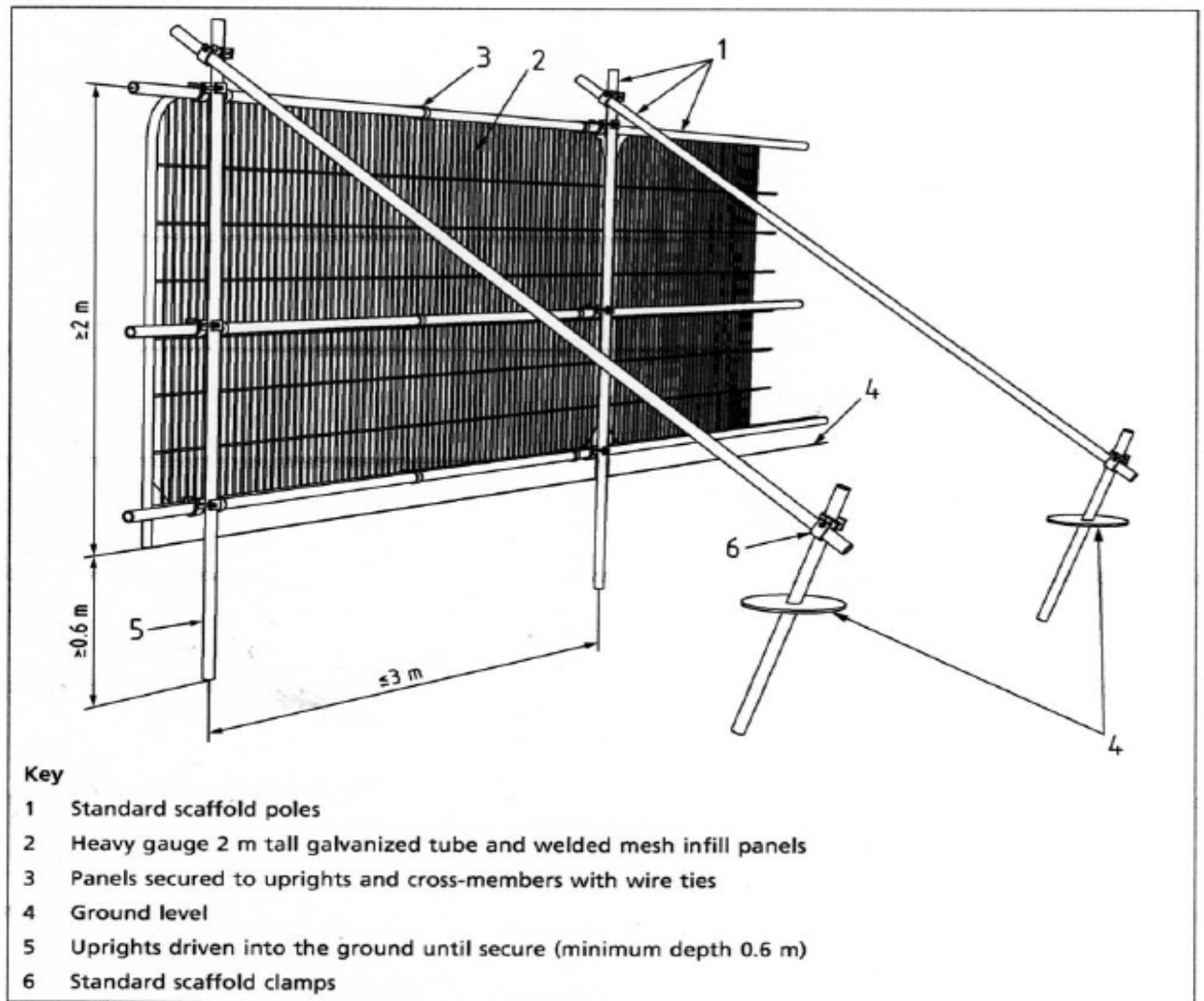
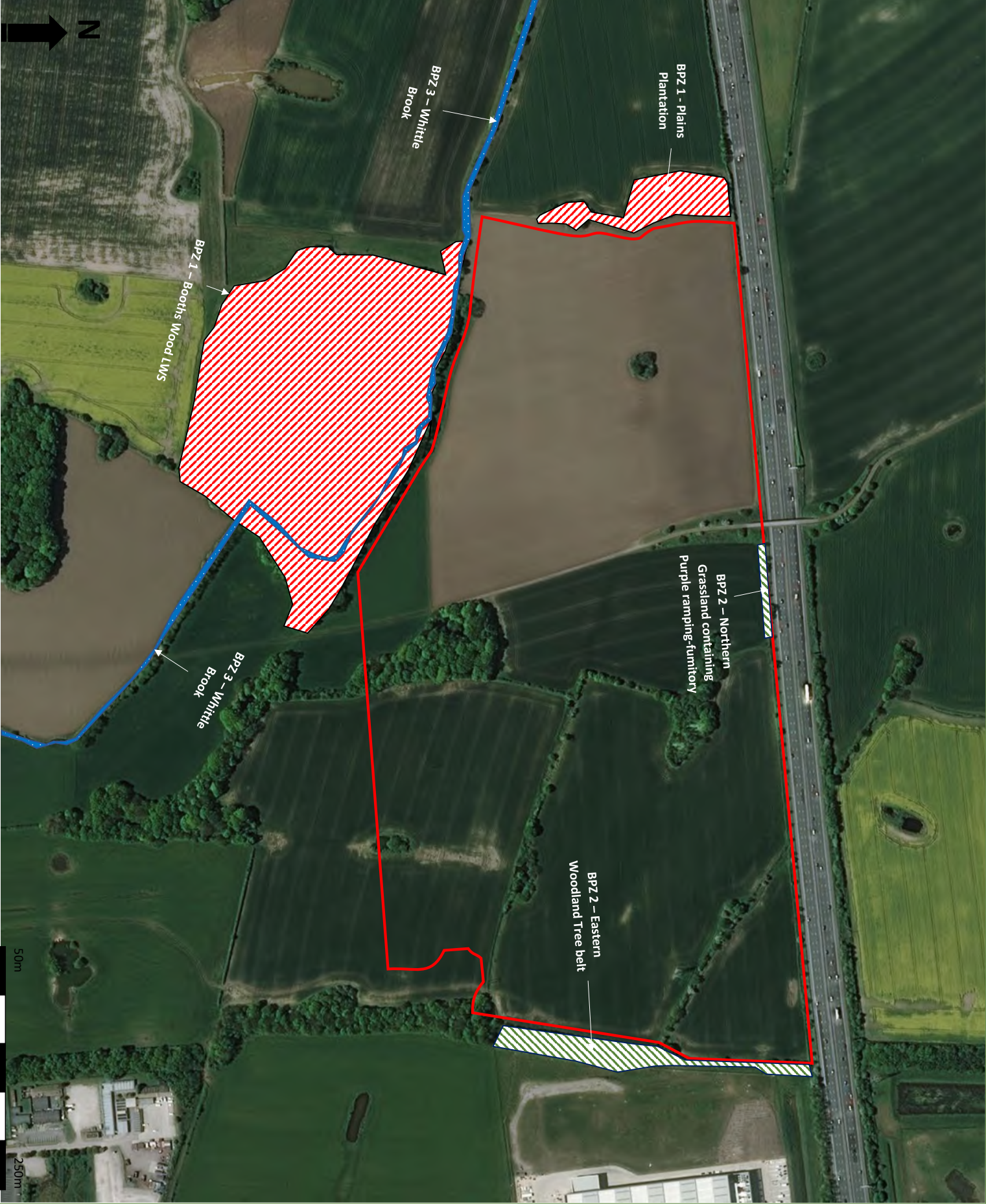
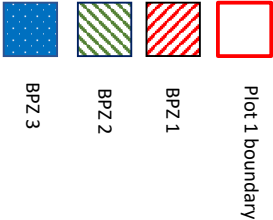


Figure 3
Biodiversity Protection
Zones (BPZs)

Omega Zone 8, St Helens

Legend






Drawings are design proposals and not to scale. Refer to architect's drawings for exact measurements.

Figure 4
Fencing

Omega Zone 8, St Helens

Legend

-  Plot 1 Boundary
-  Heras Fencing
-  Post & Rail Fencing



Drawing No.: 16903-02CEMP_A

Revision Dates			
A	B	C	D
12/03/20			

the ecology Practice

WILLOWGATE

WELSH NEWTON COMMON

HEREFORDSHIRE

NP25 5RT

TELEPHONE: 0845 602 3822

WEBSITE: www.ecologypractice.co.uk

CEMP: Biodiversity (Unit 1)

Pond Clearance Method Statement



Plot 1, Omega Zone 8

St Helens, WA5 3UG



Consultant Report on behalf of:



Ecological Assessments

Environmental Statements (Biodiversity)

Species Surveys

Phase I Habitat Survey

National Vegetation Classification

Planning Guidance





Habitat Regulation Assessment

Protected Species Licensing

42020 CEMP: Biodiversity

BREEAM LE01 - 05

REPORT STATUS

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Report Ref.	16903-PC_A	16903-PC_B	16903-PC_C
Date	11 th March 2020	17 th March 2020	31 st March 2020
Prepared by	Andrew Arnott	Josh Cartlidge	Josh Cartlidge
Signature			
Reviewed by	Josh Cartlidge/Client	Andrew Arnott	Andrew Arnott
Signature			

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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1. The following report has been prepared on behalf of Omega Warrington Ltd and provides a method statement for clearance of ponds to facilitate construction of Plot 1 and associated landscape at Omega Zone 8, St Helens ('The Site').
- 1.1.2. This document has been prepared following the British Standard 42020:2013¹. It should be read in conjunction with the CEMP: Biodiversity².

Location

- 1.1.1 The Site forms part of the Omega business estate located west of Warrington, falling just within St Helens District. It is immediately south of the M62, west of Junction 8, and immediately west of the Warrington Borough boundary and Lingley Mere. The location is shown in Figure 1.

Proposals

- 1.1.2 The ECW will work with Full Planning Permission for the erection of a B8 warehouse, with ancillary offices, associated parking, infrastructure, and landscaping. The configuration of these proposals is complex and is therefore shown in Figure 2.

Site description

- 1.1.3 The Site (30.64ha) is dominated by arable land with woodland belts, a network of ponds and ditches improved grassland and scrub habitat present. A brook along the Southern boundary of the Site from the northwest. Off-site woodland is present to the south, east and west of the Site.

¹ **The British Standards Institution 2013** BS 42020:2013 Biodiversity - Code of practice for planning and development. Published by BSI Standards Limited 2013. ISBN 978 0 580 77917 6


² **Ecology Practice, 2020a.** *Omega Zone 8 Unit 1 CEMP: Biodiversity.* Consultant Report to Omega Warrington Ltd. Report ref. 16903-CEMP (Unit 1) _C


Figure 1
Location

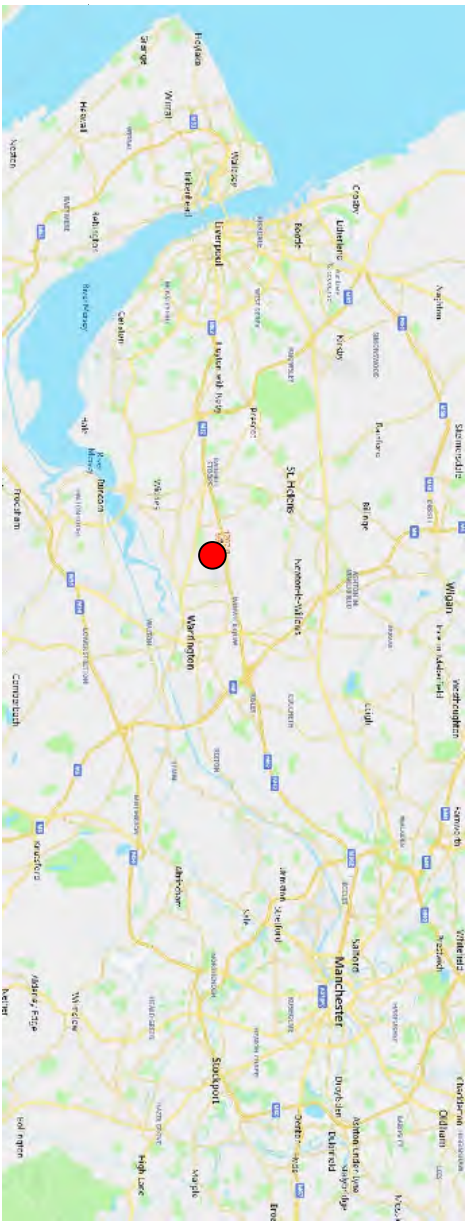
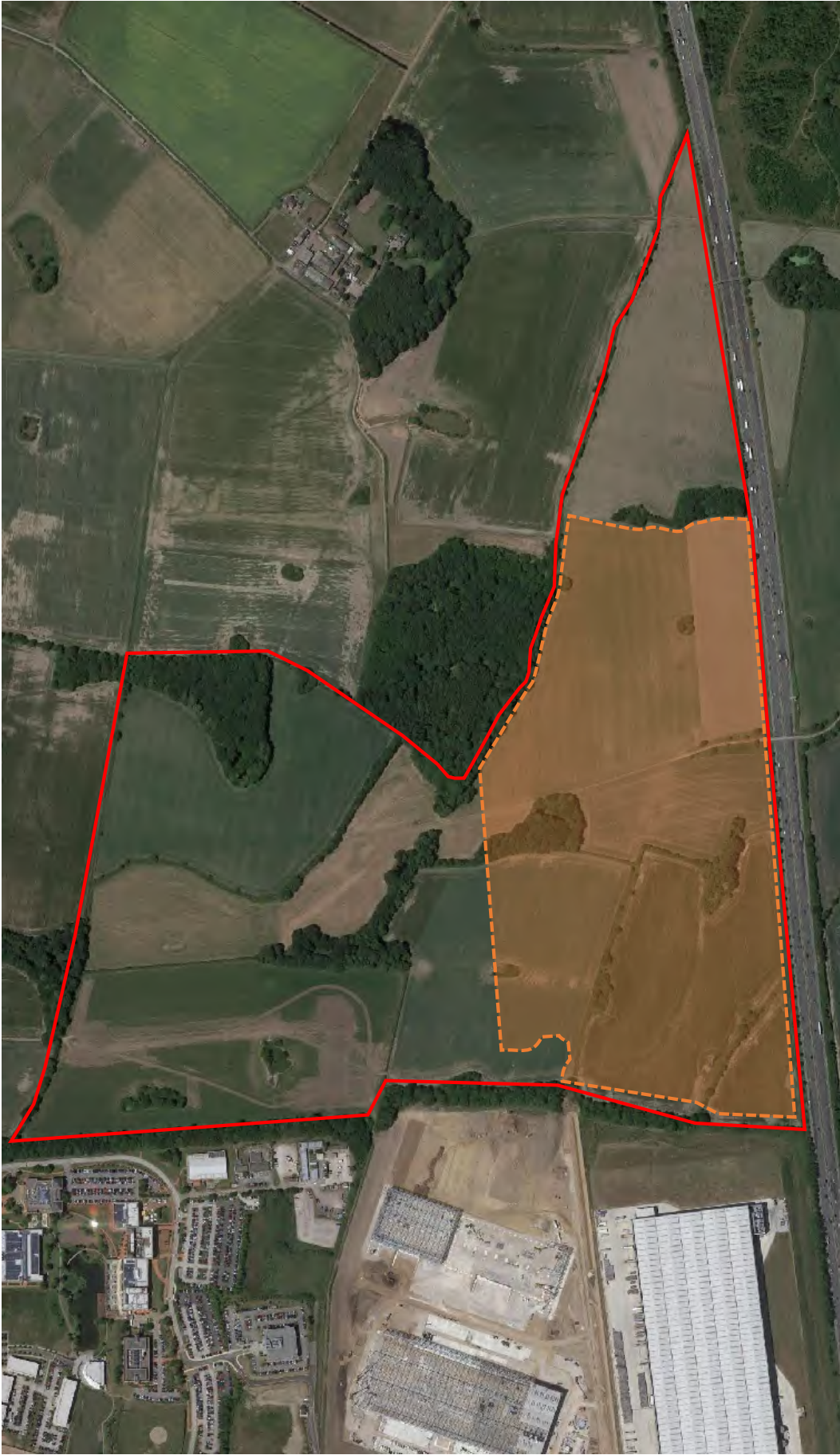
Omega Zone 8, St Helens

Legend

 Full Hybrid Proposals Area

 Full aspect of hybrid construction footprint

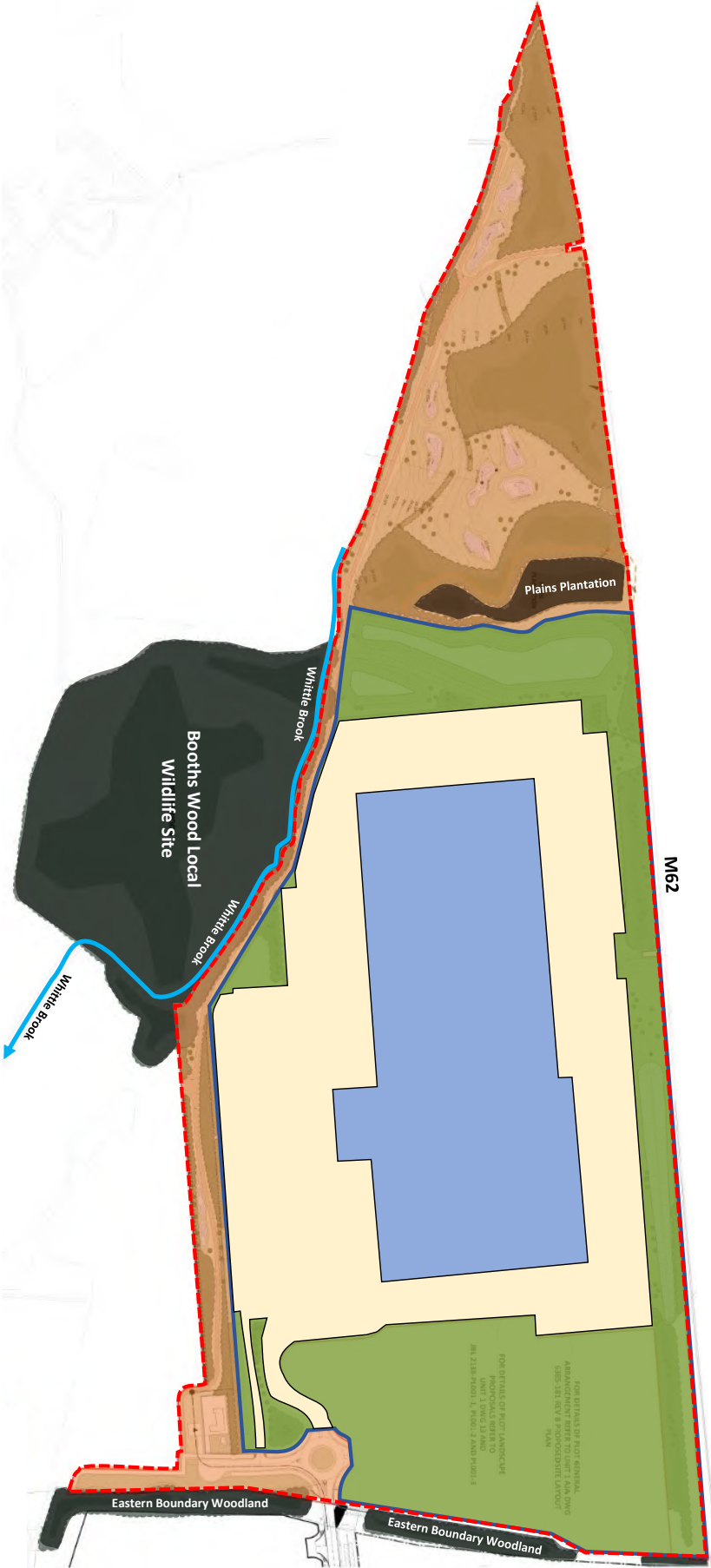
 Site location



Drawing is diagrammatic and not to scale. Refer to architect's drawings for exact measurements.

Figure 2
**Detailed
Application
Configuration**

Omega Zone 8, St Helens



Legend

- Application Area
- Off-plot landscaping and mitigation zone
- On-Plot landscaping
- Building
- Hardstanding
- Peripheral habitat to be protected from construction
- Construction Boundary
- White Brook



Drawing No.: 16903-01LEMP_A

Revision Dates			
A	B	C	D
10/09/20			

2 POND LOSS

2.1 HABITAT DESCRIPTION

- 2.1.1 Ponds within the proposals and its construction footprint are shown in Figure 3. A total of 6 ponds are located within the development footprint, with a further 2 ponds situated immediately adjacent to the boundaries.
- 2.1.2 All woodland ponds are highly shaded and therefore offer little quality in terms of macrophyte or invertebrate diversity.
- 2.1.3 In-field ponds were found to be prone to silt/soil runoff from surrounding arable land and created poor conditions for biodiversity. While there is a fairly large number of ponds scattered around the overall hybrid site all within close proximity, they are mostly isolated from one another by frequent agricultural practices (such as ploughing/harvesting).

2.2 GREAT CRESTED NEWT STATUS

- 2.2.1 All ponds onsite and within 500m of the boundary of the entire hybrid application (except for Booth's Wood pond) and therefore including those up to 500m from the development footprint were sampled for great crested newt (*Triturus cristatus*) eDNA scoring negative throughout (refer to EP 2020a³).

Habitat Suitability Index (HSI)

- 2.2.2 A Habitat Suitability Index was carried out for 2019 (refer to Table 2) using Oldham's score (Oldham et al. 2000⁴). Of the 8 ponds surveyed, only 1 of good suitability for GCN.

³ **Ecology Practice 2019** Great Crested Newt Survey – eDNA. Consultant Report to Omega Warrington Ltd. Report ref. 16903-GCN_A

⁴ **Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000).** Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155.

2.3 PONDS TO BE LOST


- 2.3.1 There are 8 ponds to be lost to facilitate development and these are shown in Figure 3. They are ponds 1, 4, A, B, C, D, S & AZ.


Figure 3
Pond Loss (Plot 1)

Omega Zone 8, St Helens

Legend

 Full Hybrid Proposals Area

 Full aspect of hybrid construction footprint

 Pond lost



Drawing No.: 16903-05CEMP_A

Revision Dates			
A	B	C	D
11/03/20			

3 POND REMOVAL METHOD STATEMENT

3.1 TIMING

- 3.1.1 All pond clearance must be carried out between the 1st September - 1st March. Ponds can be complex habitats usually surrounded by inaccessible reedbeds so it will not be possible to clear these habitat types at any other time of year due to the significantly high likelihood of breeding birds. The various schedules must be designed to account for this.

3.2 FISH RELOCATION SURVEY

- 3.2.1 Fish will be removed from the affected ponds pre-September, after the 15th June once the spawning season for coarse fish has closed. This will be by boat-based electric fishing using bankside equipment and a portable generator onboard a small inflatable boat. Electric fishing would be conducted by professionals trained under the Environment Agency Electric Fishing Code of Practice and using equipment that complies with Annex A & B, Issue II Specification of that code. The team would conduct multiple runs, until catch depletion numbers indicate that >90% of the population has been captured from the works area.
- 3.2.2 Seine netting techniques would also be used to increase the fish capture efficiency. We have the option to deploy a range of net sizes (25 – 50m) with micromesh and coarser mesh sites depending on the conditions of the site. Seine netting techniques can be limited if there is an uneven substrate with significant underwater obstacles, so the nature of the site would be assessed, and advice sought from the client prior to deploying a seine net.

Consents and licensing

- 3.2.3 Qualified personnel and licensed equipment will be used to undertake the fish pond removal and relocation. FR2 authorisation (permission to catch fish without rod and line) from the Environment Agency would be undertaken prior to any works.

3.3 ECOLOGICAL CLERK OF WORKS (ECW)

- 3.3.1 All clearance activities must be supervised daily by an ECW.
- 3.3.2 The ECW will drain down each pond using a floatation filter device and hand search the emptied pond to avoid killing or injuring commoner amphibians.
- 3.3.3 Ponds can be infilled once empty without further constraint.

3.4 ANIMAL RELOCATION

- 3.4.1 Animals will be relocated to similar habitat from which they were removed. That habitat will not be within the area earmarked for future Zone 8 development, instead it will comprise existing ponds that hold water for 12 months of the year in the neighbouring Omega South development.

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WILLOWGATE

WELSH NEWTON COMMON

HEREFORDSHIRE

NP25 5RT

TELEPHONE: 0845 602 3822

WEBSITE: www.ecologypractice.co.uk

CEMP: Biodiversity (Unit 1)

Woodland, Tree & Hedgerow Clearance Method Statement

Ecological Assessments

Environmental Statements (Biodiversity)

Species Surveys

Phase I Habitat Survey

National Vegetation Classification

Planning Guidance

Habitat Regulation Assessment

Protected Species Licensing

42020 CEMP: Biodiversity

BREEAM LE01 - 05



Plot 1, Omega Zone 8





St Helens, WA5 3UG



Consultant Report on behalf of:



REPORT STATUS

Issue/revision	Issue 1: DRAFT TO CLIENT	Issue 2: FINAL	Issue 3: AMENDED FINAL
Project No.	169-03		
Report Ref.	16903-TR(Unit1)_A	16903-TR(Unit1)_B	16903-TR(Unit1)_C
Date	11 th March 2020	17 th March 2020	31 st March 2020
Prepared by	Andrew Arnott	Josh Cartlidge	Josh Cartlidge
Signature			
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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1. The following report has been prepared on behalf of Omega Warrington Ltd and provides a method statement for tree and hedgerow removal to facilitate construction of Plot 1 and associated landscape at Omega Zone 8, St Helens ('The Site').
- 1.1.2. This document has been prepared following the British Standard 42020:2013¹. It should be read in conjunction with the CEMP: Biodiversity² and the Arboricultural Method Statement.

Location

- 1.1.1 The Site forms part of the Omega business estate located west of Warrington, falling just within St Helens District. It is immediately south of the M62, west of Junction 8, and immediately west of the Warrington Borough boundary and Lingley Mere. The location is shown in Figure 1.

Proposals

- 1.1.2 The ECW will work with Full Planning Permission for the erection of a B8 warehouse, with ancillary offices, associated parking, infrastructure, and landscaping. The configuration of these proposals is complex and are therefore shown in Figure 2.

Site description

- 1.1.3 The Site (30.64ha) is dominated by arable land with woodland belts, a network of ponds and ditches improved grassland and scrub habitat present. A brook along the

¹ **The British Standards Institution 2013** BS 42020:2013 Biodiversity - Code of practice for planning and development. Published by BSI Standards Limited 2013. ISBN 978 0 580 77917 6

² **Ecology Practice, 2020a.** *Omega Zone 8 Unit 1 CEMP: Biodiversity.* Consultant Report to Omega Warrington Ltd. Report ref. 16903-CEMP (Unit 1) _C

Southern boundary of the Site from the northwest. Off-site woodland is present to the south, east and west of the Site.


Figure 1
Location

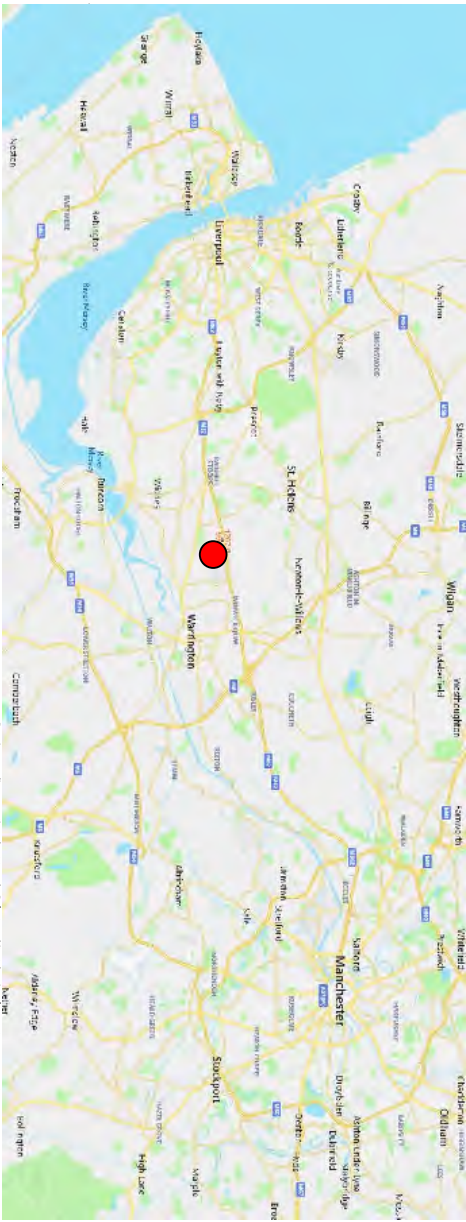
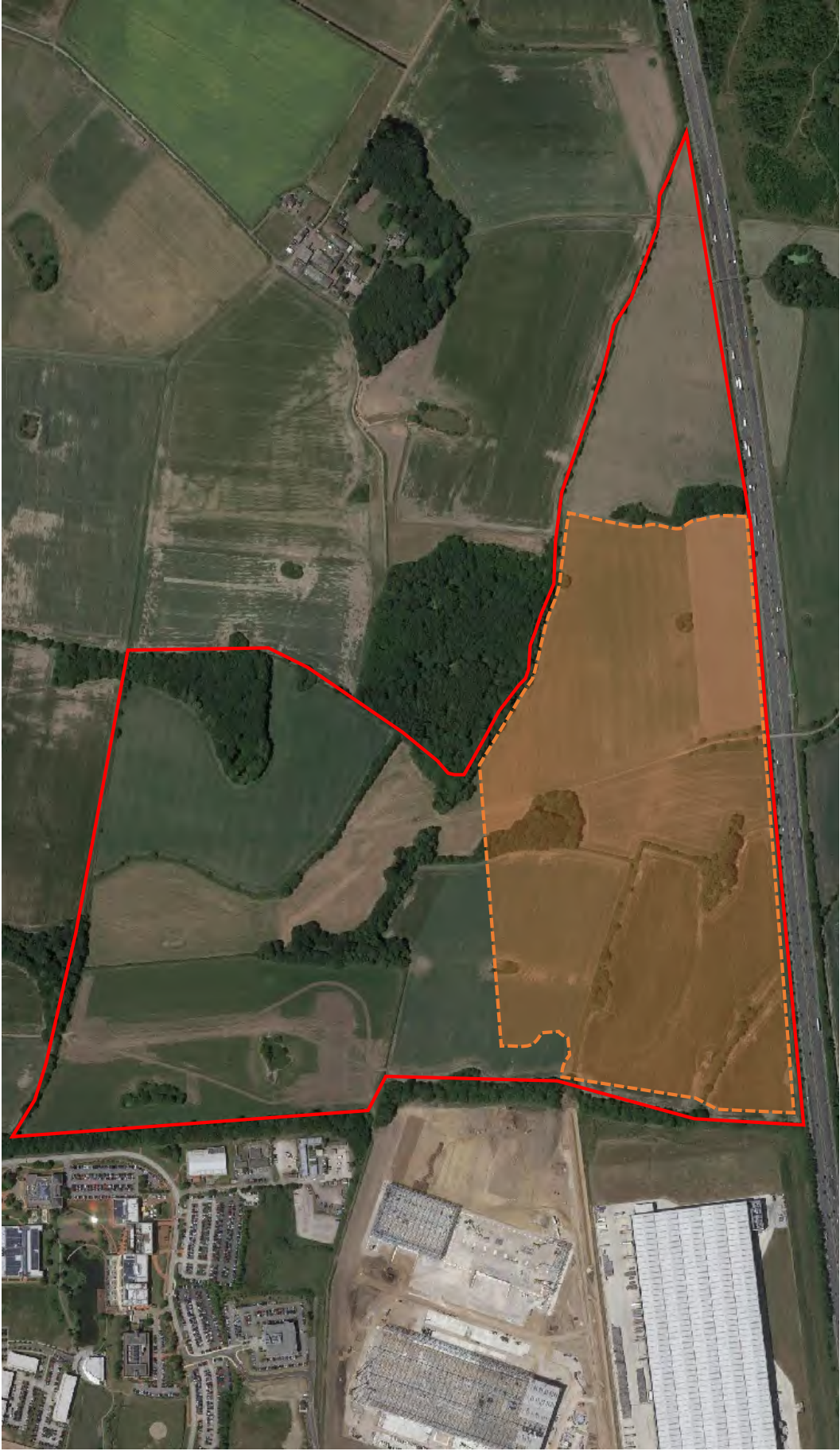
Omega Zone 8, St Helens

Legend

 Full Hybrid Proposals Area

 Construction footprint

 Site location



Drawings are diagrammatic and not to scale. Refer to architect drawings for exact measurements.

Omega Zone 8, St Helens

Application Area

Off-plot landscaping and mitigation zone

On-Plot landscaping

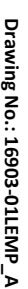
Building

Hardstanding

Peripheral habitat to be protected from construction

Construction Boundary

Whittle Brook



Revision Dates

	A	B	C	D
10/09/20				

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0845 602 3822
www.ecologypractice.co.uk



60m 300m

2 WOODLAND, TREE & HEDGEROW DESCRIPTIONS

2.1 WOODLANDS

- 2.1.1 Woodlands within and surrounding the proposals and its construction footprint are shown in Figure 3.

Woodlands Description

Woodland A (to be lost) (TPO ref – 5/2 W17)

- 2.1.2 An unnamed woodland located towards the centre-northeast of the Site. It is a small woodland (~1.4 ac) dominated by sycamore, with frequent crack willow (*Salix fragilis*) with elder (*Sambucus nigra*), pedunculate oak and silver birch (*Betula pendula*) noted as rare. Bramble and bracken (*Pteridium aquilifolium*) make up the ground flora, although soft rush (*Juncus effusus*) and yellow flag iris (*Iris pseudocorus*) were noted at the pond edge, where crack willow features within the pond.
- 2.1.3 A single pond (~850m²) is present to the western extent of the wood. It is heavily shaded by trees and fish presence was noted. During a Habitat Suitability Index (HSI) survey a small diversity of invertebrates were found to be present, including dragonfly larva.
- 2.1.4 A disused badger sett was noted within the woodland containing four (4) entrances. The sett has long been disused.

Big Wood Belt (to be lost) (TPO ref – 5/2 W7)

- 2.1.5 Big Wood Belt is located near the centre of the Site. It is dominated by sycamore with pedunculate oak and hawthorn noted as frequent. Elder, alder (*Alnus glutinosa*), horse chestnut (*Aesculus hippocastanum*), silver birch, large leaved lime (*Tilia platyphyllos*) and beech (*Fagus sylvatica*) were noted as rare. Trees were mostly of the mature age, with plenty of regeneration present within the understory (mostly sycamore). Ground flora consists largely of bare-earth ground with bramble noted as

occasional throughout. Common grasses (such as Yorkshire fog (*Holcus lanatus*) and false-at grass (*Arrhenatherum elatius*) were noted extending up to 5m into the northern woodland edge. A small 5m strip of tall ruderal vegetation was recorded along the northern boundary of the woodland adjacent to the arable field.

- 2.1.6 A single pond (~900m²) exists to the northwest of the woodland. The pond is heavily shaded by woodland and fish presence was noted. Old fishing platforms were observed at the pond edge. No vegetation was observed within the pond.
- 2.1.7 A small number of species were noted at or near the pond edge, including male fern (*Dryopteris filix-mas*), bittersweet nightshade (*Solanum dulcamara*), bramble, soft rush, silver birch and wood millet (*Milium effusum*). While wood millet is an ancient woodland indicator species, it was not found to be growing in conjunction with other ancient woodland indicator species. Species diversity was considered to be largely poor throughout the woodland.
- 2.1.8 A shallow dry ditch extends from the northeast of the pond, with a second running laterally immediately south of the pond. There was no change in vegetation within these ditches.

Plain Plantation (to be fully protected)

- 2.1.9 Plain Plantation is located towards the northwest of the Site. It is a small, mature woodland (~1.6 ac) dominated by sycamore (*Acer pseudoplatanus*) and pedunculate oak (*Quercus robur*), with occasional sessile oak (*Quercus petraea*). The understorey consists of mature and immature hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*) and alder (*Alnus glutinosa*) mostly at the woodland edges. However, the understory is dominated by rhododendron (*Rhododendron ponticum*) throughout the core of the woodland with sycamore saplings and hawthorn scattered throughout. There is a distinct lack of ground flora here, probably due to the presence of rhododendron.
- 2.1.10 Bramble (*Rubus fruticosus*), young hawthorn and grey willow (*Salix cinerea*) dominate the ditch banks to the south of the woodland, where greater herbaceous plant diversity was noted.

- 2.1.11 A wet ditch extends through Plain Plantation from the northwest corner of the woodland to the south-western extent. The ditch is approx. 0.5-1m in width at most, containing shallow water (between 1-5cm) throughout.
- 2.1.12 The ditch consists of shallow earth banks which are mostly unvegetated, becoming more vegetated as the ditch extends south beneath scattered scrub and trees. A large area of hemlock water dropwort was noted beneath the scattered scrub which is present along the ditch to the north, while becoming sparser.

Booth's Wood (to be fully protected)

- 2.1.13 Booth's Wood is a large, mature woodland, mostly located offsite to the west and designated as a Local Wildlife Site. An unnamed watercourse bisects the woodland with areas located to the north and east of the watercourse being on site. Approximately 1 ac of Booth's Wood exists within the application boundary.
- 2.1.14 Sycamore occurs most frequently, although a greater heterogenous structure and overall diversity than the other woodland on site was noted. Sessile oak, pedunculate oak, hawthorn, alder and ash were noted as occurring occasionally, with large leaved lime noted as rare.
- 2.1.15 The understorey contains rhododendron (locally abundant), holly (*Ilex aquifolium*) and blackthorn (*Prunus spinosa*) as occasional, with elder, rowan, immature beech and hazel occurring as rare.
- 2.1.16 This area of woodland contains undulating ground, with natural damp earth mounds containing mosses, although sparsely covering the ground. The ground flora is limited and consists of remote sedge, bramble, bracken (*Pteridium aquilfolium*), wood millet as occasional with nettle (*Urtica dioica*) and broad buckler fern (*Dryopteris dilatata*) occurring as rare.
- 2.1.17 Where the arable field meets the woodland on the southern aspect of the wood, mechanical damage from flailing was noted. A small number of standing deadwood trees were noted along the woodland edge.

- 2.1.18 A pond is situated east of the unnamed watercourse within the woodland. It was approximately 100m² at the time of survey and heavily shaded by bankside trees and rhododendron. There was no macrophyte cover in the pond, and the water appeared largely black from a decaying heavy litter layer. Hemlock water dropwort (*Oenanthe crocata*) was noted on the western pond bank.

Scattered Broadleaved Trees

- 2.1.19 Scattered trees along the unnamed watercourse, towards the northwest boundary also make up a sizeable portion of the total scattered trees on site. The scattered trees are located on the bankside in this area and comprise of elder, ash, alder, sycamore, aspen (*Populus tremula*), hawthorn and horse chestnut. The understory is a mix of tall ruderal (dominated by nettle), with small ~1m verges of improved grassland, or bramble-dominated scrub.
- 2.1.20 Ditches to the northeast of the site contain scattered trees with an understory of tall ruderal and marginal vegetation.

Woodlands to be lost

- 2.1.21 There are two areas of TPO that will be removed entirely (W17 – Woodland A) and (W7 – Big Belt Wood). This loss totals 12,829m².
- 2.1.22 There are two woodlands that are also covered by A TPO shown that are adjacent to the construction site boundary, Booth's Wood (W8) and Plains Plantation (W16), which will not be affected directly but will require protection.

Scattered Tree Loss

- 2.1.23 Figure 3 also shows the scattered tree woodland resource that will be removed to facilitate this development. This totals 3546m².
- 2.1.24 The status is shown in Table 1.

2.2 HEDGEROWS

- 2.2.1 Hedgerows within and surrounding the proposals and its construction footprint are shown in Figure 3 and summarised in Table 1.

Hedgerow Description

- 2.2.2 A species-poor defunct hedgerow H3 is located to the centre-north of the Site, 92m in length. The hedgerow contains hawthorn only, and gaps of up to 10m are present. The hedgerow is not 'Important' but qualifies as Priority Habitat.

Hedgerows to be lost

- 2.2.3 This single length of 92m of hedgerow will be lost to facilitate development. The status is shown in Table 1







Table 1. Woodland, Tree & Hedgerow loss/retention

Woodland #	Area (m ²)	To be lost (m ²)	Retained (m ²)
Plain Plantation	5685	0	5685
Woodland 'A'	4264	4264	0
Big Belt Wood	8563	8563	0
Booth's Wood	5949	0	5949
Scattered Trees	3546	3546	0
Hedgerow HR3	92	92	0
TOTAL TREE	28007	16373	11634
TOTAL HEDGEROW	92	92	0

Figure 3
**Woodland, Trees
& Hedgerow Loss**

Omega Zone 8, St Helens

Legend

-  Hybrid Application Boundary
-  Detailed proposals Construction Footprint
-  Woodland Block Loss
-  Woodland Block Retained
-  Scattered Tree Loss
-  Hedgerow loss



Drawing No.: 16903-04CEMP_A

Revision Dates			
A	B	C	D
00/00/00			

3 WOODLAND, TREE & HEDGEROW REMOVAL METHOD STATEMENT

3.1 WOODLAND & TREE CLEARANCE

Timing

- 3.1.1 All woodland clearance must be carried out between the 1st September - 1st March. Woodlands are a complex and sometimes dense habitat so it will not be possible to clear these habitat types at any other time of year due to the significantly high likelihood of breeding birds. The various schedules must be designed to account for this.

Ecological Clerk of Works (ECW)

- 3.1.2 All clearance activities must be supervised daily by an ECW.
- 3.1.3 The ECW will walk the entirety of the woodland each morning before works commence to flush out more mobile species such as deer.
- 3.1.4 The ECW will survey each woodland in June to identify any new badger setts that may have been created, allowing maximum time to acquire a license and complete any mitigation works before the badger breeding season commences in December.

Best Practice

- 3.1.5 There are methods of woodland clearance that will assist minimizing the impact as follows:
- Woodland felling to avoid a concentric circle approach; to be carried out in a single direction for the entirety of the removal of a woodland block.
 - Trees should not be allowed to fall into protected areas. These are detailed in the CEMP: Biodiversity².
 - Woodland removal is subject to the contents of the Arboricultural Mitigation Report³.

³ **Ecology Practice, 2020i.** *Arboricultural Impact Assessment and Tree Protection Plan*. Consultant Report to Omega Warrington Ltd. Report ref. 16903_AR_B

- Once trees are removed, the understory will not be removed for 24 hours to allow smaller mammals the chance to escape.
- Arisings from tree removal, where it is not being further processed for timber, and where the wood arisings are sufficient in size, can be used by the ECW to create deadwood piles in existing woodlands and those to be created. Refer to the Landscape and Ecology Management Plan⁴.

Species-Specific Guidance

Bats

- 3.1.6 The pre-application process carried out an assessment of all trees within and adjacent to the application site, including those trees that lie within the development footprint of the Full Planning proposals. Trees were then classified as having Low (yellow), Medium (orange) or High (red) potential to contain roost features (PRFs).
- 3.1.7 For those classified as Medium/High Potential each tree was visited, and an endoscope survey was carried out. The three classifications are shown in Figure 4 (yellow or Low potential) and Figure 5 (orange/red or medium/high potential).
- The ECW and a surveyor will visit those trees on the boundary (e.g. T77) to accurately determine which needs to be felled.
 - Yellow/Low potential trees must be soft felled⁵.
 - Orange/red high potential trees must only be felled with a licensed bat person present. There is no need for a licence to cover these works. The trees must be soft-felled⁵.
- 3.1.8 No trees within Plains Plantation, Booth's Wood or the Eastern Tree belt will require moving for ecological reasons.
- 3.1.9 Should works not proceed for more than one year from the time of the survey to inform these works, the survey has to be repeated.

Mobile Mammals

- 3.1.10 The ECW will walk the entirety of the woodland daily in the morning before works commence to flush out more mobile species such as deer or even hare.

⁴ **Ecology Practice, 2020k.** *Landscape & Ecology Management Plan (LEMP): Plot 1 - Unit 1.* Consultant Report to Omega Warrington Ltd. Report ref. 16903-LEMP_A

⁵ Refer to Box 1

- 3.1.11 Woodland felling to avoid a concentric circle approach; to be carried out in a single direction for the entirety of the removal of a woodland block.

Breeding Birds

- 3.1.12 All woodland clearance must be carried out between the 1st September - 1st March. Woodlands are a complex and sometimes dense habitat so it will not be possible to clear these habitat types at any other time of year due to the significantly high likelihood of breeding birds. The various schedules must be designed to account for this.

Owls and roosting birds

- 3.1.13 The ECW will visit each tree in each woodland to make a ground assessment of holes or large fissures that may allow an owl to form a roost. Owls present will be flushed from the roost and the roost filled with foam.

Mycology

- 3.1.14 Woodlands of this maturity may have an interesting mycological interest. Prior to works commencing each woodland will be visited by a mycological consultant to determine if any special mitigation is required, such as relocation of key areas of deadwood to the retained woodlands.

Box 1. Soft felling methods

Soft felling methods

Carried out in autumn or in spring.

Parts of the tree with low potential roost feature are removed but this is done by making cuts away from the feature and the section is lowered by rope (slowly and gently) to the ground.

This section is then leant against a standing tree for 24 hours with the roost feature facing outwards to allow the bat to fly out that night if it is present.

3.2 HEDGEROW CLEARANCE

Timing

- 3.2.1 All hedgerow clearance must be carried out between the 1st September - 1st March. Works before this period should only commence with the authority of the ECW.
- 3.2.2 A ECW should examine the hedge to confirm yellowhammer is not breeding as it is a late breeder and has been known to be present in September.

Removal

- 3.2.3 Removal of hedgerow H3 should be a 2 staged operation.
- Stage One: Removal of the main hedge material no lower than 30 cm
 - Stage Two: After 24 hours have passed, removal of the root ball such as grubbing of stumps.

Figure 4

Low Potential Trees

Omega Zone 8, St Helens

Legend

 Construction Boundary

 Low Potential Trees



Drawing No.: 16903-06CEMP_A

Revision Dates




A	B	C	D



Figure 5
**Moderate & High
Potential Trees**

Omega Zone 8, St Helens

Legend

-  Construction Boundary
-  Moderate Potential Trees
-  High Potential Trees



Drawing No.: 16903-07CEMP_A

Revision Dates

A B C D



WILLOWGATE

WELSH NEWTON COMMON

HEREFORDSHIRE

NP25 5RT

TELEPHONE: 0845 602 3822

WEBSITE: www.ecologypractice.co.uk

Appendix G: Booth's Wood Drainage Discharge Method Statement

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Appendix H: Night-Time Construction Noise Technical Note

Omega Zone 8, St Helens

UNIT 1 NIGHT-TIME CONSTRUCTION NOISE TECHNICAL NOTE





UNIT 1 NIGHT-TIME CONSTRUCTION NOISE TECHNICAL NOTE

INTRODUCTION

Night-time construction works are potentially required during the internal fit-out works of Unit 1, Omega Zone 8. This technical note reports the appraisal of potential noise impacts on the closest sensitive receptors.

For details of the methodology, legislation and policy please refer to *ES Vol. 1 Chapter 7 Noise and Vibration* (Document No. OPP DOC.11.7) and the associated appendices (referred to as “ES Chapter 7”).

PROPOSED FIT-OUT WORKS

Internal fit-out works for Unit 1 are programmed to start in January 2022 and to be completed in August 2023 (2 years, 8 months), the normal working hours will be:

- Weekdays 07:00 - 19:00;
- Saturdays 07:00 - 19:00, no deliveries scheduled; and
- Sundays 07:00 - 17:00, as backup and no deliveries scheduled.

The internal fit-out of Unit 1 involves the installation of a state-of-the-art fully automatic distribution system. All works associated with the internal fit-out would take place within the building envelope of Unit 1, barring the transportation of equipment and materials to the site.

The fit-out contractor compound is located on the south side of Unit 1, shown in Figure 1 below. This compound will be accessed from a spur off a temporary haul route that will link with the public highway at Catalina Way to the east. Catalina Way connects to Skyline Drive (A5280) which links to Junction 8 of the M62. The compound will be enclosed by a 2m Heras fence.

During normal daytime hours there will be up to four deliveries per hour and a maximum of eight deliveries per day. The majority of deliveries (80%-90%) will drive into the building with unloading taking place inside, the remaining deliveries will be unloaded via a docking bay leveller. Deliveries will be programmed to take place during normal working hours, however, this will not always be possible. In addition, there will be minimal fork lift truck use in the compound.

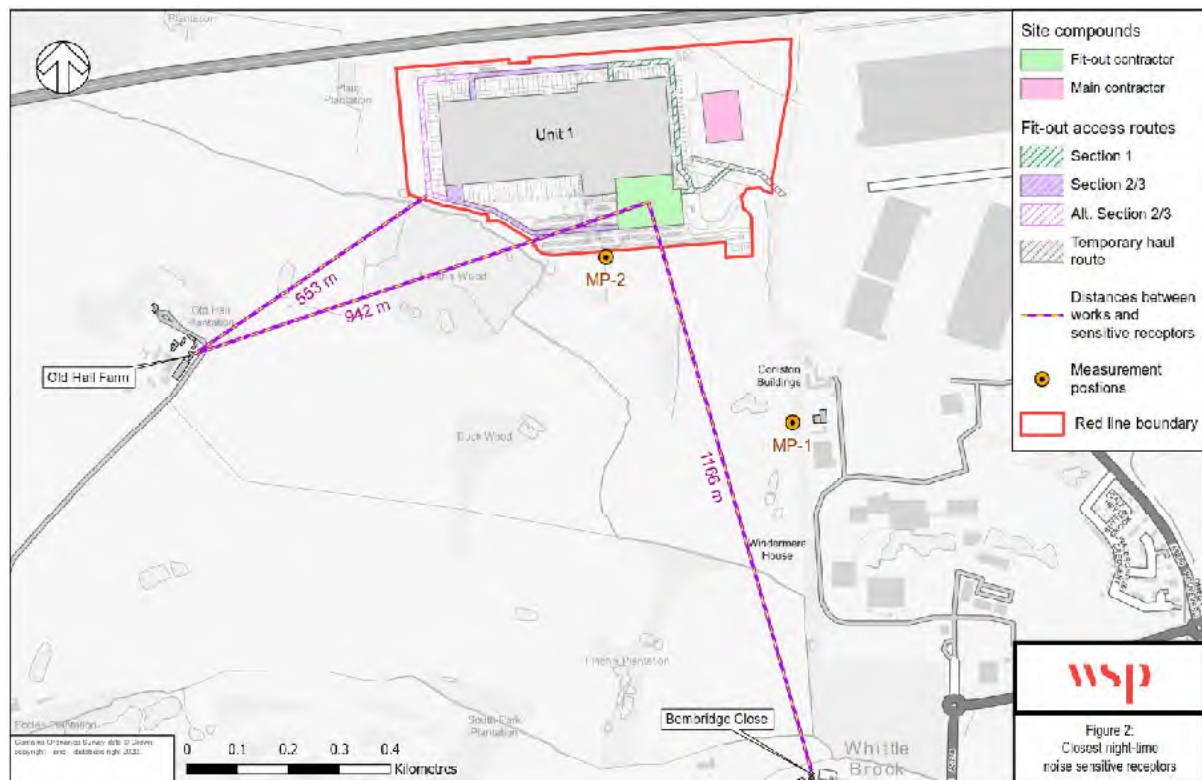
As outlined above, the fit-out contractor is not planning to work nights but it is recognised that it may be required to meet programme. In this assessment, a series of robust assumptions have been made to cover off the potential for night-time works to take place. The assessment is based on a worst-case daytime hour of deliveries, unloading and departures occurring at night. Consideration has been given to all night-time hours from 23:00 through to 07:00.

SITE LOCATION, ORIENTATION AND CLOSEST RECEPTORS

Figure 1 – Site compounds and fit-out access routes



Figure 2 – Closest night-time noise sensitive receptors



It can be seen from Figure 2 that the closest noise sensitive receptors to the fit-out compound are at significant distance, being 942 m to the west and 1,166 m to the south. The shortest distance between the fit-out access routes and sensitive receptor is 553 m.

The closest night-time noise sensitive receptors are dwellings at Old Hall Farm and Bembridge Close; these are identified as 'medium' sensitivity. Measurement position 1 (MP-1) is representative of Bembridge Close and measurement position 2 (MP-2) is representative of Old Hall Farm. These receptors are identified on Figure 2.

BASELINE NOISE LEVELS

As detailed in ES Chapter 7, unattended baseline noise measurements were completed in October 2019 at two locations selected to be representative of the closest sensitive receptors. The measurement locations are shown in Figure 2 above. Each measurement ran continuously and included seven nights (23:00-07:00). For additional survey details including measurement equipment used, refer to ES Chapter 7.

Table 1 presents the ambient ($L_{Aeq,1hr}$) night-time noise levels for measurement positions 1 and 2, a single figure linear average of each night-time hour is given. For each hour, the BS 5228-1 threshold category and assessment criteria value has been determined applying the 'ABC' assessment method.

Table 1 – Night-time ambient noise levels and construction thresholds

Measurement location	Night-time hour	Night-time noise levels ¹ ($L_{Aeq,1hr}$)	BS 5228-1 ABC threshold category	BS 5228-1 ABC assessment criteria value ($L_{Aeq,1hr}$)
1	23:00-00:00	48.2	C	55
	00:00-01:00	47.8	C	55
	01:00-02:00	45.9	B	50
	02:00-03:00	46.8	B	50
	03:00-04:00	46.9	B	50
	04:00-05:00	48.7	C	55
	05:00-06:00	49.4	C	55
	06:00-07:00	52.1	C	55
2	23:00-00:00	48.7	C	55
	00:00-01:00	46.9	B	50
	01:00-02:00	45.9	B	50
	02:00-03:00	46.5	B	50
	03:00-04:00	46.7	B	50

Measurement location	Night-time hour	Night-time noise levels ¹ (L _{Aeq,1hr})	BS 5228-1 ABC threshold category	BS 5228-1 ABC assessment criteria value (L _{Aeq,1hr})
	04:00-05:00	49.3	C	55
	05:00-06:00	50.5	C	55
	06:00-07:00	53.2	C	55
¹ Linear average of each night-time hour.				

CRITERIA

The construction noise magnitude of impact and effect level criteria from ES Chapter 7 is reproduced in **Table 2**.

Table 2 – Construction noise – Magnitude of Impact and Effect Level criteria

Construction noise level (x) (L _{Aeq,T} , dB)	Magnitude of Impact	Effect Level
x < Receptor ABC assessment criteria	No Change to Negligible	NOEL
Receptor ABC assessment criteria ≤ x < Receptor ABC assessment criteria+5dB	Small to Medium	LOAEL to SOAEL
Receptor ABC assessment criteria +5 ≤ x	Medium to Large	Above SOAEL

Determining the classification of effects is assessed against the sensitivity of the receptor and the magnitude of impact, as shown in Table 3. Where more than one effect classification exists for any given scenario (e.g. minor to moderate), professional judgement is used to assign a single effect classification.

Table 3 – Matrix for classifying effects

		Value/Sensitivity			
		High	Medium	Low	Negligible
Magnitude of Impact	Large	Major	Moderate to Major	Minor to Moderate	Negligible
	Medium	Moderate to Major	Moderate	Minor	Negligible
	Small	Moderate	Minor to Moderate	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible
	No change	No change	No change	No change	No change

The terms as used within Table 3 have been defined below, applying to both beneficial and adverse effects:

- **Major effect:** where the Proposed Development could be expected to have a substantial improvement or deterioration on receptors;
- **Moderate effect:** where the Proposed Development could be expected to have a noticeable improvement or deterioration on receptors;
- **Minor effect:** where the Proposed Development could be expected to result in a perceptible improvement or deterioration on receptors;
- **Negligible:** where no discernible improvement or deterioration is expected as a result of the Proposed Development on receptors; and
- **No change:** where no change is expected as a result of the Proposed Development on receptors.

As set out in ES Chapter 5: Approach to EIA, effects that are classified as moderate or above are considered to be significant. Effects classified as minor or below are considered to be not significant.

CONSTRUCTION NOISE APPRAISAL

For night-time fit-out operation, the following steps have been undertaken:

- Identify the sensitive receptors closest to the fit-out compound;
- Measure distances between fit-out compound and sensitive receptors;
- Determine construction noise assessment criteria values (**Table 1**);
- Determine the noise level associated with each plant item;
- Calculate the combined construction activity noise level at the sensitive receptors; and
- Compare the calculated construction noise levels with the derived assessment criteria values.

In practice, activities in the fit-out compound will take place at different times and for different durations, and will move around the compound and along the haul and access routes; consequently, the noise level at any receptor is likely to vary. It is necessary to rationalise the geographic and

temporal spread of activities to obtain a meaningful prediction and subsequent appraisal. To this end, various assumptions have necessarily been made, as described below.

The most important assumptions relate to the location of equipment and the operational on-time. With respect to the geographical location of the plant, the fork lift and unloading activities are assumed to operate together at the centre point of the fit-out compound; and the deliveries are assumed to operate at the closest point on the access routes.

For operational on-times, unloading of materials is assumed to take place continuously over the assessment period (1 hour). Four deliveries are assumed to take place within an hour, with each arrival and departure taking 5 minutes. The fit-out operations are detailed in Table 4, including the sound power level attributed to each plant item and the data source reference from BS 5228-1.

Table 4 – Construction plant and equipment

Construction working stage	Plant type	No. of plant	On-time (%)	Sound power level (L_{WA}), dB	Data source (BS 5228-1 table ref. and row)
Night-time fit-out external compound	Fork lift truck	1	100	94	C.04 #78
	Lorry - unloading	1	100	105	C.04 #63
	Lorry - arrival	4	8	102	C.02 #32
	Lorry - departure	4	8	111	C.11 #4

Construction noise at sensitive receptors is calculated using the BS 5228-1 method, using the following assumptions:

- 100% soft ground between source and receiver;
- No screening between source and receiver;
- Source height 1.5m above ground;
- Receiver height 4.0m above ground (first floor height); and
- Predicted levels are quoted as equivalent free-field (i.e. 3 dB façade reflection correction is not added so that there is parity with the conditions under which the baseline measurements were undertaken).

The resulting night-time assessment of fit-out operation noise is presented in Table 5 below, the table provides the predicted construction noise levels at each receptor location and a comparison against the BS 5228-1 assessment criteria values.

Table 5 – Fit-out compound works night-time assessment

Receptor location	Predicted night-time fit-out noise levels ($L_{Aeq,1h}$)	BS 5228-1 ABC assessment criteria value ¹ ($L_{Aeq,1hr}$)	Compliance	Assessment criteria met?
Dwellings at Old Hall Farm	40 dB	50 – 55 dB	-10 to -15 dB	Yes - met by large margin
Dwellings at Bembridge Close	35 dB	50 – 55 dB	-15 to -20 dB	Yes - met by large margin
¹ Threshold categories are presented as a range because ambient noise changes over the night-time (23:00-07:00).				

Note, the distance between the fit-out operations and the nearest night-time sensitive receptors are over 900 m. BS 5228-1 states at “distances over 300 m noise predictions have to be treated with caution, especially where a soft ground correction factor has been applied, because of the increasing importance of meteorological effects”. Notwithstanding this, it can be seen from Table 5 that the applicable assessment criteria are identified to be complied with by large margins. In accordance with Table 2, this corresponds to an impact magnitude of No Change to Negligible.

The assessment of potential effects arising as a result of night-time fit-out compound works is presented in Table 6.

Table 6 – Assessment of potential effects, additional mitigation, residual effects and monitoring during night-time fit-out construction works

Sensitive receptor	Dwellings at Old Hall Farm
Potential effects	<u>Night-time fit-out works</u> The assessment has identified that the BS 5228-1 thresholds are complied with by a margin of between 10 and 15 dB.
Additional mitigation	<u>Construction Noise</u> Given the level of compliance, consideration of mitigation for this receptor is not warranted.
Residual effects and monitoring	<u>Construction Noise</u> The sensitivity of the dwellings at Old Hall Farm is Medium and the magnitude of impact ranges from No Change to Negligible. Therefore, there is likely to be a direct, temporary, local, short term effect of Negligible adverse on the dwellings at Old Hall Farm (not significant). There is no requirement for monitoring at this receptor.

Sensitive receptor	Dwellings at Bembridge Close
Potential effects	<u>Night-time fit-out works</u> The assessment has identified that the BS 5228-1 thresholds are complied with by a margin of between 15 and 20 dB.



Additional mitigation	<u>Construction Noise</u> Given the level of compliance, consideration of mitigation for this receptor is not warranted.
Residual effects and monitoring	<u>Construction Noise</u> The sensitivity of the dwellings at Bembridge Close is Medium and the magnitude of impact ranges from No Change to Negligible. Therefore, there is likely to be a direct, temporary, local, short term effect of Negligible adverse on the dwellings at Bembridge Close (not significant). There is no requirement for monitoring at this receptor.



8 First Street
Manchester
M15 4RP

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