

Construction Environmental Management Plan

J750 – Parc Hadau

Revision 2

TS 25.08.20

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1.0 INTRODUCTION

This Construction Environmental Management Plan (CEMP) incorporates the Environmental Management Systems for the project works. It sets out the policies and environmental controls required to ensure that the environmental impacts are minimised. It highlights the key activity specific risks, detail control measures, and makes reference to all associated forms and registers where required. This document should be read in conjunction with the Construction Environmental Management Plan (Biodiversity) produced by BSG – See appendix A.

1.1 SCOPE

Parc Hadau is located to the north east of Pontardawe in the village of Rhydyfro. The site forms part of a wider allocation within the Neath port Talbot Local Development Plan for housing. This application is for 35 zero carbon homes plus community building and associated works accessed from Waunsterw. The site address is: Waunsterw, Pontardawe.

1.2 ISSUE AND REVISION

An electronic version of this Plan will be issued and held by the Project Manager. This plan will be maintained and updated regularly by the Project Team with assistance from the HS&E Function. This will be in accordance with the implementation of the contract, or after any changes to regulations and / or corporate procedures.

This CEMP provides a framework to manage the environmental issues associated with the Project, to ensure compliance with the relevant Environmental Policy Statements, and contractual and legal obligations. It is a bespoke Plan designed to minimise our impact and ensure the best service through construction.

1.3 RESPONSIBILITIES

The Project manager approves and supports this CEMP as the principal document demonstrating a planned and systematic approach to implementing environmental policy through an effective environmental management system.

The Project manager is responsible for authorising and maintaining this document and ensuring it is implemented. The Project manager is responsible in ensuring it complies with legal and contractual amendments and ensures that all project personnel are aware of the contents of this CEMP and understand their role in fulfilling the project's obligations. They are responsible for ensuring that the Client is informed of any amendments.

The Environmental Manager is responsible for ensuring it complies with all relevant environmental legal requirements and offering advice in best practice

The Project Team will comply with the requirements of this plan.

2.0 MANAGEMENT FRAMEWORK

2.1 EMPLOYER'S ENVIRONMENTAL POLICY

The project will comply with the WRW Environment Policy and the Clients Environmental Policy. The project shall ensure that the policies and their requirements are made known to all relevant personnel. This will be undertaken through a number of methods including site inductions, method statements and risk assessment briefings and toolbox talks.

All subcontractors will be provided with a copy of the Environment Policy and HS&E Terms & Conditions for Sub Contractors that set out the minimum environmental requirements.

2.2 ENVIRONMENTAL RISK ASSESSMENT

An Environmental Risk Assessment identifying significant Aspects and Impacts identified for the construction phase will be produced and will form part of the Site Control documentation.

The ERA shall be reviewed and revised on a monthly basis as or as required e.g. due to changes in the scope of work. Any new environmental aspects and their impacts will be updated accordingly.

The risk scoring system allows the impacts to be prioritised and the most significant identified. For each of the aspects the potential impact is scored for the situation where no mitigation measures are employed and again where mitigation measures are employed.

The register considers the likely environmental impacts from activities being carried out on the project with respect to:

Air	Flora – Trees and Hedgerows	Material Use	Energy Use
Waste	Contaminated land	Noise and Vibration	Water
Ecology	Fuel Storage	Nuisance	Wildlife

This considers those activities that are likely to arise because of both normal construction activities and emergency incidents or accidents.

2.3 LEGISLATION, REGULATION AND OTHER REQUIREMENTS

The Project will comply with all relevant legislation, regulations and client Standards and additionally, obtain and comply with all necessary consents to ensure legal construction works.

The Project manager is responsible for ensuring that the project complies with all applicable environmental legislation, regulations and other requirements. The Legal Compliance Action Plan is maintained by the Design Coordinator and is updated following any changes to applicable legislation. Any applicable changes will be evaluated and communicated to the relevant project personnel through Environmental Alerts, Newsletter, briefings or toolbox talks. The project specific procedures will also provide guidance to activity specific legislation.

Other requirements and regulations from Local Authorities, Highways Agencies or other Statutory Bodies will be reviewed by the Project Team and applied where applicable.

All work carried out on the project will be conducted with due cognisance of client Standards, obligations and best practice.

2.4 ENVIRONMENTAL OBJECTIVES AND TARGETS

Project specific Objectives and Targets will be formulated. These reflect the issues and requirements of the project, together with Client and any Corporate and Social Responsibility targets.

Objectives and Targets are communicated through a variety of media on a regular basis, this includes, though is not limited to, monthly Project Review Meetings, supply chain progress meetings and regular reporting.

2.5 TRAINING, AWARENESS AND COMPETENCE

All personnel, whose work may cause a significant impact on the environment, will receive environmental training. Environmental training includes, but is not limited to:

Training	Participants
Environment & sustainability element of company induction	All new starters
Environment & sustainability element of site induction	All those working on site
Sustainable Timber and Chain of Custody	Delegated Duty Holders (Site Based) and those responsible for timber purchase where necessary
Ecology and Biodiversity	Delegated Duty Holders (Site Based)
CIWM Waste Management Certificate	Delegated Duty Holders (Site Based)
Pollution Prevention and Emergency Spill Response	Delegated Duty Holders (Site Based)
Toolbox Talks on spillage, noise prevention, and other issues relevant to the works	Workforce

The HR department will document the training provided and will maintain records of the quantity and type of training received so that progress against training targets can be measured.

Where additional training or briefings such as Toolbox Talks are conducted by a third party labour force they will be responsible for supplying evidence in the form of copies of certification and/or signed attendance sheets.

2.6 INTERNAL COMMUNICATION

Communication of environmental issues within the Project will be maintained through combined monthly project review meetings, chaired by the Project manager.

The environmental section of the agenda for the monthly meetings will primarily address the future month's activities and will review events and actions arising from the previous month's activities. Other items on the monthly agenda will include:

- Progress with consents
- Progress with Work Package Plans
- Public consultation
- Reporting of monitoring results
- Actions arising from site inspections, incidents, complaints and audits
- Planned work and risks associated with this

Newsletters, bulletins, posters etc. will be produced and displayed throughout site offices on a regular basis to raise awareness of current issues both within the Project team and throughout the local community.

It is recognised that benefits can be gained from close co-operation with the client, and other contractors in achieving best practice. Access shall be given to the client Representatives for carrying out audits and/or site inspections to monitor compliance with this CEMP.

The team will ensure that meetings and discussions are carried out in a spirit of openness and co-operation to determine lessons learnt from any incident and, wherever practicable, to take action to mitigate similar risks.

2.7 EXTERNAL COMMUNICATION

The procedure is required to clearly demonstrate to the Client the way impacted residents, landowners, schools etc. will be informed of the consequences of work activities and how the Project will mitigate any impact.

Where disturbance to local residents or businesses is likely, the Project, in conjunction with the Client, will inform occupiers in advance of the work.

The strategy for external communication will be agreed between the Project team and the client communications team on an individual occurrence /site basis. Close liaison between the teams ensures effective communication and close out of issues.

This document is the principal operating document for environmental management of the Project. The CEMP defines policies and arrangements for the main environmental issues. The other documents: environmental procedures, schedules, work package plans and records will all be developed from the CEMP and together form the Environmental Management System for the Project.

All documents related to the CEMP will be established and maintained in registers within the Project Management Plan (PMP) as part of the Project records.

3.0 SITE SPECIFIC CONTROLS

Following early engagement with National Resource Wales, several site-specific observations have been raised in terms of the way WRW propose to manage the works. In addition, BSG have been appointed to produce a supplementary CEMP (Biodiversity) to this document which provides site specific measures that will be put in place. This document can be found in Appendix A.

An overview of observations is provided here with a brief statement highlighting proposed mitigation measures. The main body of the report then provide further detail on how key risks will be mitigated.

a) Risk assessment of potentially damaging construction activities

An initial risk assessment of key construction activities is provided in the body of the main Construction Phase Health and Safety Plan. This not only covers the pertinent Health and Safety Risks but also the key environmental risks including mitigation measures.

b) Identification of "biodiversity protection zones"

WRW have been informed of areas within the development that need to be segregated to protect biodiversity on the site, these will always be maintained. In addition to this the project has be phased to ensure new habitable areas are created early with the aim of giving them the opportunity to flourish ahead of the development being completed.

c) Details of pre-commencement checks for protected species

Extensive ecological investigations have taken place prior to this submission with all relevant mitigation measures put in to place prior to commencement.

e) Practical measures

As highlighted in this report, bats, reptiles, the existing watercourse and the proximity of the development to existing residential areas are the key cause for concern that need to be managed from the outset. The BSG CEMP (Biodiversity) in Appendix A provides specific details on how these will be managed. Arboriculture recommendations will also be implemented when dealing with the trees.

3.1 EMISSIONS, MONITORING AND MEASUREMENT

The project recognises that a distinction needs to be made between the different types of monitoring. For the purposes of this Project, a clear distinction has been made between active and reactive monitoring as follows:

Active	Reactive
Site Management	Incident Reporting
Boundary and watercourse inspection	Complaint recoding and investigation
HS&E Inspection	Dust
Environmental Duty Holders Site Inspection	Noise and vibration monitoring
Senior Managers Tours	Water Sampling (where necessary)
Internal Audits	

3.1.1 Emissions

The emissions that the project produces will form a significant proportion of the potential for environmental impact during the works. The following table describes the type and level of these emissions from the site. Monitoring regimes and control measures are also detailed.

Emissions:

Emissions	Potential Receptor	Monitoring and Control Measure	Level of Emissions
Oil / fuel	Land / Water	Monitor the amount coming onto site to ensure it is kept to a minimum. Materials to be stored in line with the oil storage regulations.	Low
Paints	Land / Water	Water based paints to be used and when not in use stored in a locked container.	Low
Other Chemicals	Land / Water	Control of Substances Hazardous to Health (COSHH) assessment to be undertaken for all chemicals and control measures applied. Specific monitoring regimes to be implemented as required	Low
Silt Run off	Land / Water	Measures to be put in place to prevent run off into the watercourse; filtration trench and silt settlement tank / pond.	Low
Dust	Land / Water / Air	Tarmac / concrete haul roads to be put in place early and site strip to be kept to a minimum. Damping down to take place as appropriate. Dust to be monitored as required.	Low
Wheel Bourne Mud	Roads	Road condition to be monitored on ongoing basis by site management. Tarmac / concrete haul roads to be put in place early. Wheel wash to be used during earthworks.	Low
Concrete Wash Water	Land / Water	Designated area to be established for the washing out of concrete	Low
Plant and Vehicles	Air	Maintenance regime in place and monitored for all plant and vehicles. All to be turned off when not in use	Low

3.2 VERMIN AND PEST CONTROL

Welfare facilities (canteens, mess rooms, drying rooms, locker rooms, toilets, showers etc.) will be provided by the project. These will be cleaned daily and maintained in a good condition. It is expected that the users behave properly towards the facilities provided. Anyone found to be abusing welfare facilities will be dismissed from the site.

Toilets will be located around the site. Anyone found urinating or defecating elsewhere will be dismissed from the site immediately.

All food and drink is to be consumed within the mess rooms / canteens or else off the construction site. Consumption of food outside of welfare facilities encourages the spread of vermin causing further potential occupational health risks, e.g. leptospirosis (Weil's disease).

All food and drink will be disposed of in a lidded container and emptied on a weekly basis.

As the site is in a rural area it is not expected that there will be a rodent problem. However, this will be monitored as the works progress. If required, rodent control measures will be put in place.

3.3 PREVENTION, CONTAINMENT AND CLEANING UP SPILLAGES

3.3.1 Liquid storage

Best practicable means will be employed to prevent polluting materials from entering the hydrological systems. This will include specific measures to prevent silt from escaping from excavations.

All oils and fuels will be stored in compliance with the Control of Pollution (Oil Storage) Regulations 2001.

- Fuel shall be stored in dedicated bunded, impervious storage areas, away from drains and watercourses.
- Drums over 200 litres shall be stored on drip trays capable of holding 25% of the drum's maximum capacity.
- Fuel tanks shall be stored within a bund capable of holding 110% of their capacity. All pipes and gauges shall be within the wall of the bund.
- Bowsers shall be double skinned and shall be stored in a bund capable of holding 110% of the volume of the bower.
- Small mobile plant shall be placed on drip trays.
- Spill kits will be available at various points around the site and located next to bowsers and drums.

Consideration will be given to any required surface coatings which contain bitumen or related materials as being delivered in a hot and ready to lay format. This will avoid the bituminous materials being heated on site.

3.3.2 Silt and run off

If any significant escapes are identified, the cause will be investigated and clean up measures will be implemented.

3.3.3 Solids

Spillages of dry and dusty materials will be avoided by good housekeeping methods including storing under cover and on hard standing. Skips will be covered where there is a risk of material becoming airborne.

Wheels of site vehicles will be cleaned before they leave site. This will be supplemented by a road brush to clean roads as required; this will prevent tracking of mud and debris onto surrounding routes

3.3.4 Dealing with spills

Spill kits will be available at various points around the site and located next to bowsers and drums.

Should a spill occur the following will be implemented:

- Work will be stopped immediately
- All possible ignitions will be extinguished if the spilt material is flammable
- The spill will be contained using spill kits on land

- The source will be identified and sealed as practical
- Granules / pads to will be used to mop up as much spill as possible
- The project lead will be informed of the spill
- If the spill enters the stream the environment & sustainability manager must be contacted immediately who will contact the Environment Agency and British Waterways.
- The granular material and pads and any containment items will be treated as hazardous waste and disposed of accordingly

An incident report form will be produced and sent to the HS&E department within 24 hours of the incident occurring. If the incident is significant a full investigation will be carried out by the HS&E Advisor

3.4 FIRE CONTROL

3.4.1 General

The project will ensure that operations are carried out in compliance with the Regulatory Reform (Fire Safety) Order 2005 "Joint Code of Practice on the Protection from Fire on Construction Sites and Buildings Undergoing Renovation".

A full fire management plan and risk assessment will be produced in conjunction with the nominated Appointed Person and relevant parties as appropriate. This will be based on the requirements set out in the "Code of Practice on Fire Prevention on Construction Sites". This document will identify duty holders, defines responsibilities and establishes procedures on fire prevention.

There are basic rules that apply to all of our construction sites which aid in the prevention and control of fires

A Site Fire Safety Coordinator will be appointed to ensure adherence to the Site Fire Safety Plan. In addition, they will coordinate the issues below:

- General Housekeeping
- fire extinguishers fire detection and alarms
- Hot Work Permit regime
- Fire escapes and communications (evacuation plans and procedures for calling the fire brigade)
- Fire brigade access, facilities and coordination
- Fire drills and training
- Effective security measures to minimise the risk of arson
- Materials storage and waste control regime

An initial fire risk assessment of each area will be undertaken and updated as the risks change. In addition, weekly inspections of all areas will be carried out and the findings recorded on a weekly inspection report.

All areas will be kept clean and tidy and stored materials will be properly coordinated and controlled.

3.4.2 Waste Management and Storage of Materials

During construction works buildings will be kept free from the build-up of combustible materials. Pedestrian routes to the buildings will be kept clear of stored materials. Offending contractors will be issued with Clean up and obstruction notices.

3.4.3 Storage of Materials

The Plant and Vehicle Marshall (PVM) will coordinate a delivery booking system which will mean all deliveries are booked in at least 24 hours in advance. A holding area will be implemented on the A4067 which is circa 10mins from the project, all deliveries will be required to call the PVM prior to attending site to ensure the site is ready to take the delivery. Once they arrive on site, the site compound will be setup in

a way that vehicles are able to be pulled directly in to the site rather than waiting on Waunsterw. The just-in-time deliveries will ensure that there will be minimal storage within the site itself.

3.4.4 Fire Points

Fire Points will be located throughout the project at key strategic positions as required by the projects fire risk assessment.

Each Fire Station will consist of

- Water extinguisher
- Powder extinguisher
- Alarm sounder / Rotary bell

The Fire Points will be checked daily by appointed persons and weekly by the site fire safety coordinator.

Evacuation signage is installed and maintained by the Fire Wardens as the build process progresses.

3.4.5 Fire Drills & Training

The evacuation sounders will be tested once a week. Periodic tool box talks will be issued to contractor's managers in order that their personnel are aware of the evacuation procedure. Signed acceptances of these briefings will be returned to the project.

3.4.6 Risk of fire water run off

In the case of a fire being attended by the Fire service, significant volumes of water, foam and burnt matter may be washed onto the ground. There is a risk that this may run off into drainage and the watercourse.

In this case, the site management will monitor fire water runoff and ensure that contaminants are prevented from entering water systems by use of booms, bunds and sluice gates.

3.5 TREATMENT OF EFFLUENTS

Any connections or discharges to drains and/or controlled waters will not be undertaken without approval and, where required, the necessary consent being issued.

In order to protect drainage systems, they will be drawn up on the Site Plan showing the nature and course of the drainage on site. Surface water drainage will be marked BLUE and foul water drainage will be marked RED. Measures will also be taken to prevent silting of such waters and pollution spill kits made available on site in case of emergency or accidental spillage.

Discharges will only be made to drains and sewers with appropriate consents providers and regulators.

3.6 NUISANCE TO NEIGHBOURS AND POLLUTION TO THE LOCAL ENVIRONMENT

WRW appreciates that construction activities are likely to be a cause of concern for residents. In addition to the measures already detailed, WRW will have a designated point of contact on the project to address any issues immediately.

In addition to this, there will be a dedicated CSR Coordinator based in our Llanelli office who will coordinate engagement opportunities at regular intervals with the local community with the aim of building close relationships and keeping residents informed through holding coffee mornings and issuing newsletters at regular intervals.

As part of the site compound, WRW will integrate viewing areas for residents in to site hoarding as well as provide the opportunity for residents to regularly attend site.

The site will be registered to the Considerate Constructor Scheme and managed in accordance with their guidelines

3.7 TRAFFIC AND TRANSPORTATION

Traffic both on and off site will be managed in order to minimise the impact to site operations and the local community. Full Traffic Management Plans will be developed in conjunction with the Client and the Council and are covered in more detail by the Construction Health and Safety Plan.

On site, the following would be implemented:

- Switching off vehicle engines when not required
- Parking provided on site
- Use of a form of wheel washing processes as appropriate
- Preparation of access routes
- Preparation of hard-standing
- Scheduling of deliveries
- Site speed limits on access roads
- Removing mud from public roads carried on by construction vehicles; by use of road sweeper

Works will avoid tracking / spillage of mud; soil etc. by construction vehicles onto public roads. Where this does occur, measures are to be taken to clear up excessive spillage/tracking.

3.8 DUST, NOISE AND ODOURS

There is the potential for fugitive dust emissions to arise during the construction phase of the development, a Dust Risk Assessment will be undertaken, to identify appropriate dust control procedures to ensure that construction dust does not pose a nuisance threat to nearby residential properties. This Dust Risk Assessment will be agreed before the commencement of construction.

Construction dust may be generated as a consequence of ground excavation works in preparation of the foundations for the proposed development, and if the weather is dry during the construction period, then dust may be generated by the movement of vehicles on the site, remediation works, site clearance, cut and fill operations and grading works.

The potential for unacceptable impacts resulting from the deposition of construction dust is primarily dependent on the duration of exposure (i.e. construction duration) and separation distance from the source to receptor. It is common practice (in mineral planning for example) to use a distance of between 100 to 200m from major sources as the radius within which there is the potential for significant air quality impacts from deposition of dust.

The nearest receptors where local persons may be exposed to dust are the homes in and around Waunsterw. WRW and its contractors will apply the principles of the industry best practice to ensure that the potential for fugitive dust emissions is minimised and is not a cause for nuisance complaints from neighbouring properties and users of the local facilities.

To prevent unacceptable impact from dust re-suspended by construction vehicles, mitigation measures could be employed if necessary (on the road network, for example). These would be selected with regard to best practice, and may include as appropriate: damping down dusty surfaces; controlling the speed of mobile plant crossing un-surfaced areas; mechanical road sweeper on public road; covering HGVs carrying dusty materials. The residual impact at the nearest residential properties is expected to be negligible. These procedures will be written into the construction management plan.

Should any activity associated with the construction phase of the cause or appear likely to cause visible dust to be carried towards any sensitive boundary, the activity giving rise to the emissions will be modified or suspended until the conditions giving rise to the emissions have been resolved.

The following specific mitigation measures may be appropriate for the control of fugitive dust emissions during the construction works:

- In order to prevent dust nuisance to adjoining premises during dry weather, there should be adequate screening and damping down during all restoration works, clearance works and other site preparations;
- Haulage routes to and from the development site should be watered as necessary to minimise dust nuisance, and should be stabilised/compacted to reduce off-site transfer of soil and other materials;
- Paved roads near to exits should be kept clean and vehicles transporting dusty materials onto and off site should be covered;
- All vehicles leaving the site should be inspected and cleaned as necessary, and suitable wheel wash equipment may be provided at site entrances/exits;
- Storage locations for potentially dusty materials must be located away from the site boundary;
- As far as possible, site vehicles should have vertically mounted exhausts to avoid re-entrainment of surface dust;
- All site traffic should keep to designated haul routes to reduce the break down and subsequent entrainment of fine material into the atmosphere.

Accordingly, fugitive dust emissions during the construction phase are expected to be minimal.

Where works are likely to cause noise and vibration nuisance, the site will consult with the local authority and where required submit a Section 61 application to the Client under the Control of Pollution Act 1974. Noise monitoring will be carried out during the enabling works period to understand if this will be required.

3.9 AIR POLLUTION

Air pollution, arising from odour, fumes and smoke, may arise from the following activities:

- Use of heavy plant and machinery
- Road vehicles, particularly HGVs

Pollution to air will be managed in order to reduce impacts to a minimum, and to eliminate where practicable. Management will be achieved through:

- No fires permitted on site
- All fuels, oils and other Volatile Organic Compounds (VOC's) will be stored in secure, sealed, labelled containers
- Consideration will be made to using prefabricated materials where possible so that localised air pollution is minimised
- Vehicles and plant will be switched off when not in use
- Ensure vehicles and plant are not over loaded to prevent labouring
- Modern, well-maintained plant and equipment is used
- Mains electricity supply will be used in preference to generators where practicable

All work will be carried out in accordance with relevant Legislation and statutorily issued guidance.

3.10 ARCHAEOLOGY AND BUILT HERITAGE

The Pre-Construction Information and Planning Conditions make no reference to any known Archaeology. However, if in the unlikely event that any archaeological remains are found during the course of the works, the Site Manager shall cease works and contact the relevant authorities as soon as practicable to ascertain how work will continue.

3.11 ECOLOGY

Surveys have been carried out on the site for Bats and Dormouse. No dormice have been recorded on the site and no bat roosts will be affected by the development, although bats do make use of the site for foraging and commuting. In addition, reptiles and common toad will be translocated to the land immediately east of the construction site. This will take place prior to construction commencing, or within the very early phases of construction. Thereafter it will be necessary to maintain the reptile-proof fencing to prevent re-entry of reptiles and toads to the construction zone. All site personnel will be briefed on the processes for ensuring ecological interests are protected during construction and further detail is provided in Appendix A (CEMP (Biodiversity)).

Extensive Tree / hedgerow removal has already taken place, any further removal will be carried out in accordance with the Arboricultural.

Any trees listed as retained within the arboricultural report will be protected outside the RPA using the appropriate fixed fencing. There are also areas of root protection identified that will also be segregated from all construction activities for the duration of the works. All groundworks activities will make allowance for these areas during the production of their RAMs.

Any disturbance or unexpected discovery of protected or invasive species will be reported in line with the Emergency Response Plan and in compliance with the Client procedures. In all cases, works must stop until guidance is given by the HS&E department.

3.12 LANDSCAPE AND VISUAL

The Project will take measures to control the visual impact of the works, where reasonably practicable. However, given the remote location of the site there will be little impact on landscape and visual during the construction works.

Where lighting is needed overnight for security purposes, this will be set up so as to minimise light spill from the site. The eastern and northern buffer zones will be protected to maintain dark corridors in these areas.

Standard temporary boundary fences will be used (Herras type). Site information and contact details will be displayed in compliance with the Clients requirements, any damage or graffiti will be rectified as soon as reasonably practicable. The boundary fence will be maintained to an acceptable standard.

Temporary accommodation facilities will be toward the centre of the site and located so as not to overlook the adjacent caravan site.

The Project will endeavour to prevent significant environmental impacts beyond the boundaries of the work sites.

All reasonably practicable measures to control the visual impact of the works and to preserve and reinstate any damage to landscape have been / will be taken, including:

- Considerate positioning of new structures
- Selection of most appropriate materials and sympathetic construction practices
- Avoidance of unnecessary tree and vegetation removal
- Additional planting and landscaping

- Good housekeeping arrangements, keeping all sites in a tidy manner and prevent release of litter and mud accumulation on public roads
- Use of hoardings or seeded bunds where appropriate
- Restrictions on lighting to prevent intrusion
- On site temporary parking

On completion, all construction materials will be removed, and the sites left in a tidy manner, to the satisfaction of the Client.

3.13 FLOOD RISK AND DRAINAGE

Given the proximity of the site to an ordinary watercourse which has a hydrological link to the Upper Clydach, all appropriate pollution control measures will be adopted during site clearance and construction to ensure the integrity of controlled waters. As noted in the Construction Plan, WRW will aim to carry out early works to the existing watercourse with the view of mitigating any pollution risk to the watercourses. This should also assist with concerns over the ground water management strategy for the scheme which is a key concern for residents.

3.14 WASTE

The project will nominate a suitably qualified project team member to hold the delegated duty of Waste Manager. They will ensure that waste registers are kept up to date and ensure including any changes to methods of handling wastes and amendments to destination recycling or landfill sites are legal and audited. Copies of waste transfer notes shall be collated for the duration of the works and shall be stored within the Site Waste Management Plan, at a suitable location, for the statutory required period.

All waste will be handled and disposed of in line with current “Duty of Care” Regulations. It is the responsibility of all persons on site to dispose of waste in the correct receptacles and to report any waste being stored incorrectly or escaping from the site area.

Whilst the Site Waste Management Plan Regulations have been repealed it is company policy that all of our projects produce a Waste Management Plan which will describe how waste shall be managed on site and identifies:

- The wastes, and their category, that will be generated by the project
- Opportunities for reuse and / or recycling
- Proposed methods of storage, segregation, handling and transportation of waste
- Means of disposal including licensing requirements of carriers and destination sites
- Recording of all waste movements from the site
- Reporting and monitoring process

Opportunities to minimise waste through the design process (where applicable) will be considered and actions taken where identified and cost effective.

3.14.1 Waste Minimisation

It is the Project’s policy to minimise the amount of waste generated and sent to landfill.

Waste elimination (through design) and minimisation shall be an integral part of the process. All waste streams by EWC will be assessed against the waste hierarchy to determine the most effective waste management option.

APPENDIX A

Planning Application Reference P2019/5543:
Parc Hadau, Waunsterw

Construction Environmental Management Plan (Biodiversity)

Document Ref: J748-BSG-CEMP

DRAFT for WRW: June 2020

APPENDIX A

Issuing office

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Client	Yr Hadau Ltd
Project	Parc Hadau, Waunsterw, Construction Environmental Management Plan (Biodiversity)
Version	FINAL
Project number	P20-016 Parc Hadau CEMP - Biodiversity

	Name	Position	Date
Originated / issued for client review	Jim Gillespie	Director	01 June 2020
Amended following client input and issued to Yr Hadau	Jim Gillespie	Director	16 June 2020
Issued	Jim Gillespie	Director	02 July 2020

Disclaimer

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Any recommendation, opinion or finding stated in this report is based on circumstances and facts as they existed at the time that BSG Ecology performed the work. The content of this report has been provided in accordance with the provisions of the CIEEM Code of Professional Conduct. BSG Ecology works where appropriate to the scope of our brief, to the principles and requirements of British Standard BS42020.

Nothing in this report constitutes legal opinion. If legal opinion is required the advice of a qualified legal professional should be secured. Observations relating to the state of built structures or trees have been made from an ecological point of view and, unless stated otherwise, do not constitute structural or arboricultural advice.

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1 Introduction

- 1.1 This document is a Construction Environment Management Plan (CEMP) relating to the management and protection of biodiversity during construction of the Parc Hadau development. It relates primarily to the construction phase of the development, but also includes a method statement for reptiles, which is expected to be a pre-construction activity.
- 1.2 This CEMP (Biodiversity) forms an adjunct to the main CEMP, produced by WRW.
- 1.3 A copy of this CEMP (Biodiversity) should be kept on site throughout the construction period for reference by the Contractor.

Site Description

- 1.4 The development site is on land north-east of Waunsterw near Pontardawe, Swansea, centred on National Grid Reference SN 7176 0538 and is approximately 1.45 ha in extent. The Site boundary is shown on Figure 1 in Appendix 1 (plan showing the Biodiversity Protection Zones and features to be protected / avoided).
- 1.5 The Site is on damp, slightly sloping ground and supports a mosaic of habitats. An open area of marshy grassland with encroaching scrub occupies the centre and this was, until recently, bordered by blocks of willow scrub to the west and south, the scrub grading into broadleaved woodland (ancient woodland) to the east, and bracken and an outgrown hedgerow to the north. The Site is bordered by the residential development of Waunsterw to the south and west, ancient woodland to the east and open fields to the north.
- 1.6 Since the granting of planning permission, removal of scrub has taken place across the site by agreement with Neath Port Talbot Council (outside of the adjacent ancient woodland and a buffer to the ancient woodland of 10-15 m depth). As a result, all scrub within the development footprint has already been removed, save for the stumps of individual shrubs and trees which will be removed as part of site clearance.

Planning Background

- 1.7 Planning permission has been granted for development (application reference P2010/5543). Condition 6 of the development relates to the production of a CEMP (Biodiversity). Condition 6 is set out below and the structure of this CEMP (Biodiversity) follows the requirements of the Condition:
 - 6 *No development shall commence (including any site clearance, but with the exception of the tree works detailed within the BSG Ecology Parc Hadau, Method Statement for woodland cutting dated 31st January 2020), until a Construction Environmental Management Plan shall be submitted and approved in writing by the LPA. The CEMP (biodiversity) shall include the following:*
 - a. *Risk assessment of potentially damaging construction activities.*
 - b. *Identification of "biodiversity protection zones" (including retained habitat areas, buffer areas including the 10-15m eastern buffer, ancient woodland, wildlife receptor sites).*
 - c. *Details of pre-commencement checks for protected species.*
 - d. *Practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during construction (may be provided as a set of method statements). Measures shall include, but are not limited to: a method statement for the conservation of reptiles and common toads (including details of receptor sites and their suitability); measures to prevent wildlife becoming trapped in excavations; measures to prevent pollution of watercourses on and off-site; measures to eradicate invasive non-native species; measures to deter species where necessary.*
 - e. *The location and timing of sensitive works to avoid harm to biodiversity features.*

- f. The times during construction when specialist ecologists need to be present on site to oversee works.*
- g. Responsible persons and lines of communication and the role and responsibilities and operations to be overseen by an appropriately competent person (e.g. an ecological clerk of works or on-site ecologist)*
- h. Use of protective fences, exclusion barriers and warning signs.*
- i. A programme of updated surveys to address any changes in ecological constraints which may occur as a result of the construction timetable / phasing.*

The approved strategic CEMP shall be adhered to and implemented throughout the construction strictly in accordance with the approved details, and the Ecological Clerk of Works appointed until completion of the construction phase of the development.

Reason

In the interests of biodiversity and the protection of habitats and the environment, and to accord with Policies BE1, EN6 and EN7 of the Neath Port Talbot Local Development Plan.

2 Risk Assessment of Potentially Damaging Construction Activities

- 2.1 Table 1 overleaf provides a summary of construction-related activities that have potential to affect ecological receptors (in the absence of mitigation).
- 2.2 For guidance, please note that if an offence is committed under the Wildlife and Countryside Act 1981 (as amended) and / or the Conservation of Habitats and Species Regulations 2018 (as amended), a person guilty of an offence could be liable on summary conviction to imprisonment or to a fine or to both.
- 2.3 It is the role of the Developer and the Contractor to consult and discuss any additional construction-related activities and / or variations in activities set out in Table 1 with the Project Ecologist (see Section 7 on Roles and Responsibilities).
- 2.4 **Note:** Table 1 should be printed out and displayed in the Site office for the duration of the construction period.
- 2.5 A list of construction-related activities with potential to harm biodiversity, and which could result in offences being committed, is provided below. Each type of activity has been assigned a code which is then repeated in Table 2 which details the measures that will be implemented to prevent adverse impacts arising from that activity.
- 2.6 Potentially damaging construction-related activities are as follows:
- 1. Works along the northern boundary
 - 2. Removal of tree / shrub stumps and stripping of associated soils
 - 2a. Stripping of marshy grassland
 - 3. Construction activities generally
 - 4. Site set-up: offices, temporary storage areas, stockpiles, establishment of haul roads.
 - 5. Re-fuelling and storage of fuels and other contaminants on site
 - 5a. Movement and storage of soils
 - 6. Excavations/trenching works
 - 7. Night working

Table 1: Ecological Risk Assessment, Effects and Implications.

Proposed Site Activity	Ecological receptor of concern	Potential ecological effect (e.g. loss of habitat, damage to bat roosts)	Relevant biodiversity legislation
1. Works along the northern boundary	The northern watercourse (SINC ref NPTSINC015)	The buffer of the SINC extends 7 m from top of bank and although the approved development includes an incursion into this buffer, uncontrolled construction activity could result in excess disturbance / damage of the buffer. It could also result in contamination of the watercourse with silt, soils, vegetation or spilled fuel. See Figure 1 in Appendix 1 for Biodiversity Protection Zones.	
	Boundary vegetation and nesting birds	<u>Clearance of scrubby / woody vegetation during the nesting period could result in killing or injury to birds, damage or destruction of nests and young birds and/or eggs.</u> As a guide, the bird nesting season is between February and August inclusive; dates vary by species and can be affected by prevailing weather conditions. The majority of species do not start nesting until March and April.	Killing or injury of birds, damage or destruction of a nest/s while nest is in use or being built. Wildlife and Countryside Act 1981 (as amended).
2. Removal of tree / shrub stumps	Reptiles / toads	The principle reptile / toad habitat is on the marshy grassland in the centre of the site but there is potential among the roots of some cut stumps to support hibernating reptiles and toads. <u>Clearance of stumps without checks for reptiles / toads, or within the hibernation period for reptiles (November to March as a guide) could result in killing / injury of individual animals</u>	Killing / injury of reptiles. Wildlife and Countryside Act 1981 (as amended).
2a. Stripping of marshy grassland	Nesting birds	Removal of woody vegetation could give rise to impacts on nesting birds (see above).	Killing or injury of birds, damage or destruction of a nest/s while nest is in use or being built. Wildlife and Countryside Act 1981 (as amended).

Proposed Site Activity	Ecological receptor of concern	Potential ecological effect (e.g. loss of habitat, damage to bat roosts)	Relevant biodiversity legislation
	Badgers	No specific measures are prescribed. However, as badgers are a mobile species, and are known to be present in the surrounding land, if they colonise the prior to construction then disturbance or damage to a sett could take place, which could lead to killing / injury of badgers.	Killing or injuring a badger; or damaging or disturbing a badger sett, are offences under the Protection of Badgers Act 1992.
3. Construction activities generally	Reptiles / Toads	It is intended that reptiles / toads will be re-located to the eastern buffer zone prior to construction (see Figure 1 in Appendix 1) and if the programme is delayed then trapping of the marshy grassland may still be underway when construction begins. In either case, maintenance of reptile-proof fencing will be necessary to ensure reptiles / toads do not move back onto the construction area. If reptile-proof fencing is not maintained there is a risk that reptiles / toads will be killed or injured. Measures that will be adopted during the construction phase to avoid the risk of incidental killing / injuring individual animals (if any are present) include regular checks of reptile-proof fencing and repairs as necessary and minimisation of opportunities for reptiles / toads to colonise loosely stored material in the event that they became located within the construction zone	Killing / injury of reptiles. Wildlife and Countryside Act 1981 (as amended).
4. Site set-up: location of offices, temporary storage areas, stockpiles, establishment of haul roads	Trees, shrubs, retained marshy grassland	Compaction of soil leading to restricted growth of tree roots and hedgerows and alteration in hydrology of the soil could lead to fatality of trees shrubs. Retained grassland and scrub habitats within the ancient woodland buffer zone could also be degraded if vehicles, materials or stockpiles are stored in this area; or if the extent of haul routes is not controlled.	Refer to BS British Standard BS5837:2012 specification in relation to trees and hedgerows
	Invasive Species	Invasive species are present in several locations around the site boundaries adjacent to the residential gardens. These include stands of variegated yellow archangel <i>Lamiastrum galeobdolon</i> subsp. <i>Argentatum</i> in the north-west of the Site and small stands of Montbretia <i>Crococsmia × crocosmiiiflora</i> to the south and west. These locations are indicated on Figure 1 in Appendix 1.	Causing the spread of a Schedule 9 plant during development operations could amount to an offence under the Wildlife and Countryside Act 1981 (as amended).

Proposed Site Activity	Ecological receptor of concern	Potential ecological effect (e.g. loss of habitat, damage to bat roosts)	Relevant biodiversity legislation
		The movement of construction vehicles and earthworks close to these areas has potential to spread this plant throughout the Site.	
5. Re-fuelling and storage of fuels and other contaminants on site 5a. Movement and storage of soils	Groundwater and local watercourses including the northern watercourse (SINC ref NPTSINC015)	Without appropriate controls, there is a risk that any spillages to ground will adversely affect the quality of local groundwater and watercourse resources. Similarly, uncontrolled movement and inappropriate storage of soils and other materials could lead to siltation or blocking of local watercourses or damage to root protection zones of retained hedges / woodland / scrub. Adverse impacts on water quality leads to adverse effects on aquatic organisms, including fish, invertebrates, and plants. Indirect impacts can arise on birds and mammals that forage and commute along this watercourse.	
6. Excavations/ trenching works	Badger	If excavations and trenches are left open overnight there is a risk of pitfall / entrapment for mammals, which could lead to incidental killing or injury. It is also possible that amphibians and reptiles will become entrapped if they leak back onto the site (for instance if a section of reptile fencing fails).	
7. Night working	Bats	Illumination of retained trees and shrubs may alter the roosting, foraging and commuting behaviour of bats.	It is an offence to impair the ability of bats to survive, breed or nurture their young, and to significantly affect the local distribution or abundance of a particular species. Indirect disturbance to bats through inappropriate lighting of trees and habitat features which could lead to the loss of potential roost sites and foraging areas.

3 Identification of Biodiversity Protection Zones

- 3.1 Areas within the development will be segregated to protect biodiversity, and these will always be maintained. The approximate boundaries of the two Biodiversity Protection Zones are shown on Figure 1 in Appendix 1. These are a 10-15 m buffer to the ancient woodland, along the eastern edge of the site; and a 7 m buffer to the top of the northern watercourse bank.
- 3.2 Figure 1 in Appendix 1 should be printed out and displayed in the site office during the construction period.
- 3.3 The approved design shows small incursions into these buffer areas (as shown on Figure 1 in Appendix 1) and these will be marked out on site prior to work in these areas.
- 3.4 The type of fencing used to mark the buffer zones will be in approved by the Ecologist in advance of being installed, its approximate location is indicated in Section 8 of this CEMP (Biodiversity).
- Habitats to be retained and protected throughout the course of the works
 - Scrub, woodland, open grassland, bracken communities, and marshy grassland in the eastern buffer
 - Northern watercourse corridor
 - High visibility fencing and reptile- proof fencing and signage will be installed in the following locations (see Section 8 of this document):
 - Around the entirety of the Biodiversity Protection Zones, with allowance made for approved incursions and access for maintenance and monitoring in the buffer zones.

3.5 Reptile Hibernacula

Prior to construction one or two hibernacula will be constructed by the Specialist Contractor (Ecovigour) under a watching brief from the Project Ecologist.

4 Pre-Commencement Checks for Protected Species

- 4.1 Prior to commencement, checks will be undertaken for signs of badgers. This will include checks during the reptile relocation process, in advance of commencement.
- 4.2 The presence of reptiles and toads will be checked and moved as required, as part of the reptile relocation scheme (see Appendix 2).
- 4.3 Nesting opportunities for birds have been removed from the construction area. Nonetheless a final check for nesting activity will be made prior to construction commencing.

5 Measures to Avoid and Reduce Ecological Impacts During Construction and their Location and Timing

- 5.1 Table 2, overleaf, identifies measures that will be undertaken to avoid and reduce ecological impacts during construction.
- 5.2 **Note:** Table 2 should be printed out and displayed in the Site office during the construction period for ease of reference.
- 5.3 It should be read in conjunction with Table 1 (potential ecological effects of specified construction activities) and Figure 1 in Appendix 1 which identifies the locations of habitats and features within the Site that are to be retained and protected during construction.

Table 2: Ecological Mitigation Measures and Responsibilities

Proposed Site Activity	Rationale for measures	Location / measures to be implemented during construction	Timing / seasonal or other constraints	Persons/organisation responsible
1. Works along the northern boundary	To protect the stream buffer and limit the extent of clearance to minimise habitat loss	<u>Northern boundary.</u> <u>Marking out of the sections to be worked to</u> <u>minimise extent of clearance.</u> <u>A stand-off will be maintained from the bank</u> <u>top and from all retained trees and shrubs.</u> For root protection zones for retained trees refer to Arboricultural Implications Plan and British Standard BS5837:2012 specification in relation to trees and hedgerows.	No seasonal constraints to marking out sections to be cleared. See Birds (below) for guidance on timing of vegetation clearance.	Developer/Contractor
	To avoid damage to nesting birds/nests/young	<u>Site-wide / all woody material.</u> Removal (or reduction in height of woody vegetation) to be carried out outside of the breeding bird season, <u>or else</u> following survey by the Project Ecologist for signs of bird nesting activity prior to clearance. If nesting is present then work within 3-5 m (to be advised by Project Ecologist to be delayed until the young have fledged. If commencement is delayed then continue to cut scrub re-growth prior to commencement as required.	Ideally removed between the months of September and mid-February, or else under supervision.	Developer/Contractor to inform Project Ecologist of dates for removal. As necessary, Project Ecologist to undertake survey of area to be cleared for evidence of breeding bird activity. Project Ecologist to advise Contractor and Developer following survey. Contractors to proceed as agreed with Project Ecologist.

Proposed Site Activity	Rationale for measures	Location / measures to be implemented during construction	Timing / seasonal or other constraints	Persons/organisation responsible
2. Removal of tree / shrub stumps 2a. Stripping of marshy grassland	To avoid killing / injury of reptiles / toads	<u>Location (indicative) - see Figure 1 in Appendix 1</u> In advance of stripping of previous scrub areas the cut stumps will be inspected by the Project Ecologist to identify any with potential to harbour reptiles / toads (i.e. to act as refugia / hibernacula). These will be identified and will be removed under a watching brief from the Project Ecologist to ensure that any reptiles / toads within the stumps are removed to safety (to a hibernaculum in the retained eastern buffer zone - see Figure 1 in Appendix 1 for indicative locations) and refer to Appendix 2 (Reptile Method Statement). Following reptile / toad trapping marshy grassland will be systematically stripped under a watching brief from the EcOW who will relocate any remaining individuals to the on-site hibernacula.	During the reptile's active period (April to October as a guide, and depending on prevailing weather conditions). During the reptile's active period (April to October as a guide, and depending on prevailing weather conditions).	Developer/Contractor to inform Project Ecologist of dates for stump removal and site stripping. As necessary, Project Ecologist to undertake survey of area to be cleared for evidence of breeding bird activity. Project Ecologist to advise Contractor and Developer following survey. Contractors to proceed as agreed with Project Ecologist.
3. Construction activities generally	To avoid killing / injury of reptiles / toads	<u>Location - see reptile fencing plan in Appendix 2</u> In advance of construction, an ecologist will inspect the line of the reptile fencing prior to its installation; and will move any reptiles or toad that might be affected by fence installation to safety. Fencing can then be installed by the Specialist Contractor. Once construction begins, reptile-proof fencing will be checked daily by person to be nominated by the Contractor, and on	During reptile active period (late March to early November as a guide; weather dependent) Not constrained – needs to be done for duration of fencing being in place.	Developer/Specialist Contractor to inform Project Ecologist of fence installation date. Developer/Contractor to inform Project Ecologist of construction start date. Contractor to check daily /

Proposed Site Activity	Rationale for measures	Location / measures to be implemented during construction	Timing / seasonal or other constraints	Persons/organisation responsible
		every visit by the Project Ecologist (minimum of weekly).		Project Ecologist to check fencing on every visit. Contractor to make repairs within 12 hours.
4. Site set-up: location of offices, temporary storage areas, stockpiles, establishment of haul roads	To avoid/reduce impact on tree roots by physical damage or ground compaction. To avoid damage of retained marshy grassland.	<u>Location - see Arboricultural Impact Assessment</u> Site offices, welfare facilities, temporary storage areas, stockpiles, machinery access routes, etc. need to be sited <u>away from root protection zones and away from and marshy grassland that is to be retained within the eastern buffer zone.</u>	N/A.	Developer/Contractor to confirm location of site offices, stockpiles, haul roads etc. with Project Ecologist prior to site set-up (including fencing off protected areas and signposting to exclude access to all except authorised personnel (Project Ecologist in collaboration with Contractor).
	To control the spread of invasive weeds	<u>Location: see Figure 1 in Appendix 1.</u> <u>Treat the variegated <i>Lamiasstrum</i> plants before working within 5 m of this plant.</u> The Project Ecologist should identify its extent and it should be treated with an approved non-selective, translocated herbicide, applied by an appropriately qualified operator. Multiple applications may be required (and, if necessary, shallow cultivation employed to break up the root mass and shorten the translocation pathway - so this operation should be undertaken within the growing season and commenced as soon as possible . The <i>Crocasmia</i> in the south-east is beyond	To be confirmed	Developer/Contractor working with Project Ecologist

Proposed Site Activity	Rationale for measures	Location / measures to be implemented during construction	Timing / seasonal or other constraints	Persons/organisation responsible
		the buffer zone, on the edge of the ancient woodland, and will not be affected by the development. Appropriate measures for its control will be considered within the Habitat Management Plan to be prepared for the Site.		
5. Refuelling and storage of fuels and other contaminants 5a. Movement and storage of soils	Protection of RPZs and watercourses	<u>Location: northern boundary of site</u> Given the proximity of the site to an ordinary watercourse which has a hydrological link to the Upper Clydach, all appropriate pollution control measures will be adopted during site clearance and construction to ensure the integrity of controlled waters. No soils or other materials will be stored within any root protection zones (see the Arboricultural Implications Plan)	N/A	
6. Excavations/ trenching works	To avoid impacts on mammals and reptiles / amphibians	<u>Location: site-wide</u> <u>No major trenches to be left open overnight</u> without a suitable ramp to allow badgers to escape should they become trapped.	N/A.	Developer/Contractor
7. Night working	To avoid impacts on bats	<u>Location: site-wide</u> Night working to be avoided where possible to minimise adverse impacts in bat behaviour. Should night working be required then the <u>illumination of hedgerows and trees with bat roost potential will be avoided.</u>	N/A	Developer/Contractor

6 Timing of Ecologist Presence to Oversee Works

- 6.1 At this stage not all timings are confirmed. Any clarification / changes to the proposed timing of works resulting from modification of the construction programme, and that require an ecologist to be present, should be agreed with the Project Ecologist.
- 6.2 In summary, an ecologist will be present:
- Prior to construction, during the reptile fencing installation, the removal of tree stumps, the marshy grassland stripping, and the hibernacula construction; and to undertake reptile trapping and relocation.
 - During construction, if reptile trapping is still taking place, presence will be daily while the weather is conducive to reptile trapping effort.
 - Following trapping, weekly checks will be undertaken to monitor reptile and other protective fencing, works near the watercourse, and storage of materials generally.

Pre-commencement

Installation of reptile fencing

- 6.3 This is currently scheduled to take place in August 2020, although this is dependent on confirmation of a commencement. An ecologist will be present to inspect the line of the fencing in advance of installation and move any reptiles or toads that might be affected by fence installation to safety.

Removal of tree / shrub stumps and stripping of associated soils

- 6.4 In advance of stripping of previous scrub areas the cut stumps will be inspected by the Project Ecologist to identify any with potential to harbour reptiles / toads. Any found will be removed to safety.

Stripping of marshy grassland

- 6.5 In advance of grassland stripping, and following trapping, grassland will be progressively cut down and inspected by the Project Ecologist and any reptiles / toads will be removed to safety.
- 6.6 Timing: to be confirmed; within the June to October period unless the prevailing weather permits an extension into early November.

During construction

Site set-up: offices, temporary storage areas, stockpiles, establishment of haul roads.

- 6.7 Timing: to be confirmed; in advance of site set-up and then on an ad-hoc basis throughout.

Works along the northern boundary

- 6.8 An ecologist will be present to inspect the impacted area of land within the stream corridor and along the northern boundary generally and to identify with the contractor any sensitive locations that should be avoided temporarily.
- 6.9 Timing: to be confirmed; in advance of work along the northern boundary.

Construction activities generally

Maintenance of reptile fencing

- 6.10 During the construction period, if any reptile trapping and relocation is still taking place the reptile fencing will be checked daily (or thereabouts) by an ecologist during suitable weather conditions while undertaking reptile translocation (currently planned for within the June to October period). During this time the integrity of the fence will be monitored and any defects reported to the Contractor who will affect repairs within 24 hours.
- 6.11 Timing: to be confirmed.
- 6.12 Once construction begins (but following completion of reptile relocation) reptile-proof fencing will be checked daily throughout the active season for reptiles / toads (late March to October as a guide) by a person to be nominated by the Contractor, and on every visit by the Project Ecologist (minimum of weekly during the reptile active period).

General checks

- 6.13 Weekly / ad-hoc checks will be undertaken to monitor the state of other fencing, works near the watercourse to ensure protection of the watercourse buffer, and storage of materials generally.

7 People / Organisations Responsible for Implementation

- 7.1 This section defines the roles of Developer, the Contractor, the Project manager, and Project Ecologist in implementing the biodiversity mitigation and protection measures set out in Table 2.

Developer

- 7.2 This is Yr Hadau Ltd. The Developer's Site Manager will be Keiron Lloyd
- 7.3 The Developer will appoint the Contractor and, independently, will appoint the Project Ecologist during pre-construction activities.

Contractor

- 7.4 This is WRW.
- 7.5 The Contractor is responsible for ensuring that the construction activities are carried out in accordance with the biodiversity protection measures set out in this document.
- 7.6 The Contractor is responsible for ensuring that a copy of this document is available on-site and that Tables 1 and 2, and Figure 1 in Appendix 1 are displayed in the site office to promote ecological awareness amongst the contractors.
- 7.7 The Project manager will be employed by the Contractor. The Project manager approves and supports this CEMP (Biodiversity) as an adjunct to the main CEMP, which is the principal document demonstrating a planned and systematic approach to implementing environmental policy through an effective environmental management system.
- 7.8 The Project manager is responsible for working with the Project Ecologist and the Developer to authorise and maintain this document and ensure that it is implemented. The Project manager is responsible for ensuring it complies with legal and contractual amendments and ensures that all project personnel are aware of the contents of this CEMP (Biodiversity) and understand their role in fulfilling the project's obligations. They are responsible for ensuring that the Developer is informed of any amendments.
- 7.9 The Contractor's Environmental Manager is responsible for ensuring it complies with all relevant environmental legal requirements and offering advice in best practice. The Project manager will induct all site operatives in respect of the provisions of this CEMP.
- 7.10 The Contractor will engage the Project Ecologist during the construction phase.

Specialist Contractor

- 7.11 The reptile fencing and hibernaculum creation; as well as initial management of the eastern buffer scrub, will be undertaken by Ecovigour.

Project Ecologist

- 7.12 The Project Ecologist is BSG Ecology who will nominate a team of professionally qualified ecologists and will be responsible for providing ecological advice when requested.
- 7.13 The Project Ecologist will be the first point of contact for the Project manager in the event of any ecological issues during the construction phase.

8 Use of Protective Fences, Barriers, and Warning Signs

- 8.1 Fencing specification and positioning will be done in conjunction with the ecologist.
- 8.2 The proposed reptile fencing location is shown on the drawing in Appendix 2.

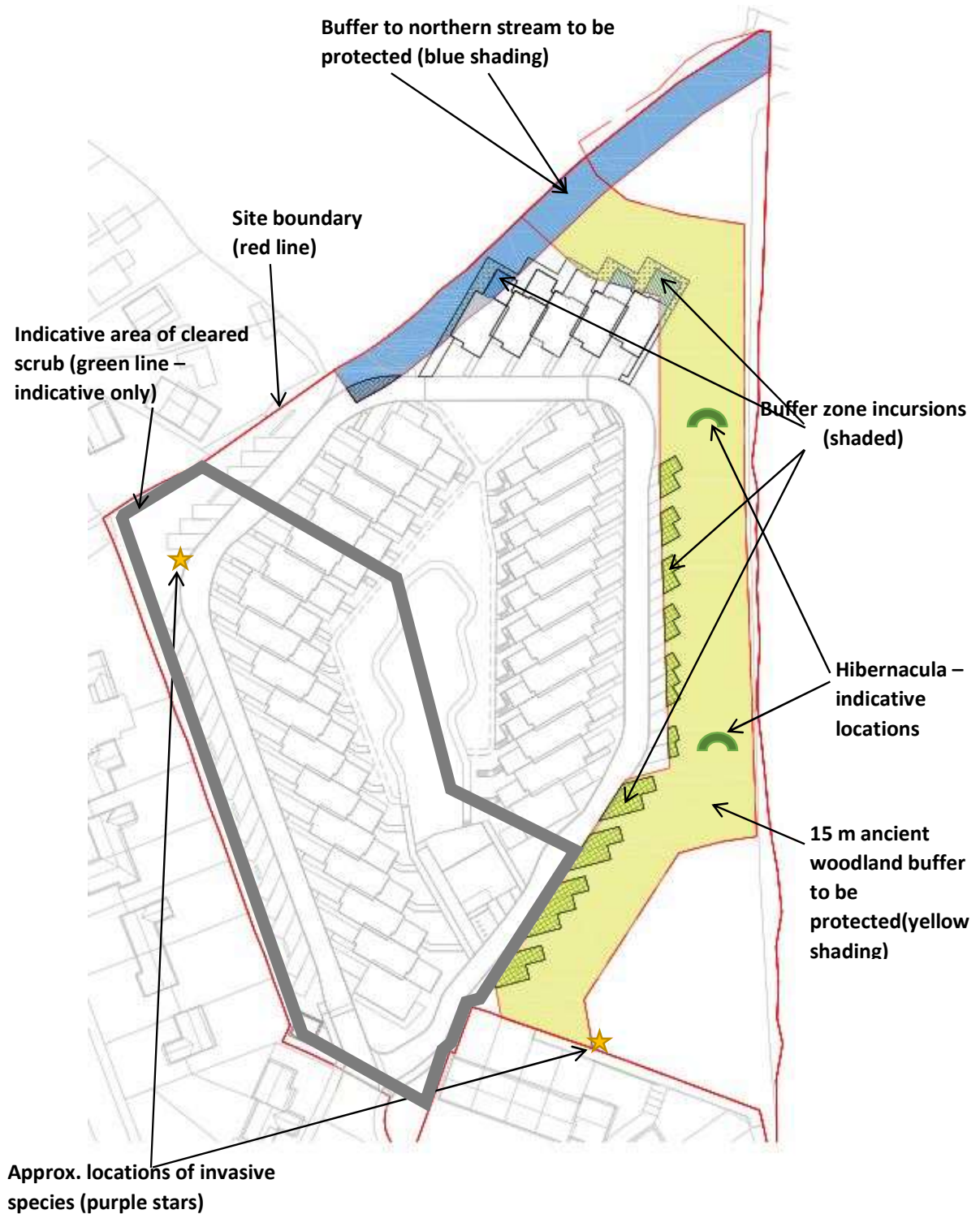
9 Programme of Updated Surveys

- 9.1 This section identifies what ecological surveys may need to be updated, depending on any changes in the construction timetable / phasing.
- 9.2 At this stage no changes that would give rise to a requirement to update any surveys is anticipated. However, if unforeseen delays push the start of development back and a construction start is not made until January 2021 or beyond, then a survey of the site and nearby for badger activity and the presence of badger setts would be undertaken.

Appendix 1: Features to be Retained and Protected

These are shown on Figure 1, overleaf

Figure 1: Site Boundary, Biodiversity Protection Zones and Invasive Species



Appendix 2: Reptile Relocation Method Statement

Preparation of the receptor area

- 9.3 One large hibernaculum or two smaller hibernacula will be created in the buffer zone on the east side of the Parc Hadau site to improve this area as a receptor site for reptiles / toads. Indicative locations are shown on the accompanying fencing location plan.
- 9.4 This will include the following work, to be undertaken by Ecovigour Contractors working with BSG Ecology:
- a. Sensitive soil-strip of the hibernaculum footprint undertaken prior to excavation.
 - b. Creation of hibernaculum 4 m long x 2 m deep x 1 m tall (or 2 No. hibernacula at roughly 2m length each). Locations will be selected in advance by BSG Ecology.
 - c. The hibernaculum will be sunk to c.50 cm along its length and filled with rubble of varying size along with suitable cut logs and wood chip from the woodland and scrub that has already been cleared at Parc Hadau.
 - d. Once constructed, placement of topsoil from the footing of the hibernaculum, along with other topsoil from the main site (such as stripped and placed tussocky grassland) to give a good covering and a finished height of approximately 1 m.
 - e. Bare areas will be seeded using an EM10 tussocky grassland mix or equivalent.

The *Photographs* section, below, shows five images of the creation of a (larger) hibernaculum on another site that was constructed on similar principles to those proposed at Parc Hadau.

Method Statement: Fencing, Reptile Exclusion, Translocation and Monitoring

Coverage of method statement

- 9.5 This Method Statement applies to all of the “reptile trapping areas”, shown within the area delimited by the “permanent” reptile fencing in the accompanying drawing. These are the areas of the site that support habitat suitable for reptiles / toads and which may be subject to construction activity or could be disturbed by construction activity. Vegetation clearance will take place in all of these areas.

Structure of ecology team

- 9.6 The team working on this project will be made up of a lead ecologist who will act as Ecological Clerk of Works (ECoW) in respect of the translocation of reptiles / toads. This person will be named and their contact details will be supplied as necessary to other personnel involved. The ECoW will be responsible for implementation of this Method Statement.
- 9.7 Other suitably trained ecologists will provide support to the ECoW as required and their work on the site will include fencing inspection and basic maintenance, liaison with contractors, placement of reptile refugia, translocation of reptiles / toads and related tasks.

Guidance on machinery / equipment / materials

- 9.8 Standard reptile exclusion fencing (flexible polythene or rigid polypropylene fencing). Wooden stakes for support. Fittings (nails / screws and washers).
- 9.9 Mini-digger and mobile trenching unit for fence installation (supplied by Ecovigour).

- 9.10 Excavator with toothed digging bucket for destructive searches (for pre-construction stripping of remaining stumps and marshy grassland area; to be supplied and operated by WRW).
- 9.11 50 artificial reptile refuges (already in position) on the marshy grassland area. This equates to approximately 110 refugia per hectare of suitable reptile habitat. Materials to be used are as follows:

Material and size	Number
Corrugated metal sheets (0.5 m x 1 m)	10
Thick roofing felt (0.5 m x 1 m)	40
Total	50

Timing and location

- 9.12 The reptile translocation should be carried out during the active season for reptiles / toads (mid-March to mid-October as a guide) in suitable weather conditions (see Foster and Gent, 1996).
- 9.13 Reptiles will be released into and around the hibernaculum which is adjacent to the trapping areas.

Method: destructive searches in cleared woodland/scrub areas

- 9.14 In advance of stripping of previous scrub areas the cut stumps will be inspected by the Project Ecologist to identify any with potential to harbour reptiles / toads (i.e. to act as refugia / hibernacula). These will be identified and removed under a watching brief from the Project Ecologist to ensure that any reptiles / toads within the stumps are removed to the hibernaculum in the retained eastern buffer zone.

Method: reptile exclusion fencing

- 9.15 ECoW to give a toolbox briefing talk to the fencing team before fencing commences.
- 9.16 Fencing will be installed in the indicative locations shown on the accompanying fencing location plan which will be marked out by the client or the Contractor (WRW). Micro-siting of the final location of the fencing will be agreed in consultation with the ECoW who will oversee the fence installation.
- 9.17 The fence will be installed to approximately 0.7 m above ground level with a return on the upper outside edge that faces away from the main development site. It will be either self-supporting or supported by wooden stakes according to its location. The fence will be buried at least 100 mm into the ground and backfilled tightly.
- 9.18 The fence is to prevent reptiles / toads from moving into the construction areas from the retained buffer or from the land to west / south of the development area during and after trapping and translocation.
- 9.19 The fencing will be installed to create trapping compartments within the trapped area, which can be trapped and monitored separately to allow cleared areas to be released for stripping and development (rather than waiting for the whole area to be cleared of reptiles / toads before any stripping can take place).

Method: reptile trapping

- 9.20 A minimum of 10 days after the placement of any refugia (to allow the refugia to “bed-in”) translocation will commence at that refugia.
- 9.21 Subject to paragraph 9.22 (below), trapping of the marshy grassland area will take place for a minimum of 30 trap days at each placed refugia, with a possible two visits per day to take advantage of particularly suitable weather conditions. It will continue until the numbers of reptiles / toads being captured have been depleted to a negligible level (this will be demonstrated by a low steady level on a depletion curve to be produced and analysed by BSG Ecology on an on-going basis). The point at which trapping ceases entirely will be decided by the ECoW and agreed with the Neath Port Talbot Council Ecologist.
- 9.22 At any time, provided 15 days have elapsed, if the trapping results from a particular group of refugia (“trapping compartment”) indicate that further trapping is unlikely to be beneficial in that area the refugia in question will be relocated to another trapping compartment with higher on-going levels of activity. This will increase the density of trapping in the other compartments. It will also permit the area with low trapping levels to be destructively searched before being stripped of vegetation (see below).
- 9.23 Any reptiles / toads captured will be carefully transferred to a suitable lidded container or cloth bag and moved to the on-site hibernaculum in the buffer area to the east. They will be carefully released amongst dense vegetation and brash close to the hibernaculum, as guided by the ECoW.

Method: destructive search for reptiles on marshy grassland

- 9.24 Once it has been agreed that trapping of the marshy grassland area (or particular trapping compartments) is resulting in a negligible number of reptiles / toads remaining on the main development site or on any particular part of it, a destructive search of the relevant trapped-out areas can begin. Under strict supervision of the ECoW team, the vegetation will be cut to a height of 100-150 mm). Any remaining woody vegetation (stumps, roots, etc.) and areas of grassland to be removed will then be systematically stripped using an excavator with a toothed digging bucket, leaving bare soil. Any remaining reptiles / toads disturbed during this process will be carefully captured and transported to the hibernaculum in cloth bags or lidded plastic buckets.
- 9.25 The destructive search is expected to take a minimum of two days.

Method: maintenance and retention of reptile-proof fencing

- 9.26 The fencing should be inspected regularly by the ECoW (or assistants) and either patched as necessary in the case of minor wear and tear; or else reported to the client for immediate attention in the case of more extensive damage.
- 9.27 Once the site has been destructively searched the outer fencing will remain in place until completion of construction. Inspection of the state of fencing will be daily by the Contractor and by an ecologist whenever they are present on site.

Method: monitoring of reptiles at receptor sites

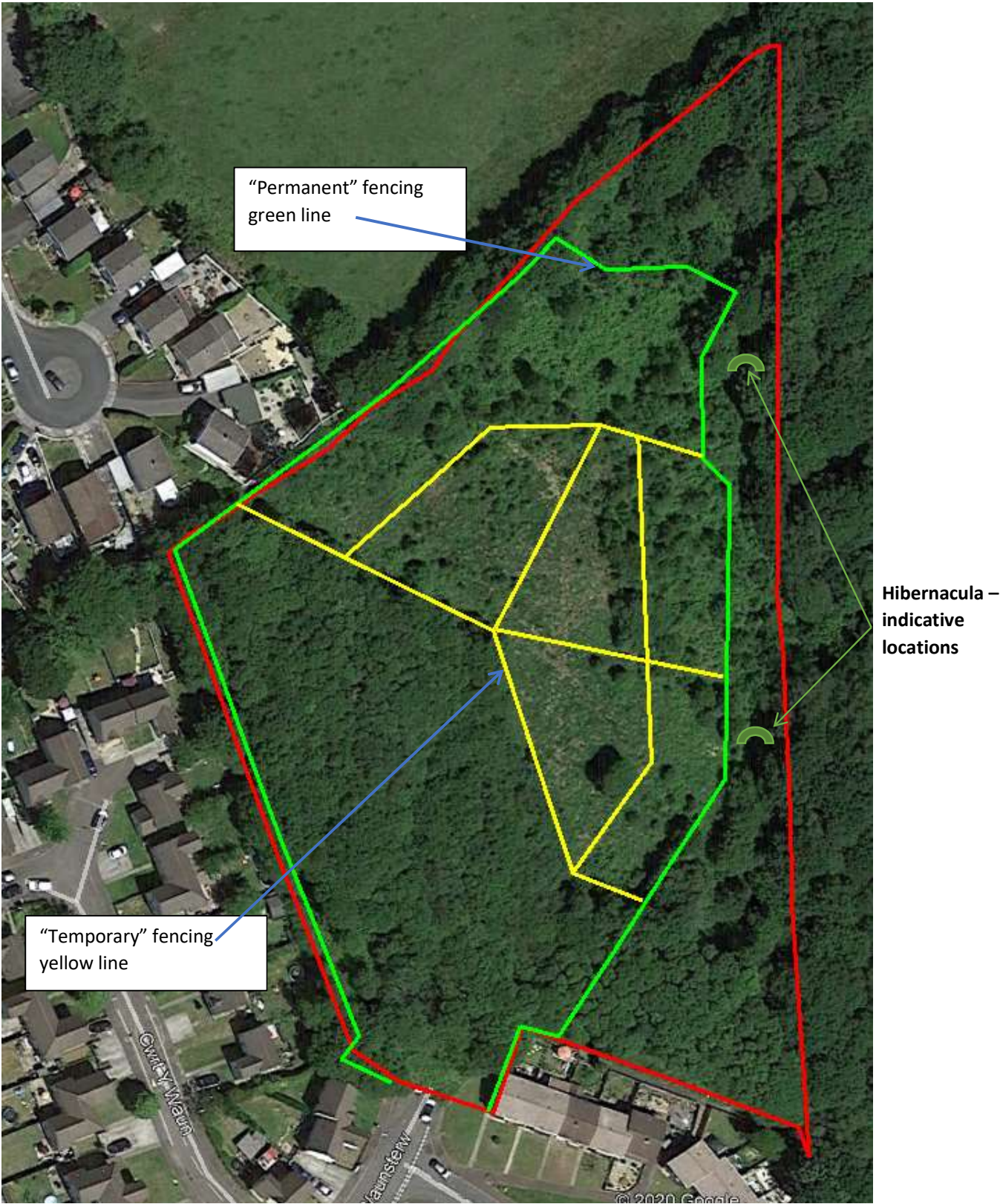
- 9.28 The receptor site will be monitored for reptiles / toads by a suitably experienced ecologist for two years post-translocation (2021 and 2022).
- 9.29 This will involve placement of artificial refugia in the buffer area after translocation and the checking of these for reptiles / toads seven times a year at suitable times of the year (April to September) when temperatures are suitable. This will help determine whether the populations are stable or fluctuating.

- 9.30 In the unlikely event that populations appear to show a decreasing trend, another hibernaculum and / or additional habitat manipulation within the buffer area may be required.
- 9.31 In addition to reptile monitoring, ecologists will also assess the created hibernacula, checking that access and egress points are unobstructed and hibernacula are free from waterlogging.
- 9.32 Long-term habitat management of the buffer area will be dealt with in associated documentation.
- 9.33 An annual report will be produced showing the outcomes of the monitoring for reptiles / toads. This will be submitted to Neath Port Talbot Council's ecologist.

References

Foster, J. and Gent, T. (1996). *Reptile Survey Methods*. English Nature.

Method Statement Figure: Proposed Layout of Reptile Fencing



Photographs

These are photographs showing the creation of a larger (10 m length) hibernaculum built on similar principles to those proposed at Parc Hadau.



Photo 1. Hibernaculum creation in progress, using rubble and logs.



Photo 2. Logs being piled into the hibernaculum structure along with wood chippings.



Photo 3. Hibernaculum in final stages of construction



Photo 4. Completed hibernaculum showing cleared vegetation around the new structure.



Photo 5. Completed hibernaculum with tussocky habitat in front and young woodland behind.