

Dragon Parc – Construction Environmental Management Plan

BMQ-JBAU-XX-XX-RP-EN-0001-S3-P01-CEMP

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Revision History

Revision Ref / Date	Amendments	Issued to
16/10/2019	Draft Report	Tim Carter
17/10/2019	Draft Report	Huntley Wood Investments Ltd

Contract

This report describes work commissioned by Huntley Wood Investments Ltd. Ben Sullivan of JBA Consulting carried out this work.

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Technical Director

Purpose

This document has been prepared as a Draft Report for Huntley Wood Investments Ltd. JBA Consulting accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

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Abbreviations

CEMP	Construction Environmental Management Plan
CIRIA	Construction Industry Research and Information Association
ECow	Environmental Clerk of Works
EMS	Environmental Management System
FRAP	Flood Risk Activity Permit
GGAT	Gwent Glamorgan Archaeological Trust
GHG	Greenhouse Gas
INNS	Invasive Non-Native Species
KMP	Japanese Knotweed Management Plan
MTCBC	Merthyr Tydfil County Borough Council
NRW	Natural Resources Wales
RPZ	Root Protection Zone
SINC	Site of Importance for Nature Conservation
SSSI	Site of Special Scientific Interest
SWMP	Site Waste Management Plan

1 Introduction

1.1 Purpose

This outline Construction Environmental Management Plan (CEMP) summarises the recommendations for environmental management during the construction phase of the Dragon Parc Swale Flood Alleviation Scheme. It outlines the likely roles and responsibilities of those involved in the project and sets out the environmental actions required to achieve a series of environmental management objectives identified for the scheme.

1.2 Roles

For each environmental management action set out in the table below, the appropriate project team member needs to be identified who has responsibility for ensuring that the action is fully implemented. Monitoring of the CEMP is undertaken by the Construction Contractor. It is recommended that where required, the Construction Contractor is supported by an appropriately qualified Environmental Clerk of Works (ECoW).

This outline CEMP should be used as a guide, to assist the Construction Contractor when implementing their own Environmental Management System (EMS). Typical environmental issues requiring management during construction could include:

- Environmental permitting requirements and environmental planning conditions;
- Protected species and habitat monitoring;
- Site waste management;
- Materials management;
- Pollution prevention and control (including storage of material, refuelling and incident response); and
- Visual impacts.

1.3 Environmental audits

Site audits should be undertaken by the Construction Contractor on a regular basis, to ensure compliance with regulatory requirements (and any conditions imposed) and relevant construction industry best practice.

1.4 Environmental incident reporting

As part of the Construction Contractor's EMS, any environmental issues or incidents must be reported, using the Construction Contractor's incident reporting system.

2 Environmental Baseline and Scheme Proposals

2.1 Site location

Dragon Parc is a 7.5ha area of ex-industrial land, that once formed part of the large Hoover site in Pentrebach, on the southern side of Merthyr Tydfil, South Wales. The site has been abandoned since Hoover closed a large proportion of their operations in the town in 2009. Buildings that were present on the site when it was operational have now been removed leaving a large empty area of hardstanding.

Table 2-1: Site Description

Site Name	Dragons Park
Site Area	78 ha
Existing Land-use	Brownfield
Purpose of development	Flood mitigation
OS-NGR	SO05400420
Country	Wales
County	Merthyr Tydfil, Glamorgan
Local Planning Authority	Merthyr Tydfil County Borough Council
Lead Local Flood Authority	Merthyr Tydfil County Borough Council

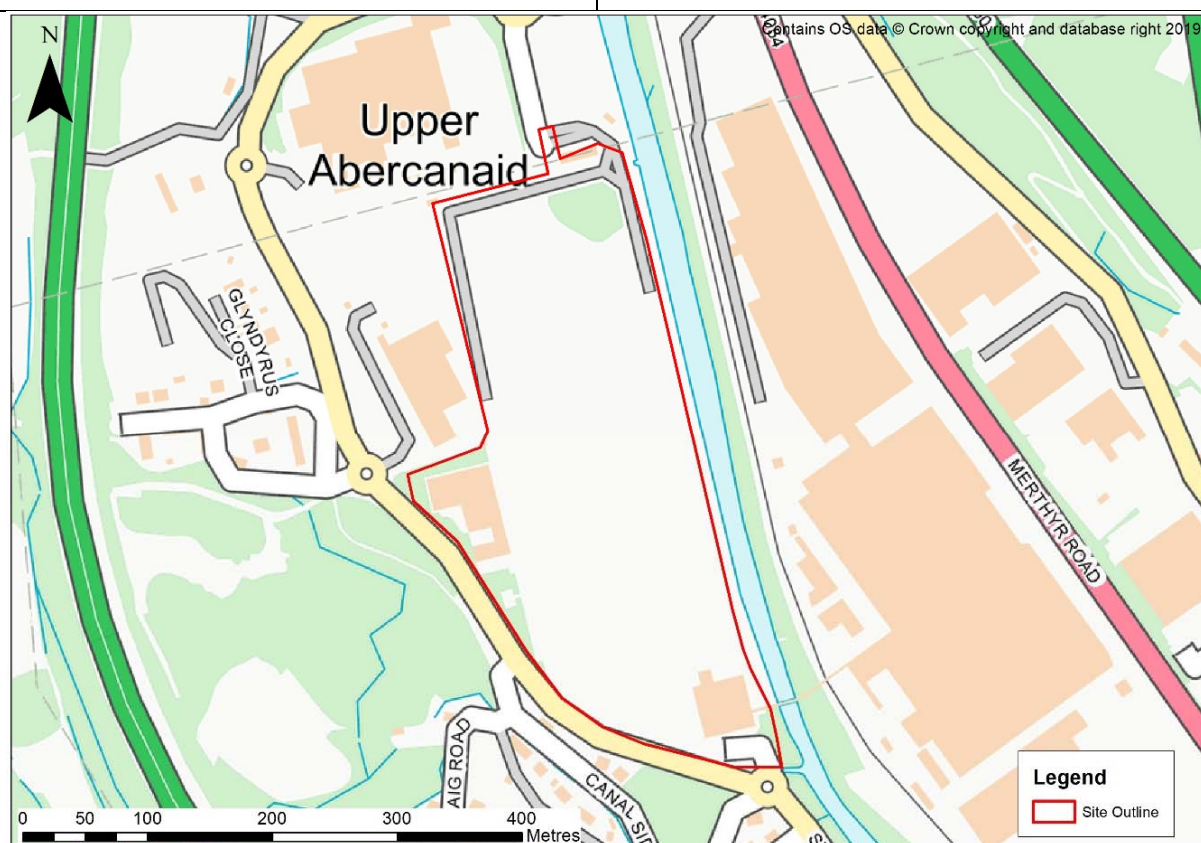


Figure 2-1: Site Location

The immediate area surrounding the site is predominantly industrial and residential, with Hoover still maintaining some operations in the neighbouring site, which they still own.

Mynydd Merthyr ascends steeply to the west of the site. To the east of the site is the River Taff, a main river that flows south, eventually reaching the Bristol Channel via Cardiff Bay.

2.2 Environmental Baseline

The proposed scheme does not lie within any environmentally designated sites. There is one nationally designated site within 2km – Cwm Glo a Glyndrys SSSI lies 310m to the north west. The site is designated for its extensive areas of marshy grassland, species-rich neutral grassland and acid grassland, and for the association of these habitats with others including woodland and heath. There are no internationally designated wildlife sites within 2km.

There are no locally designated environmental sites within the proposed scheme boundary, but Rhydyar West Site of Importance for Nature Conservation (SINC) is 350m to the west, the other side of the A470. The River Taff is also designated as a SINC, which the site borders to the east.

A Preliminary Ecological Appraisal and corresponding site visit was carried out by Ecological Services Ltd from August – October 2019. The following was determined about the site. Most of the site is concrete hardstanding and rubble, with tarmac roads and car parking areas also present. A tree line is present along the western and south-western edge of the site, thought to be planted when the Hoover plant was built. Small areas of semi-improved grassland are present between the tree line and the road. A small pond is located on the western side, which is deemed unsuitable for Great Crested Newt habitation. At the north of the site, marshy and neutral grasslands are present. Common Pipistrelle, Soprano Pipistrelle, Noctule and Myotis bats are known to be present. It is thought that Otter likely use the river Taff, on the eastern boundary of the site, for lying up. No other protected species are thought to be present within or in close proximity to the site.

Aside from ecological aspects, the following environmental constraints are located in and around the site:

- A number of listed buildings 300m to the south;
- Three Scheduled Monuments 1-1.2km to the west, Vale of Neath railway cutting and tunnel portal, Cwm Pit and head of railway and Cyfarthfa balance pond and leaf;
- The Taff Trail Strategic Walking Route, which runs from Cardiff to Brecon, borders the western edge of the site, running parallel.
- Approximately 9,900 people live within 2km of the site, with 2,000 of those living within 500m.

2.3 Scheme proposals

The site was purchased by Huntley Wood Investments Ltd for housing development, in order to contribute to Merthyr Tydfil Council's objective of building 2,000 homes by 2032. However, the site predominantly falls within Flood Zone C2. In Wales, only less vulnerable forms of development are allowed in Flood Zone C2. This excludes housing, which is considered a more vulnerable form of development. As a result, in order to make the site suitable for housing and obtain planning for the proposed development, a scheme to reduce the flood risk on the site must be implemented.

The flood risk arises from the west of the site, where water from small rivers in the hills flows down and floods the site.

As a result, the developer is proposing to construct a swale along the western boundary of the site, which will collect flood water as it flows in the direction of the site, thereby preventing it from flooding, rendering it suitable for housing development. This swale will flow into the River Taff via a new culvert, which will be constructed in the south-eastern corner of the site.

The general arrangement for the proposals and detailed engineering drawings are provided in Appendices A and B.

3 Construction Environmental Management Plan

The CEMP is a live document that needs to be updated as the project progresses through the consenting process and pre-construction phase and throughout construction of the proposed scheme. The following proforma should be used by the Construction Contractor's appointed ECoW to develop and maintain a CEMP for the duration of the construction works.

Table 3-1: Construction Environmental Management Plan

Ref.	Objective	Action	Responsibility	Ref. to further info.	Progress and further action	Sign off and date
Pre-Construction						
1. Consents						
PC.1.1	Discharge Planning Permission conditions from Merthyr Tydfil County Borough Council (MTCBC)	Ensure any environment related planning conditions are discharged prior to the start of construction. Incorporate relevant planning conditions into the CEMP.	Construction Contractor and ECoW	Planning Decision Statement (once obtained)		
PC.1.2	Obtain a Flood Risk Activity Permit (FRAP) from Natural Resources Wales (NRW)	Ensure all activities associated with construction do not increase flood risk in any area.	Construction Contractor and ECoW	https://naturalresources.wales/permits-and-permissions/flood-risk-activities/flood-risk-activity-permits-information/?lang=en		
PC.1.3	Establish works specification	Detailed method statements must be prepared and accepted by the client two weeks before works commence.	Construction Contractor			
PC.1.4	Minimise noise impacts on adjacent residents.	The nearest residential properties are approximately 20m from the proposed works. A Section 61 Consent may therefore be necessary for any noisy operations from MTCBC. In order to obtain this the Construction Contractor will need to agree working hours and methods with MTCBC.	Construction Contractor	BS 5228-1:2009 Code of practice for noise and vibration control on construction and open sites.		
PC.1.5	Confirm site boundary	The working areas must be clearly delineated and signposted before works commence.	Construction Contractor			

Ref.	Objective	Action	Responsibility	Ref. to further info.	Progress and further action	Sign off and date
2. Natural Resources						
PC.2.1	Reduce Greenhouse Gas Emissions	Considerations should be made during the construction stage to prevent unnecessary GHG emissions. These could include minimising idling equipment.	Construction contractor			
PC.2.2	Encourage sustainable use of materials	The use of hazardous or polluting substances should be minimised or, if possible, prevented.	Construction contractor			
PC.2.3	Avoid construction waste becoming a management issue and encourage re-use/retention of material on site or sustainable disposal	A large volume of earth will be excavated for the proposed development. To minimise waste, this should be re-used on site wherever possible. A Site Waste Management Plan (SWMP) may be necessary.	Construction Contractor	https://naturalresources.wales/guidance-and-advice/environmental-topics/waste-management/how-to-classify-and-assess-waste/?lang=en		
3. Ecological receptors						
PC.3.1	Avoid impacts on wildlife	An Environmental Clerk of Works (ECoW) should be appointed to oversee the construction stage.	Huntley Wood Investments Ltd (Client) or Construction Contractor			
PC.3.2	Prevent disturbance to the River Taff SINC	Vegetation clearance along the banks of the River Taff should be supervised by the ECoW – to ensure disturbance is minimised,	Construction Contractor			
PC.3.3	Prevent unnecessary damage to trees	Barriers protecting the trees on site must be installed before materials or machinery is brought onto site and before any pre-construction works begin. Barriers must be regarded as sacrosanct and must not be removed or moved without prior approval from the ECoW.	Construction Contractor			

Ref.	Objective	Action	Responsibility	Ref. to further info.	Progress and further action	Sign off and date
PC.3.4	Prevent adverse impacts on otter populations	An otter toolbox talk should be provided to all site contractors, workers and visitors before they are permitted to enter the site.	Construction contractor	Preliminary Ecological Appraisal		
PC.3.5	Prevent the spread of Japanese knotweed	A Japanese Knotweed Management Plan (KMP) will be authored and agreed by the client before any works begin. The measures described in the KMP will be strictly adhered to during construction.	ECoW Construction Contractor	Dragon Parc Swale Knotweed Management Plan.		
During Construction						
1. Human receptors						
DC.1.1	Avoid dust impacts on human receptors and nearby ecological designations	If weather during construction is sufficiently dry for dust to become a concern, wheel wash and dust suppression measures (such as water spraying from a bowser) should be undertaken as necessary to keep the construction site and public roads free of dust. Dust levels generated will be monitored and recorded	Construction Contractor	Institute of Air Quality Management (IAQM) Guidance on the assessment of dust from demolition and construction		
DC.1.2	Minimise noise levels during construction to avoid impacts on residents and wildlife	The contractor should agree working hours with MTCBC. Work outside these hours should only be undertaken with prior agreement from MTCBC. All construction machinery will be well maintained and switched off when not in use, to decrease the levels of noise. Soft-start measures should be employed to avoid sudden noise increases.	Construction contractor	BS5228-1:2009 Code of practice for noise vibration control on construction and open sites.		
2. Ecological receptors						
DC.2.1	Prevent or minimise disturbance to nesting birds	Demolition of the building on site or clearance of any vegetation should not be done during the bird nesting season (March to August inclusive).	Construction Contractor	Preliminary Ecological Appraisal		

Ref.	Objective	Action	Responsibility	Ref. to further info.	Progress and further action	Sign off and date
		If vegetation clearance is necessary during nesting season, it should be done under the supervision of the ECoW. The ECoW should first check all clearance areas for the presence of nesting birds. Should any be found, a 5m exclusion zone should be set up around the nest until all chicks have fledged.				
DC.2.2	Minimise disturbance to resident otter populations	A qualified ecologist should be present when vegetation along the riverbank is cleared. If otter holts or lying up locations are found, the ecologist should halt works in that area until further notice. All materials left on site overnight should be securely stacked. All excavations should be covered overnight. If this is not possible, an escape ramp positioned at a 45° angle (or shallower) should be present.	Construction Contractor	Preliminary Ecological Appraisal		
DC.2.3	Minimise vegetation loss	The tree line and wooded areas along the western boundary of the site will be retained where that is possible. A Root Protection Zone (RPZ) will be implemented around any retained trees or hedgerows within or directly adjacent to the site. All RPZs will include clear marking to ensure no digging or machinery is used in that area. The new drainage swale will not be positioned closer than 2m to any RPZ.	Construction Contractor ECoW	Preliminary Ecological Appraisal (PEA) BS 5837: Trees in relation to design, demolition and construction - Recommendations		
DC.2.4	Avoid impact on resident bat populations	No night-time working (works between the hours of 6pm and 6am) will be permitted.		PEA		
DC.2.5	Avoid impacts on local grassland habitat	No engineering works or storage of either excess earth or machinery is to	Construction Contractor	PEA		

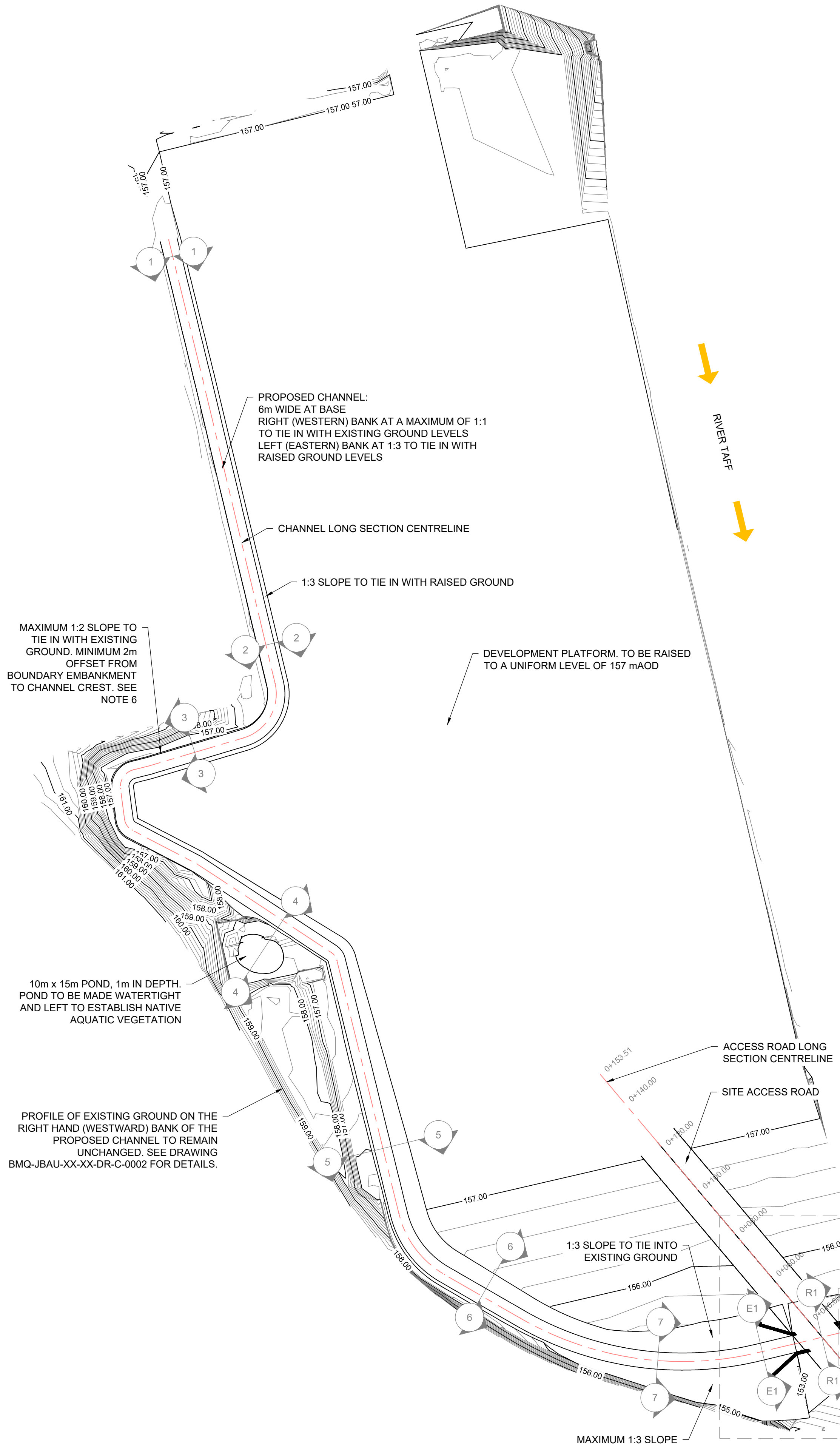
Ref.	Objective	Action	Responsibility	Ref. to further info.	Progress and further action	Sign off and date
		take place on the grassland area to the north of the site.				
DC.2.6	Prevent the spread of Invasive Non-native species (INNS)	All site operatives will be inducted in good biosecurity practice, including the adoption of the Check-Clean-Dry campaign, through toolbox talks. A cleaning area should be installed at all works areas which should comprise a membrane or hard standing upon which machinery and equipment can be checked and cleaned of soil and vegetation after use and before leaving site. This area should be located as close to the works area as is reasonably possible. Any vehicles and plant which have crossed areas of infestation must be pressure washed. The material left after pressure washing must be contained and disposed of along with other INNS material.	Construction Contractor	KMP		
DC.2.7	Avoid the spread of Japanese Knotweed	Where stands of Japanese Knotweed intersect with works areas, actions referred to in the Knotweed Management Plan must be adhered to.	Construction Contractor	Dragon Parc Swale Knotweed Management Plan.		
DC.2.8	Reduce impacts of lighting the construction site on sensitive receptors	There will be no construction work occurring between the hours of 18.00 and 06.00 (night-time hours). If lighting is needed to aid works, it shall avoid illuminating the River Taff. Glare is to be kept to a minimum by ensuring that the main beam angle of all lights is downward towards the ground.	Construction contractor	Institute of Lighting Engineer's <i>Guidance Notes for the Reduction of Obtrusive Light</i>		
DC.2.9	Prevent impacts to ecological communities in the River Taff	No waste or construction run-off will be discharged into the River Taff. If there is an accidental discharge into the River Taff, NRW and MTCBC's	Construction contractor			

Ref.	Objective	Action	Responsibility	Ref. to further info.	Progress and further action	Sign off and date
		Biodiversity Officer will be notified immediately and emergency response initiated.				
DC.2.10	Mitigate habitat loss associated with the development	If replacement planting takes place to compensate for habitat loss associated with construction, it shall be done in accordance with the methods recommended in the PEA	Construction Contractor	PEA		
3. Water Environment Receptors						
DC.3.1	Avoid pollution of waterbodies	Measures would be undertaken to reduce risks of pollution and run-off following CIRIA Guidance: <i>Control of water pollution from construction sites, Guidance for consultants and contractors</i>. Any fuel stores will be located on impermeable bases within a secured bund with a storage capacity 100% of the stored volume. Biodegradable fuels should be used if possible. Refuelling of vehicles should be carried out >10m from any watercourse. All machinery and site materials will be stored in a securely fenced construction compound at least 10m away from the riverbank. If security lighting of this compound is deemed to be required, it shall be directional and cowled so as not to spill onto habitat. Emergency spill kits will be available on site and staff trained in their use. Working areas to be clearly marked and regularly checked by the ECoW. If herbicides are used, they must not be harmful to the aquatic environment.	Construction Contractor ECoW	NRW Guidance for Pollution Prevention: https://naturalresources.wales/guidance-and-advice/environmental-topics/watermanagement-and-quality/water-quality/guidance-for-pollution-prevention/?lang=en https://www.ciria.org/Resources/All_toolbox_talks/Env_toolbox_talks/Working_on_or_near_watercourses.aspx		
4. Archaeological receptors						

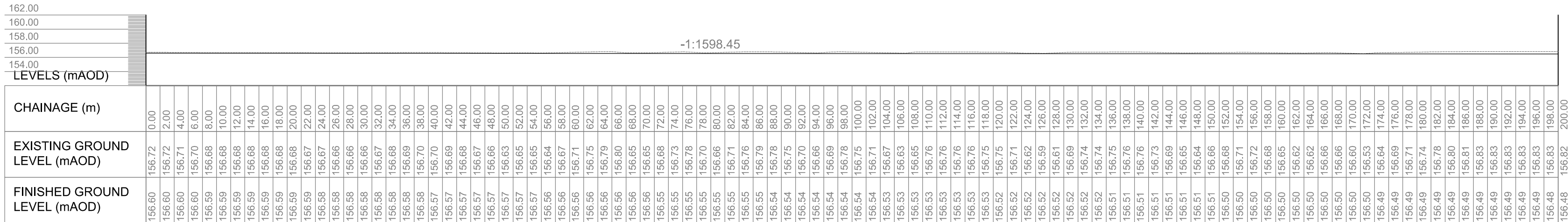
Ref.	Objective	Action	Responsibility	Ref. to further info.	Progress and further action	Sign off and date
DC.4.1	Protection of any archaeological remains encountered	If any features that are of potential archaeological interest are encountered, the works must cease within the vicinity of the find, and consultation would need to be undertaken with the Gwent-Glamorgan Archaeological Trust (GGAT).	Construction Contractor	GGAT		
Post-construction						
1. Ecological receptors						
PC.1.1	Eradication of Japanese Knotweed along the watercourse	To compensate for the loss of mature trees along the riverbank, a Japanese Knotweed Management Plan will be agreed and implemented.	Construction Contractor/ Maintenance Contractor	Japanese Knotweed Management Plan		

Appendices

A General Arrangement



PLAN
1:1000

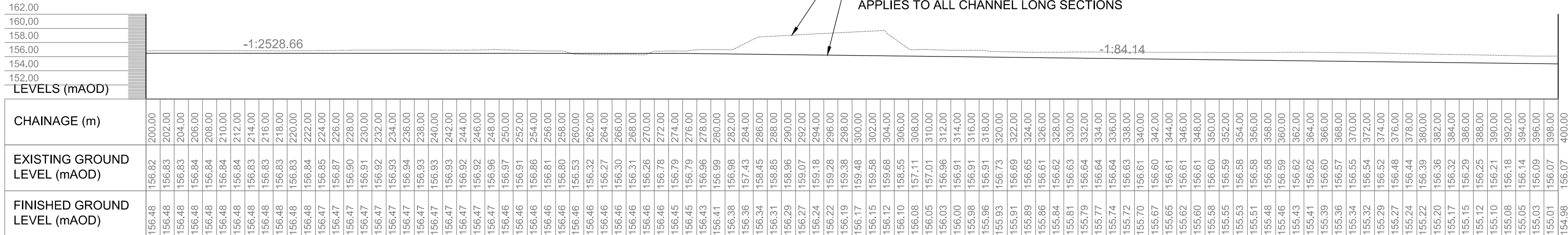


CHANNEL LONG SECTION

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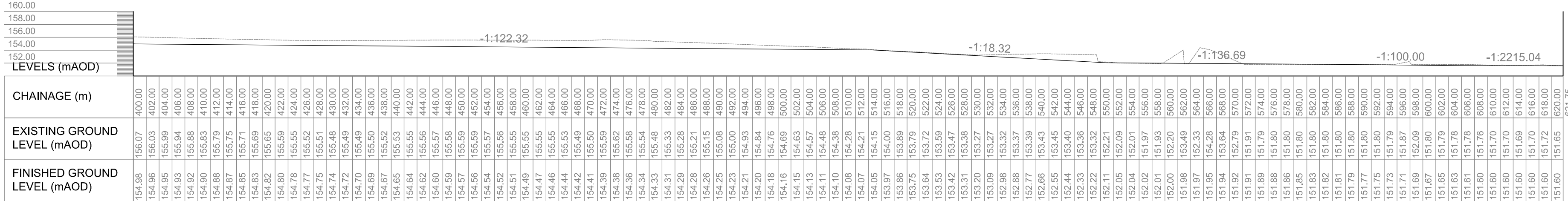
EXISTING GROUND LEVEL. APPLIES TO ALL LONG SECTIONS
PROPOSED GROUND LEVEL: GRASSED LINED CHANNEL.
APPLIES TO ALL CHANNEL LONG SECTIONS



CHANNEL LONG SECTION

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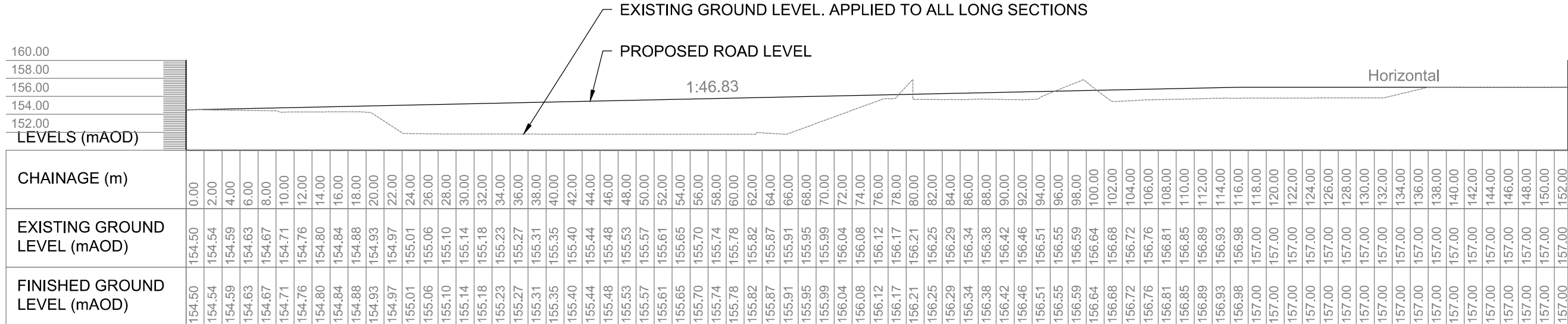
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CHANNEL LONG SECTION

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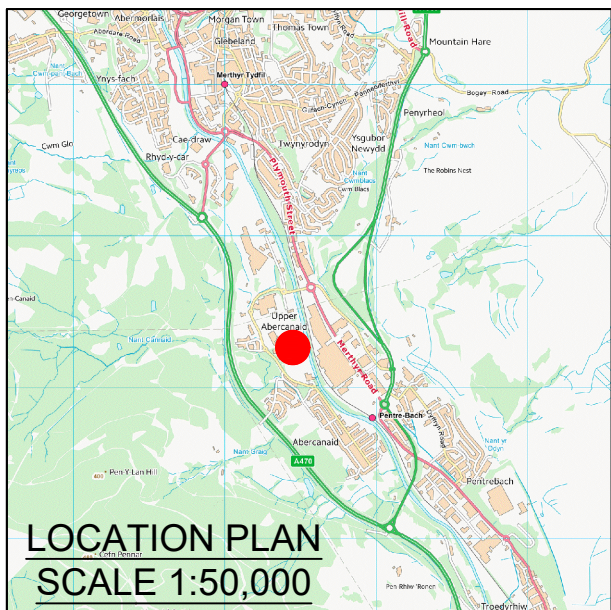
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ACCESS ROAD LONG SECTION

CH: 0.00 - 153.51m

1:500



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• Falls from height • Lifting • Excavation • Ground conditions • Working in / near water • Existing services • Flood risk	• Public / Plant interface • River channel access • Falls from height	• Habitat loss • Invasive non-native species • Pollution of a watercourse • Contaminated land
Construction Risks	Public Risks	Environmental Risks
In addition to the hazards/risks normally associated with the types of work detailed on this drawing take note of the above. It is assumed that all works detailed on this drawing will be carried out by a competent contractor working, where appropriate, to an appropriate method statement.		
SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX		

- GENERAL NOTES:
- Do not scale from this drawing. All dimensions to be checked / verified on site.
 - All levels shown with respect to meters Above Ordnance Datum (mAOD).
 - Ground contours were generated based on the topographic survey carried out by Azimuth Land Surveys Ltd (2015), subject to the proposed engineering works.
 - This drawing is not for construction issue.
 - Existing services not shown.
 - Final channel layout to depend on ground conditions, to be confirmed via Ground Investigation.

Drawing to be read in conjunction with:-
BMQ-JBAU-XX-XX-DR-C-0002-Sections
BMQ-JBAU-XX-XX-DR-C-0010-Road_GA
BMQ-JBAU-XX-XX-DR-C-0011-Road_Section
BMQ-JBAU-XX-XX-DR-C-0020-Outfall

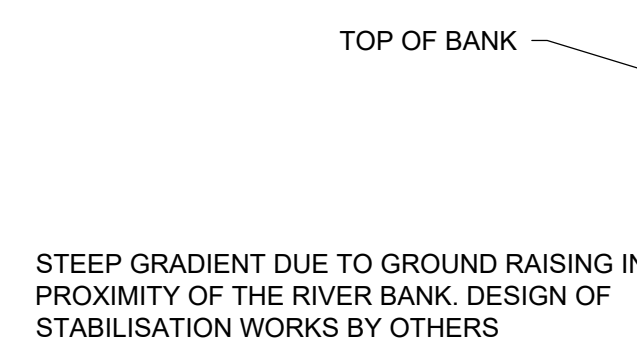
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Rev.:	Date	17/10/19	Drawn	BH	Designed	JK	Checked	GB	Approved	AT
Client Approval										
A - Approved										
B - Approved with Revisions										
C - Do Not Use										

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Project		Land at Dragon Parc, Merthyr		
Title		General Arrangement Plan and Long Sections		
Client		for		
Huntley Wood Investments Ltd.				
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Checked:	G Baker	15/10/19	Approved: A Tyndel	17/10/19
Project Reference:		2019s0875		
Scale:		As Shown @ A1		
Drawing Number:		Status:	Revision:	Sheet Size:
BMQ-JBAU-XX-XX-DR-C-0001		S3	P01	A1

B Detailed Design Drawings



RIGHT HAND BANK OF RIVER TAFF. TOPOGRAPHY
UNKNOWN AND TO BE CONFIRMED VIA SURVEY

EMBANKMENT SLOPE AT 1:3

GABION BASKET CHANNEL —
WALLS TO FOLLOW
GROUND PROFILE

BRIDGE
PARAPET

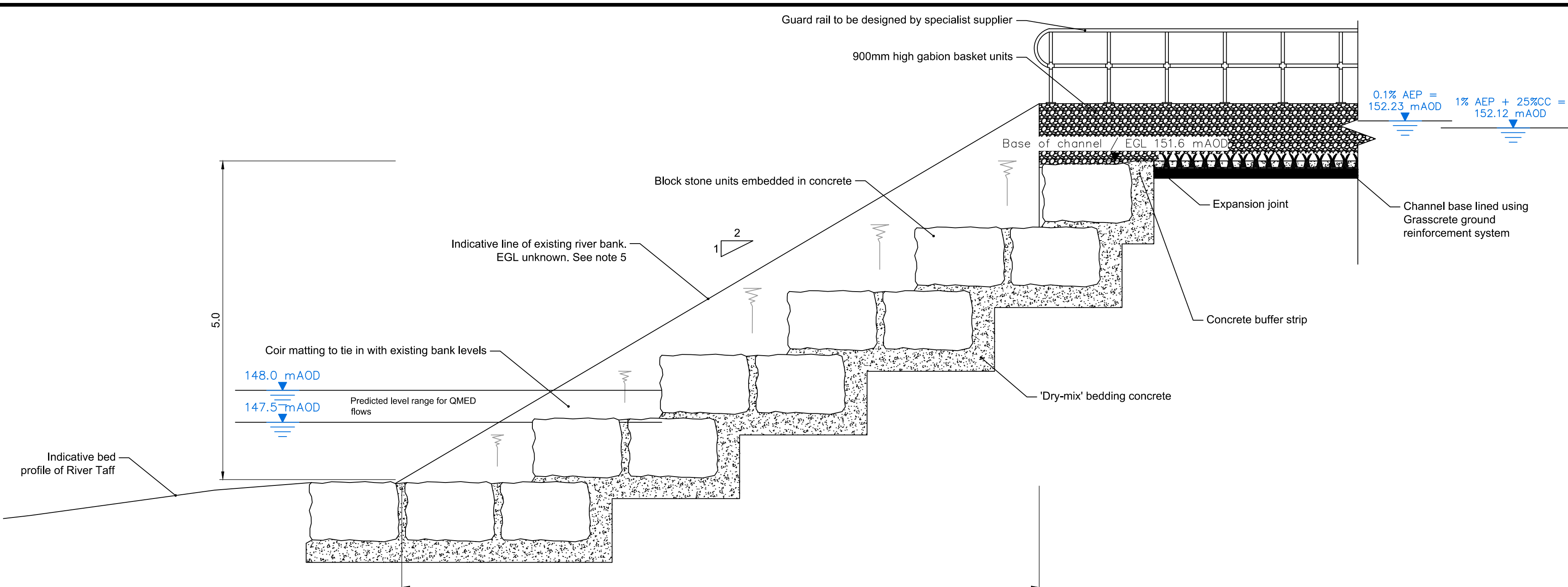
— GUARD RAIL ON OUTER
EDGE OF GABION WALL

—WESTERN WING WALL
ABUTMENT TO TIE-INTO NEW
CHANNEL EMBANKMENT

— PRECAST ROAD KERB

STEEP GRADIENT DUE TO GROUND RAISING IN PROXIMITY OF THE RIVER BANK. DESIGN OF STABILISATION WORKS BY OTHERS

PLAN
1:100



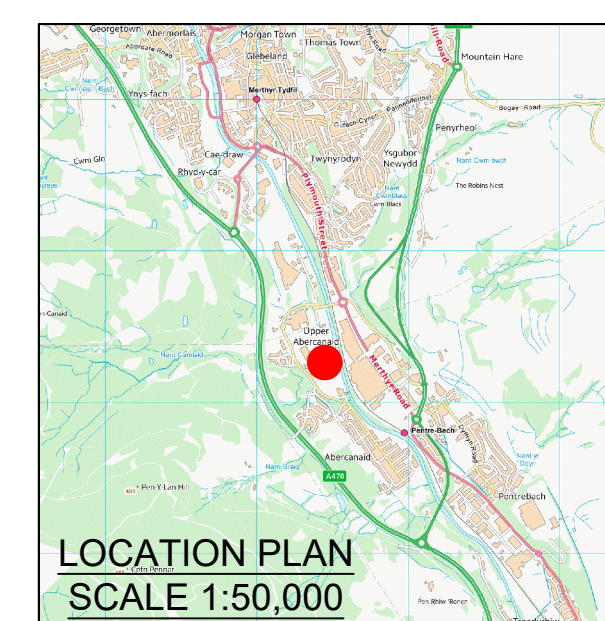
SECTION A-A
1:50

✓ STEPPED BLOCKSTONE CASCADE / OUTFALL

COIR MATTING

900mm HIGH GABION BASKETS FORMING CHANNEL WALLS

BASE OF CHANNEL LINED USING GRASSCRETE REINFORCEMENT SYSTEM



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AND DETERMINE FROM 2015		
• Falls from height • Lifting • Excavation • Ground conditions • Working in / near water • Existing services • Flood risk	• Public / Plant interface • River channel access • Falls from height	• Habitat loss • Invasive non-native species • Pollution of a watercourse • Contaminated land
Construction Risks	Public Risks	Environmental Risks

In addition to the hazards/risks normally associated with the types of work detailed on this drawing take note of the above.

It is assumed that all works detailed on this drawing will be carried out by a competent contractor working, where appropriate, to an appropriate method statement.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX
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GENERAL NOTES:

- GENERAL NOTES:**
1. All levels shown on this drawing. All dimensions to be checked / verified on site.
 2. All levels shown with respect to meters Above Ordnance Datum (mAOD).
 3. Ground contours were generated based on the topographic survey carried out by Azimuth Land Surveys Ltd (2015), subject to the proposed engineering works.
 4. This drawing is not for construction issue.
 5. The existing bank profile of the River Taff is unknown at the outfall location. The design shown is based on a 1 in 2 slope from the top of bank. This has been interpolated from survey data provided by Matby Land Surveys (2017).

Drawing to be read in conjunction with:-
BMQ-JBAU-XX-XX-DR-C-0001-Channel_Plan
BMQ-JBAU-XX-XX-DR-C-0002-Sections
BMQ-JBAU-XX-XX-DR-C-0010-Road_GA
BMQ-JBAU-XX-XX-DR-C-0011-Road_Section

Comments									
Rev.:	Date	Drawn		Designed		Checked		Approved	

Rev.:	Date	17/10/19	Drawn	BH	Designed	JK	Checked	AT	Approved	GB
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Rev.:	Date:
Client Approval	

Client Approval	
	A - Approved

A - Approved
B - Approved with Revisions

	B - Approved with
	C - Approved with

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Project

Land at Dragon Parc, Merthyr

Title

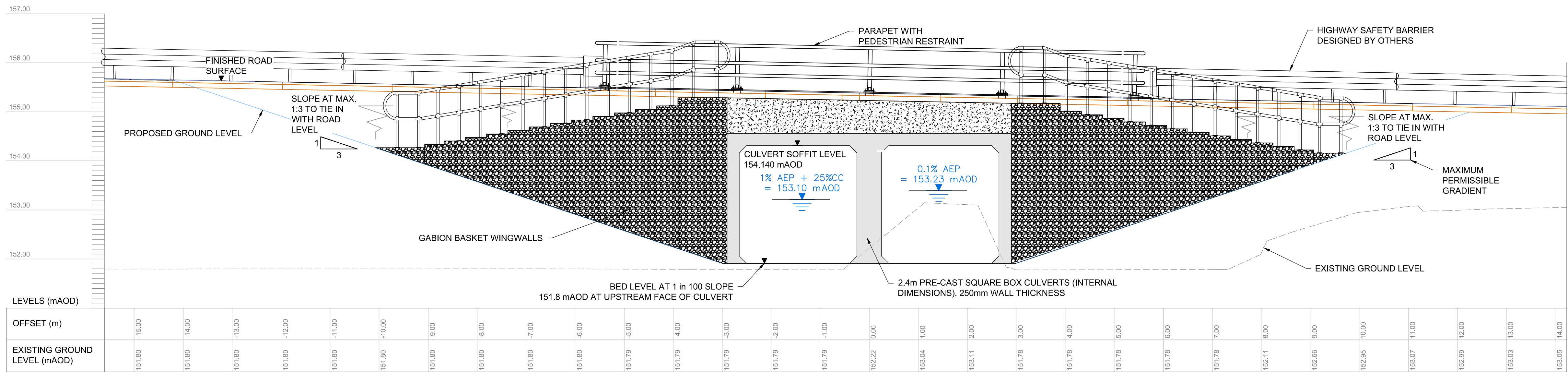
Outfall Plan and Long Sections

Client

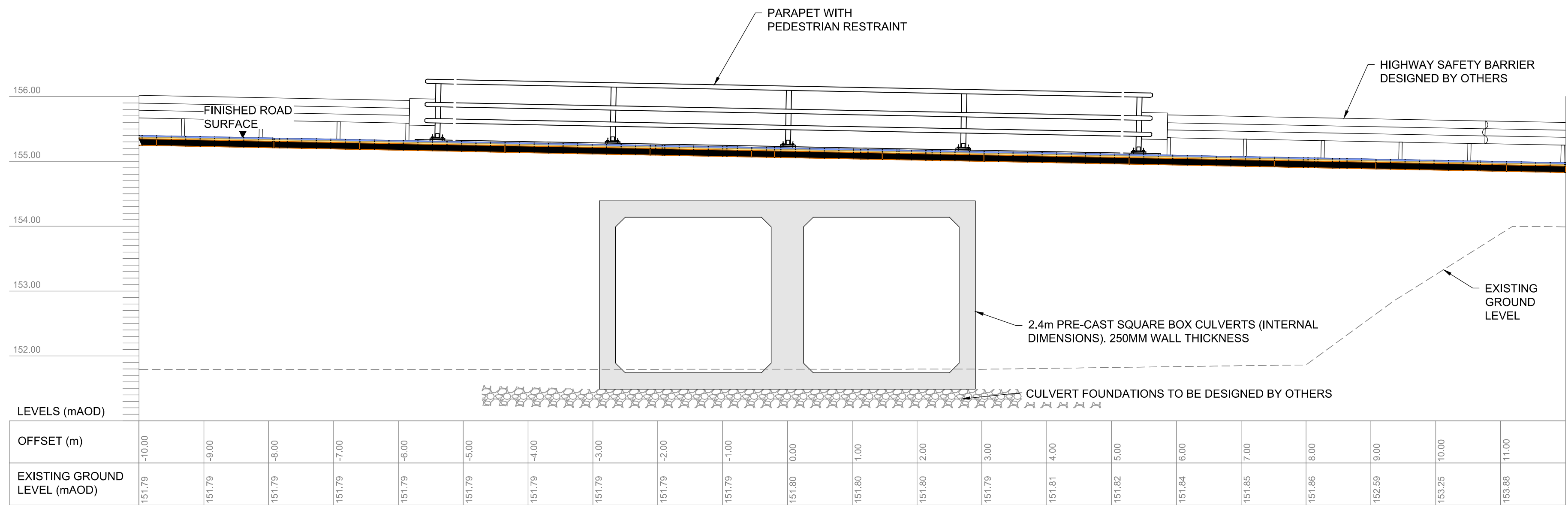
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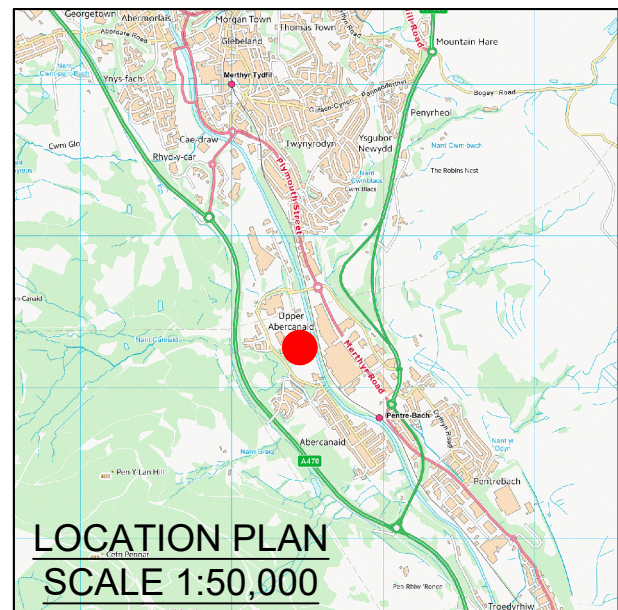
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Checked: A Tyndel	17/10/19	Approved: G Baker	17/10/19
Project Reference: 2019s0875		Scale: As Shown @ A1	
Drawing Number: BMQ-JBAU-XX-XX-DR-C-0020		Status: S3	Revision: P01
			Sheet Size: A1



ELEVATION E1-E1
CH: 571.29
1:50



SECTIONAL ELEVATION R1-R1
CH: 592.78
1:50



LOCATION PLAN
SCALE 1:50,000
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- Falls from height - Lifting - Excavation - Ground conditions - Working in / near water - Existing services - Flood risk	- Public / Plant interface - River channel access - Falls from height	- Habitat loss - Invasive non-native species - Pollution of a watercourse - Contaminated land
Construction Risks	Public Risks	Environmental Risks
In addition to the hazards/risks normally associated with the types of work detailed on this drawing take note of the above. It is assumed that all works detailed on this drawing will be carried out by a competent contractor working, where appropriate, to an appropriate method statement.		
SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX		

- GENERAL NOTES:
- Do not scale from this drawing. All dimensions to be checked / verified on site.
 - All levels shown with respect to meters Above Ordnance Datum (mAO).
 - This drawing is not for construction issue.
 - Ground contours were generated based on the topographic survey carried out by Azimuth Land Surveys Ltd (2015), subject to the proposed engineering works.
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Drawing to be read in conjunction with:-
BMQ-JBAU-XX-XX-DR-C-0001-Channel_Plan
BMQ-JBAU-XX-XX-DR-C-0002-Sections
BMQ-JBAU-XX-XX-DR-C-0010-Road_GA
BMQ-JBAU-XX-XX-DR-C-0020-Outfall

	Comments									
Rev.:	Date	Drawn		Designed		Checked		Approved		
P01	Comments		1st Issue							
Rev.:	Date	17/10/19	Drawn	BH	Designed	JK	Checked	GB	Approved	AT
Client Approval										
A - Approved										
B - Approved with Revisions										
C - Do Not Use										

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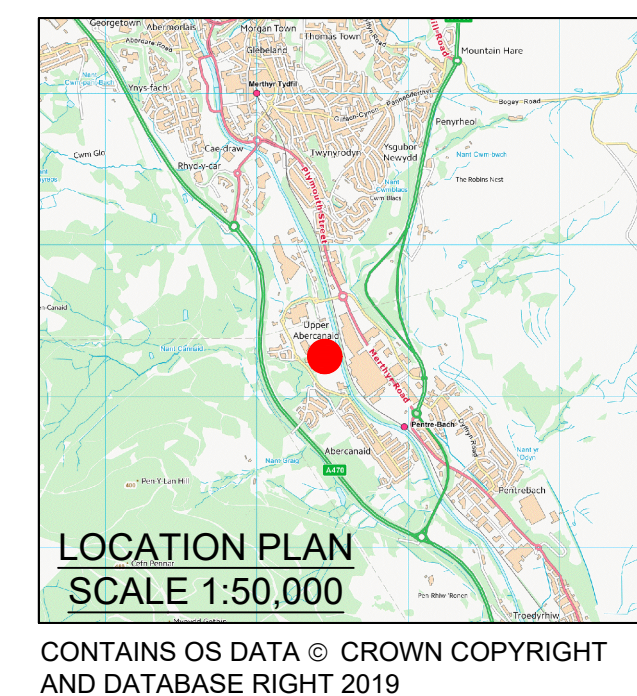
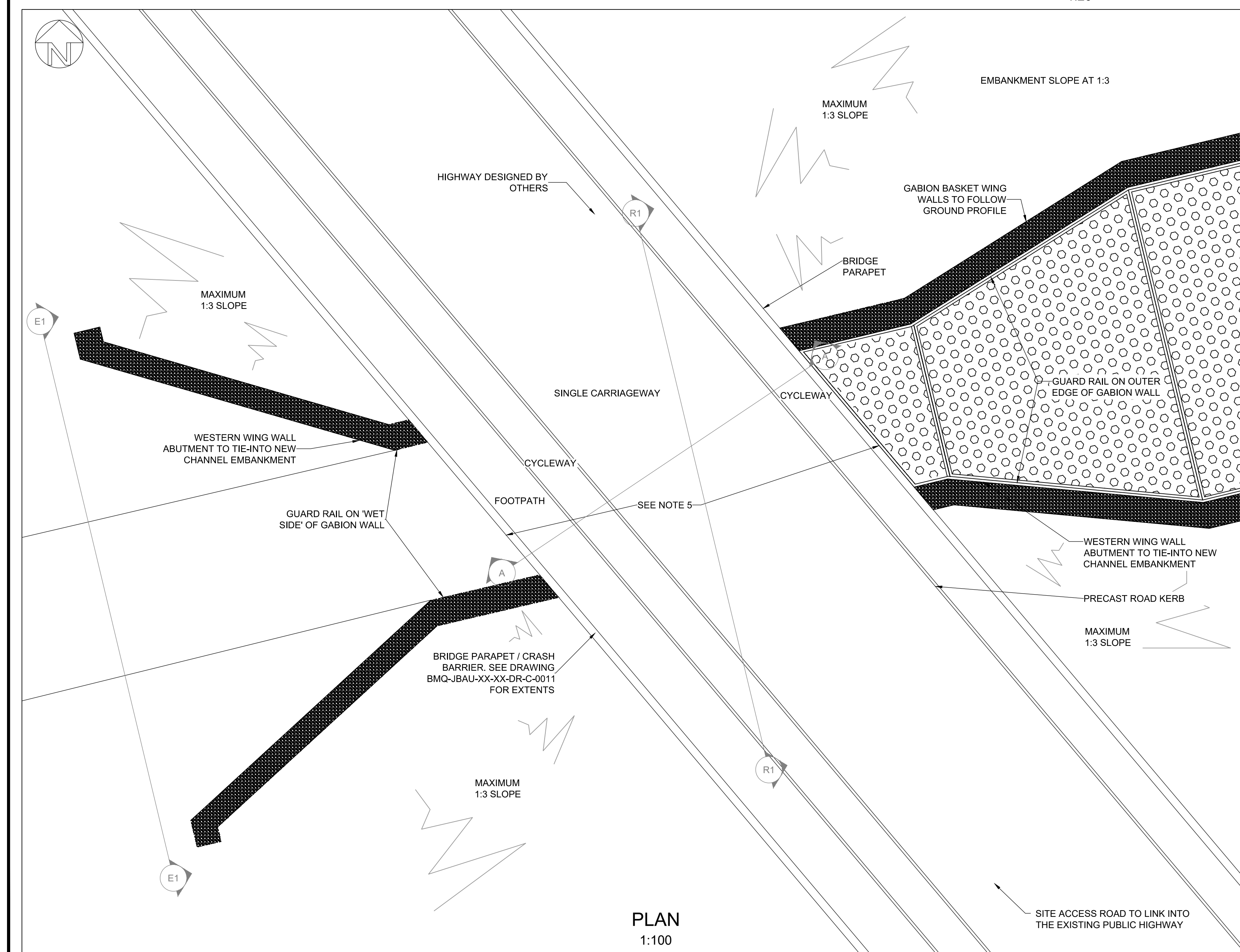
Project
Land at Dragon Parc, Merthyr

Title
Road Sections

Client
Huntley Wood Investments Ltd.

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Drawn:	B Henderson	14/10/19	Designed:	J King	14/10/19
Checked:	G Baker	15/10/19	Approved:	A Tyndel	17/10/19
Project Reference:	2019s0875		Scale:	As Shown @ A1	
Drawing Number:	BMQ-JBAU-XX-XX-DR-C-0011		Status:	S3	
			Revision:	P01	
			Sheet Size:	A1	



• Falls from height • Lifting • Excavation • Ground conditions • Working in / near water • Existing services • Flood risk	• Public / Plant interface • River channel access • Falls from height	• Habitat loss • Invasive non-native species • Pollution of a watercourse • Contaminated land
Construction Risks	Public Risks	Environmental Risks

In addition to the hazards/risks normally associated with the types of work detailed on this drawing take note of the above.

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GENERAL NOTES:

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2. All levels shown with respect to meters Above Ordnance Datum (mAOD).
3. Ground contours were generated based on the topographic survey carried out by Azimuth Land Surveys Ltd (2015), subject to the proposed engineering works.
4. This drawing is not for construction issue.
5. Culvert entrance and exit to align with the site access road parapet. Access road alignment indicative; to be designed by others.

Drawing to be read in conjunction with:-
 BMQ-JBAU-XX-XX-DR-C-001-Channel_Plan
 BMQ-JBAU-XX-XX-DR-C-002-Sections
 BMQ-JBAU-XX-XX-DR-C-0011-Road_Section
 BMQ-JBAU-XX-XX-DR-C-0020-Outfall

Comments					
Rev.:	Date	Drawn	Designed	Checked	Approved
P01	Comments 1st Issue				

Rev.:	Date	Drawn	BH	Designed	JK	Checked	GB	Approved	AT
Client Approval									
A - Approved									
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Project	Land at Dragon Parc, Merthyr
Title	Road Plan, Sections and Details
Client	Huntley Wood Investments Ltd.

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Checked: G Baker	15/10/19	Approved: A Tyndel	17/10/19
Project Reference: 2019s0875	Scale: As Shown @ A1		
Drawing Number:	Status:	Revision:	Sheet Size:
BMQ-JBAU-XX-XX-DR-C-0010	S3	P01	A1

C Preliminary Ecological Appraisal



Preliminary Ecological Appraisal



Project: Land at Dragon Parc, Merthyr Tydfil

Instructed by: Huntley Wood Investments Ltd

Reported by: Ecological Services Ltd
10 Mount Pleasant, Llanelly Hill, Abergavenny, Monmouth NP7 0NT

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2. Desk Top Study
3. Phase 1 Survey
4. Bat Survey Results
5. Recommendations and Mitigation
6. Future Development Recommendations and Mitigation

Appendix

Species Recorded

Site Photographs

Extended Phase 1 Site Map

Aerial View of Site

Site Transect Route

Bat Activity Surveyor Locations

1. Introduction

The applicant is seeking planning permission to create new a new drainage swale and discharge point into the River Taff. The drainage works will help to reduce the risk of flooding within the proposed development site which is located at a Dragon Parc, Merthyr Tydfil (SO 05436 04336). The land within the red line boundary is approximately 8.2ha in size.

To the west of the site a small watercourse, the Nant Canaid, enters a culverted system which approximately follows the site boundary to discharge into the River Taff. The outfall is located immediately south of the current site entrance at the junction with Stanfield Close. The capacity of the culvert carrying the Nant Canaid is predicated to be exceeded during intensive rainfall events. The excess water in the culvert from the Nant Canaid is likely to result in flooding to the south and west of the site.

This report will assess the potential for the land within the site boundary to support habitats and species and the implications that the development proposals could have on them.

1.1 Site Description

The land within the proposed site boundary is fairly flat with a lower level plateau present to the southern half of the site. The site measures approximately 8.2ha in size and was formerly used for light industrial purposes with a large warehouse, smaller ancillary buildings and car parking present. The site has been cleared of the majority of the buildings leaving behind foundations and rubble piles across the site. One building is still remaining to the south east of the site.

The site lies within the settlement of Abercainaid to the south of Merthyr Tydfil directly adjacent to the River Taff. The site is immediately surrounded by light industrial units to the north and west with residential housing present to the south of the site. A small area of woodland and the Taff Cycle Trail lie to the south west of the site.

1.2 Survey Constraints

Full access was gained to all areas of the proposed development site. The site visit was undertaken during August which is within of the optimum time to undertake phase 1 habitat surveys.

The bat activity surveys and static monitoring were all completed at a suitable time of year and weather conditions. Internal access was going into buildings to visually inspect the interior for bats, although an in depth in tenurial inspection couldn't be undertaken due to structural safety issues.

1.3 Surveyor Experience

Aislinn Harris is a full member of Chartered Institute of Ecology and Environmental Management (CIEEM). Aislinn is an ecologist with 10 years experience undertaking a wide range of flora and fauna surveys. Aislinn is also a licenced bat ecologist (NRW S085699-1) and licenced dormouse ecologist (S085700-1).

All survey work is undertaken following JNCC Phase 1 Survey Guidelines and CIEEM Guidelines for Preliminary Ecological Appraisal (2013).

Bat activity surveys were undertaken by 6 surveyors on each occasion. Surveyors used were Richard Watkins, Mason Smith, Ryan Smith and Keith Watkins with the lead surveyor being Richard Watkins, a NRW bat license holder. All surveyors used are well experienced and have completed numerous bat activity surveys for Ecological Services Ltd. Anabat and Echo Meter Touch bat detectors were used to acoustically record the bat activity on site.

1.4 Previous Ecological Work

A suite of ecological survey work has previously been completed within the proposed development site in 2016 by ecologists from RPS. An initial site walkover survey was completed on 12th April 2016 which classified all habitats within the site boundary and their potential to support protected species and habitats. The April site survey found neutral grassland, marshy grassland, amenity grassland, woodland, scrub, ornamental planting, short ephemeral / perennial vegetation, a pond, tarmac, buildings, concrete hardstanding and rubble. A small amount of Japanese knotweed was noted at the site entrance.

A Habitat Suitability Index (HSI) assessment of the pond within the site to assess the potential for the presence of great crested newts was completed. The pond was found to have very poor suitability for the presence of this species. The Ecological Appraisal Report (May 2016) made a number of recommendations for further work within the site boundary including bat transect surveys, supervision of buildings during soft demolition and reptile surveys.

As the initial site inspection was undertaken at a suboptimal time of year, a more detailed botanical assessment of the grassland within the site was undertaken 23rd June 2016 which is an optimal time to undertake such surveys. The botanical survey concludes that none of the habitats within the site boundary qualify as UKBAP priority habitats. Full details of the survey methodology and results can be found in the Grassland Botanical Survey Letter Report dated 9th September 2019 by RPS.

Walked bat transect surveys across the site were completed in May, July and September of 2016. Static monitoring of the site was completed during June, July and September 2016. The bat survey work found a low level of common bat species to be using the site with activity levels being highest in mid to late July. The majority of bat activity was found to be around

Preliminary Ecological Appraisal Land at Dragon Parc, Merthyr Tydfil

south and south western areas of the site. The largest number of bat calls recorded were from common pipistrelle bats with some soprano pipistrelle and notcule bat calls. Rare myotis and serotine / leislers calls were also recorded. Full details of the survey methodology and results can be found in the Dragon Parc, Abercanaid, Merthyr Tydfil: Bat Activity Survey report by RPS dated September 2016.

2. Desktop Study

A data search was undertaken via SEWBReC for the proposed development site and surrounding area. A 2km buffer zone was searched and records returned within 500m of site are noted below:

- Records for the presence of Goshawk- approximately 150m away,
- Records for commuting/foraging common and soprano pipistrelle - approximately 160m away,
- Records for the presence of weasel- approximately 200m away,
- Records for the presence of otter- approximately 380m away,
- Records for the presence of grass snake- approximately 400m away,
- Records for commuting/foraging noctule bat - approximately 430m away,
- Numerous bird records - dunnock, house sparrow, bullfinch, song thrush

Records of note returned for the rest of the buffer zone are detailed below:

- Common pipistrelle bat roost in residential property,
- Commuting / foraging calls of brown long eared, common and soprano pipistrelle bat calls,
- Hedgehog,
- Polecat,
- Curlew,
- Great Crested Newt,
- Barn Owl,

2.1 Protected Sites

A data search for species records was undertaken for the proposed development site and surrounding area. The search also considered statutory and non-statutory protected sites.

Statutory Protected Sites

No statutory protected sites lie within or directly adjacent to the proposed development site. A single statutory protected site is within the search area returned by the data search. The Cwm Glo A Glyndyrys Site of Special Scientific Interest (SSSI) is located approximately 1km from the proposed development site.

Non-Statutory Protected Sites

The proposed development site lies adjacent to the River Taff Site of Importance for Nature Conservation (SINC). The data search has returned a number of other SINC sites within 2km of the proposed development site. The next closest site is the Rhydder West SINC which is approximately 500m to the west. The remaining SINC sites are:

- Abercanaid Fields
- Glynmil
- Pentrebach Fields

There are no other non statutory designated sites within 2km of the proposed development site.

Two habitats which qualify as section 7 habitat under the Environment (Wales) Act 2016 and a UK Biodiversity Action Plan habitat were found within the site boundary. An area of marshy grassland to the north of the site and a small pond along the western edge of the site. The location of both habitats are shown on the habitat map in appendix 3.

2.2 Potential Impacts to Protected Sites

Given the localised nature of the development works within the red line boundary, it is unlikely there will be any direct impacts to statutory protected sites within the local area. However the site lies adjacent to the River Taff SINC and the proposed new drainage connection will see some construction work being completed along the banks of the river. Mitigation and compensation measures will need to be implemented for the potential impacts to the SINC as part of the development proposals.

The current planning proposals focus on the creation of a drainage swale and outlet. The route of the drainage swale will impact on the pond present within the site boundary. It would seem likely that the marshy / neutral grassland to the north of the site can be left unaffected by the current proposals. However, compensation for the loss of the pond will be required.

3. Phase 1 Survey

3.1 Habitats

A walkover survey of the whole site was completed 13th August 2019 which included all areas of the land within the proposed development site boundary. The site comprises a roughly rectangular shaped parcel of land with the southern end of the site approximately 4m lower than the rest. Both levels of the site are considered to be generally flat. The south western edge of the site slopes steeply upwards to the adjacent road which lies outside of the site boundary.

The majority of the site is **concrete hardstanding and rubble** which is present mainly in the centre to the southern half of the site. It would appear that a large building previously stood within the site boundary which has now been demolished. The buildings material have been broken up and left in the centre of the site in piles around 2m high. Some walls and hardstanding areas of smaller buildings are still standing to the south and west of the site boundary. **Tarmac roads and car parking** areas are present within the site as well. The southern end of the site which is at lower level looks to have previously been used as a car park and is entirely tarmac. Parking space lines and signs are visible in this area. A tarmac road runs around the entire site boundary in a rectangular shape.

A **tree line** which is present along the west and south western edge of the site which thickens into a narrow corridor of woodland along the spur of land westwards. The trees are thought likely to have been planted as soft landscaping when the previous industrial unit was built within the site boundary as a mix of native and non native species are present. Species noted within the habitat include elder, alder, silver birch, beech, hazel, a species of cherry, hawthorn and larch. The understory in the tree line was sparse when compared with the thicker more wooded areas. Species in the understory include bramble, herb robert, ivy, nettle, buddleja, a species of rose and gorse. Parcels of **semi improved grassland** are present between the tree line and road along the western edge of the site. The grassland appears to be currently unmanaged and **bramble scrub** is beginning to encroach across it. Species noted within the grassland areas include creeping buttercup, selfheal, knapweed, barren strawberry timothy, Yorkshire fog and creeping cinquefoil.

A small **pond** is located along the western side of the, location shown in Appendix 2. The pond is densely overgrown and difficult to access fully around its perimeter. The pond appeared to be choked with leaf litter from overhanging trees with a layer of water potentially 10cm deep on top.

The land to the north of the site creates a varied mosaic due mostly to a lack of on site management. Marshy and neutral grassland are present with a band of scrubby **woodland**

encroaching into the grassland areas. A section of marshy grassland to the north of this area appears to be wetter in nature and dominated by bulrush. Based on its small size this parcel of land is thought to be **marginal vegetation**. Species noted in the **marshy grassland** include hemp agrimony, cuckooflower, water mint, marsh bedstraw, marsh thistle and silverweed. Species noted in the **neutral grassland** include wild carrot, crested dogs tail, autumn hawkbit, sweet vernal grass, purple loosestrife, knapweed, heath woodrush and birdsfoot trefoil.

Metal fencing forms the very northern and eastern boundary of the site. Russian vine is present along the northern section of fencing. From previous surveys and the site boundary map it appears that new fencing has been erected along the very north east edge of the site which allows parking for an adjacent factory.

A dense stand of Japanese knotweed was noted to the south east of the site along the access road off the adjacent small roundabout. Some scattered stands of knotweed were also observed along the banks of the rRiver Taff to the south east of the site. Access along the the full extent of the river bank wasn't possible due to steepness however it would seem likely that knotweed is present along most of the river bank adjacent to the site. Japanese knotweed is listed under Schedule 9 of the Wildlife and Countryside Act (1981) which makes it an offence to plant or allow to grow in the wild. Under the Environmental Protection Act 1990, Japanese Knotweed is classified as controlled waste.

3.2 Great Crested Newts

Great crested newts (*Triturus cristatus*) are a European protected species and are protected under the Conservation of Habitats and Species Regulation 2017. In summary, they are protected from:

- Deliberate capture, killing and injuring,
- Deliberate disturbance of a breeding site or resting place,
- Deliberate taking or destroying of eggs,
- Damage or destruction of a breeding site or resting place.

Great Crested Newts are listed on schedule 5 of The Wildlife & Countryside Act 1981 which protects them from intentional or reckless disturbance or obstruction when using a structure or place for shelter and / or protection. It is also an offence to sell, offer or expose for sale a great crested newt.

The closest record for Great Crested Newt (GCN) is approximately 1.1km away from the proposed development site. A single pond is present within the proposed development site. The pond is heavily silted and completely covered by trees at the time of the 2019 site visit.

The pond was slightly more open during the 2016 surveys completed by RPS and a Habitat Suitability Index (HSI) assessment was completed on it. The HSI assessment completed by RPS found the pond to have poor suitability for GCN. Based on the continued degradation of the pond since 2016 no additional detailed assessment of the pond for GCN has been undertaken.

The current pond has very poor suitability for use by GCN, the site is located in an urban setting being immediately surrounded by housing, the River Taff and light industrial units making it fairly isolated from any surrounding habitat which maybe suitable for GCN. Given the lack of close records for GCN as well, it is considered highly unlikely that they are present within the site boundary. No further surveys are recommended for this species.

3.3 Dormice

The dormouse (*Muscardinus avellanarius*) is a European protected species and is protected under the Conservation of Habitats and Species Regulation 2017. In summary, they are protected from:

- Deliberate capture, killing and injuring,
- Deliberate disturbance of a breeding site or resting place,
- Damage or destruction of a breeding site or resting place.

Dormouse are listed on schedule 5 of The Wildlife & Countryside Act 1981 which protects them from intentional or reckless disturbance or obstruction when using a structure or place for shelter and / or protection. It is also an offence to sell, offer or expose for sale a native dormouse. Dormouse is listed in section 7 of the Environment (Wales) Act 2016 which makes them a key species to sustain and improve biodiversity.

There are no records for the presence of dormouse returned via the data search. The vast majority of the proposed development site is considered unsuitable for use by dormouse being tarmac, rubble, hardstanding and grassland. The tree line, woodland and scrub could possibly be used by dormouse. The site has limited connectivity to adjacent suitable habitat for dormouse but a small stand of woodland is present to the south west of the site. However the A470 separates this woodland from the woodland on Mynydd Gethin to the west of the site.

Given the lack of records of evidence of dormouse in the area it is thought highly unlikely that dormouse are present within the site boundary. The tree line and wooded areas will also be retained during the development proposals. No further surveys for dormouse are recommended.

3.4 Bats

All British bats are a European protected species and are protected under the Conservation of Habitats and Species Regulation 2017. In summary, they are protected from:

- Deliberate capture, killing and injuring,
- Deliberate disturbance of a breeding site or resting place,
- Damage or destruction of a breeding site or resting place.

Schedule 5 of The Wildlife and Countryside Act (1981) also protects all species of British bat and their roosting locations. British bats are protected from intentional or reckless disturbance and or obstruction of their roosting places. Barbastelle, bechstein, noctule, brown long eared, common pipistrelle, soprano pipistrelle, greater horseshoe and lesser horseshoe bats are also listed in section 7 of the Environment (Wales) Act 2016 which makes them a key species to sustain and improve biodiversity.

There are three buildings within the site footprint. Two Small buildings are present on the south and west of the site. One is a gate house and one a former small office building. The former office building was previously identified as having a high probability of being used as a day roost by Pipistrelle bats. The previous bat survey work by the Countryman and RPS concluded that bats are likely to roost in these buildings. It appears that the buildings have degraded in condition since the previous survey work. Although potential still exists in the buildings it is suggested that this potential as diminished as the buildings have suffered extensive vandalism and water ingress. There is a further large single building and walkway over the River Taff is present to the south east of the site. The building is thought to be the remains of a previous office building within the site boundary.

The buildings within the site footprint were assessed as having low to moderate potential for bats to be present due to their structure. Based on the BCT guidelines (2016) two bat emergence surveys are recommended, the results of the activity surveys are provided in section 4 of this report.

The site boundaries are predominantly tree lined and as such offered a suitable linear feature for bats to used as a commuter and feeding area. The eastern site boundary runs parallel with the river Taff which again is appealing to bats. Given the suitability of the habitat within the site boundary, two transect surveys were completed to provide information on habitats within the site which maybe important to bats. RPS Ltd completed bat activity surveys within the site in 2016. As the survey data is now more than two years old, additional survey effort will be undertaken using the same methodology to establish current bat activity levels. The updated survey data in this report must be used in conjunction with the previous RPS bat survey report, “*Dragon Parc, Abercanaid, Merthyr Tydfil Bat Activity Survey*” dated September 2016.

3.5 Otters

The common otter (*Lutra lutra*) is a European protected species and is protected under the Conservation of Habitats and Species Regulation 2017. In summary, they are protected from:

- Deliberate capture, killing and injuring,
- Deliberate disturbance of a breeding site or resting place,
- Damage or destruction of a breeding site or resting place.

Otter are listed on schedule 5 of The Wildlife & Countryside Act 1981 which protects them from intentional or reckless disturbance or obstruction when using a structure or place for shelter and / or protection. It is also an offence to sell, offer or expose for sale an otter.

The closest record for the presence of otter is approximately 380m away and is for the River Taff, although no details of what was observed apart from a habitat description are provided. Numerous other otter records are provided within the local area, many associated with the River Taff.

The proposed development site lies directly adjacent to the River Taff. The Nant Canaid flows through the site but it is culverted making it unsuitable for use by otter. The woodland and bramble scrub could potentially provide suitable cover for use by otter. However the frequent presence of otter within the site is thought unlikely. Despite the proximity of the River Taff to the site, the river banks are extremely steep making it difficult for large mammals to travel up and down. Also whilst there are some habitats within the site boundary which provide cover for species such as otter, the vast majority of the site is tarmac, hardstanding or rubble. These features are all considered to have negligible potential for use by otter. No mammal paths were noted across the site during the site inspection indicating very little movement by large mammals across the site.

It should also be noted that the proposed development works will result in minimal vegetation loss of woodland and scrub within the site boundary. However there will be vegetation loss along the river bank where the new discharge point is created.

It is thought highly unlikely that otters frequently use the proposed development site, no evidence of the presence of a holt or lying up site within the site boundary were noted. Given the steepness of the banks along the River Taff it is also thought unlikely that otter commute or forage within the site, however this cannot be ruled out conclusively. Whilst no further surveys for otter are recommended a few precautionary measures are recommended.

3.6 Badger

Badgers are protected under the Protection of Badgers Act 1992. In summary they are protected from:

- Taking, killing or injuring;
- Cruelty;
- Interfering with a badger sett;
- The selling and possession of badgers;
- Marking or ringing.

Badgers are also listed on schedule 6 of the Wildlife and Countryside Act 1981 as amended.

Badgers tend to have a variety of setts with different uses and functions within the territory for the family unit. In general there is usually a main sett which the family will use the most. There are then annex, subsidiary and or outlier setts which depending on family structures and environmental pressures may be used at different times of the year. As female badgers tend to have their cubs over winter the disturbance and damage of badger setts is prohibited between December and June inclusive. NRW are the licensing body for any actions which may contravene the above legislation.

The closest record for the presence of badger is approximately 1.1km away for Abercanaid Woodland however the record is from 1972 and thought unlikely to still be correct. No evidence of the presence of badger, such as sett, latrine or digging, was noted during the site survey. The site is open and exposed with the majority of the site consisting of tarmac, hardstanding and rubble. It is considered unlikely badger are resident within the site boundary however they may occasionally pass through commuting and foraging. No further recommendations are made for this species.

3.7 Birds

All breeding birds are protected under schedule 1 of the Wildlife and Countryside Act (1981) as amended.

No birds' nests were directly noted during the site visit. However the mature trees, scrub and remaining building are thought highly suitable for use by nesting birds. Mitigation measures suitable for nesting birds are recommended.

3.8 Reptiles and Amphibians

Reptile such as the slow worm, common lizard, adder and grass snake are protected under the Wildlife and Countryside Act 1981(as amended). They are protected from killing, injuring and sale. In Wales sand lizard, smooth snake, adder, grass snake, slow worm and common lizard are listed in section 7 of the Environment (Wales) Act 2016 which makes them a key species to sustain and improve biodiversity.

The closest reptile record is approximately 410m away and is for grass snake found along a rail track. The closest amphibian record is approximately 830m away and is for common frog.

The habitats within the site boundary create a mosaic of longer and shorter vegetation which are highly attractive to common reptile species. The presence of rubble piles adjacent to the grassland and scrub and the root systems of mature trees also provide potential for hibernation use of the site. However the rubble piles within the centre of the site surrounded by tarmac and hardstanding are isolated and thought less suitable for reptile use.

The current development proposals will not affect the woodland and mature tree lines within the site boundary. The marshy and neutral grassland within the site boundary should also remain undisturbed. However it would seem likely that some areas of scrub and semi improved grassland will be affected temporarily due to engineering works to create the new drainage swale.

Given the small scale impacts of the current development proposals, dedicated reptile surveys are one recommended at present. Instead the presence of a small number of reptiles will be assumed and species avoidance measures implemented as part of the development proposals.

3.9 Marsh Fritillary Butterfly

The Marsh Fritillary butterfly (*Euphydryas aurinia*) is fully protected under the Wildlife & Countryside Act 1981. This provides the species with protection from:

- Intentional killing, injuring and taking,
- Possession or control of any specimen, part or derivative,
- Damage to or destruction of, disturbance and obstruction of any structure or place used for shelter or protection,
- Selling, offering for sale, possessing or transporting for the purpose of sale
- Advertising for buying or selling any specimen, part or derivative.

Marsh Fritillary butterfly are listed as an annex 2 species under the Conservation of Habitats and Species Regulation 2017 which allows areas of habitat to be protected and managed to ensure the survival of the species. Marsh fritillary butterfly can be a primary and secondary reason for designation of Special Areas of Conservation (SACs). This species is also listed as a section 7 species of importance under the Environment (Wales) Act 2016 and UK BAP priority species which makes them a key species to sustain and improve biodiversity.

There are no records for the presence of Marsh Fritillary returned by the data search which covers 2km from the site. No scabious plants were observed within the marshy grassland.

Preliminary Ecological Appraisal
Land at Dragon Parc, Merthyr Tydfil

Although marshy grassland is present within the site boundary it is thought to be unsuitable for use by Marsh Fritillary. The presence of this species within the site boundary is thought to be highly unlikely.

4. Bat Survey Results

A summer and autumn bat transect survey were completed within the site boundary. Two surveyors walked a defined route around the site during each survey visit. The surveyor route is shown in Appendix 5. All bat calls were recorded using Anabat and EM Touch bat detectors and analysed using Analook and Kaleidoscope software.

4.1 Bat Transect Surveys

Two bat surveys were undertaken on the building. Appendix 4 shows the locations of surveyors during each activity survey.

1) Date - 24th June 2019

Weather Conditions - 15°C, light cloud, calm and dry

Surveyors Present - Richard Watkins and Alan Harvey

Sunset Time - 21:15

Common and Soprano Pipistrelle Bats Pipistrelle bats were both recorded and observed very shortly after sunset. These were observed hawking and commuting along the tree lined site boundary. Results are similar to the previous ecology report findings by RPS report of 2016 with the exception of an increase in numbers of Soprano Pipistrelle. There was also an increase in Noctule activity on site than in previous survey work. The most bat activity on site was located over the eastern boundary as it borders the Taff. Bats were observed feeding under the walk way bridge where the structure and vegetation offered a dark and still environment which was high in insect activity. It is noted that during the time when light levels allowed the visual scrutiny of the bat activity, it was obvious that the feeding bats made repeated passes. Thus a small number of bats was responsible proportionately for high number of calls.

2) Date- 21st September 2019

Weather Conditions - 20°C, light cloud, calm and dry.

Surveyors Present - Scott Watkins and Richard Watkins

Sunset Time - 19:15

Results similar to the survey on the 24th July 2019. Common and Soprano Pipistrelle Bats Pipistrelle bats were recorded and observed very shortly after sunset. These were observed

hawking and commuting along the tree lined site boundary. Results are also similar to the previous ecology report findings by RPS report of 2016 with the exception of a more balanced mix of Soprano and Common Pipistelle calls. Again there were also an increase in Noctule activity on site than in previous survey work. General bat numbers during the September 2019 survey were lower than were present in July 2019. Again It is noted that during the time when light levels allowed the visual scrutiny of the bat activity, it was obvious that the feeding bats made repeated passes. Thus a small number of bats was responsible proportionately for high number of calls.

4.2 Static Bat Surveys

Two periods of static bat monitoring have been completed within the site boundary. An Anabat Express bat detector was left for a period of 7 nights each time to record bat activity within the area. All recorded data was downloaded and assessed using Analook soft ware. The survey periods and a brief description of the activity recorded is given below.

- Dates of Static Monitoring 24th July to 30th July

Common and Soprano Pipistrelles were the most common species of bat recorded on the site. Activity was highest along the site boundary adjacent to the river Taff. Common and Soprano bats made up the vast majority of the calls. Noctule was the next most common species recorded. There were a very low number of Myotis bat calls on the eastern site boundary. No Leisers or serotine calls was recorded which differed to the previous survey work of 2016.

- Dates of Static Monitoring 21st September to 27th September

Bat numbers were lower than the previous survey of 24th July 2019. Again Common and Soprano Pipistrelles were the most common species of bat recorded on the site. Activity was highest along the site boundary adjacent to the river Taff. Common and Soprano bats made up the vast majority of the calls. Noctule was the next most common species recorded. There were a very low number of Myotis bat calls on the eastern site boundary. No Leisers or serotine calls was recorded which differed to the previous survey work of 2016.

4.3 Bat Exit Surveys

Activity surveys on the buildings were undertaken to clarify if bats were using the buildings as a day roost during the summer activity period as suggested likely in the previous ecology reports for the site.

1) Dusk Exit Survey - 27th July 2019

Weather Conditions - 16.5°C, light cloud, calm and dry

Preliminary Ecological Appraisal Land at Dragon Parc, Merthyr Tydfil

Surveyors Present - Scott Watkins, Deb Parry, Richard Watkins, Keith Watkins and Alan Harvey, Tyrone Evans, Hannah Evans

Sunset Time - 21:10

Common species of bat predominantly Common and Soprano Pipistrelle bats were observed feeding and commuting past all buildings during the survey works. The highest activity was bats feeding under the walkway in the south east of the site. No bats were observed exiting any of the buildings during any of the survey period. Noctule and Pipistrelle social calls were also recorded.

2) Dusk Exit Survey - 18th August 2019

Weather Conditions - 15°C, light cloud, dry.

Surveyors Present - Scott Watkins, Deb Parry, Richard Watkins, Keith Watkins and Alan Harvey, Tyrone Evans, Hannah Evans

Sunset Time - 20:31

Again similar to the previous survey, common species of bat was recorded and observed feeding and commuting past the buildings but no bats were observed exiting the buildings. Common and Soprano Pipistrelle were the most prevalent bats present. Noctule, Pipistrelle social calls and a low number of passes by a myotis species was also recorded.

4.3 Bat Survey Conclusions

- The current survey data from the 2019 bat surveys was broadly similar to the survey findings of 2016 surveys by RPS. Therefore the previous survey recommendations listed in the previous ecology report, “*Dragon Parc, Abercanaid, Merthyr Tydfil Bat Activity Survey*” authored by RPS Ltd, dated September 2016 is still relevant and must be implemented in full.
- The site boundaries are used by Common and Soprano species of bat to feed and commute in low to moderate numbers. Noctule feed over the site in low numbers and very low number of Myotis species of bat was identified over the eastern site boundary.
- The eastern site boundary has more activity in both number and species of bat.
- No bats were observed exiting the buildings during the survey work therefore it can be concluded that no significant day roost is present. The degradation of the buildings may

have been a reason for this. It is still recommended to follow the ecological soft strip of be undertaken as use of the buildings as an occasional day roost cannot be totally excluded.

- Both Common and Soprano Pipistrelle are known to be able to tolerate light levels greater than some other species of bat. Although this is the case it is important that a detailed lighting plan is submitted to ensure that dark corridors are retained around the site boundary to ensure that commuter connectivity is preserved. This is especially relevant to the eastern boundary as this has more feeding opportunities as it is adjacent to the river and this area also has the presence of Myotis species of bat which can be less tolerant of light levels. It is imperative that light spill is contained from entering the designated SINC area around the river Taff.
- No trees onsite are to be reduced in size or removed without written permission from a suitably qualified ecologist.
- Suitable mitigation for crevice dwelling bats will be incorporated into the design of any new build properties on site. Any new bat mitigation will not be directly illuminated and will have a dark corridor to exit into the wider environment. The location and type of mitigation will be drafted by a suitably qualified ecologist once a site building plan has been designed.

5. Recommendations and Mitigation

The initial development proposal for this site is to undertake drainage improvement works to help deal with the current water flow experienced within the site boundary. The site levels will be raised and a shallow channel along the southern and western boundaries created to carry the Nant Canaid flow. An improved discharge point will be created to the south east corner of the site for the water to enter the River Taff.

It is highly likely that in the future a further planning application is made for the site for development works. The scope of any future development is unknown at present but some broad recommendations are made in this section based on the likelihood of the majority of the site being lost to development.

The below mitigation and compensation measures are recommended to help avoid negative impacts to any habitats and species which may be affected as part of the current development proposal to improve site drainage:

- The potential for a otter holt or lying up location to be present along the banks of the River Taff could not be ruled out during the site inspection. As a precautionary measure a suitably experienced ecologist will be present when the vegetation along the river bank is cleared to allow the construction of the new water discharge point.
- The building, trees and scrub along the river banks have the potential for use by nesting birds. The demolition of the building and clearance of vegetation along the river bank must be undertaken outside of the bird nesting season of March to August inclusive. If this is not achievable an ecologist must inspect any vegetation or buildings with the potential for birds to be present, for active birds' nests prior to removal works beginning. If an active nest or evidence of use of the structures are identified a buffer zone of 5m around the nest must be observed until the chicks have fledged. Only then can the vegetation / buildings be removed.
- The tree line and wider wooded areas along the western boundary of the site must be retained where possible. The mature vegetation provides habitat for a wide variety of species, helps reducing surface water run off and screen the site from adjacent housing.
- A root protection zone (RPZ) must be implemented around any retained trees or hedgerows within or directly adjacent to the site. British Standard BS 5837 *Trees in relation to design, demolition and construction - Recommendations* will be followed. Measures will include clear marking of the RPZ to ensure no digging or machinery is used in that area.

- A minimum width of 2m from the RPZ of retained trees to the edge of the engineering work zone required to create the new drainage swale will be required to ensure the mature trees are retained into the future.
- Bat surveys completed across the site found a number of common bat species to use the River Taff for foraging and commuting purposes. The presence of commuting and foraging use of the river by otter is also highly likely. No night time working along the river will be permitted between the hours of 6pm and 6am to ensure noise and lighting do not negatively affect any nocturnal species using the river.
- All machinery and site materials will be stored in a securely fenced construction compound at least 10m away from the bank of the River Taff. This will help to reduce the potential for pollution incidents affecting the river water quality.
- A securely fenced construction compound will also prevent the potential for otters to access any machinery and or construction materials and injure themselves.
- If security lighting of the site compound is required all lighting will be directional and cowled to ensure no light spill onto adjacent natural habitats. Providing the storage compound is sited 10m from the river bank, impacts from lighting will not be felt along the river.
- The presence of Japanese knotweed to the south east of the site and scattered along the river banks was noted during the site visit. Japanese knotweed is a highly invasive plant and strategy to deal with it during and post construction will be required.
- Vegetation removal within the site boundary will be completed in two stages with no ground disturbance works between the months of November to February inclusive. These measures will help to avoid any negative impacts to reptile species which maybe present within the site boundary.
- The construction of the new discharge point along the River Taff will result in the loss of some mature trees and scrub along the river banks creating a negative impact on the designated SINC. In order to mitigate for this habitat loss a management strategy for the Japanese knotweed in the area will be agreed and implemented. Replacement planting along the river will also be undertaken with a management plan for a period of 5 years after planting to ensure all saplings establish. If any planting fails it will be replaced.
- The new discharge point will measure approximately 12m in length and will be created using block stone in a cascade formation the height of the current river bank. The stepped formation of the discharge point will still allow mammal movement along the river corridor. However the habitat loss will allow a greater level of lighting to fall upon the river than currently experienced. This loss will be mitigated for by the replacement planting along the tops of the river bank and treatment of Japanese knotweed.

- The new swale route will require the removal of the current pond within the site, approximate location is shown in appendix 3. A new pond measuring a minimum of 4m by 4m in surface area and 1m in depth will be created on the western edge of the swale, between the swale and retained trees. The pond will be made watertight but left to establish native aquatic vegetation in its own time.

The Environment Act (Wales) 2016 places a duty on competent authorities such as Merthyr Tydfil County Borough Council to conserve and enhance biodiversity. For developments of 2 houses or more or where the development exceeds 100m², sustainable drainages systems (SuDS) must be implemented. SuDS requirements aim to manage rainfall using as natural processes as possible which can offer opportunities for habitat creation, biodiversity enhancements and improved water quality. Detailed plans for the site are not currently available making specific recommendations difficult. However a number of suggestions are detailed below which can be incorporated into the site design at this early planning stage.

The below bullet points are some simple measures that could be achieved to enhance the biodiversity of the site:

- The provision of native wildflower planting or borders would be beneficial for local wildlife. Any natural vegetation should be maintained with wildlife in mind and managed as naturally as possible for example mowing four times a year and all arisings being collected and removed from site.
- The use of attenuation ponds within the site design can be used to store rainwater, slowing its release into the natural environment, creating an attractive natural feature for residents and a new habitat type within the site. The number of ponds within the landscape has drastically declined and the creation of a pond or network of ponds would increase habitat diversity for plants and animals.
- Tree and or hedgerow planting where ever possible within the site design would also help reduce the amount of rainfall reaching drains, rivers and streams. Trees will naturally use more water than shorter types of vegetation which in turn reduces the amount of water run off into drains etc.

6. Future Development Recommendations and Mitigation

Should the site come forward for further development works in the future we would suggest the below ecological issues are considered and further survey work completed where required:

- Dedicated reptile surveys of the grassland habitats within the site boundary may be required should they be affected by development proposals.
- As much mature woodland and trees will be retained as possible. It is difficult to replace mature trees that are lost to development works.
- The marshy grassland within the site is considered to be a section 7 habitat under the Environment Act (Wales) 2016. This habitat should be retained where possible, if it cannot be retained, compensation for the loss of such habitat must be provided.
- The riparian corridor along the River Taff must remain wooded. A buffer zone between any development footprint and the river bank should be incorporated into the site design to ensure no additional disturbance to flora and fauna using the river is experienced.
- The lighting of any future development will need to be designed to be wildlife friendly. No light spill should fall on to the River Taff. The loss of vegetation along the new discharge point will leave this area vulnerable to negative impacts of increased lighting as there will be limited vegetation to screen the river.

Appendix 1 – Plant Species Recorded

Common Name	Latin Name
Hazel	<i>Corylus avellana</i>
Alder	<i>Alnus glutinosa</i>
Conifer sp	<i>Conifer sp</i>
Birch sp	<i>Betula sp</i>
Willow sp	<i>Salix sp</i>
Beech	<i>Fagus sylvatica</i>
Field maple	<i>Acer campestre</i>
Bramble	<i>Rubus fruticosus agg</i>
Holly	<i>Ilex aquifolium</i>
Ash	<i>Fraxinus excelsior</i>
Hawthorn	<i>Crataegus monogyna</i>
Ribwort Plantain	<i>Plantago lanceolata</i>
Creeping buttercup	<i>Ranunculus repens</i>
Daisy	<i>Bella perennis</i>
Perforate St. Johns wort	<i>Hypericum perforatum</i>
Black bryony	<i>Tamus communis</i>
Common nettle	<i>Urtica dioica</i>
Buddleja	<i>Buddleja davidii</i>
Ivy	<i>Hedra helix</i>
Germander speedwell	<i>Veronica chamaedrys</i>
Cleavers	<i>Galium aparine</i>
Knapweed	<i>Centrau nigra</i>
Herb Robert	<i>Geranium robertianum</i>
Dandelion	<i>Taraxacum egg.</i>
Selfheal	<i>Prunella vulgaris</i>
Cotoneaster sp	<i>Cotoneaster sp</i>
Hop trefoil	<i>Trifolium campestre</i>
Ragwort	<i>Senecio jacobaea</i>
Rosebay willow herb	<i>Champion angustifolium</i>
Hard fern	<i>Blechnum spirant</i>
Cocksfoot	<i>Dactylis glomerata</i>
Nettle	<i>Urtica dioica</i>
Curled dock	<i>Rumex crispus</i>

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Toad rush	<i>Juncus bufonius</i>
Japanese knotweed	<i>Fallopia japonica</i>
Marsh thistle	<i>Cirsium palustre</i>
Yellow iris	<i>Iris pseudacorus</i>
Ragged robin	<i>Lychnis flos-cuculi</i>
Yorkshire fog	<i>Holcus lanatus</i>
Compact Rush	<i>Juncus conglomeratus</i>
Lesser spearwort	<i>Ranunculus flammula</i>
Silver weed	<i>Potentilla anserina</i>
Sweet Vernal Grass	<i>Anthroxanthum odoratum</i>
Yarrow	<i>Achillea millefolium</i>
Birds-foot trefoil	<i>Lotus corniculatus</i>
Purple moor grass	<i>Molinia caerulea</i>
Water mint	<i>Mentha aquatica</i>
Marsh bedstraw	<i>Galium palustre</i>
Creeping cinquefoil	<i>Potentilla reptans</i>
Heath woodrush	<i>Luzula multiflora</i>
Cuckoo flower	<i>Cardamine pratensis</i>
Lesser stitchwort	<i>Stellaria graminea</i>
Tufted vetch	<i>Vicia cracca</i>
Wild carrot	<i>Daucus carota</i>
Timothy	<i>Phleum pratense</i>
Coltsfoot	<i>Tussilago farfara</i>
Barren strawberry	<i>Potentilla sterilis</i>
Crested Dogs tail	<i>Cynosurus cristatus</i>
Red clover	<i>Trifolium pratense</i>
Purple toadflax	<i>Linaria purpurea</i>
Common Fleabane	<i>Pulicaria dysenterica</i>
Hemp agrimony	<i>Eupatorium cannabinum</i>
Prickly sow thistle	<i>Sonchus asper</i>
Bristly ox tongue	<i>Helminthotheca echioides</i>
Nipplewort	<i>Lapsana communis</i>
Bulrush	<i>Typha latifolia</i>
Hedge woundwort	<i>Stachys sylvatica</i>
Creeping bent	<i>Agrostis stolonifera</i>

Appendix 2 – Site Photographs



View of Japanese knotweed along south entrance



View of southern portion of site looking east



Demolished section of buildings to south of site



View of Office tower remaining



View of gantry over River Taff



View of rubble piles looking northwards

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Tree line above brick wall west of site



View of grassland & woodland along west edge



View of building foundations



View of overgrown pond to west of site



Remaining small building



View of tarmac road & tree line north of site

Preliminary Ecological Appraisal
Land at Dragon Parc, Merthyr Tydfil



View of neutral grassland looking east



View of marshy grassland & wood to south



Northern fence line with Russian Vine along it



Neutral grassland looking west

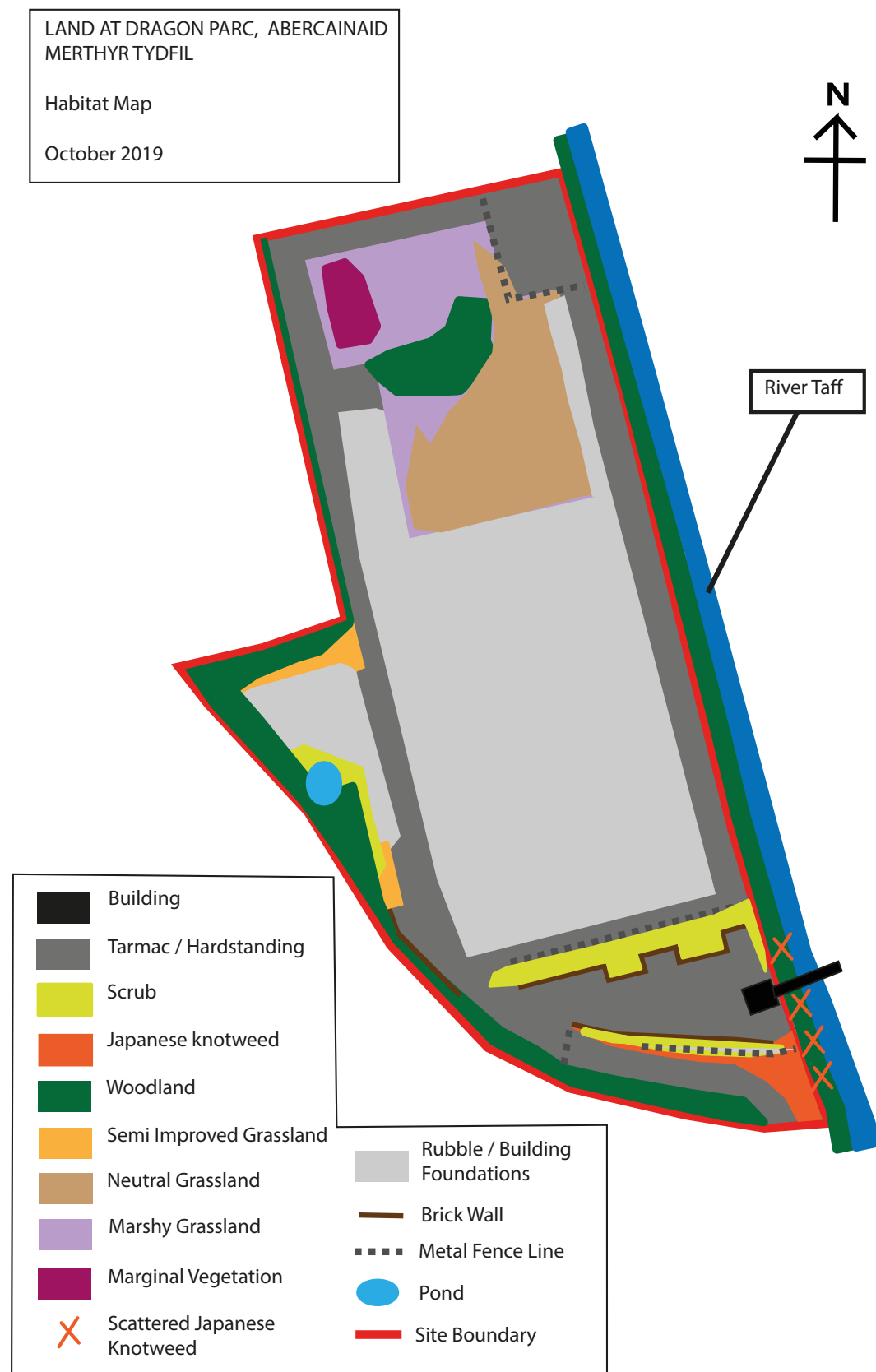


Tarmac road along north east looking south



View of south east corner of site

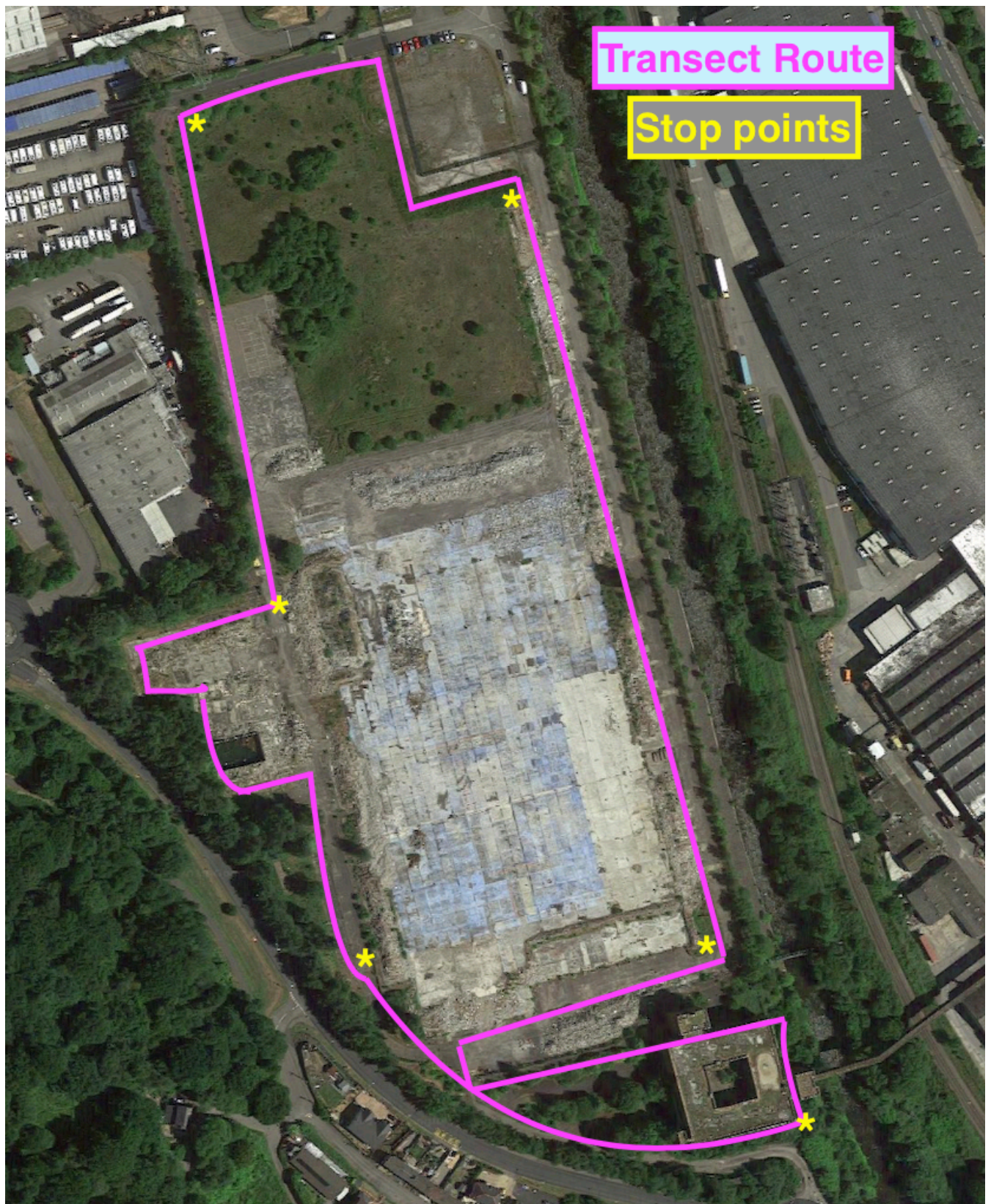
Appendix 3– Extended Phase 1 Site



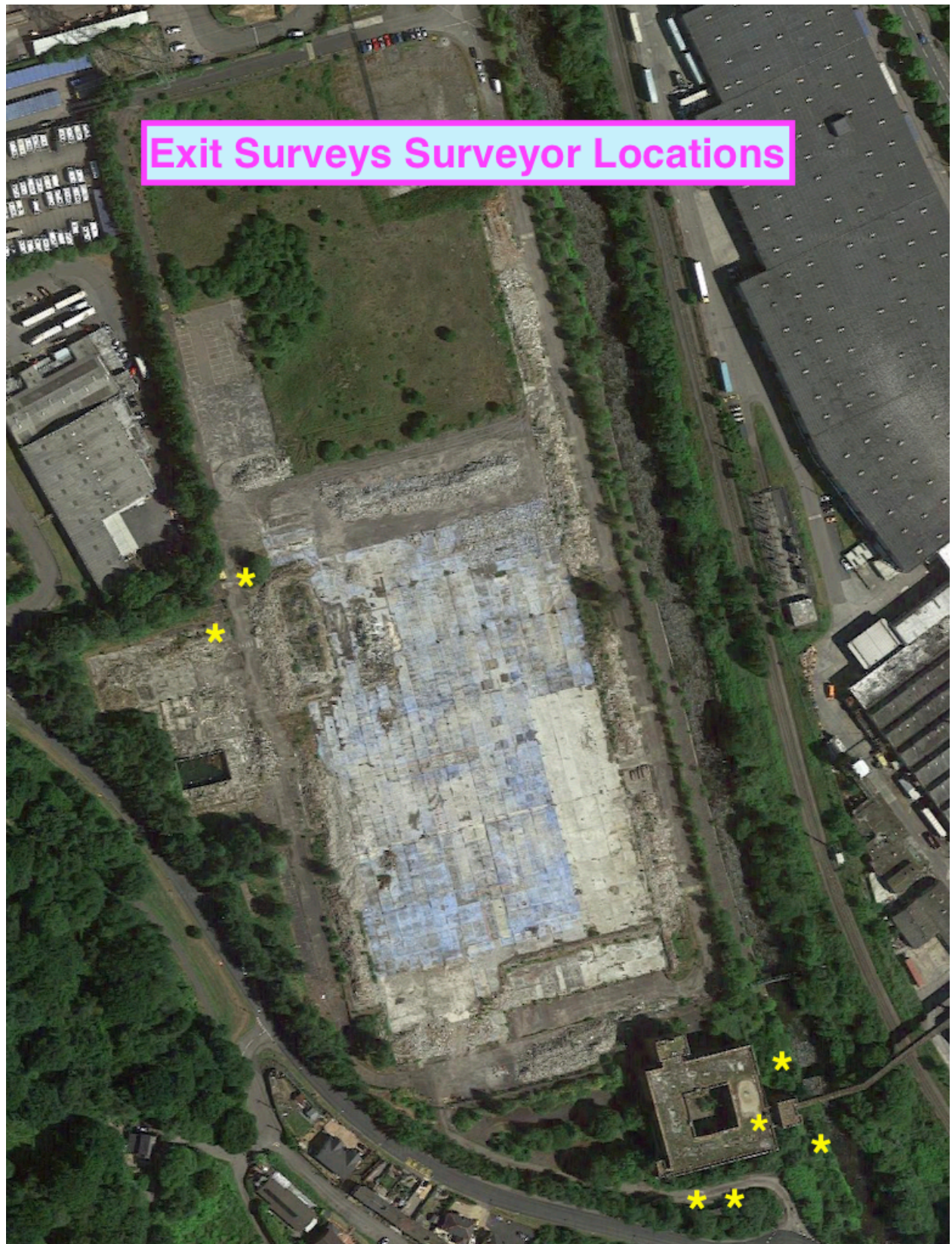
Appendix 4 - Aerial View of Site



Appendix 5 - Transect Route of the Site



Appendix 6 - Bat Exit Survey Surveyor Locations



Offices at

Coleshill
Doncaster
Dublin
Edinburgh
Exeter
Glasgow
Haywards Heath
Isle of Man
Limerick
Newcastle upon Tyne
Newport
Peterborough
Saltaire
Skipton
Tadcaster
Thirsk
Wallingford
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