Caenant Terrace

Ecological Impact Assessment



Caenant Terrace

Ecological Impact Assessment

Atkins Ltd

TACP (UK) LTD 10 PARK GROVE CARDIFF CF10 3BN

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1 INTRODUCTION

1.1 Background

- 1.1.1 TACP (UK) Ltd was commissioned by Atkins in December 2022 to undertake an Ecological impact assessment on the Caenant Terrace site. This is an update of a Preliminary Ecological impact assessment undertaken in September 2020 and includes a wider survey area.
- 1.1.2 This report provides an ecological overview of the site including a description of potential ecological receptors and gives an ecological impact assessment in relation to the site and the proposed works. This includes recommendations for mitigation and enhancement in relation to the potential impacts identified based on the available information. Proposed areas for retention and enhancement to benefit ecology and nature conservation have also been identified.

1.2 Site Description

1.2.1 The site is linear and covers approximately 1.3km, beginning at Caenant Terrace to the west centred on grid reference \$\$72689752 and culminates at the confluence of the Tennant Canal and River Clydach to the east of Neath Abbey (grid reference \$\$738972). The site also includes additional areas of land proposed for drainage connections, to the centre of the site along Drummau Road and to the south-east along the Tennant Canal. The site boundary is shown in Appendix C. The site consists of a heavily populated residential area, with the A4320 (New Road) to the north, which is flanked by shops and the B4290 (Old Road) between the residential area and the industrial estate to the south leading to the Tennant canal.

1.3 Proposed Works

- 1.3.1 Neath Port Talbot County Borough Council (NPTCBC) propose to upgrade the flood alleviation system by enhancing and replacing existing inlet structures, creating new open channels and introducing new culverts. The current proposals are detailed below:
 - A new 900 diameter concrete culvert in alignment with the main residential street (Caenant Terrace), connecting to the existing culvert to the south of Springfield Road, to preserve the current domestic connections.
 - Existing inlet structures & trash screens to be removed and replaced at Caenant Terrace, New Road and Old Road.
 - New Inlet structure and new 1200 diameter culvert at Drummau Road, to the north of the railway.
 - New open channel through Railway Abutments.
 - Existing Open Channel along Drummau Road to be replaced with 1500 wide 'U' channel.
 - Existing culvert to the south of New Road to be removed and replaced with Open Channel.
 - Proposed 1200 diameter overflow discharging into Tennant Canal

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 Proposed overflow Weir structure at confluence of Tennant Canal and River Clydach, 5.1m long adjustable height weir with discharge into River.

2 METHODOLOGY

2.1 Desk Study

- 2.1.1 A South East Wales Biodiversity Records Centre (SEWBReC) data search was undertaken within 1km of the site to provide an indication of the protected species that are present in the wider area.
- 2.1.2 A review of available designated sites information was also undertaken within 1km of the site for internationally and nationally designated sites and within 1km for locally designated sites.

2.2 Field Surveys

Phase 1 Habitat Survey

2.2.1 An extended Phase 1 habitat Survey was carried out by James Bilham BSc (Hons), MSc, ACIEEM, MRSB on the 11/01/2023 to provide a baseline to assess the value of the habitats and their potential to support protected species. This survey was conducted following appropriate Chartered Institute for Ecology and Environmental Management (CIEEM) guidelines and the methods outlined in the Joint Nature Conservation Committee (JNCC)'s 'Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit' (JNCC, 2010). All habitats within the sites were classified and mapped with detailed target notes and floral species lists produced for each habitat area.

2.3 Limitations

- 2.3.1 It is acknowledged that January is a sub-optimal time to undertake habitat surveys, reducing the likelihood of rare and protected floral species being identified.
- 2.3.2 No species-specific surveys have been undertaken and as such the value of the site in terms of protected species is based on the available desk study records and professional judgement.

2.4 Site Assessment

- 2.4.1 The CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (2022) have been used to undertake the impact assessment as detailed below. These guidelines provide the basis for more thorough surveys and assessments, which are used to provide detailed mitigation requirements and ecological enhancement measures.
- 2.4.2 The wildlife value has been assessed using the Ratcliffe Criteria. This assesses an ecological feature in terms of:

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- a. Fragility
- b. Rarity
- c. Size (area of extent)
- d. Diversity
- e. Potential Value
- f. Position within the Ecological/ Geographical Unit
- g. Typicality
- h. Recorded History
- i. Naturalness
- j. Intrinsic Appeal
- 2.4.3 The degree to which a feature can be replaced/substituted has also been taken into consideration. Guidance suggests that the loss of a feature of national value that is irreplaceable may be considered more significant than the loss of a feature that can be replaced or substituted.
- 2.4.4 The overall ecological value of the area has been considered in the context of the pattern of habitat and interdependencies between habitats, as well as the relative legislative value of any protected species, habitats, or sites.
- 2.4.5 The value of the ecological features has been given, as far as possible, in terms of geographical context in accordance with CIEEM EcolA guidance (2022):
 - **a. International/European** e.g., Natura 2000 sites, significant populations of European Protected Species (EPS), sites hosting significant populations under the Bonn Convention, non-designated international features such as large populations that are rare on an International/European scale.
 - **b. National (UK)** e.g., Sites of Special Scientific Interest, Geological Conservation Review sites, significant populations of U.K protected species, significant populations of Section 7 species (Environment (Wales) Act 2016).
 - **c. National (Wales)** e.g., nationally important designations which can be reasonably substituted such as National Parks, medium populations of European or U.K protected species, significant populations of U.K or Wales 'Red List' of Birds of Conservation Concern or Wales Red Data List Species, medium to significant populations of Section 7 species (Environment (Wales) Act 2016).
 - **d. Regional** e.g., regionally important designation which can be reasonably substituted such as Local Nature Reserves, important inventory site such as Ancient Woodland, small population of European or U.K protected species, medium population of Section 7 species, medium populations of U.K or Wales 'Red List' of Birds of Conservation Concern or Wales Red Data List Species
 - **e. County** e.g., County Wildlife Sites or other county-wide designations, sites with Local Biodiversity Action Plan (LBAP) species, non-breeding individuals of European or U.K protected species, small populations of Section 7 species, small populations of U.K or Wales 'Red List' of Birds of Conservation Concern or Wales Red Data List Species
 - f. River Basin District
 - g. Estuarine System/Coastal Cell
 - h. Local features of value within the site area, district, borough, or parish only



- **i. Zone of Influence** this can include any of the above features and is determined by the extent/potential extent of impacts identified and can vary from feature to feature, particularly for mobile species.
- 2.4.6 The 2022 guidelines also identify the need to assess potential impacts on ecosystem services resulting from a project's ecological effects. Ecosystem services can be divided into four types, as detailed below:
 - **a. Supporting services** services necessary for the production of all other ecosystem services, including soil formation, photosynthesis, primary production, nutrient cycling, and water cycling.
 - **b. Provisioning services** products obtained from ecosystems, including food, fibre, fuel, genetic resources, biochemical, natural medicines, pharmaceuticals, and fresh water
 - **c. Regulating services** benefits obtained from the regulation of ecosystem processes, including air quality regulation, climate regulation, water regulation, erosion regulation, water purification, disease regulation, pest regulation, pollination, and natural hazard regulation.
 - **d. Cultural services** non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences thereby taking account of landscape values.
- 2.4.7 The assessment includes direct, indirect, short-term, medium-term, and long-term, secondary, and cumulative impacts. Both positive and negative impacts on the ecological baseline of the site are assessed.
- 2.4.8 Magnitude of impact is assessed by the scale of loss or damage predicted to seminatural vegetation, wildlife habitats and protected species. Significance is assigned by looking at the magnitude of change to habitats and species of local and regional importance and assigning higher significance to greater loss of regionally important habitats.
- 2.4.9 The following criteria for determining the magnitude of impact are used and are based upon, or adapted from, those given in the Guidance.
- 2.4.10 Major negative The proposal may adversely affect the integrity of the site, in terms of the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the population levels of species of interest. This includes large-scale damage or loss of a large proportion of a particular semi-natural habitat type or protected species habitats that are of regional/national importance or listed as key habitats in the UK Biodiversity Action Plan Steering Group Report Loss of Protected Species.
- 2.4.11 Moderate negative The site's integrity will not be adversely affected but the effect on the site is likely to be significant in terms of its ecological objectives. If, in the light of full information, it cannot be clearly demonstrated that the proposal will not have an adverse effect on integrity, then the impact should be assessed as major negative. This would apply in the case of damage or loss of a small proportion of a particular seminatural habitat type or protected species habitat that are of local importance or listed as key habitats in the UK Biodiversity Action Plan Steering Group Report.



- 2.4.12 **Slight negative** Neither of the above apply, but some minor negative impact is evident. (In the case of Natura 2000 sites a further assessment may be necessary if detailed plans are not yet available). This would apply in the case of damage or loss of common semi-natural vegetation, wildlife habitats or important wildlife but not protected species. Habitats are not locally or regionally important.
- 2.4.13 **Neutral** No observable impact in either direction. This would apply in the case of damage or minor losses of common types of habitats or common wildlife. Habitats are not locally or regionally important.
- 2.4.14 **Slight Positive** Impacts which provide a slight net gain for biodiversity overall. This would apply in the case of an increase in the population of a species or area of habitat which is not locally or nationally important.
- 2.4.15 Moderate Positive Impact which provide a net gain for biodiversity overall (but which will not positively affect the integrity of the site). This would include a small increase in the proportion of a semi-natural habitat or habitat of a protected species that are locally important or listed as key habitats within the UK Biodiversity Action Plan Steering Group Report.
- 2.4.16 Major Positive Impact which provides a net gain for biodiversity overall in terms of increases in habitat diversity (and which may positively affect the integrity of the site). This would apply in the case of a large-scale increase in a protected species or habitat of a protected species that are locally important or listed as key habitats within the UK Biodiversity Action Plan Steering Group Report.
- 2.4.17 The overall significance of each impact is determined from the ecological value of the feature and the magnitude of the potential impact, as shown in Table 2.4.1 below.

Magnitude of Potential	Nature Conservation Value of Ecological Feature						
Impact	Very High	High Medium		Low	Negligible		
Major Negative	Very large adverse	Very large adverse	Moderate adverse Slight adverse		Neutral		
Moderate Negative	Large adverse	Large adverse	Moderate adverse Slight adverse		Neutral		
Slight Negative	Slight adverse	Slight adverse	Slight adverse	Slight adverse Slight adverse			
Neutral	Neutral	Neutral	Neutral Neutral		Neutral		
Slight Positive	Slight positive	Slight positive	Slight positive Slight positive		Neutral		
Moderate Positive	Large positive	Large positive	Moderate positive	Slight positive	Neutral		
Major Positive	Very large positive	Very large positive	Moderate positive Slight positive		Neutral		

Table 2.4.1: Overall significance of impact assessment



3 RESULTS

3.1 Desk Study

- 3.1.1 There are no internationally or nationally designated sites within 1km of the proposed works area
- 3.1.2 There are 3 Wildlife/SINC sites within the site:
 - Tennant Canal
 - Pentreffynnon
 - Gwlyptir Mynachlog Nedd
- 3.1.3 There are 6 Wildlife/SINC sites within 1km of the site:
 - Neath Estuary (104m)
 - Dyffryn Woods (387m)
 - Roman Way Reedbed (555m)
 - Neath Canal (679m)
 - Coed Bach a'r cwm (811m)
 - Square Pond (854m)
- 3.1.4 Records of floral species of conservation concern within 1km of the site comprise of Chives, Flowering-rush, Soft Hornwort, Shady Horsetail, Corn Marigold, Sea-buckthorn, Golden-samphire and Charlock.
- 3.1.5 Invasive non-native species (INNS) recorded within 1km of the site include Himalayan Cotoneaster (Cotoneaster simonsii), Wall Cotoneaster (Cotoneaster horizontalis), Hollyberry Cotoneaster (Cotoneaster bullatus), Japanese Knotweed (Fallopia japonica), Himalayan Balsam (Impatiens glandulifera), Montbretia (Crocosmia pottsii x aurea = C. x crocosmiiflora), Japanese Rose (Rosa rugosa), Rhododendron (Rhododendron ponticum) and New Zealand Pigmyweed (Crassula helmsii). These are all listed on Schedule 9 of the Wildlife and countryside Act 1981 (as amended) (WCA 1981). This makes it illegal to plant or otherwise cause these species to grow or spread in the wild.



- 3.1.6 Records of bat species within 1km of the area comprise of Daubenton's bat (Myotis daubentonii), brown long-eared bat (Plecotus auritus), lesser horseshoe bat (Rhinolophus hipposideros), Noctule (Nyctalus noctula), common pipistrelle (Pipistrellus pipistrellus) and soprano pipistrelle (Pipistrellus pygmaeus). All UK bat species are protected under Annex IV of the Habitats Directive (Council Directive 92/43/EEC), which is transposed into UK law by the Conservation of Habitats and Species Regulations 2017 (as amended). This provides full protection from harm, destruction, and disturbance to the individual animals, their young and all breeding and resting sites. Bats are also protected under Schedule 5 of the WCA 1981 (as amended) and are also afforded protection under the Bonn and Bern Conventions. Eight species of bats are listed as a living organism of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales on Section 7 of the Environment (Wales) Act 2016.
- 3.1.7 There are records of Eurasian Badger (*Meles meles*) within 1km of the site. This species is afforded full U.K. protection under the Protection of Badgers Act 1922, which protects both the individual animals and their setts. However, habitats used for any other purpose are not afforded any form of protection under this or other legislation. This species is also listed on Schedule 6 of the WCA 1981 (as amended), which outlaws certain methods of taking and killing when this is necessary.
- 3.1.8 There are records of European Hedgehog (*Erinaceus europaeus*) within 1km of the site. This species is listed as a living organism of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales on Section 7 of the Environment (Wales) Act 2016. They are also afforded protection under the Bern Convention.
- 3.1.9 There are records of European Otter (*Lutra lutra*) within 1km of the site. This species is protected in the UK under the WCA 1981 (as amended)a Priority Species under the UK Post-2010 Biodiversity Framework, a European Protected Species under Conservation of Habitats and Species Regulations 2017 (as amended), and listed as Near Threatened on the global IUCN Red List of Threatened Species.
- 3.1.10 There are records of Brown Hare (Lepus europaeus) within 1km of the site. This species is listed as a living organism of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales on Section 7 of the Environment (Wales) Act 2016.
- 3.1.11 There are records of non-native mammals within 1km of the site. These are of American Mink (Neovison vison) and Grey Squirrel (Sciurus carolinensis). These species are listed on Schedule 9 of the WCA 1981 (as amended).
- 3.1.12 Records of reptiles species within 1km of the site comprise of Slow worm (Anguis fragilis) and Grass snake (Natrix helvetica). All reptiles are protected against killing, injuring and sale under UK legislation through their inclusion in Appendix III of the Bern Convention (1979), Schedule 5 of the WCA 1981 (as amended) and Section 7 of the Environment (Wales) Act 2016.



- 3.1.13 Records of amphibians within 1km of the site include common Toad (*Bufo bufo*), common frog (*Rana temporaria*), smooth newt (*Lissotriton vulgaris*) and palmate newt (*Lissotriton helveticus*). These species are afforded protection under Schedule 5 of the WCA 1981 (as amended) and are also listed as a living organism of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales on Section 7 of the Environment (Wales) Act 2016. Common Toads are also listed as a U.K. Biodiversity Action Plan (BAP) Priority Species and is included within the Bern Convention 1979.
- 3.1.14 All bird species, including their eggs and nests, are protected from harm during the breeding season under the WCA 1981 (as amended) to varying degrees. Further protection is afforded to those listed on Schedule 1 of this Act making it an offence to disturb these birds intentionally or recklessly at, on or near an 'active' nest. Certain species are also afforded further protection under Annex I of the EC Birds Directive and under Section 7 of the Environment (Wales) Act 2016. All UK birds are categorized under the Birds of Conservation Concern (BoCC) listings as Red, Amber, or Green for their conservation status. Species are listed in Table 1 below.



Binominal name	Common Name	categorisation
Acanthis cabaret	Lesser Redpoll	Priority Species
Accipiter gentilis	Goshawk	Priority Species
Actitis hypoleucos	Common Sandpiper	Species of Conservation Concer
Aegithalos caudatus	Long-tailed Tit	Species of Conservation Concer
Alauda arvensis	Skylark	Priority Species
Alcedo atthis	Kingfisher	Priority Species
Anas crecca	Teal	Species of Conservation Concer
Anas platyrhynchos	Mallard	Species of Conservation Concer
Anser albifrons	White-fronted Goose	Priority Species
Anser albifrons albifrons	European White-fronted Goose	Species of Conservation Concer
Anser brachyrhynchus	Pink-footed Goose	Locally Important Species
	Meadow Pipit	Species of Conservation Concer
Anthus pratensis Anthus spinoletta		
	Water Pipit	Locally Important Species
Apus apus	Swift	Species of Conservation Concer
Ardea cinerea	Grey Heron	Species of Conservation Concer
Aythya ferina	Pochard	Species of Conservation Conce
Aythya fuligula	Tuffed Duck	Species of Conservation Conce
Bucephala clangula	Goldeneye	Priority Species
Calidris alpina	Dunlin	Species of Conservation Conce
Cettia cetti	Cetti's Warbler	Priority Species
Charadrius hiaticula	Ringed Plover	Priority Species
Chloris chloris	Greenfinch	Species of Conservation Conce
Chloris chloris chloris	Chloris chloris	Species of Conservation Conce
Chroicocephalus ridibundus	Black-headed Gull	Priority Species
Cinclus cinclus	Dipper	Species of Conservation Conce
Crex crex	Corncrake	Priority Species
Cuculus canorus	Cuckoo	Priority Species
Curruca communis	Whitethroat	Species of Conservation Conce
Emberiza citrinella	Yellowhammer	Priority Species
Emberiza schoeniclus	Reed Bunting	Priority Species
Falco columbarius	Merlin	Priority Species
Falco peregrinus	Peregrine	Priority Species
Falco tinnunculus	Kestrel	Priority Species
Ficedula hypoleuca	Pied Flycatcher	Priority Species
Fringilla montifringilla	Brambling	Priority Species
Fulica atra	Coot	Species of Conservation Conce
Gallinago gallinago	Snipe	Species of Conservation Conce
Haematopus ostralegus	Oystercatcher	Species of Conservation Conce
	Swallow	
Hirundo rustica		Species of Conservation Conce
chthyaetus melanocephalus	Mediterranean Gull	Priority Species
Larus argentatus	Herring Gull	Priority Species
Larus canus	Common Gull	Species of Conservation Conce
Larus fuscus	Lesser Black-backed Gull	Species of Conservation Conce
Larus glaucoides	Iceland Gull	Locally Important Species
Larus hyperboreus	Glaucous Gull	Locally Important Species
Larus marinus	Great Black-backed Gull	Species of Conservation Conce
Larus michahellis	Yellow-legged Gull	Locally Important Species
Limosa limosa	Black-tailed Godwit	Priority Species
Linaria cannabina	Linnet	Priority Species
Mareca penelope	Wigeon	Species of Conservation Conce
Milvus milvus	Red Kite	Priority Species
Motacilla cinerea	Grey Wagtail	Species of Conservation Conce
Muscicapa striata	Spotted Flycatcher	Priority Species
Numenius arquata	Curlew	Priority Species
Numenius arquara	Whimbrel	
		Priority Species
Denanthe oenanthe	Wheatear	Species of Conservation Conce
Pandion haliaetus	Osprey	Priority Species
Passer domesticus	House Sparrow	Priority Species
Passer montanus	Tree Sparrow	Priority Species
Phalacrocorax carbo	Cormorant	Species of Conservation Conce
Phoenicurus ochruros	Black Redstart	Priority Species
Phylloscopus trochilus	Willow Warbler	Species of Conservation Conce
Picus viridis	Green Woodpecker	Species of Conservation Conce
Platalea leucorodia	Spoonbill	Priority Species
Prunella modularis	Dunnock	Priority Species
Puffinus puffinus	Manx Shearwater	Species of Conservation Conce
Pyrrhula pyrrhula	Bullfinch	Priority Species
Regulus ignicapilla	Firecrest	
		Priority Species
Regulus regulus	Goldcrest	Species of Conservation Conce
Riparia riparia	Sand Martin	Species of Conservation Conce
Scolopax rusticola	Woodcock	Species of Conservation Conce
Spatula clypeata	Shoveler	Species of Conservation Conce
Sturnus vulgaris	Starling	Priority Species
「adorna tadorna	Shelduck	Species of Conservation Conce
Tringa nebularia	Greenshank	Priority Species
Tringa ochropus	Green Sandpiper	Priority Species
Tringa totanus	Redshank	Species of Conservation Conce
Furdus iliacus	Redwing	Priority Species
Turdus philomelos	Song Thrush	Priority Species
Turdus pilaris	Fieldfare	Priority Species
Turdus torquatus	Ring Ouzel	Priority Species
Turdus viscivorus	Mistle Thrush	Species of Conservation Conce
Tyto alba	Barn Owl	Priority Species
i yi o dibd	Lapwing	

Table 1. Bird species with records within 1km of the site.

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3.1.15 Records of invertebrate species within 1km of the site are listed in Table 2 below:

Binominal name	Common Name	Sub group			Category
Agrotis ripae	Sand Dart	Invertebrates	(insect)	Locally Important Species
Aporophyla lutulenta	Deep-brown Dart	Invertebrates	(insect)	Priority Species
Austrominius modestus	Austrominius modestus	Invertebrates	(other,	marine or freshwater)	Other Species
Boloria euphrosyne	Pearl-bordered Fritillary	Invertebrates	(insect)	Priority Species
Boloria selene	Small Pearl-bordered Fritillary	Invertebrates	(insect)	Priority Species
Bombus muscorum	Moss Carder Bee	Invertebrates	(insect)	Priority Species
Brachytron pratense	Hairy Dragonfly	Invertebrates	(insect)	Locally Important Species
Calodera riparia	Calodera riparia	Invertebrates	(insect)	Species of Conservation Concern
Calopteryx virgo	Beautiful Demoiselle	Invertebrates	(insect)	Locally Important Species
Ceramica pisi	Broom Moth	Invertebrates	(insect)	Priority Species
Chesias legatella	Streak	Invertebrates	(insect)	Priority Species
Cirrhia icteritia	Sallow	Invertebrates	(insect)	Priority Species
Coenagrion pulchellum	Variable Damselfly	Invertebrates	(insect)	Locally Important Species
Cordulegaster boltonii	Golden-ringed Dragonfly	Invertebrates	(insect)	Locally Important Species
Erynnis tages	Dingy Skipper	Invertebrates	(insect)	Priority Species
Erythromma najas	Red-eyed Damselfly	Invertebrates	(insect)	Locally Important Species
Euphydryas aurinia	Marsh Fritillary	Invertebrates	(insect)	Priority Species
Harmonia axyridis	Harlequin Ladybird	Invertebrates	(insect)	Other Species
Helotropha leucostigma	Crescent	Invertebrates	(insect)	Priority Species
Hepialus humuli	Ghost Moth	Invertebrates	(insect)	Priority Species
Ischnura pumilio	Scarce Blue-tailed Damselfly	Invertebrates	(insect)	Locally Important Species
Jodia croceago	Orange Upperwing	Invertebrates	(insect)	Priority Species
Lampropteryx otregiata	Devon Carpet	Invertebrates	(insect)	Locally Important Species
Lasiommata megera	Wall	Invertebrates	(insect)	Priority Species
Lestes sponsa	Emerald Damselfly	Invertebrates	(insect)	Locally Important Species
Lithobius (Lithobius) pilicornis	Lithobius (Lithobius) pilicornis	Invertebrates	(other,	terrestrial)	Species of Conservation Concern
Melanchra persicariae	Dot Moth	Invertebrates	(insect)	Priority Species
Mythimna litoralis	Shore Wainscot	Invertebrates	(insect)	Locally Important Species
Notiophilus quadripunctatus	Notiophilus quadripunctatus	Invertebrates	(insect)	Species of Conservation Concern
Orthetrum cancellatum	Black-tailed Skimmer	Invertebrates	(insect)	Locally Important Species
Orthetrum coerulescens	Keeled Skimmer	Invertebrates	(insect)	Locally Important Species
Parasemia plantaginis plantaginis	Wood Tiger	Invertebrates	(insect)	Locally Important Species
Perizoma albulata	Grass Rivulet	Invertebrates			Priority Species
Sesia apiformis	Hornet Moth	Invertebrates	(insect)	Locally Important Species
Sideridis turbida	White Colon	Invertebrates			Locally Important Species
Spilosoma lubricipeda	White Ermine	Invertebrates	(insect)	Priority Species
Spilosoma lutea	Buff Ermine	Invertebrates	(insect)	Priority Species
Synanthedon culiciformis	Large Red-belted Clearwing	Invertebrates	(insect)	Locally Important Species
Tholera cespitis	Hedge Rustic	Invertebrates	(insect)	Priority Species
Tyria jacobaeae	Cinnabar	Invertebrates	(insect)	Priority Species

Table 2. Invertebrate species with records within 1km of the site.

3.1.17 Fish species within 1km of the site include the European Eel (Anguilla anguilla) recorded in the Tenant canal. These are a Priority Species under the UK Post-2010 Biodiversity Framework and are listed as Critically Endangered on the global IUCN Red List of Threatened Species.

3.1.16



3.2 Field Surveys

Phase 1 Habitat Survey

- 3.2.1 The following habitats were recorded within the site with phase 1 habitat (codes in brackets):
 - Scattered Scrub (A.2.1)
 - Dense Scrub (A2.2)
 - Broadleaved Parkland/scattered trees (A3.1)
 - Neutral Grassland (B2.2)
 - Canal / River (G2)
 - Amenity Grassland (J.1.2)
 - Garden (J.1.5)
 - Hedge with Trees (J.2.3)
 - Fence (J.2.4)
 - Wall (J.2.5)
 - Buildings (J.3.6)
 - Bare Ground and Hard Standing (J.4)
- 3.2.2 The distribution of these habitats within the site is shown in Appendix A and is described below.
- 3.2.3 The site comprises mostly of residential properties, with associated gardens, as well as hardstanding within the road network, parking areas and footpaths. Occasional areas of scrub, scattered trees are present throughout, with the large majority located along the Tennant Canal to the south-east. A small area of semi-improved grassland is present on the banks of the confluence between the Canal and the River Clydach.
- 3.2.4 The current culvert inlet is located at the northern extent of the site, in the north-west corner of the gravel car park for adjacent properties. An open channel is present as a tributary into the culvert (refer to Photograph 1). A rail fence runs the length of the open channel preventing access. Approximately 20m to the north of this is an active rail line (Skewen to Neath line). A steep bank drops down from the track to the culvert. There is a large young Sycamore (Acer pseudoplatanus) at the northern end of the open channel which has leafy ivy (Hedera helix) covering, with adjacent Holly (Ilex aquifolium) (refer to Photograph 2). There is bramble (Rubus fruticosus agg) dominated scrub with evidence of Japanese Knotweed (Fallopia japonica) aligning the open channel.
- 3.2.5 A grass bank, previously noted as scattered scrub is present to the northern boundary of the housing adjacent to the main rail line, a rail fence and close boarded fencing run the length of the housing development, restricting access.



- 3.2.6 Caenant terrace comprises a residential area with a mix of dwellings and garden sizes. It runs parallel to the railway line for the majority of the site, culminating in a small linear patch of amenity grassland with a public footpath leading to an underpass beneath the railway and a small patch of amenity grassland containing butterfly bush (Buddleia davidii) and willowherb (Epilobium sp.). A planted treeline consisting of an overhanging Silver Birch (Betula pendula), and a mix of privet (Ligustrum sp.), alder (Alnus glutinosa), ash (Fraxinus excelsior), and hazel (Corylus avellana) is adjacent to the road with a domestic wall on the opposite (South-western) side.
- 3.2.7 The site continues to the east of Caenant Terrace parallel to the A4320 (New Rd and St Johns Terrace) which comprises domestic dwellings and commercial buildings with negligible ecological features throughout. An area of amenity grassland is present to the boundary of the Cwrt-Clwydi-Gwyn Care Home on the corner of Drummau Road, with a couple of silver birch (Betula pendula) trees present (refer to Photograph 3). On the southern boundary of the road lies an area of amenity grassland, with species including bulbous buttercup (Ranunculus bulbosus), dandelion (Taraxacum officinalis), ribwort plantain (Plantago lanceolata) and yarrow (Achillea millefolium). A scrub/earth bank is also present along the edge of the pavement, as well as a privet hedge around the gardens of the Cross Keys Hotel.
- 3.2.8 Heading north is Drummau road, which passes beneath the main railway line. To the top of the road, an amenity grassland bank was present on the western side, containing Ribwort Plantain, bulbous buttercup and common daisy (Bellis perennis). During the visit, it was noted that drainage works were ongoing adjacent to the residential properties. Under the railway arches was an area of scattered scrub including bramble, common nettle (Urtica dioica), giant sedge (Carex pendula), bracken (Pteridium sp.), butterfly bush (Buddleja), Common Gorse (Ulex europaeus), holly, two ash trees and dandelion (refer to Photograph 4).
- 3.2.9 To the south of the railway, an open channelled watercourse with steep bouldered sides is present, flanked by gorse and bramble, stepped as it heads south, parallel to the main road (refer to Photograph 5). To the west of the watercourse is an area of open wasteland, with gorse, bramble, holly, soft rush (Juncus effusus), ivy, Scots pine (Pinus sylvestris) and cotoneaster sp. A small patch of Japanese Knotweed was also noted as present within the centre of the trees (refer to Photograph 6).
- 3.2.10 Between St Johns Terrace and Old Road, is a gravel car park adjacent to the Cross Keys Hotel, with a small area of scrub/ruderal vegetation growing through the hardstanding, including buddleja and herb robert (*Geranium robertianium*), with three fir trees immediately adjacent to the entrance (refer to Photograph 7).
- 3.2.11 To the east lies a number of residential gardens which lead to a gated storage compound adjacent to the drainage channel. A vertical stone walled channel leads into the inlet structure to the culvert (refer to Photograph 8). A stand of Japanese Knotweed is present within the compound along with buddleja. Across the road, lies a sloped embankment covered in Japanese Knotweed and Himalayan balsam (Impatiens glandulifera).



- 3.2.12 The former colliery railway is adjacent to the site, this follows through an industrial area to the Tennant canal and adjacent footpath. The site culminates in the join between the canal and the River Clydach. The southern side of the canal is banked with a number of large willow (Salix sp.) oak (Quercus sp.) sycamore and ash (Fraxinus excelsior) trees. Flag iris (Iris pseudacorus) and common reed (Phragmites sp.) are found throughout the canal, along with Japanese Knotweed present either side of the canal
- 3.2.13 To the west of the Tennant Canal, lies a steep bank down to the canal with willow, sycamore and birch trees, bramble, ivy, herb robert, dogwood (Cornus sanguinea), gorse and willow leaf cotoneaster (Cotoneaster salicifolius) on the boundary of the footpath. Large areas of Japanese Knotweed are present along the junction at the top of the banks of the canal, along with buddleja.
- 3.2.14 To the east of the Tennant Canal, is a footbridge over the canal with gorse, bramble, ivy, Bbacken and ribwort plantain. The bank adjacent to the footpath is north facing and heavily shaded by tree cover and Knotweed and therefore was considered as unsuitable for reptiles.
- 3.2.15 No protected floral species were recorded during survey.
- 3.2.16 There were no priority habitats recorded during survey
- 3.2.17 INNS listed under Schedule 9 of the WCA 1981 (as amended) were recorded within the site at the time of the survey, namely extensive stands of Japanese Knotweed adjacent to the canal, (refer to Photograph 9), Drummau Road and Old Road and isolated areas of Himalayan Balsam. Cotoneaster species were also noted within the site itself. No other INNs were recorded during the survey.

Preliminary Protected Species Assessment

- 3.2.18 At the time of survey there were no visible potential roost features for **bats** present on the sycamore tree at the northern extent of the site, although some lvy cover was noted. However, the age of the tree and low density of climbing lvy stems limits the potential for roosting bats. Other trees within the site are young and densely packed and show evidence of past management. There is potential for bats to roost in some of the buildings within the industrial estate or have day roosts within the bridges over the canal. There is potential for the canal and the River Clydach to be important foraging and commuting habitat for a number of species. As such the site is considered to have **local ecological importance** for bats.
- 3.2.19 There was no evidence of opportunity for the site to support badger activity. The site is located in an urban setting with little connectivity to suitable adjacent habitat, other than that to the east of the River Clydach and some potential for commuting along the railway line near Caenant terrace. However, the latter was inaccessible and beyond the limits of the site. The remainder of the site has little opportunities for badger and the proposed works would not be affecting any adjacent land that could support badgers. Therefore, the site is considered to have negligible ecological importance for badgers.



- 3.2.20 The site is considered to be unlikely to support **hedgehog** populations, other than a small chance of transient foraging. There are few foraging or resting sites within the residential areas precluding movement across the site. As such the site is considered to have **negligible ecological importance** for hedgehog.
- 3.2.21 The canal and the River Clydach have potential to support **European Otters**, despite the remainder of the site having little connectivity to a wider water body, other than the River Clydach to the east which feeds into the River Neath to the south. Therefore the site is considered to have **local ecological importance** to **otters** along the canal and River Clydach.
- 3.2.22 The isolated trees within the site and the large trees lining the southern side of the canal have potential to support nesting **birds** during the active season (late February to early September inclusive, weather dependent). As such the site is considered to have **local ecological importance** for breeding birds.
- 3.2.23 The majority of the site is considered to have little suitability to support a population of **reptiles**. There are few examples of basking or foraging grounds and little potential or suitable hibernacula other than potential habitat along the railway embankments and as the proposed works would not be affecting this habitat, the site is considered to have negligible potential for reptiles. However, the canal and adjacent habitat have the potential to support commuting and foraging reptiles in particular Grass snakes, despite the suitable banks being north facing. As such the site is considered to have at least **local ecological importance** for reptile species.
- 3.2.24 The majority of the site is considered to be of little suitability to support a population of **amphibian** species, due to the lack of connectivity to watercourses/suitable habitat and little in the way of potential or suitable hibernacula. However, the watercourse adjacent to Drummau Road may have some potential for amphibians, although it is isolated and culverted under the railway. The canal and adjacent habitat have the potential to support amphibians as such the site is considered to have at least **local ecological importance** for amphibian species.
- 3.2.25 The Canal and the River Clydach are connected to the River Neath, these have records and provide opportunities for fish including European Eels. The canal was slow flowing, clear, and with a vegetation cover of approximately 30% in the survey area. Therefore, the site is considered to have **local ecological importance** to fish.



4 POTENTIAL IMPACTS

4.1 Construction Impacts

- 4.1.1 There are no designated sites within the site area and none identified by the desk study would be affected by the current proposals with respect to habitats. Potential impacts on designatory species have been addressed in the species-specific assessments below.
- 4.1.2 The development proposals in their current form would result in the permanent loss of some of the habitats within the site boundary, this includes hard standing, amenity grassland, dense/scattered scrub and some scattered trees. There are currently no buildings anticipated to be impacted on site.

Bats

- 4.1.3 No impacts on roosting bats are currently anticipated, although pre-works inspections may be required if any works occur close to suitable trees with roosting opportunities.
- 4.1.4 No other direct impacts on bats are anticipated. However, there may be indirect impacts depending on the construction methodologies, particularly in terms of light and noise. With regards to the species known to be in the area these impacts could be **slight negative**
- 4.1.5 In the absence of mitigation, the potential impact on bats is considered to be **slight negative** in magnitude resulting in a **slight adverse** significance of impact.

Eurasian Badger

- 4.1.6 No impacts on badgers are currently anticipated, given the lack of suitable habitat present within the site, as noted within section 3.2.19 and therefore resulting in a **neutral to slight negative** impact in the absence of mitigation.
- 4.1.7 Depending on the construction requirements, further direct impacts on badger may occur should they utilise the site during the works, particularly if there are excavations left open overnight as these could result in trapped or injured animals. There may also be indirect impacts depending on the construction methodologies, particularly in terms of light and noise pollution. As such, in the absence of mitigation these construction impacts are considered to be of a **slight adverse** magnitude.

European Hedgehog

4.1.8 The potential loss of habitats would reduce the extent of available habitats for hedgehogs resulting in a **neutral to slight negative** impact. Clearance of areas of scrub could also result in direct mortality, injury, or disturbance to hedgehogs resulting in a further **slight negative** impact in terms of hedgehog populations, however this is considered unlikely due to only transient foraging of hedgehogs potentially occurring across the site.



4.1.9 Depending on the construction requirements, further direct impacts on hedgehog may occur should they utilise the site during the works, particularly if there are excavations left open overnight as these could result in trapped or injured animals. There may also be indirect impacts depending on the construction methodologies, particularly in terms of light and noise pollution. As such these construction impacts, in the absence of mitigation are considered to be of a **slight adverse** magnitude.

European Otter

4.1.10 The proposed works would have a limited impact on suitable otter habitat as the only suitable habitat within or adjacent to the site is the Tenant Canal and The River Clydach. The loss of habitat, in order to accommodate the proposed overflow into the canal would be minimal and would have limited impact on available habitats for Otter resulting in a **neutral to slight negative** impact. However, clearance of these areas could result in direct mortality, injury, or disturbance to otter, if any resting places or otter holts were present resulting in a further **slight negative** impact to populations in the absence of mitigation. The proposed overflow weir would be a link from the Canal to the River and therefore caution should be taken to avoid any suitable otter/mammal paths and ensure no holts were present in the area of works.

Reptiles and Amphibians

- 4.1.11 Given the low potential for reptiles across the site as stated in section 3.2.23, and the limited suitable habitat and watercourses for amphibians, the works would result in a negligible to slight negative impact. In the absence of mitigation, clearance of these areas could result in direct mortality, injury or disturbance to both species groups resulting in a **slight negative** impact in terms of their populations, however this is considered unlikely.
- 4.1.12 Further direct impacts on reptiles and amphibians may occur should they utilise the site during the works, particularly if works are undertaken during the active season and excavations left open overnight as these could result in trapped or injured animals. These impacts are considered to be of a **neutral to slight adverse** magnitude, in the absence of mitigation

Breeding and Non-breeding Birds

- 4.1.13 The proposed loss of scrub habitats to enable the creation of the open channel as well as the proposed overflow into the Tenant Canal would reduce the extent of available habitats for both breeding and non-breeding birds resulting in a **neutral to slight negative** impact. Clearance of these areas could also result in direct mortality, injury, or disturbance to birds, if clearance is undertaken during the breeding season (late February to early September inclusive, weather dependent).
- 4.1.14 The potential impact on birds is considered to be **slight adverse** in magnitude resulting in a **neutral** significance for non-breeding birds and **slight adverse** significance of impact for breeding birds, in the absence of mitigation.



Invertebrates

4.1.15 The identified potential loss of small areas of scrub habitats would reduce the extent of available habitats for invertebrate populations on site resulting in a **neutral to slight negative** impact in the absence of mitigation. The clearance works could result in direct mortality and injury to and disturbance of invertebrate species, although this is considered to be **neutral** in terms of magnitude.

4.2 Operational Impacts

4.2.1 No operational impacts are envisaged, other than maintenance of inlet structures and trash screens and the open channel around Drummau road, to ensure these don't become backed up.

5 POTENTIAL MITIGATION AND ENHANCEMENT MEASURES

5.1 Habitats

- 5.1.1 No designated sites will be directly affected by the proposals and indirect impacts both through construction and operation would be managed through construction best practice and appropriate scheme design. Impacts in relation to mobile species associated with these sites would be mitigated through the best practice measures detailed in the section below.
- 5.1.2 There is potential for INNS to be directly affected by the works on site. The proposed works are likely to be within the vicinity of the extensive Japanese Knotweed along the canal and River Clydach, as well as along Drummau and Old Road. Any works within 7m of Japanese Knotweed should follow the correct methodology to reduce or prevent further dissemination of the plant based on the Japanese Knotweed code of practice (Natural Resources Wales) or other appropriate guidance.
- 5.1.3 The majority of the habitats likely to be lost as part of the proposals consist of amenity grassland/scattered scrub and bare ground. These habitats are of negligible ecological and nature conservation value. However, the extent of the loss of these habitats should be reduced as far as possible within the scheme design with retained areas subject to more ecologically friendly management regimes and ecological enhancement measures. It is proposed that any required laydown areas (for storage, culvert head construction, or for welfare units) will be confined to previously cleared areas/hard standing, for example, the car park adjacent to the culvert inlet at Caenant Terrace or areas within the industrial estate where few ecological constraints are apparent.
- 5.1.4 The indirect construction impacts should be addressed through best practice measures including the following:
 - a. Restrictions to night-time working;

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- b. Use of directional and low-level lighting to reduce light spill into adjacent habitats:
- c. Careful placement of compounds, storage areas etc. and use of noise barrier fencing to reduce noise impacts within retained habitats;
- d. Avoidance of re-fuelling and parking of vehicles close to watercourses wherever possible;
- e. Production and implementation of a suitable pollution and sediment management plan;
- f. Provision of spill kits close to high risk areas for rapid deployment in the event of a pollution event;
- 5.1.5 Mitigation for protected species, to reduce the construction impacts listed in Section 4 above, is noted in the further surveys below, as well as the best practice measures.

6 RECOMMENDED FURTHER SURVEYS

6.1 Habitats

6.1.1 Further surveys are not recommended

6.2 Protected Species

- 6.2.1 Species specific surveys should be undertaken following detailed scheme design and impact assessment. These should include:
 - a. Pre-construction surveys for breeding birds are recommended if work is undertaken during the active season (late February to early September inclusive, weather dependent).
 - b. Despite the minimal disruption of the proposed works to the canal and River Clydach, if works are to impact the structure of either a targeted survey for otter holts should be undertaken prior to the works.
 - c. An ecological method statement should be produced detailing the clearance methodology for specific species and methodology for invasive species removal once the scheme design and programme have been finalised, this may include supervision of clearance in areas of dense scrub, where it is not possible to fully survey ahead of works.
- 6.2.2 These surveys should be undertaken by suitably experienced and appropriately licenced ecologists.
- 6.2.3 Further surveys may be necessary depending on the results of the above.

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7 REFERENCES

CIEEM (2022) Guidelines for Ecological Impact Assessment in the U.K and Ireland – Chartered Institute of Ecology and Environmental Management, Winchester

Joint Nature Conservancy Council (1990) Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit Joint Nature Conservancy Council

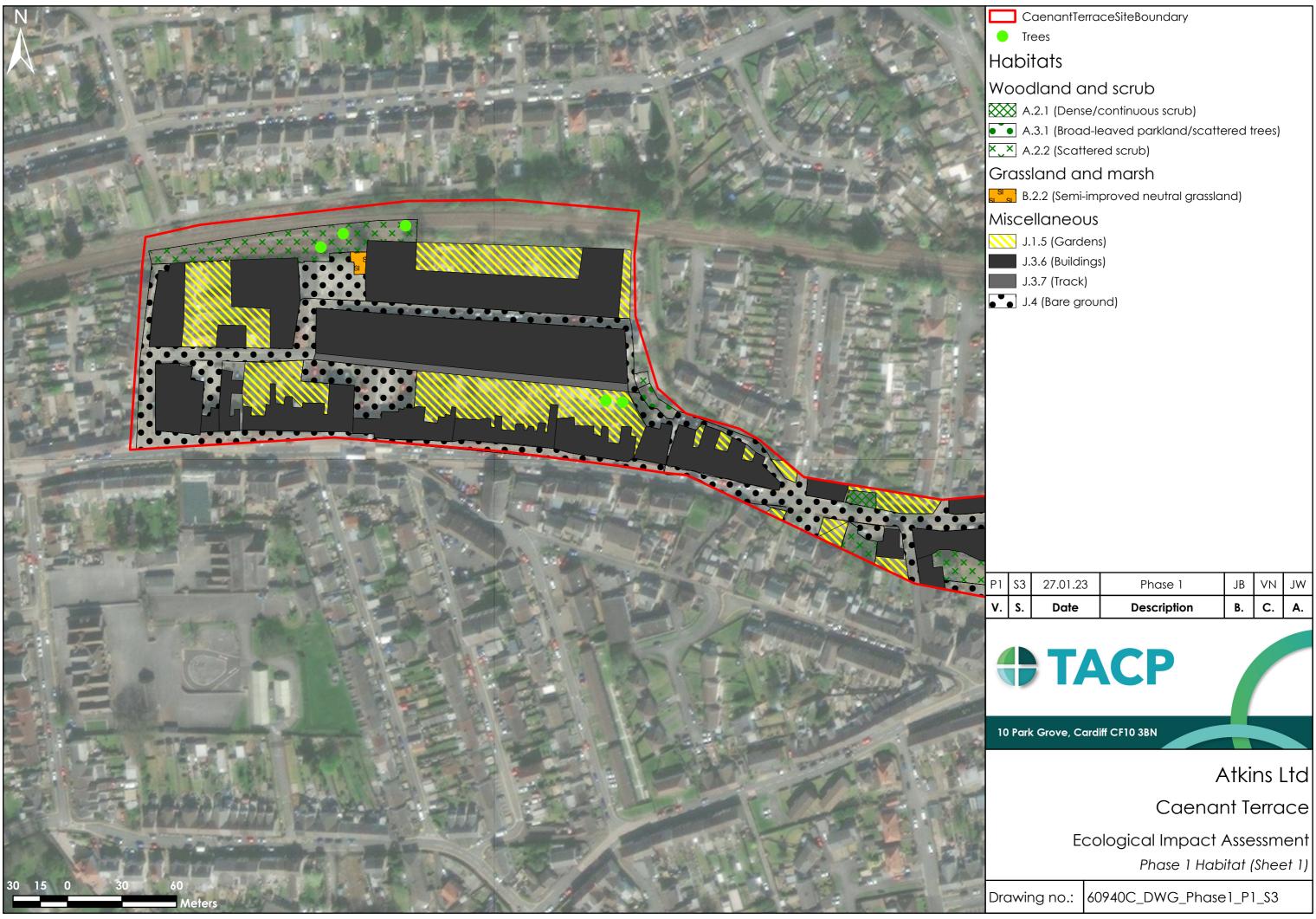
TACP (2022) Caenant Terrace- Update Preliminary Ecological Appraisal

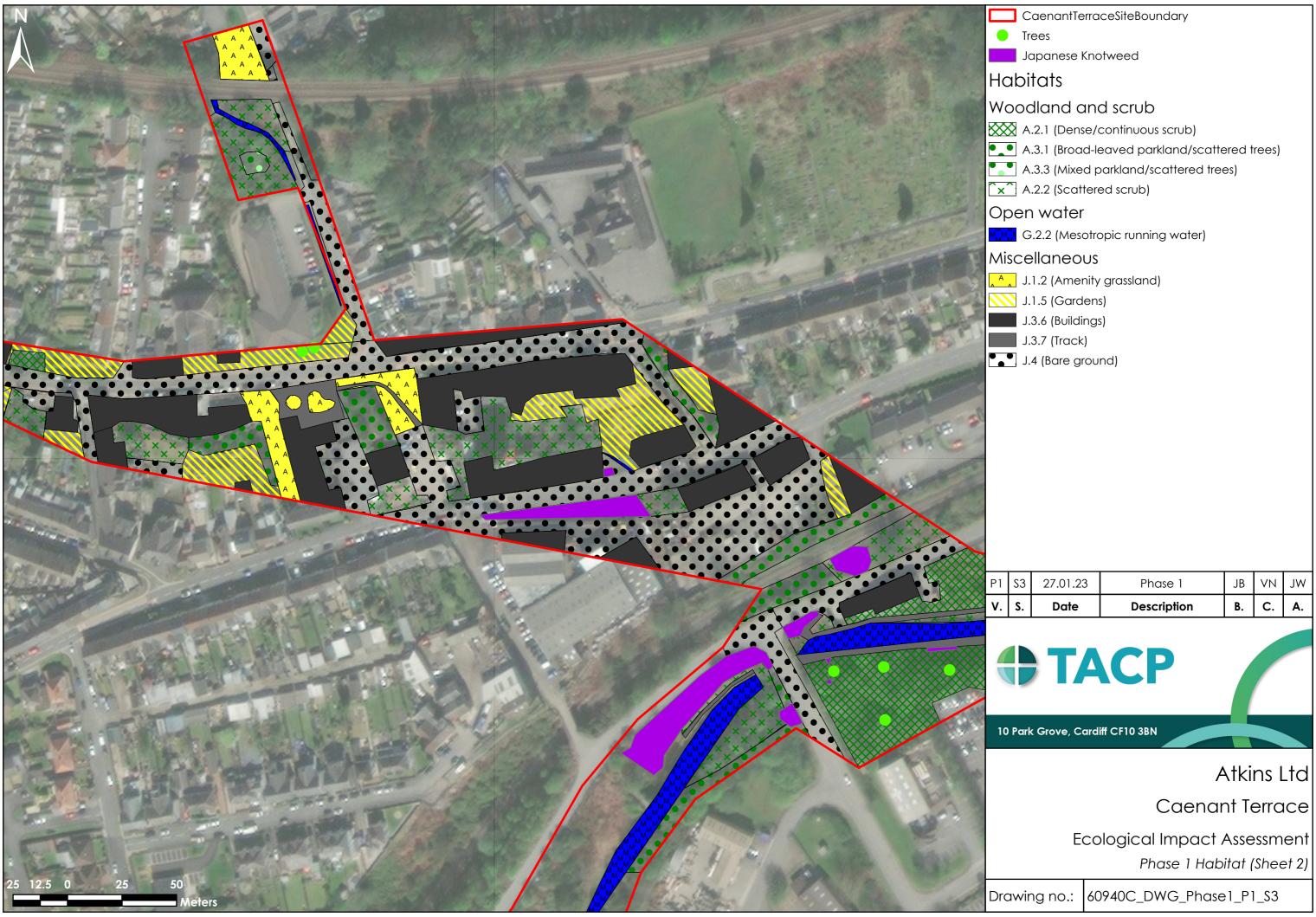


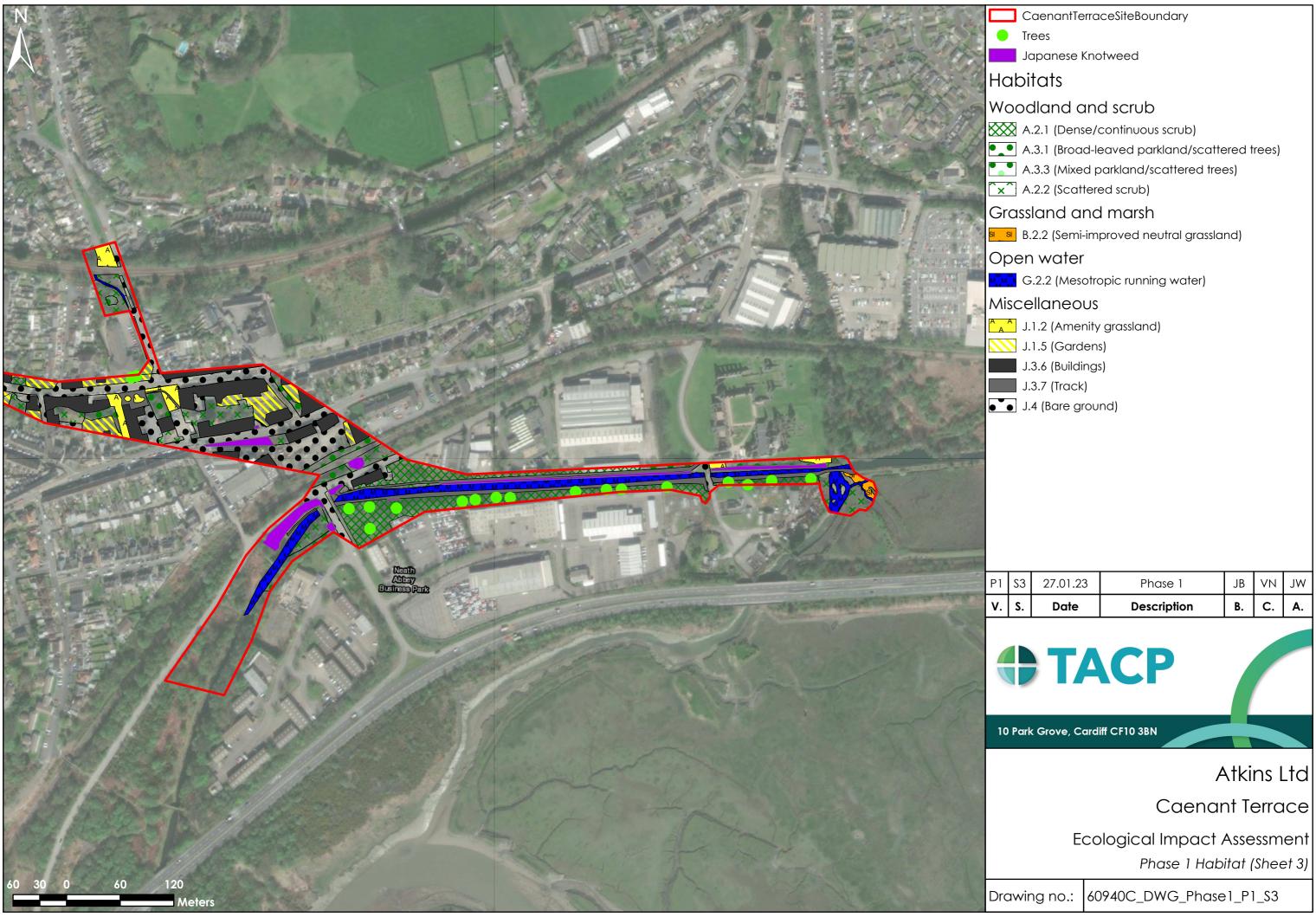
APPENDICES

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Appendix A Phase 1 Habitat Survey Map







Appendix B
Site Photos



Photograph 1 – Stream into Inlet / Culvert at Caenant Terrace



Photograph 2 – Sycamore Tree adjacent to Culvert at Caenant Terrace



Photograph 3 – Silver Birch Trees and Amenity Grassland at junction of Drummau Road



Photograph 4 – Area of scrub adjacent to railway arches on Drummau Road



Photograph 5 – Stepped watercourse on Drummau Road



Photograph 6 – Copse of trees and adjacent scrub on Drummau Road



Photograph 7 – Amenity Grassland and parking between St Johns Terrace and Old Road



Photograph 8 – Stone walled stream into culvert on Old Road



Photograph 9 – Knotweed on embankments – eastern Tennant Canal

Appendix C Proposed Scheme Overview