



PREP Batch
Bury WwTW
Ecological Assessment Report



On behalf of Advance Plus

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Executive Summary

Stantec UK was commissioned by Advance Plus to undertake an ecological assessment and prepare an Ecological Assessment Report (EAR) to inform a planning application for the proposed works at Bury Wastewater Treatment Works (WwTW) (the Site). The proposed works are small in scale and limited in extent. They have been split out into works related to the Planning Application and works that are classed as Permitted Development. The Proposed Development works within this report refer to the works required only for the Planning Application.

To establish the baseline ecological conditions at the Proposed Development area a desk study and field surveys were undertaken in 2020. The desk study confirmed that no statutory or non-statutory designated sites, Habitats of Principal Importance or Ancient Woodland are present within the Proposed Development area.

An extended Phase 1 habitat survey was undertaken on 29th June 2020 which identified only amenity grassland present with the Proposed Development area. This habitat was assessed as being of negligible ecological value. One area of standing water within 250m of the Site (a redundant concrete lined, sludge lagoon) was identified which may provide suitable habitat for breeding amphibians. An eDNA survey (water sample and laboratory analysis to confirm the presence/ likely absence of great crested newt (*Triturus cristatus*) was undertaken in June 2020. A negative result was returned.

The Proposed Development area was considered to be of negligible value to foraging badgers, foraging bats, hedgehog and common terrestrial invertebrates.

Due to the limited ecological value of the site, and the small extent of the works, there will be no significant adverse effects as a result of the Proposed Development. As a consequence, no residual effects are anticipated and no cumulative or in combination effects will arise in relation to ecology as a result of the Proposed Development. No project-specific mitigation is deemed necessary.

In accordance with United Utilities' commitment to incorporate enhancement opportunities where planning permission is required, measures to achieve 10% net gain, primarily through the creation of an area of wildflower grassland within the wider Bury WwTW Site. Other measures could include installation of bird and bat boxes, insect hotels and the opportunity to plant additional native trees, along with the potential to instigate a treatment programme to remove non-native invasive species within the wider WwTW.

These measures are likely to provide biodiversity enhancement to the Proposed Development area and the Site as a whole.

Disclaimer

This Executive Summary contains an overview of the key findings and conclusions. However, no reliance should be placed on any part of the executive summary until the whole of the report has been read.

1 Introduction

1.1 Introduction

- 1.1.1 Stantec UK was commissioned by Advance Plus to undertake a Preliminary Ecological Appraisal (PEA) of Bury Wastewater Treatment Works (WwTW), hereafter referred to as “the Site”, and the surrounding environs extending out to a 30m radius from the Site boundary. As part of this ongoing commission, Stantec then subsequently undertook an Ecological Assessment of an area of Proposed Works (hereafter referred to as “the Proposed Development Works” located within the Site.
- 1.1.2 This report presents ecological baseline information for the Site including the results of a desk study and an extended Phase 1 habitat survey undertaken on 29th June 2020. In addition, all suitable waterbodies within a 250m radius of the Site were subject to an environmental DNA survey in June 2020 (eDNA) to determine the presence/likely absence of great crested newts (GCN) (*Triturus cristatus*). This report also provides an evaluation and impact assessment (based on a finalised scheme design) for the Proposed Development works, including details of committed ecological avoidance, compensation, mitigation measures and enhancement opportunities for the development.

1.2 Site Location

- 1.2.1 The Site is located on the southern outskirts of the town of Bury, Greater Manchester, as shown on **Figure 1**. The centre of the Site is located by National Grid Reference (NGR) 380249, 407866. The Site is bordered to the north and west by the River Irwell, with residential housing beyond. To the south east is agricultural grazing land, to the east is residential housing and to the south is the solar farm relating to the WwTW.

1.3 Proposed Development

- 1.3.1 This work is part of a package of sites (PREP batch) delivered through Advance Plus on behalf of United Utilities (UU), for which a Preliminary Ecological Appraisal has already been undertaken in summer 2020 to inform future delivery of the Environment Agency (EA), Water Industry National Environmental Programme 3 (WINEP3) outputs for a future population growth based on a 2035 design horizon. The driver at Bury WwTW is to achieve a final effluent quality of 0.3mg/l ortho-phosphate on an annual average basis.
- 1.3.2 The current proposed works at Bury WwTW are illustrated on drawings shown in **Appendix A**, and the proposed works are small in scale and limited in extent to the following:

Planning Application Works

- Proposed Primary Settlement Tank Motor Control Kiosk (PST MCC kiosk) which is approximately 7.7m wide X 3.2m deep X 2.8m high, located on a platform 1.2m above ground, with associated stairs and handrail.

Permitted Development Works¹

- Refurbishment of existing primary settlement tanks (PSTs) and ferric dosing kiosk
- Cable and dosing ducting will be installed to connect new and existing infrastructure and the proposed power feed will be from an existing substation. Proposed blind tank,

¹ Much of the upgrade project scope is to be carried out under United Utilities permitted development rights for operational land, in accordance with Part 13, Class B (f) of the Town and Country Planning (General Permitted Development) Order 2015, and therefore does not require formal planning permission.

secondary dosing kiosk, primary ferric point of application and eye bath kiosk, three secondary ferric point of application and eye bath kiosks and the extension of the existing delivery bund.

- 1.3.3 “Proposed Development works” within this report refer only to the works falling within the remit of the Planning Application, and not those works that fall under Permitted Development rights, as shown on the Site Layout Plan within **Appendix A**.

1.4 Aim and Scope of Document

- 1.4.1 This report sets out the ecological assessment of the proposed development. As such, the objectives of this report are to provide:
- i. outline survey methodologies and relevant survey guidance;
 - ii. a description of the relevant ecological baseline and identify any features of potential ecological importance;
 - iii. an assessment of impacts associated with the construction and operation of the proposed development, taking into account the baseline and any effects on important ecological features; and,
 - iv. any required ecological mitigation, compensation and / or enhancement measures in line with applicable ecological legislation/ planning policy.

2 Methods

2.1 Overview

- 2.1.1 This section sets out the methodology used to inform the assessment in relation to ecological features present within the Site. This was informed by a desk study (review of existing ecological baseline information available in the public domain and information held by relevant third parties) and an extended Phase 1 habitat survey. In addition, all ponds / suitable waterbodies within a 250m radius of the Site were subject to an eDNA survey to determine the presence/likely absence of GCN. The survey methods are described below along with any limitations experienced in relation to these works.

2.2 Desk Study

- 2.2.1 A desk-based review was conducted using third party and open-access resources to identify relevant existing ecological data in relation to the Site and its surrounds. This included consideration of:
- Information relating to statutory designated areas for nature conservation within a 2km radius of the Site (extended to 10 km for European or internationally designated areas), as held on the Multi-Agency Geographic Information for the Countryside (MAGIC) website;
 - Natural England's Impact Risk Zones (IRZs) covering the Site as held by MAGIC;
 - Non-statutory designated areas within 2km;
 - Habitats of Principal Importance (HPI) as listed in accordance with Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006), and ancient woodland parcels within a 2 km radius of the Site as held by MAGIC;
 - A data search from Greater Manchester Local Record Centre (GMLRC) including the following records held within 2km of the site boundary;
 - Non-statutory designated sites (Sites of Biological Importance (SBI));
 - Protected and notable species;
 - Non-native invasive species;
 - Aerial photography and Ordnance Survey (OS) maps of the Site and its surrounds, including to search for ponds within 250m of the Site; and
 - Relevant National and Local Planning Policy.

2.3 Field Survey

Extended Phase 1 Habitat Survey

- 2.3.1 An extended Phase 1 habitat survey was undertaken within the Site and all accessible land within a 30m radius of the Site boundary. Habitats were identified and mapped following the standard Phase 1 habitat survey methodology (JNCC, 2010)².
- 2.3.2 This uses a system of codes to describe different habitat types based on the dominant vegetation present. The dominant plant species were recorded, and habitats were classified according to their vegetation types. Where appropriate, consideration was given to whether habitats qualify, or could qualify, as a Habitat of Principal Importance under the Natural Environment and Rural Communities Act 2006 (NERC), following habitat descriptions published by the Joint Nature Conservation Committee (JNCC, 2008)³.
- 2.3.3 The survey was extended to give particular consideration to the potential of the habitats present to support protected or otherwise notable species in accordance with published guidance by the Chartered Institute of Ecology and Environmental Management (CIEEM) for Preliminary Ecological Appraisal (CIEEM, 2017)⁴. Effort was also made to search for and record incidental evidence of protected/notable species where possible (e.g. bird species using the site at the time of survey).
- 2.3.4 The extended Phase 1 habitat survey was undertaken on 29th June 2020 which is an optimal time of year to undertake such a survey. Weather conditions during the survey were reasonable, with light rain but no wind.

Great Crested Newt eDNA Survey

- 2.3.5 The survey identified one area of standing water within 250m of the Site (a redundant concrete lined, sludge lagoon) which may provide suitable habitat for breeding amphibians. An eDNA survey (water sample and laboratory analysis to confirm the presence/ likely absence of great crested newt (*Triturus cristatus*) was undertaken in June 2020. Water samples were taken following the recommended protocol by Natural England (Biggs et al, 2014)⁵ and were sent to SureScreen Scientifics for subsequent laboratory analysis.

2.4 Personnel

- 2.4.1 The surveys were undertaken and overseen by a suitably qualified and experienced Senior Consultant Ecologist who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), and has worked as a professional ecologist for more than 20 years and has extensive experience of undertaking extended Phase 1 Habitat surveys and protected species surveys in a range of habitats across the UK. A Consultant Ecologist, who is a Graduate member of CIEEM, assisted with the survey. Both surveyors have extensive experience of undertaking both habitat assessments for great crested newts as well as presence/absence and population assessment surveys. Both surveyors hold licences to survey for great crested newts and have undertaken training in the collection of water samples for eDNA analysis.

² Joint Nature Conservation Committee (JNCC). 2010. Handbook for Phase1 habitat survey. JNCC, Peterborough

³ UK Biodiversity Action Plan; Priority Habitat Descriptions. BRIG (ed. Ant Maddock) 2008. (Updated Dec 2011)

⁴ CIEEM. (2017) Guidelines for Preliminary Ecological Appraisal. Version: December 2017. Chartered Institute for Ecology and Environmental Management, Winchester. Available online: https://www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Jan2018_1.pdf

⁵ Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford

- 2.4.2 All survey work and reporting were undertaken by experienced and qualified ecologists, in accordance with the Code of Professional Conduct of CIEEM.

2.5 Evaluation and Impact Assessment Approach

- 2.5.1 The importance of ecological features potentially affected by the proposed development were evaluated with regard to CIEEM's Guidelines for Ecological Impact Assessment in the UK and Ireland (hereafter referred to as 'the CIEEM Guidelines') (CIEEM, 2018)⁶. The CIEEM Guidelines recommend that valuation of ecological features associated with a site is made with reference to a geographical framework, i.e. a feature may be of importance within the following context:
- International and European;
 - National (England);
 - Regional/ County (Manchester);
 - Borough (Bury); and
 - Local (Redvale Ward).
- 2.5.2 Features of less than Local value may still be of some limited value such as at the Site or zone of influence⁷ (Zol)level only.
- 2.5.3 The evaluation process allows the identification of 'Important Ecological Features' which, in the context of this assessment were deemed to be any feature considered to be of importance within the 'Local' context or greater. All 'Important Ecological Features' were carried forward for detailed impact assessment, whilst other identified features (i.e. those assessed as being of less than Local importance) were excluded from further assessment given that impacts on such features are considered insignificant regardless of the nature or magnitude of the potential impact.
- 2.5.4 Where protected or notable species of less than 'Local' importance were nonetheless present, measures to ensure compliance with relevant wildlife legislation have been provided.
- 2.5.5 Ecological input has been provided during the design process for the proposed development; and as such, the proposed development provides 'embedded avoidance and mitigation' for ecology. The impact assessment therefore considers the impacts of the scheme and assess the ecological effects taking account the embedded measures. This approach is in accordance with the CIEEM Guidelines which promotes the assessment of effects of the mitigated scheme only, where there is high confidence that integrated mitigation will be implemented; as in this situation.

⁶ CIEEM, 2018. CIEEM's Guidelines for Ecological Impact Assessment in the UK and Ireland

⁷ The 'zone of influence' for a project is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities (CIEEM, 2018).

- 2.5.6 Use of the terms 'impact' and 'effect' within the impact assessment follow the definitions as defined within CIEEM Guidelines (CIEEM, 2018). An 'impact' is defined as an action that results in changes to an ecological feature e.g. when a proposed development requires the removal of a tree with bat roost features. An 'effect' is the outcome to an ecological feature from an impact e.g. the effects on a bat population from the loss of a tree with bat roost features. The construction and operation impacts of the Proposed Development and associated effects on important ecological features are based on the following plans within **Appendix A** Drawing References : 80061824-01-ADP-BURYZ-97-DR-T-10001, 80061824-01-ADP-BURYZ-97-DR-T-10004 and 80061824-01-ADP-BURYZ-97-DR-T-10002.
- 2.5.7 The evaluation, impact assessment and application of the mitigation hierarchy have been undertaken in line with CIEEM best practice guidelines and applicable legislation, planning and biodiversity policy as outlined in **Appendix D.**

2.6 Limitations to Methodology

- 2.6.1 Although records secured through the desk study and supplied by third parties provide useful background information for initial ecological assessment, they often comprise individual records supplied by members of the public or are the result of ad hoc surveys. The desk study information can therefore help to further inform the likelihood of species being present in the area but should not be relied upon to definitively determine presence or absence of individual species. For this reason, an ecological assessment is always informed by both desk study and information gathered during field survey.
- 2.6.2 Full access was available to Site, however there was access restrictions to some of the area extending 30m from the Site boundary. There was no access to the banks of the River Irwell due to dense giant hogweed (*Heracleum mantegazzianum*) and steep banks, although it was viewed through the fence in multiple locations. No access was available to the residential housing and agricultural land to the east of the site. These were however viewed from public access and it is considered that this will have no bearing on the results of the survey.

2.7 Report Qualification

- 2.7.1 All survey work was undertaken in accordance with the best practice methodologies current at the time of commissioning. Site circumstances, scientific knowledge or methodological requirements can change during the course of a project, and these external factors may impact on the scope of subsequent work requirements.
- 2.7.2 All ecological surveys have an expected validity period owing to the tendency of the natural environment to change over time. This validity period varies from receptor to receptor, and is also dependent on the degree of change in a site's management and overall landscape ecology. Where the potential for change is considered to be relevant to the site, this is highlighted in the appropriate section.
- 2.7.3 This report does not purport to provide detailed, specialist legal advice. Where legislation is referenced (see **Appendix D**), the reader should consult the original legal text, and/or the advice of a qualified environmental lawyer.

3 Ecological Baseline

3.1 Overview

- 3.1.1 The section below summarises the findings of the desk study and field surveys undertaken within the Site.
- 3.1.2 The potential for protected and notable species within the Proposed Development area within the Site and immediate surrounding area is then discussed based on the results of the field survey, other ecological surveys undertaken within the Site (see introduction of this report) and species records supplied as part of the desk study. Only recent records (<10 years old) have been considered where supplied by GMLRC, as records from prior to this date are of limited relevance (given the time that has passed).
- 3.1.3 An evaluation is set out for ecological features in the context of the geographic frame of reference defined in Section 2.5.1.
- 3.1.4 Where a feature is not evaluated as being an 'important ecological feature', and/or unlikely to be affected by the proposals, it is screened out of further detailed consideration in this report. Where protected species (of less than 'Local' importance) are nonetheless present, measures to enable compliance with relevant wildlife legislation have also been included. A summary of relevant legislation and planning policy is provided as applicable in **Appendix D**

3.2 Statutory Designated Areas

- 3.2.1 The locations of statutory designated areas are shown on **Figure 2**. There are no internationally or nationally designated areas within or adjacent to the Site. There are no internationally designated areas within the 10km radius.
- 3.2.2 There are no nationally designated areas within the 2km radius. The closest nationally designated area is Ashclough Site of Special Scientific Interest (SSSI), located approximately 3.8km west of the Site. The Site is located within the SSSI Impact Risk Zone (IRZ) for this SSSI. The IRZ is a tool used to determine whether planning applications are likely to impact European or nationally designated areas, and whether further consultation is required between and LPA and Natural England (NE). The nature of the Proposed Development works (planning application works only) is not a development type identified by NE as likely to result in a risk to the condition of the corresponding SSSI, and hence does not appear to require consultation with NE although this should be agreed with the LPA upon consultation.
- 3.2.3 Therefore, statutory designated areas will not be considered further in this assessment.

3.3 Non-Statutory Designated Areas

- 3.3.1 The locations of non-statutory designated areas are shown on **Figure 3**. There are 15 non-statutory designated areas (Sites of Biological Importance (SBI)) within the 2km radius of the Site.
- 3.3.2 The closest is Swan Lodge SBI, located approximately 360m north west of the Site. This SBI is however separated from the Site by the River Irwell and residential housing. Sailor's Brow and Springwater Park SBI is located approximately 700m south but this is also separated from the site by the River Irwell and the River Roch.
- 3.3.3 The other SBI's are located over 1km from Site and there is no connectivity between them and the Site. These SBIs are considered to be of **County** value for nature conservation.

- 3.3.4 Swan Lodge and Sailors Brow and Springwater Park SBI's are separated from the Site and the remaining SBI's are located over 1km from the Site, therefore these SBIs will not be considered further in this assessment.

3.4 Habitats

- 3.4.1 Although areas of deciduous woodland and lowland fen were identified during the desk study using the online UK Government database for Habitats of Principal Importance (HPI) (<https://magic.defra.gov.uk>) as shown in **Figure 4**, no HPI were identified to be present on Site during the extended Phase 1 habitat survey.
- 3.4.2 The River Irwell is situated offsite but adjacent to the northern and western Site boundary. This feature is likely to qualify as an HPI depending on its hydrological quality and potential presence of species such as otter (*Lutra lutra*). The River Irwell is assessed as being of up to **National** importance, however it is outside of the Zone of Influence and therefore will not be considered further in this assessment.
- 3.4.3 The solar farm is located in the location that was highlighted as being lowland fen HPI in the desk study.
- 3.4.4 The Site is mapped as part of the National Habitat Network. This is described by Natural England (NE) as a national overview of the distribution of habitat networks. NE hope that these maps will help to stimulate local engagement with partners and to agree local priorities and identify where action might help build more ecologically resilient ecosystems across landscapes. This may also tie in with the 'Biodiversity opportunity areas' or 'ecological enhancement areas' as highlighted in the Draft Bury Local Plan consultation documentation.
- 3.4.5 The locations and extent of habitats recorded during the extended Phase 1 habitat survey of the entire Site is shown on **Figure 5**. Target notes are provided in **Appendix B** for all semi-natural habitats that are deemed either ecologically important or have the potential to support protected species/Species of Principal Importance. Locations of target notes are also shown on **Figure 5**.
- 3.4.6 The outer northern and western area of the Site and the wider 30m survey area comprised habitat of greater biodiversity (broadleaved plantation woodland, scattered trees, dense scrub, standing water, running water (River Irwell, which is also classed as HPI), tall ruderal and marshy grassland). The field survey found the majority of the Site comprises species-poor semi-improved grassland, amenity grassland, hardstanding, and existing infrastructure; habitats considered to be of negligible ecological value.
- 3.4.7 The area in which the Proposed Development works are to be situated, comprises of amenity grassland, as shown on **Figure 5**. This amenity grassland is considered to be of **negligible** ecological value. The area of amenity grassland to be replaced with the kiosk is approximately 25m².

3.5 Amphibians

- 3.5.1 The data search from GMLRC returned records of great crested newt from within a 2 km radius of the Site, the closest being located c. 800m south, with no connectivity to the Site (separated by River Irwell and River Roch). The other records are all located c. 1.9km west and east and are separated from Site by residential housing and rivers. There are also records of common toad (*Bufo bufo*) within the 2km search radius.
- 3.5.2 The desk study review of OS mapping identified one waterbody (TN12) within 250m of the proposed development site, which is considered as providing suitable habitat for breeding amphibians. The waterbody is situated within the Site on the southern boundary, the location is shown on **Figure 5**. This is a redundant concrete lined, sludge lagoon with an unknown water

depth. It has shallow banks and is unshaded. It is surrounded by dense scrub, tall ruderal, giant hogweed, and marginal vegetation including: common reed (*Phragmites australis*), reed canary-grass (*Phalaris arundinacea*), bulrush (*Typha latifolia*), soft rush and willow sp. Waterfowl were present at the time of the survey.

- 3.5.3 Within the Site, suitable terrestrial habitat to support great crested newts and other common amphibians includes areas of dense scrub, broadleaved plantation woodland, marshy grassland, semi-improved grassland, and areas of tall ruderal.
- 3.5.4 An eDNA survey to assess for the presence of great crested newt was undertaken with water samples taken from TN12. The samples came back as negative, indicating that great crested newts are absent. The full results are included in **Appendix C**. It is therefore considered that great crested newts are absent and are therefore not considered further within this assessment.
- 3.5.5 The amenity grassland habitat within the Proposed Development area is not considered suitable to support great crested newts or other common amphibians. Therefore amphibians will not be considered further in this assessment.

3.6 Badger

- 3.6.1 The data search from GMLRC returned seven records of badger (*Meles meles*) from within a 2km radius of the Site. The nearest evidence of badger was recorded c. 200m north east of Site. Two badger setts were recorded within Springwater Park c. 500m south of Site, however this area is separated from Site by the River Irwell and the River Roch.
- 3.6.2 No evidence of badger was found during the survey, however the steep woodland along the banks of the River Irwell outside of Site could not be fully accessed, however no badger tracks led into this area and it is therefore considered that badger are likely absent from this area at that time. Habitat suitable for badgers on Site includes the broadleaved plantation woodland, dense scrub, and semi-improved grassland.
- 3.6.3 The amenity grassland within the Proposed Development works area is considered to offer limited suitable foraging habitat for badger. Therefore the Proposed Development works area is considered to be of **negligible** value to badgers.

3.7 Bats

- 3.7.1 The data search from GMLRC returned numerous records of bats from within the 2km search area. The data included records of common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auratus*), noctule (*Nyctalus noctula*), and daubenton's (*Myotis daubentonii*) bat species. The majority of records within 2km are roosts recorded by South Lancashire Bat Group within houses in the suburban areas in proximity to the Site. The closest recorded roosts are approximately 60m west and 170m north (both common pipistrelle). There is however good connectivity (tree lined watercourse, woodland, and hedgerow bordered fields) between the suburban areas with recorded roosts in houses and the Site.
- 3.7.2 The field survey identified numerous buildings (TNs 1, 4, 5, 14, 15, 16, 17 and 18) within the Site with potential access and egress points for bats. Potential roost features recorded include missing mortar in brickwork, and gaps under fascia's, roof felting, under roof lines. The field survey also identified numerous trees (TNs 3, 9, 10, 11), within woodland at TN6 within the Site and along the banks of the River Irwell with potential roost features, and these include fissures, damaged/dead limbs, woodpecker holes and cavities. The Site and the wider survey area also provide suitable foraging and commuting habitat including woodland, scattered trees, scrub, marshy grassland, semi-improved grassland, standing water and running water.

- 3.7.3 There was no suitable bat roosting habitat present within the Proposed Development working area. Therefore roosting bats are considered to be absent and are therefore not considered further within this assessment. The amenity grassland present is considered to offer limited suitable foraging habitat. Therefore the area for the Proposed Development is considered to be of **negligible** value to the local bat population.

3.8 Breeding Birds

- 3.8.1 Numerous records of bird species were returned from the GMLRC data search from within the 2km search area including Schedule 1 species; bittern (*Botaurus stellaris*), black redstart (*Phoenicurus ochruros*), hobby (*Falco subbuteo*), little ringed plover (*Charadrius dubius*), peregrine (*Falco peregrinus*), scaup (*Aythya marila*), common Scoter (*Melanitta nigra*), kingfisher (*Alcedo atthis*) and barn Owl (*Tyto alba*). The majority of these recordings were from the land around Elton and Withins Reservoir which are located c. 1.5km north west of Site.
- 3.8.2 Two records of kingfisher were recorded adjacent to Site within the 30m survey area along the River Irwell with one recording to the north and one to the west of Site.
- 3.8.3 The woodland, scattered trees, dense scrub, tall ruderal and one building (TN14) provide suitable nesting habitat for a variety of bird species. In addition, the riverbank recorded in the wider 30m radius survey area also provides suitable habitat for nesting birds.
- 3.8.4 There is no suitable habitat to support breeding birds within the Proposed Development works area. The amenity grassland will provide limited foraging habitat. Therefore breeding birds are considered to be absent in this area and are therefore not considered further within this assessment.

3.9 Otter

- 3.9.1 The data search from GMLRC returned two records of otter (not specified whether it was a holt or sighting) from within the 2km search area. The closest record is approximately 300m to the north of Site along the River Irwell with good connectivity.
- 3.9.2 Habitat suitable to support otter is present within the 30m wider survey area of the Site in the form of the River Irwell, and adjacent dense scrub and woodland, which may provide otter with suitable commuting resting/laying up areas and potential holt habitat.
- 3.9.3 There is no suitable habitat to support otter within the Proposed Development works area. as it comprises solely amenity grassland Therefore otters are considered to be absent and are therefore not considered further within this assessment

3.10 Reptile

- 3.10.1 The data search from GMLRC returned one record of common lizard (*Zootoca vivipara*) from within a 2km radius of the Site. The nearest recording is c. 1.05km south of Site, however this area is separated from Site by the River Irwell and the River Roch.
- 3.10.2 There is limited potential habitat for reptiles identified on Site which includes the semi-improved grassland, edges of dense scrub and the broadleaved woodland.
- 3.10.3 There is no suitable habitat to support reptiles within the Proposed Development works area, as it comprises solely amenity grassland. Therefore reptile are considered to be absent and are therefore not considered further within this assessment.

3.11 Water Vole

- 3.11.1 The data search from GMLRC returned two records of water vole (*Arvicola amphibius*) from within a 2km radius of the Site. The nearest recording is for a pond located within Springwater Park c. 500m south of Site, however this area is separated from Site by the River Irwell and the River Roch.
- 3.11.2 The River Irwell within the wider survey area is considered unsuitable for water vole due to the fast flow and limited marginal vegetation.
- 3.11.3 There is no suitable habitat to support water vole within the Proposed Development works area as it comprises solely amenity grassland. Therefore water vole are considered to be absent and are therefore not considered further within this assessment.

3.12 Other Notable Species

- 3.12.1 There are three records of hedgehog (*Erinaceus europaeus*) provided in the results of the GMLRC data search, with the closest being approximately 900m north west of Site, however all recorded locations are separated from Site by residential housing and rivers.
- 3.12.2 Suitable habitat for hedgehogs is present on Site which includes broadleaved woodland, dense scrub, and semi-improved grassland.
- 3.12.3 The amenity grassland present within the Proposed Development area is considered to offer limited suitable foraging habitat only for hedgehog. Therefore the area for the Proposed Development is considered to be of **negligible** value to the local hedgehog population.

3.13 Terrestrial Invertebrates

- 3.13.1 Data from GMLRC included a number of records of Section 41 (Species of Principal Importance under the NECR Act) moths from within the 2km search area radius. The closest record is located within Springwater Park c. 500m south of Site.
- 3.13.2 The area of poor semi-improved grassland in the north of the site contained beehives (TN7). The broadleaved plantation woodland dense scrub, and scattered trees is considered to offer suitable habitat to a range of common invertebrate species.
- 3.13.3 The amenity grassland present within the Proposed Development area is considered to offer limited habitat for common terrestrial invertebrates. Therefore the area for the Proposed Development is considered to be of **negligible** value to the local terrestrial invertebrate population.

3.14 Non-Native Invasive Species

- 3.14.1 The data search from GMLRC returned no records of non-native invasive species from within the 2km search area.
- 3.14.2 Within the extended 30m boundary, Himalayan balsam and giant hogweed was recorded on the banks of the River Irwell (at TN2).
- 3.14.3 Non-native invasive species recorded on Site include Himalayan balsam (within the woodland at TN6) and Japanese knotweed (in the woodland at TN6 and in the poor semi-improved grassland at TN8) and giant hogweed (dense areas within the woodland (TN6) and around the lagoon (TN12)). There was evidence of treatment around the site.

- 3.14.4 No non-native invasive species were present within the Proposed Development works area or surrounding 50m area. Therefore non-native invasive species are considered to be absent at this time and are therefore not considered further within this assessment.

3.15 Summary of Results and Evaluation

- 3.15.1 A summary of the above-detailed results and evaluation linked to the Proposed Development works area only is provided in Table 1 below. Those identified as 'Important' in accordance with the methodology outlined previously (i.e. those of importance within the local context or greater) are shown in bold.

Table 1: Results and Evaluation Summary

Ecological Feature	Importance (Geographic Frame of Reference)
Statutory Sites	Absent
Non-Statutory Sites SBI's	County
River Irwell	Up to National
Habitats Amenity Grassland	Negligible
Amphibians	Absent
Badger	Negligible
Bats - Roosting	Absent
Bats – Foraging	Negligible
Breeding Birds	Absent
Otter	Absent
Reptiles	Absent
Water Vole	Absent
Other Notable Species Hedgehog	Negligible
Terrestrial Invertebrates	Negligible
Non-native Species	Absent

- 3.15.2 Due to the distance from the Proposed Development works area and the two SBIs along with no direct or indirect impacts for the River Irwell, they are therefore not considered further in this assessment. As are all other ecological features that are either considered absent from the Proposed Development works area or of negligible ecological value.

3.16 Future Baseline

- 3.16.1 In the absence of development and assuming the Site is not subject to a significant change in management it is likely the amenity grassland within the Proposed Development works area will

continue to be managed in the same way and therefore will remain as being of negligible ecological value.

4 Ecological Impact Assessment and Mitigation

4.1 Overview

- 4.1.1 Ecological input has been provided as the design of the Proposed Development has evolved; and as such, the Proposed Development includes avoidance measures, and following the mitigation hierarchy would, if required continue to consider embedded mitigation for ecology, and further mitigation measures, as described in the section below.
- 4.1.2 Taking into account avoidance measures, and the embedded mitigation for ecology, the ecological assessment then considers the impacts and assess the effects of the Proposed Development on Important Ecological features, and other features to ensure legislative compliance, taking these measures into account. This approach is in accordance with the CIEEM Guidelines which promotes the assessment of effects of the mitigated scheme only, where there is high confidence that integrated mitigation will be implemented; as in this situation.

4.2 Inherent Design and Embedded Ecological Mitigation

- 4.2.1 Ecological input has been provided as the design of the Proposed Development has evolved; and as such, the Proposed Development includes avoidance measures and provides embedded mitigation for ecology.
- 4.2.2 The Proposed Development has been designed to take in to account the following measures inherent within the scheme design:
- The Proposed Development is to be sited within an area of amenity grassland considered to be of negligible ecological value, so avoiding any habitats or features of Ecological Importance.
 - General environmental protection measures should be implemented during the construction phase. Such measures include best environmental practice guidance outlined in the Environment Agency's Pollution Prevention Advice and Guidance (Environment Agency, 2007) (now archived) and those outlined by the Construction Industry Research and Information Association guidance (CIRIA, 2015):
 - o Cover any open holes, or install mammal ladders or earth ramps in any open excavations at the end of each day to prevent animals from becoming trapped;
 - o Cap off any open pipes at the end of each day;
 - o Keep all fuel and other harmful substances in a locked area;
 - o Ensure any spillages are treated with spill kits; and
 - o Night work should be avoided where possible, and any flood lighting should face away from the Site boundaries and the River Irwell.

4.3 Impacts likely to be associated with Proposed Development

- 4.3.1 As there are no Important Ecological Features associated with the Proposed Development works, there will be no significant adverse effects predicted on any Important Ecological Feature associated with the Proposed Development, during either construction or operation. The nature of the proposed construction works and operations is such that there are no indirect impact pathways on ecological features such as the River Irwell or SBIs outside the immediate 50m ecological Zol.

4.4 Summary

- 4.4.1 There are no Important Ecological Features within the Zone of Influence for the Proposed Development area, as it comprises only a small area of amenity grassland, with negligible potential to support protected / notable species. Therefore, there is also no requirement to undertake a detailed impact assessment for any of the ecological features (in accordance with CIEEM Guidelines), as there can be no significant potential effects. Furthermore, no specific mitigation measures are deemed necessary.
- 4.4.2 Given the above, there will be no significant adverse effects predicted on any Ecological Feature associated with the Proposed Development. As a consequence, no residual effects are anticipated and no cumulative or in combination effects are likely to arise in relation to ecology as a result of the Proposed Development.

5 Enhancement and Management

5.1 Ecological Enhancement

- 5.1.1 National Planning Policy Framework (NPPF) (2019) states that the planning system should 'contribute to and enhance the natural and local environment by minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.
- 5.1.2 Following the issue of the NPPF, all planning decisions should aim to maintain and enhance, restore, or add to biodiversity conservation interests. The Government also plans to mandate Biodiversity Net Gain (BNG) (10%) through the Environment Bill, to secure a positive impact on biodiversity through development. For the elements of works under permitted development, no planning policy would be directly applicable, however being a public body, United Utilities is subject to the Natural Environment and Rural Communities Act (NERC Act), meaning they have a duty to consider biodiversity when discharging their duties.
- 5.1.3 In line with United Utilities' responsibility to conserve and enhance the natural environment, consideration must be given to retain, protect and maximise opportunities for enhancement. This could also include enhancing habitat(s) or creating habitat(s) in order to connect fragmented/isolated habitat(s) to create resilient ecological networks on the landscape scale in accordance with NE National Habitat Network.
- 5.1.4 The Proposed Development will result in the loss of 0.002464 ha of amenity grassland beneath the footprint of the kiosk. For all elements where planning permission is required, United Utilities has a commitment to achieve a 10% net gain in biodiversity.
- 5.1.5 Using the DEFRA Metric 2.0 calculator, 10% BNG will be achieved through an additional overseeding of 0.001 ha of amenity grassland at a location to be agreed within the wider Bury WwTW site. Following a preliminary review of the DEFRA Metric 2.0 calculation this could result in an overall gain of approx. 0.001 ha of new grassland habitat; other neutral grassland (DEFRA Metric 2.0 habitat category "*Grassland – Other Neutral Grassland*"), and could result in approx. 19% net gain in biodiversity. This will be confirmed when the biodiversity metric calculation has been completed and the area of over seeding agreed with United Utilities. Grassland overseeding is an industry standard mitigation measure and is considered both deliverable and ecologically relevant to the WwTW site and setting.
- 5.1.6 Other enhancement opportunities could also include installation of bird and bat boxes, insect hotels and the opportunity to plant additional native trees along with the potential to instigate a treatment programme to remove non-native invasive species within the wider WwTW. This should be undertaken in conjunction with consultation with the LPA Ecologists to ensure that they agree with the approach developed.

5.2 Ecological Management

- 5.2.1 The proposed ecological management strategy will be implemented through a specific detailed Landscape Ecology Management Plan (LEMP) or incorporating the additional measures into the existing United Utilities Site management plan

5.3 Summary

- 5.3.1 Subject to the successful implementation of the avoidance measures and enhancement measures detailed above, and given the current negligible ecological value of the area where the Proposed Development works are to be undertaken, it is expected that the Proposed Development will achieve overall net gain in biodiversity.

6 Conclusion

- 6.1.1 Stantec UK was commissioned by Advance Plus to undertake a Preliminary Ecological Appraisal (PEA) of Bury Wastewater Treatment Works (WwTW), hereafter referred to as “the Site”, and the surrounding environs extending out to a 30m radius from the Site boundary. As part of this ongoing commission, Stantec then subsequently undertook an Ecological Assessment of an area of Proposed Works (hereafter referred to as “the Proposed Development Works” located within the Site.
- 6.1.2 The desk study confirmed that no statutory or non-statutory designated Sites are present within the Proposed Development area.
- 6.1.3 The field survey was undertaken on the 29th June 2020 and confirmed the Proposed Development works area to contain only amenity grassland which is considered to be of negligible ecological value.
- 6.1.4 The Proposed Development area was considered to be of negligible value to foraging badgers, foraging bats, hedgehog, and common terrestrial invertebrates.
- 6.1.5 In accordance with current best practice guidance as set out by CIEEM (2018)⁶, the findings of the assessment (including avoidance measures embedded into the scheme design) have confirmed that none of the Ecological Features associated with the Proposed Development and Zone of Influence are considered to be sufficiently valuable (with greater than a ‘Local’ value) and/or with the potential to experience significant effects.
- 6.1.6 This assessment has confirmed that the Proposed Development will have no significant adverse effects on any ecological features associated with the Site. As a consequence, no residual effects are anticipated and no cumulative or in combination effects are will to arise in relation to ecology as a result of the Proposed Development.
- 6.1.7 In accordance with United Utilities’ commitment to incorporate enhancement opportunities where planning consent is required, measures to achieve 10% net gain have been prescribed. Primarily this is through overseeding an additional area of 0.001 ha of amenity grassland within the Bury WwTW to create a wildflower grassland (neutral grassland). Other measures could include installation of bird and bat boxes, insect hotels and the opportunity to plant additional native trees along with the potential to instigate a treatment programme to remove non-native invasive species on Site.
- 6.1.8 Subject to the successful implementation of the avoidance measures, embedded mitigation and proposed enhancement measures detailed above, and given the current limited value of the Proposed Development area, it is expected that the Proposed Development will achieve an overall net gain in biodiversity.

Figures

Figure 1: Site Location Plan

Figure 2: Statutory Designated Area Plan

Figure 3: Non-Statutory Designated Area Plan

Figure 4: Habitats of Principal Importance Plan

Figure 5: Extended Phase 1 Habitat Survey Plan



Client
Advance Plus

Source: Esri, Maxar, GeoEye, Earthstar
Geographics, CNES/Airbus DS, USDA,
USGS, AeroGRID, IGN, and the GIS User
Community
Contains OS data © Crown Copyright and
database right 2020

10/09/2020

Drawn: JP

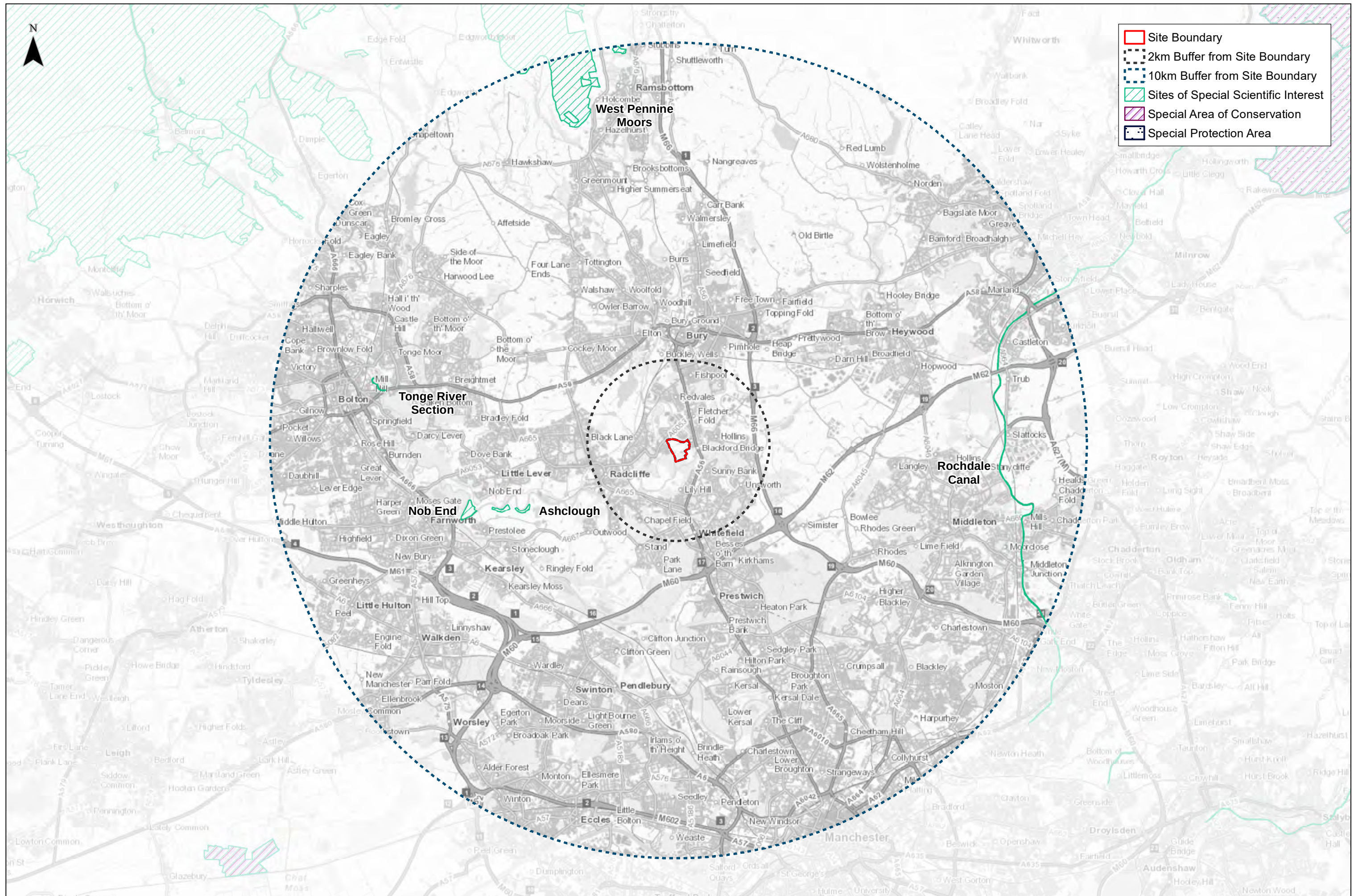
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ADVANCE UU AMP 7
Bury WwTW
Site Location Plan

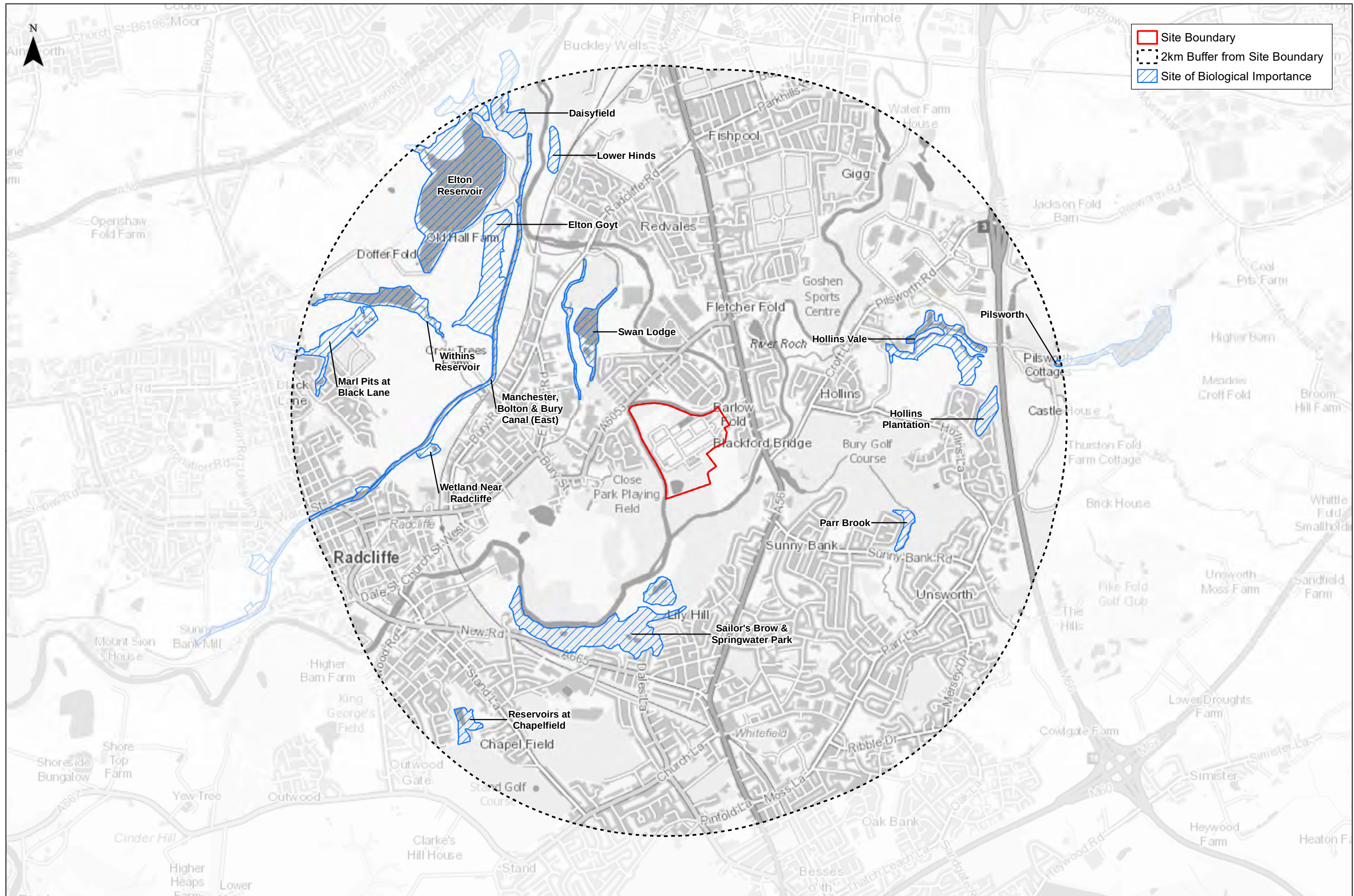


Figure 1

Rev A

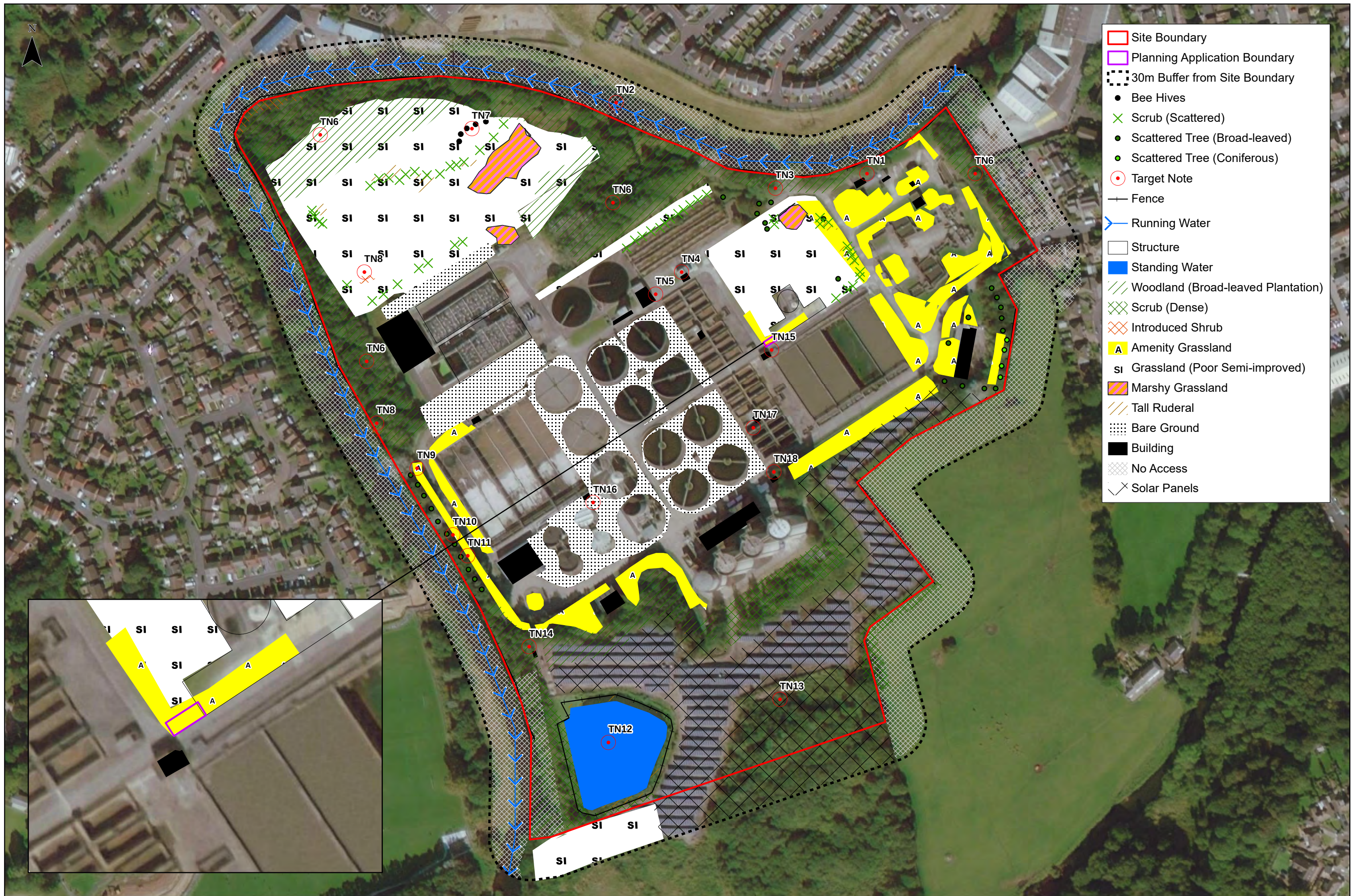


	Client	ADVANCE UU AMP 7 Bury WwTW - Internationally and Nationally Designated Areas	 Contains OS data © Crown Copyright and database right 2019 © Natural England © CCW © Scottish Natural Heritage © Heritage England © CADW © Historic Scotland © Forestry Commission © Sustrans © CEFAS Aerial Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community	1:85,000 @ A3	Date: 24/07/2020
	Advance Plus			Drawn: JP	Checked: KH
				Figure 02	Rev A

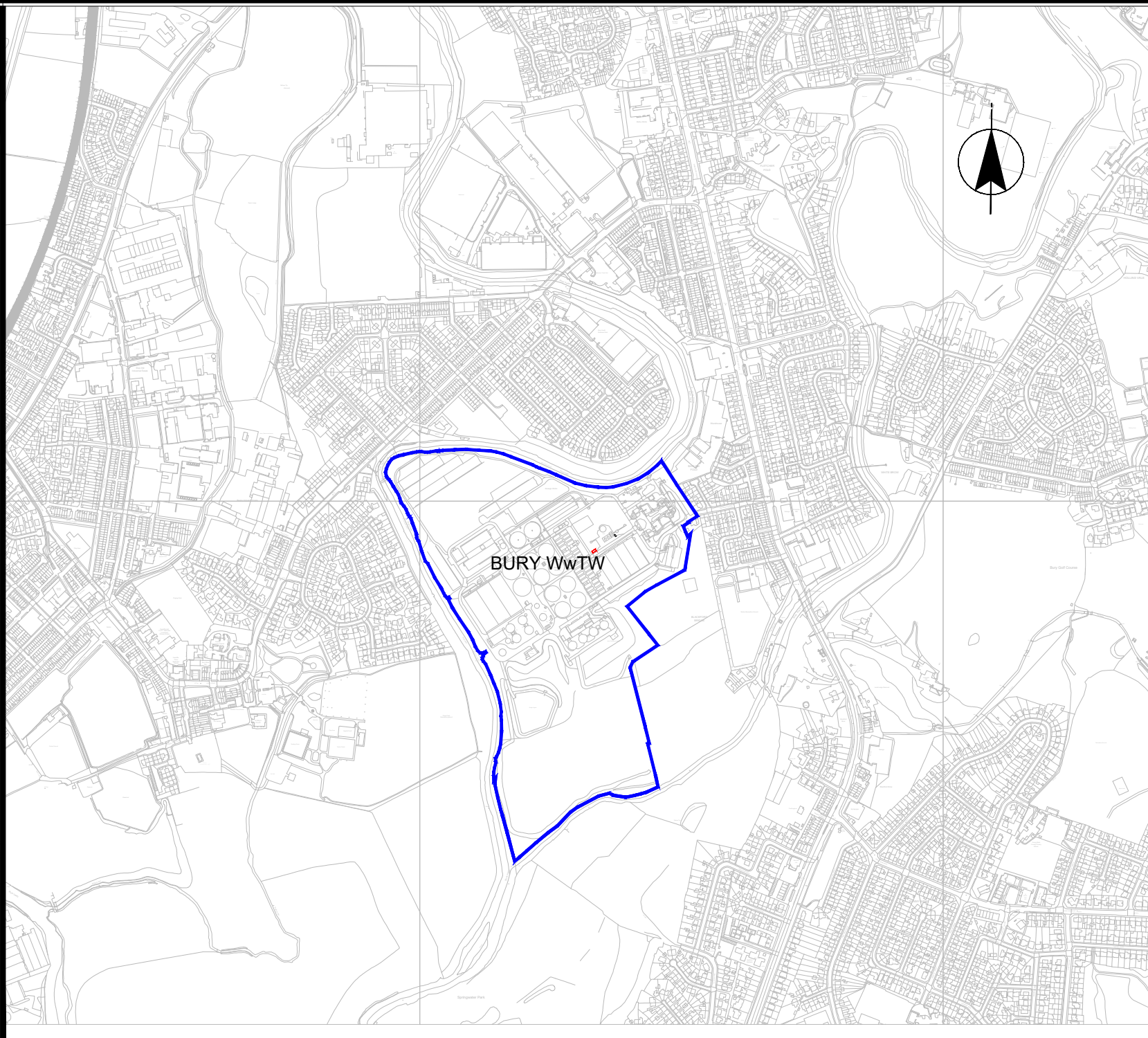
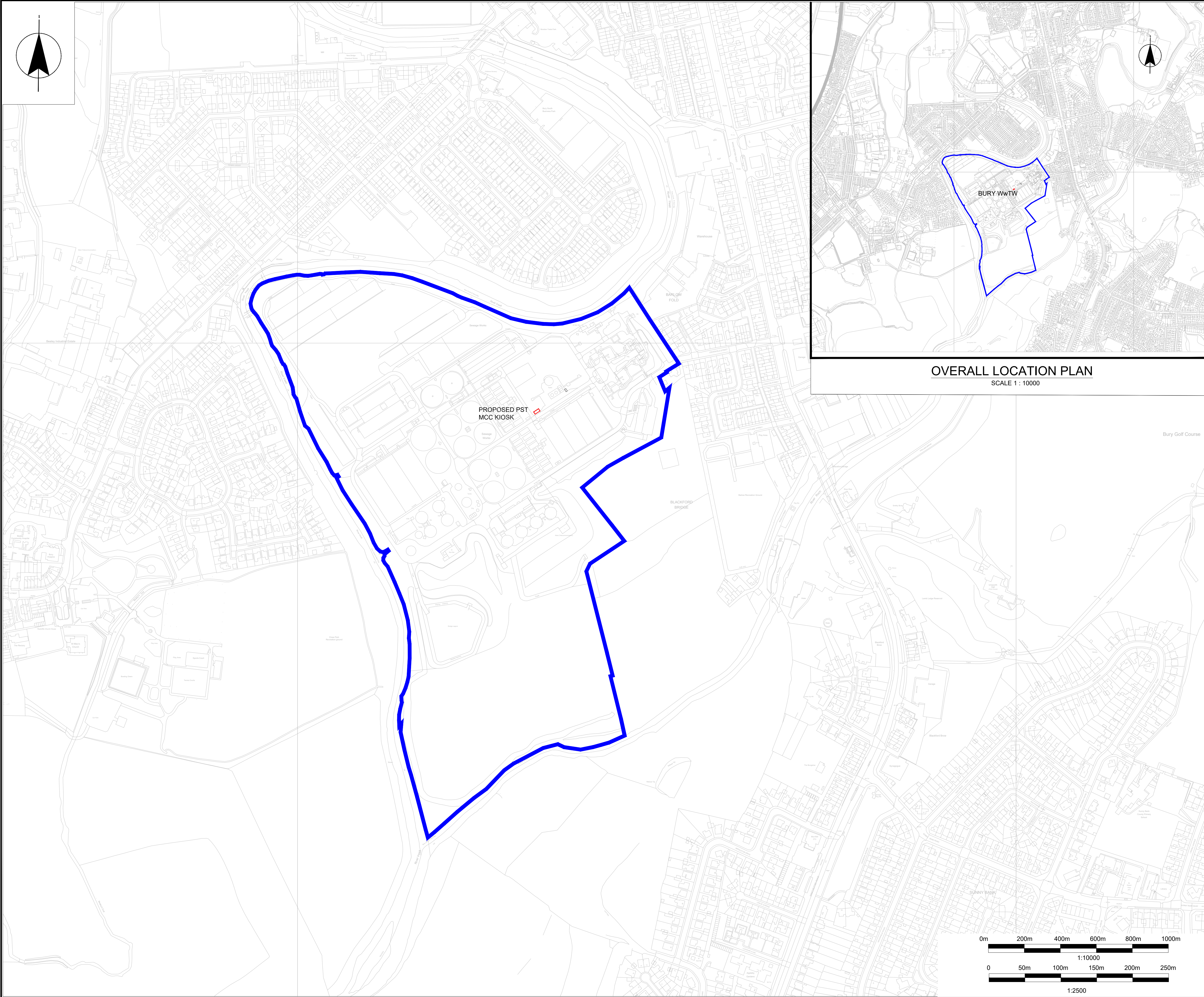




	Client	ADVANCE UU AMP 7 Bury WwTW - Habitats of Principal Importance	012 km		1:20,000 @ A3	Date: 24/07/2020
	Advance Plus		Contains OS data © Crown Copyright and database right 2019 © Natural England © CCW © Scottish Natural Heritage © Heritage England © CADW © Historic Scotland © Forestry Commission © Sustrans © CEFAS Aerial Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community		Drawn: JP	Checked: KH
					Figure 04	Rev A



Appendix A Proposed Works Drawing



OVERALL LOCATION PLAN
SCALE 1 : 10000

NOTES

1. ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS IN METRES
AOD UNLESS NOTED OTHERWISE.

SITE LOCATION

NEAREST POSTCODE: BL9 9TF
OS GRID REF E 380355.716 - N 407924.368 (CENTRE OF SITE)

REFERENCES

- 80061824-01-ADP-BURYZ-97-DR-T-10002 - SITE LAYOUT PLAN
80061824-01-ADP-BURYZ-97-DR-T-10004 - MCC KIOSK ELEVATIONS

LEGEND

-  UU LAND OWNERSHIP BOUNDARY
-  NEW BUILDING / STRUCTURE REQUIRING
PLANNING PERMISSION
(TOTAL AREA = 21.72m²)

OS TILE REF = SJ8007NW

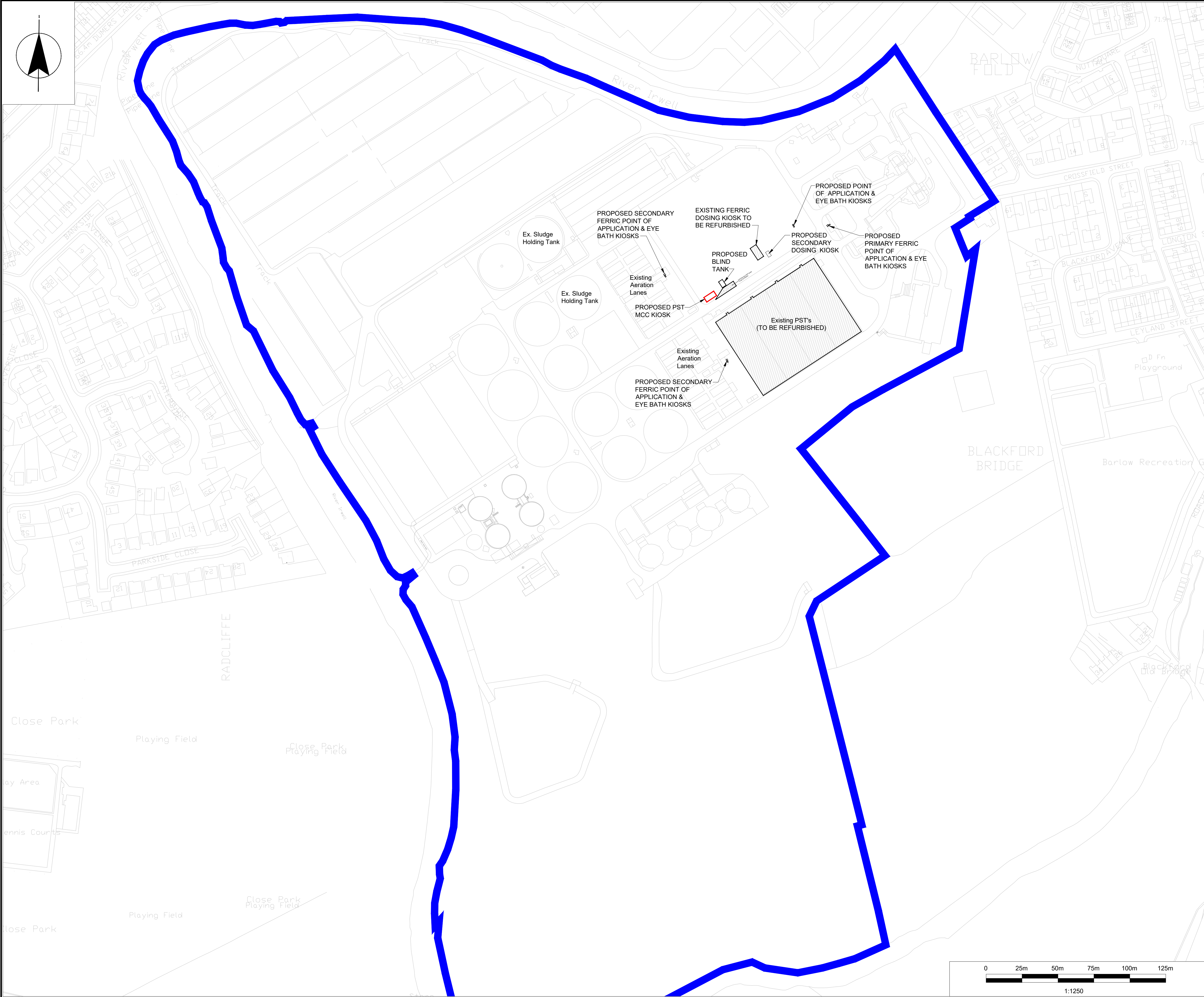
CURRENT ISSUE INFORMATION

P02	PH	MC	JB	Issued for Planning Application	09/09/20
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
S2		Issued for Information			
SUITABILITY CODE		SUITABILITY DESCRIPTION			



BURY WwTW - ND - AMP7
PLANNING
SITE LOCATION PLAN

SCALE AS SHOWN	SHEET SIZE A1
DRAWING NUMBER 80061824-01-ADP-BURYZ-97-DR-T-10001	REVISION P02



NOTES

1. ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS IN METRES
AOD UNLESS NOTED OTHERWISE.

SITE LOCATION

NEAREST POSTCODE: BL9 9TF
OS GRID REF E 380355.716 - N 407924.368 (CENTRE OF SITE)

REFERENCES

80061824-01-ADP-BURYZ-97-DR-T-10001 - SITE LOCATION PLAN
80061824-01-ADP-BURYZ-97-DR-T-10004 - MCC KIOSK ELEVATIONS

LEGEND

UU LAND OWNERSHIP BOUNDARY

NEW BUILDING / STRUCTURE REQUIRING
PLANNING PERMISSION
(TOTAL AREA = 21.72m²)

OS TILE REF = SJ8007NW

CURRENT ISSUE INFORMATION

P02	PH	MC	JB	Issued for Planning Application	09/09/20
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
S2		Issued for Information			
SUITABILITY CODE		SUITABILITY DESCRIPTION			

Water for the North West

BURY WwTW - ND - AMP7

PLANNING

SITE LAYOUT PLAN

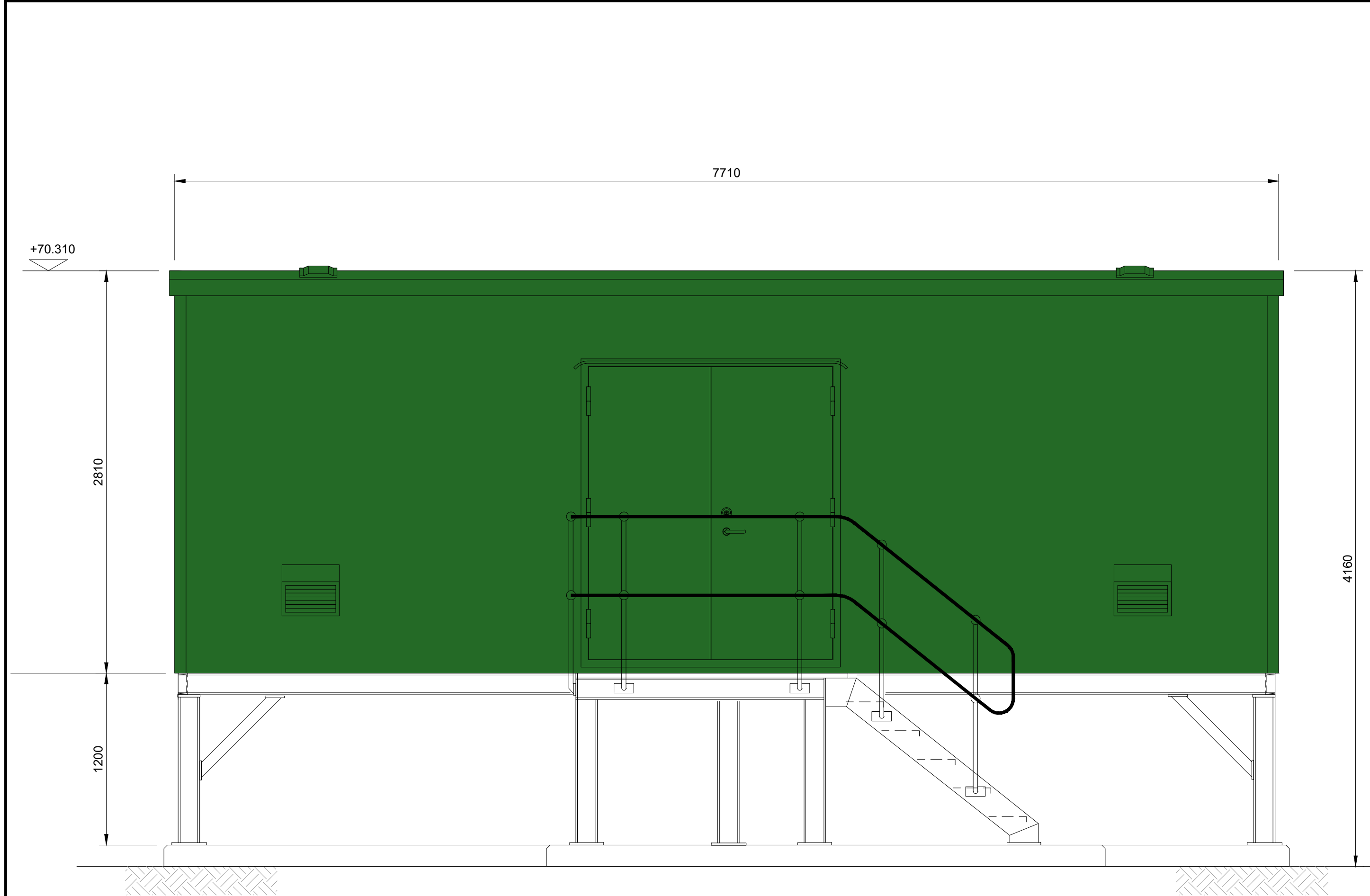
SCALE
AS SHOWN

DRAWING NUMBER
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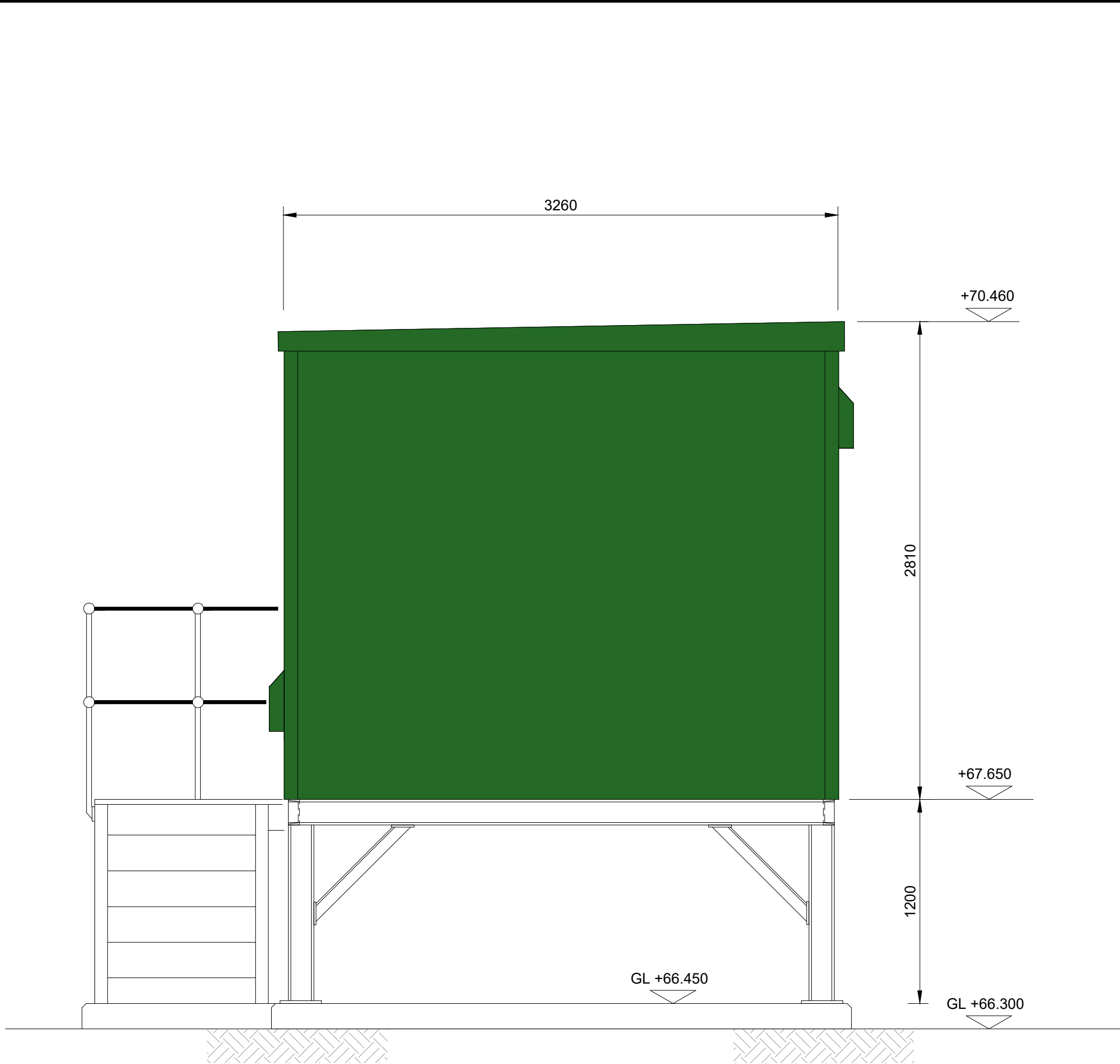
SHEET SIZE
A1

REVISION
P02

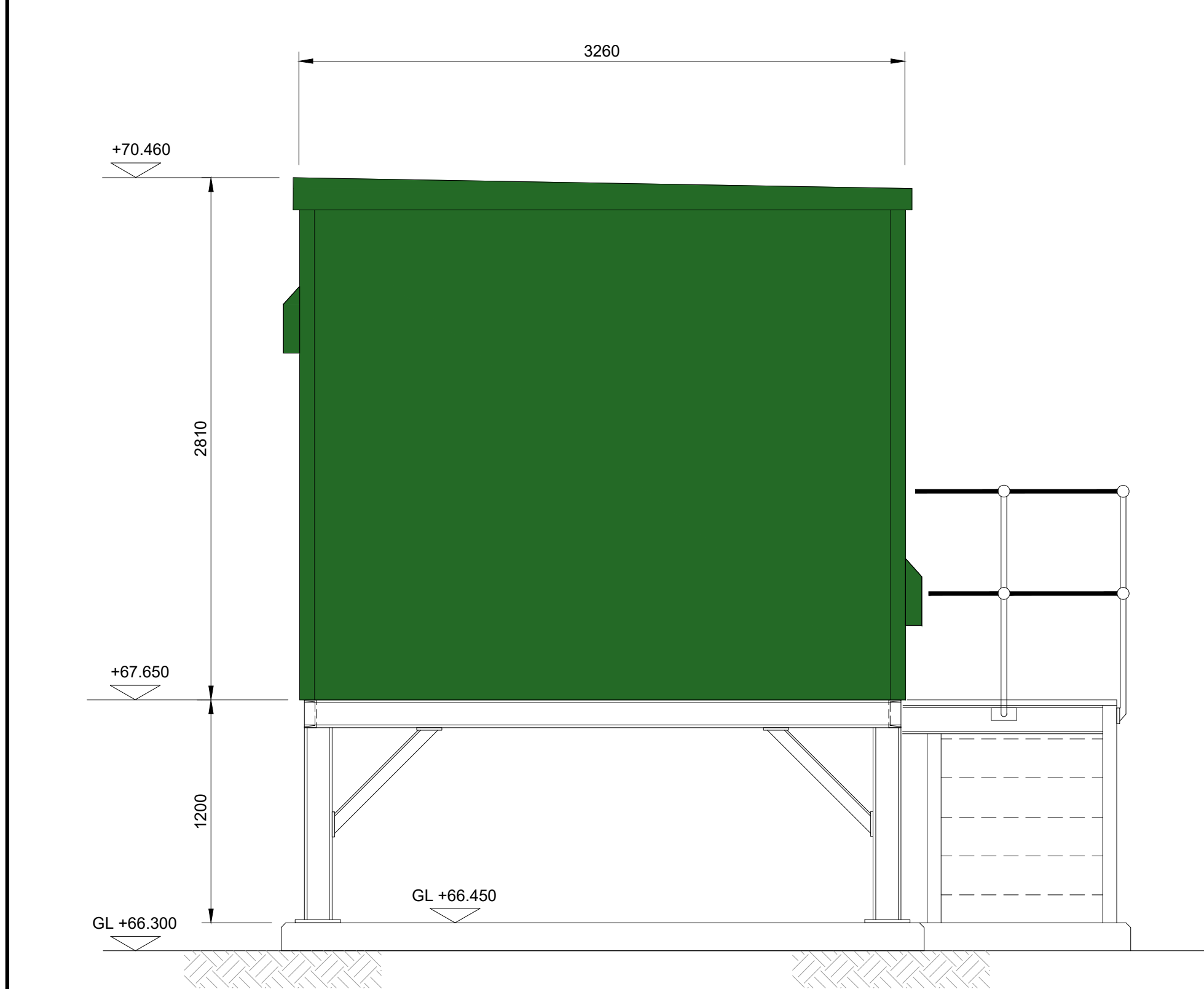
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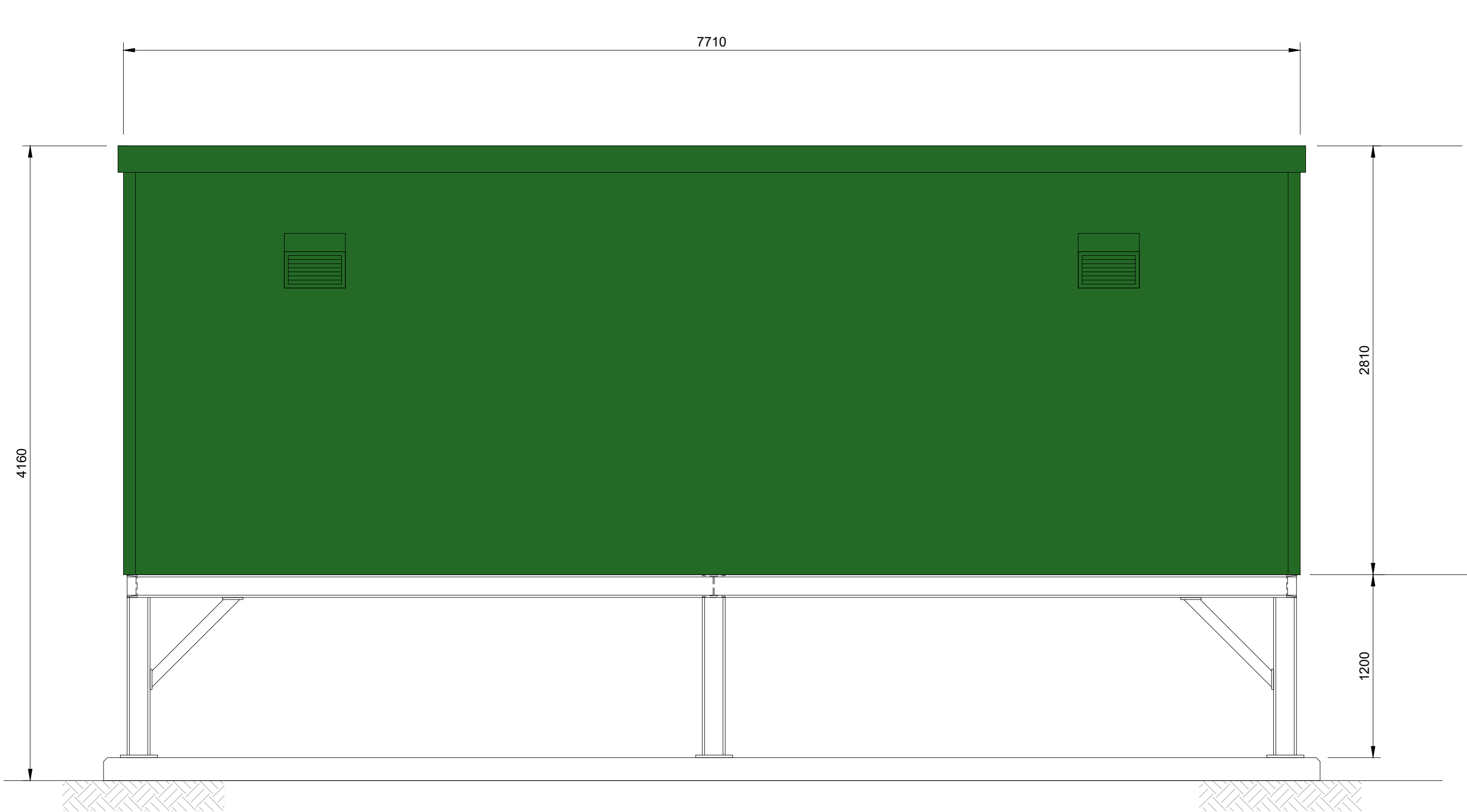
EAST ELEVATION



NORTH ELEVATION



SOUTH ELEVATION



WEST ELEVATION

NOTES

1. ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS IN METRES UNLESS SHOWN OTHERWISE
2. KIOSK TO BE GRP, EXTERNAL COLOUR - HOLLY GREEN (BS4800 14C39) / MATT.
3. PLATFORM, STAIRS AND HANDRAILING TO BE FACTORY FINISHED GALVANISED MILD STEEL

REFERENCES

- 80061824-01-ADP-BURYZ-97-DR-T-10001 - SITE LOCATION PLAN
80061824-01-ADP-BURYZ-97-DR-T-10002 - SITE LAYOUT PLAN

CURRENT ISSUE INFORMATION

P02	PH	MC	JB	Issued for Planning Application	09/09/20
VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
S2		Issued for Information			
SUITABILITY CODE		SUITABILITY DESCRIPTION			



BURY WwTW - ND - AMP7	
PLANNING	
MCC KIOSK	
ELEVATIONS	

SCALE 1:25	SHEET SIZE A1
DRAWING NUMBER 80061824-01-ADP-BURYZ-97-DR-T-10004	REVISION P02

Appendix B Target Notes

TN1 – Building

A single storey, brick-built building with a flat roof. There are holes in the wooden door on the northern elevation which may provide access for bats and damage to a coping stone on the southern elevation which may provide a potential bat roosting feature. The building is not considered to provide breeding bird potential.

TN2 –River Irwell

The River Irwell is present in the 30m wider survey area to the north and west of the site. The river is approximately 15m wide and was fast flowing at the time of the survey. The banks are steep with broadleaved plantation woodland (TN6). Tree species include: occasional sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), pedunculate oak (*Quercus robur*) and rare poplar (*Populus sp.*). Scrub species include: occasional willow spp. (*Salix spp.*), hawthorn (*Crataegus monogyna*) and bramble (*Rubus fruticosus agg.*). Ground flora species include: abundant giant hogweed, frequent common nettle (*Urtica dioica*), locally frequent Himalayan balsam (*Impatiens glandulifera*) and Japanese knotweed (*Fallopia japonica*). The riverbanks could not be accessed; however, they were viewed from through the boundary fence. The river and associated riparian habitat provide suitable nesting habitat for birds, shelter for small mammals and amphibians and may be suitable to support species such as otter. The banks of the river may be suitable to support badger, although the banks could not be fully searched at the time of the survey due to access restrictions. No evidence of badger was found within the site or where the riverbanks could be viewed through the fence. There was no evidence of badger tracks leading into this inaccessible area and it is therefore considered that badger are likely absent from the survey area. The river is considered unsuitable for water vole due to the flow rate and limited marginal vegetation for food.

TN3 – Scattered Tree

A mature, multi-stemmed ash tree located within the 30m wider survey area to the north of the site which overhangs into the site. There is a split in the trunk at approximately 5m on the south east elevation which may provide bat roosting potential. The tree may also provide suitable breeding bird habitat.

TN4 - Building

A rectangular, brick-built, single storey building. There is a hole in the brick wall at the bottom of the wall on the northern elevation which leads into the cavity wall which may provide access for bats. The building is not considered suitable to support breeding birds.

TN5 – Building

A rectangular, brick-built, single storey building with a flat roof. There are broken windows, gaps in the brickwork at the roofline and possible gaps under the fascia's which may provide access to bats and potential roosting features. The building is not considered suitable to support breeding birds.

TN6 – Broadleaved Plantation Woodland

Broadleaved Plantation woodland is present in multiple locations around the site on the eastern, northern and western boundaries and a small area within the south of the site.

Canopy species include: occasional elder (*Sambucus nigra*), sycamore, goat willow (*Salix caprea*), hawthorn, silver birch (*Betula pendula*), ash, hazel (*Corylus avellana*) and rare weeping willow (*Salix sp.*), field maple (*Acer campestre*) and rowan (*Sorbus aucuparia*). Understorey species include: frequent bramble. Ground flora species include: abundant giant hogweed, frequent common nettle, occasional Himalayan balsam, cleavers (*Galium aparine*), garlic mustard (*Alliaria petiolata*), fern sp. (*Dryopteris sp.*), herb Robert (*Geranium robertianum*) and rare Japanese knotweed, hemp agrimony (*Eupatorium cannabinum*) and hedge woundwort (*Stachys sylvatica*).

The woodland may provide suitable habitat for nesting birds and shelter for small mammals, amphibians and otter. The woodland may also have trees that contain suitable bat roosting potential and will provide foraging habitat for bats. No evidence of badger was found during the survey.

TN7 – Bee Hives

An area containing bee hives within the poor semi-improved grassland in the north of the site.

TN8 – Japanese Knotweed

Two small areas of the Section 9 Wildlife and Countryside Act 1981 (as amended) listed species - Japanese knotweed. One stand within the poor semi-improved grassland and one within the plantation woodland (TN6) on the western boundary of the site.

TN9 – Scattered Tree

A mature silver birch located on the western boundary of the site. There are multiple damaged limbs over 5m high which may provide suitable bat roosting potential. The tree may also provide suitable breeding bird habitat.

TN10 – Scattered Tree

A mature silver birch with a damaged/broken limb at approximately 10m high on the northern elevation, which may provide suitable bat roosting potential. The tree may also provide suitable breeding bird habitat.

TN11 – Scattered Tree

A mature poplar tree with a dead limb on the western elevation at approximately 8m high, the limb has multiple woodpecker holes, which may provide suitable bat roost potential. One of the woodpecker holes appeared to have bird nesting material in. The tree also provides suitable nesting bird habitat for other bird species.

TN12 – Standing Water

A redundant concrete lined, sludge lagoon with an unknown water depth. It has shallow banks and is unshaded. It is surrounded by dense scrub, tall ruderal, giant hogweed and marginal vegetation including: common reed (*Phragmites australis*), reed canary-grass (*Phalaris arundinacea*), bulrush (*Typha latifolia*), soft rush and willow sp. Waterfowl were present at the time of the survey. The lagoon and its marginal vegetation may provide suitable habitat for amphibians, breeding birds and foraging bats.

TN13 – Solar Farm

There is a solar farm within the south and south east of the site. The solar panels are arranged in rows with bare ground and ephemeral vegetation underneath including: ribwort plantain (*Plantago lanceolata*), herb Robert, rosebay willowherb (*Chamerion angustifolium*), nipplewort (*Lapsana communis*), oxeye daisy (*Leucanthemum vulgare*) and sow thistle sp. (*Sonchus* sp.). The solar farm is considered to have low ecological value.

TN14 – Building

A breeze-block and wooden panelled, single storey building with a corrugated metal roof. The building is partially collapsed and there are gaps in the walls, in the brick work along the roofline and in the roof, which may provide suitable bat roosting potential and nesting bird habitat.

TN15 – Building

A single storey, brick-built building with a flat roof. There are gaps above the door on the southern elevation and gaps in the brickwork at the roofline on the northern and western elevations, which may provide suitable bat roosting potential. The building is not considered suitable to support nesting birds.

TN16 – Building

A single storey, brick-built building with a flat roof. There are gaps in the brickwork at the roofline and in between the coping stones, which may provide access to bats and potential bat roosting features. The building is not considered suitable to support nesting birds.

TN17 – Building

A single storey, brick and concrete building with a flat roof. There are possible gaps under the roofing felt, however, the building was difficult to access as it is in the middle of a large tank with machinery. The building is not considered suitable to support nesting birds.

TN18 – Building

A single storey, brick-built building with a flat roof. There are gaps in the vents on the southern and western elevations and in between the coping stones on the southern elevation which may provide access to bats and potential bat roosting features. The building is not considered suitable to support nesting birds.

Appendix C GCN eDNA Survey Results

Folio No: E8154
Report No: 1
Purchase Order: 20085
Client: ECOLOGY SERVICES LTD
Contact: Charlotte Wood

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (TRITURUS CRISTATUS)

SUMMARY

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 30/06/2020
Date Reported: 09/07/2020
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
4203	Lagoon, Bury WWTW	SD 802 075	Pass	Pass	Pass	Negative	0

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com

Reported by: Sarah Evans

Approved by: Chris Troth



METHODOLOGY

The samples detailed above have been analysed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample which then undergoes DNA extraction. The extracted sample is then analysed using real time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded.

Analysis of eDNA requires scrupulous attention to detail to prevent risk of contamination. True positive controls, negative controls and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added security.

SureScreen Scientifics Ltd is ISO9001 accredited and participate in Natural England's proficiency testing scheme for GCN eDNA testing. We also carry out regular inter-laboratory checks on accuracy of results as part of our quality control procedures.

INTERPRETATION OF RESULTS

SIC: **Sample Integrity Check** [Pass/Fail]

When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results.

DC: **Degradation Check** [Pass/Fail]

Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.

IC: **Inhibition Check** [Pass/Fail]

The presence of inhibitors within a sample are assessed using a DNA marker. If inhibition is detected, samples are purified and re-analysed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.

Result: **Presence of GCN eDNA** [Positive/Negative/Inconclusive]

Positive: GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.

Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.

Negative: GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.



Appendix D Relevant Legislation and Policy

This report does not purport to provide detailed, specialist legal advice. Where legislation is referenced, the reader should consult the original legal text, and/or the advice of a qualified environmental lawyer.

Conservation of Habitats and Species Regulations 2017 (as amended)

The conservation of Habitats and Species Regulations transpose the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora ("The Habitats Directive") into law.

The 2017 Regulations consolidate the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The regulations provide for:

- designation and protection of European Sites (Special Protection Areas (SPA) and Special Areas of Conservation (SAC)) including the need for 'Appropriate Assessment' of plans and proposals.
- protection of European protected species.
- adaptation of planning and other controls for the protection of European Sites.
- make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2.

No actions that will impact upon a European protected species or its habitat can be undertaken unless authorised by a European Protected Species licence issued by Natural England. Such a licence is granted until after planning consent has been granted once Natural England are satisfied that adequate measures are to be put in place to mitigate for the impact of the development.

Wildlife and Countryside Act 1981 (as amended)

The Act implements the Convention of European Wildlife and Natural Habitats (The Bern Convention) and the Directive 2009/147/EC 'The Birds Directive'.

The 1981 Act has been amended by the Countryside and Rights of Way (CROW) Act 2000.

Schedules 1 (birds) and 5 (animals) of the Act identify species of bird and other animal in relation to which the Act makes killing, injury, taking and disturbance an offence while Schedule 8 to the Act lists species of plant in relation to which the Act makes it an offence to intentionally pick, uproot or destroy.

The Act also prohibits certain methods of killing, injuring, or taking wild animals.

Section 14(2) of the Act makes it an offence to cause any species of animal or plant listed in Schedule 9 of the Act to grow in the wild.

The Act further provides for notification and confirmation of Sites of Special Scientific Interest (SSSI) for their flora, fauna, geological or physiographical features. It also contains measures for the protection and management of SSSIs.

The Natural Environmental and Rural Communities Act 2006 ('NERC')

The NERC Act sets a duty on public bodies (including Local Authorities) to have due regard for habitats and Species of Principal Importance for biodiversity in England when carrying out their duties.

Section 41 (S.41) the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list is used by decision-makers, such as Local Authorities, in implementing their protection duties under this Act when carrying out their functions.

The S.41 list includes 56 habitats and almost 1000 Species of Principal Importance in England. Since the UN Convention on Biological Diversity (CBD) in 2010 the UK identify these habitats and species as conservation priorities under the UK Post-2010 Biodiversity Framework, (they were formerly identified as UK BAP habitats and species).

Protection of Badgers Act

The Protection of Badgers Act 1992 protects badgers from killing or injury and makes it an offence to damage or interfere with a badger sett unless a licence is obtained from the statutory authority.

Summary of species-specific legislation

A summary of species/species group specific legislation is presented below in Table H.1

Table H.1 Summary of species/species group specific legislation

Species/species group	Summary of legislation
Great Crested Newts	Great crested newts are a European Protected Species (EPS), and both individuals and their habitat are legally protected under the Conservation of Habitats and Species Regulations (the 'Habitats Regulations') 2017 (as amended) and the WCA. Great crested newts and common toads are both Species of Principal Importance (SPI) under the NERC Act. Other UK wild amphibian species are listed on the WCA but this prohibits sale only.
Bats	Bats and their roosts are legally protected under the Conservation of Habitats and Species Regulations 2017 (as amended) ("Habitats Regulations") and the Wildlife and Countryside Act 1981 (as amended) ("WCA"). In broad terms, these pieces of legislation jointly mean that the animals themselves are protected against killing, injury, taking (capture) and disturbance. In addition, their places of shelter are protected against damage, destruction and obstruction. Some species of bat (e.g. brown long-eared, noctule and soprano pipistrelle) are also a SPI
Badger	Badgers and their places of shelter (setts) are protected under specific legislation known as the Protection of Badgers Act 1992. This prohibits (among other things) the killing or injury of badgers, the damage or destruction of setts and disturbance of badgers occupying setts.
Otter	Otters and their places of shelter are afforded protection under the Habitats Regulations 2017 and the WCA. In broad terms, these pieces of legislation jointly mean that the animals themselves are protected against killing, injury, taking (capture) and disturbance. In addition, their places of shelter are protected against damage, destruction and obstruction. Otters are also an SPI.
Reptiles	All reptile species in the UK are protected from killing and injury under the WCA. All native reptiles are also on the list of Species of Principal Importance (SPIs) prepared in response to Section 41 of the NERC Act 2006.
Breeding Birds	All nesting birds are legally protected from killing and injury with their active nests and eggs being protected from damage and destruction under the WCA. A selection of bird species (including house sparrow (<i>Passer domesticus</i>) among others) are also SPI under the NERC Act. As well as the blanket protection afforded to all wild birds (see above) bird species listed on Schedule 1 of the WCA, including the barn owl and kingfisher are subject to additional protection, which prohibits disturbance at or near an active a nest site. This extends to disturbance of dependent young.
Hedgehog	Hedgehogs in the UK are protected from killing and injury under the WCA. Hedgehogs are also on the list of Species of Principal Importance (SPIs) prepared in response to Section 41 of the NERC Act 2006.

Japanese Knotweed, Himalayan Balsam and Giant Hogweed	Listed on Schedule 9 of the Wildlife and Countryside Act (WCA) 1981 (as amended). It is an offence to plant or otherwise cause to grow in the wild any plant listed on Schedule 9 of the WCA.
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National Planning Policy

National Planning Policy Framework (NPPF) (last updated June 2019)

The latest version of the National Planning Policy Framework (NPPF) was published in June 2019. This document states that:

'Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives)... an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy'.

Conserving and Enhancement of the Natural Environment

Section 15 relates to: Conserving and Enhancement the Natural Environment. This states:

'Planning policies and decisions should contribute to and enhance the natural and local environment by:

- protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries

Habitats and Biodiversity

To protect and enhance biodiversity and geodiversity, plans should:

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and

areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and

- b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

When determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁵⁸ and a suitable compensation strategy exists; and
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

The following should be given the same protection as habitats sites:

- a) potential Special Protection Areas and possible Special Areas of Conservation;
- b) listed or proposed Ramsar sites; and
- c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

British Standard BS42020: 2013 'Biodiversity – Code of practice for planning and development

British Standard to promote a rigorous professional scientific and consistent approach to gathering, analysing, presenting and reviewing ecological information at key stages of the planning application process.

BS4202:2013 ISBN 978 0 580 77917 6 sets out a standard approach intended to promote submission of transparent and consistent ecological information of appropriate quality to inform with planning applications and applications for other regulatory approvals.

Local Planning Policy

Draft Bury Local Plan

Bury Council are currently in the process of preparing a new Local Plan that will guide future development in the Borough. Together with the Greater Manchester Spatial Framework (GMSF), the Local Plan will form a key part of Bury's overall development plan and, once adopted, these documents will both be used as the basis for determining future proposals for the next 20 years or so.

Whereas the GMSF will deal with strategic planning matters that are of significance across Greater Manchester (such as identifying future levels of housing and employment growth), Bury's Local Plan will contain a range of locally-specific planning policies and identify local sites where development should be built as well as areas where development should be restricted or controlled.

Bury Council have produced Topic Paper 7: Natural Environment (October 2018)

Biodiversity and Ecosystems

The Borough has a good range of semi-natural habitats such as blanket bog, heathland, ancient woodland, wetlands and unimproved grassland. It also has many man-made habitats such as ponds, lodges and canals that are the result of past industrial development or historic land management practices. Some of them have been retained within reclaimed public open spaces.

Comprehensive data on biodiversity, i.e. detailed and country-wide, does not exist. Similarly in Bury, some areas and species are better surveyed than others. The Borough is fortunate in having complete Phase 1 habitat surveys from 1991 and 2001 and a partial survey from 2011. It also has a good number of amateur naturalists who have contributed species records to the GM Records Centre. These indicate that since 1991 there has been:

- An increase in broad-leaved plantation of approximately 200ha, primarily from the efforts of the Red Rose Forest Partnership and mostly occurring in the 1990's.
- An increase in semi-natural scrub and woodland at the cost of more open habitats such as acid grassland and heath owing to neglect of former agricultural and industrial land.
- An overall increase in the number of ponds as a result of planning gain and pro-active habitat creation but a reduction in the number of large water bodies as result of development, natural succession and drainage.
- A gradual increase in wet grassland characterised by *Juncus spp* as a result of lack of maintenance of drainage systems on agricultural land and recreation sites.

Woodland

The Borough has approximately 93 hectares of ancient woodland which is mostly located in steep sided valleys in Ramsbottom, Whitefield and Prestwich.

Total woodland cover in the Borough was 3.8% in 1991, 5.8% in 20013 and 7.6% in 2012, compared with the national average of 12% and the European average of over 30% (Forestry Commission 2010).

Species

In terms of species, local trends seem to reflect national patterns. A number of highly mobile species such as speckled wood butterfly banded demoiselle and emperor dragonfly have colonised the Borough in the last 15-20 years, mostly likely as a result of the increase in average temperature. Other species have colonised or increased in numbers because of improvements in habitat quality, such as the return of the otter on the Irwell.

A number of pest species, such as mink, giant hogweed and Himalayan balsam have increased.

Declining species are less easy to define but farmland specialists such as lapwing and skylark appear now to be less common in the Borough than during the 1990s, as does brown hare.

Designated Sites

The Borough has the following site designations of relevance to biodiversity:

- Site of Special Scientific Interest at West Pennine Moors (awaiting confirmation by August 2017), which is partly within the Borough.
- Local Nature Reserves, at Philips Park, Chesham, Hollins Vale, Redisher Woods, the Kirklees Valley and Chapelfield.
- local 'Sites of Biological Importance' (SBIs). SBIs are surveyed and designated on behalf of the Council by the Greater Manchester Ecology Unit.

There are no sites with European designations in the Borough. However, the Council has a responsibility to consider the impacts of its strategies, plans and projects on European sites in adjacent districts.

The closest protected site is the Rochdale Canal (located 4km to the south east) which is protected in Rochdale and Oldham. Other more distant sites are the South Pennines SAC6 (13km), the Peak District SPA 7 (17km) and Manchester Mosses SAC8 (10-16km).

A Habitat Regulation Assessment was undertaken for the Publication Core Strategy (July 2013). This Assessment concluded that the aspiration to re-open the Manchester, Bolton and Bury Canal does bring a remote chance of affecting the Rochdale Canal Special Area of Conservation. However, it concluded that, providing mitigation plans, policies and strategies are adopted and implemented appropriately through the development management process, development within the identified area could proceed without harm being caused to the special interest of the Rochdale Canal.

Protected Species

Bury has a number of species protected from harm under the 1981 Wildlife and Countryside Act and the Habitats Regulations 2010. They include bats, badgers, great crested newts, kingfisher, little ringed plover, otters and water vole. Bats are widespread and great crested newts are associated with pond clusters in a central belt of the Borough.

Wildlife Corridors/Ecological Networks

Sites of importance for wildlife are of greater value if they are connected. This is because if they are, territories can be extended or because migration or re-population can occur. The identification of wildlife corridors, encompassing open space to join sites of wildlife value are therefore a common planning tool. Bury's corridors, identified following the 1990 Phase 1 Habitat Survey and refined for the 1997 UDP, mostly follow water courses. They include the Irwell Valley, a corridor of sub-regional significance.

Priority Habitats and Species

The UK 1994 Biodiversity Action Plan produced a list of habitats and species of conservation priority because of their rarity or rate of decline. A number are present in the Borough but not necessarily protected by planning designations. Much acid grassland and urban habitat mosaic (cleared/derelict sites) would fall into this category.

Ecological Enhancement Areas

'Biodiversity opportunity areas' or 'ecological enhancement areas' are locations where an opportunity exists for improvements that will improve the functioning of ecological networks/wildlife corridors. They could be beneficiaries of 'biodiversity offsetting', where it is agreed that a development can mitigate for biodiversity loss off-site. In Bury, opportunities were identified for the Core Strategy for seven areas around the Borough. It is intended to review these opportunities for the production of the Local Plan.

Green Infrastructure

National Planning Guidance defines Green Infrastructure as a network of multi-functional greenspace which delivers a wide range of benefits. Its individual components include parks, open spaces, playing fields, woodlands, street trees, allotments, private gardens, waterbodies and green roofs.

Green Infrastructure benefits biodiversity (in providing habitats), human health (in providing opportunities for relaxation and exercise away from polluted air) and climate change (in sequestering carbon dioxide). Sometimes Green Infrastructure is considered alongside Blue Infrastructure, which is land required to reduce flood risk or provide improve the quality of waterbodies and watercourses.

As part of its preparation, the Greater Manchester Spatial Framework identified a GI network. The Council intends to commission consultants to identify a Green Infrastructure Network for the Bury Local Plan. Following the Greater Manchester network it is expected to be largely centred on the river valleys of the Irwell and the Roch and their tributaries. The work will review the existing boundaries for River Valleys, West Pennine Moors and wildlife corridors shown on the UDP Proposals Map under Policies OL5/1 and OL7/2 to see whether they are fit for purpose and can be rolled forward to form the new Green Infrastructure network.

Evidence from consultants TEP in 2010 on green infrastructure for Greater Manchester and for Bury indicates that these boundaries do closely relate to the wider network although this must be robustly tested. For development control purposes, these boundaries have already been used to seek green infrastructure improvements as part of planning applications.

Water bodies

The EU Water Framework Directive applies to surface water and groundwater and requires member states to protect, enhance and restore water bodies to 'good' status. The North West Region River Basin Management

Plan is the over-arching source of information and measures to meet the Water Framework Directive. DEFRA encourages action on a river catchment basis. A catchment management plan for the River Irwell is expected to be published by the Catchment Partnership in April 2018. Bury's watercourses are heavily modified so actual 'good' ecological status is unlikely to be achieved.

Development that has the potential to cause significant adverse impacts on water quality is required to submit a detailed assessment as part of an environmental statement.