



## **Ecological Impact Assessment (EclA)**

### **Llanishen and Lisvane reservoirs Draft Master Plan**

**Dŵr Cymru Welsh Water**

**APEM Ref: P00003743**

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## Revision and Amendment Register

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1	21/06/2019		40	First draft for DCWW review	HW
2	10/07/2019		45	Final. Minor changes from draft; inclusion of Cardiff Council Screening Opinion.	HW

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## **1. Summary**

### **1.1 Purpose of the report**

The purpose this Ecological Impact Assessment (EclA) report was to set out the ecological baseline and identify the Important Ecological Features (IEF) that were present within the site. It presents the findings of an assessment of the likely ecological impacts arising from the development proposals, and how these impacts will be minimised through scheme design and other mitigation measures.

### **1.2 Scheme Description**

The proposed development principally involves the construction of a new visitor centre and upgrades to the existing access road and informal paths. A number of access improvements and positive management interventions to the green infrastructure provide a variety of activities that meet the recreational, health & well-being needs of residents and visitors. A landmark Visitors Centre will be constructed and act as the main hub for the visitor activities.

The development proposals also include management measures to safeguard the existing habitats and species present within the site.

### **1.3 Methodology**

This assessment has been carried out in accordance with guidance from the Chartered Institute of Ecology and Environmental management (CIEEM, 2018).

### **1.4 Key Impacts and Mitigation Measures**

It is not envisaged that the development proposals will give rise to any significant impacts.

Key mitigation measures are as follows:

- Avoidance of physical infrastructure on areas of land designated as either Site of Special Scientific Interest (SSSI) or (Site of Importance for Nature Conservation) SINC;
- Timing construction of the visitor centre and access road to avoid disturbance to wintering wildfowl;
- Avoiding areas identified as supporting diverse plant and fungi assemblages;
- Production of a Construction Environmental management Plan (CEMP) outlining environmental mitigation measures to be implement during the construction phase;

- Production of a Draft Site Management Plan outlining how during the operational phase, access to the site will be managed whilst maintaining and enhancing ecological features.

## 2. Introduction

### 2.1 Terms of Reference

This Ecological Impact Assessment (EcIA) Report has been prepared by APEM Ltd./ RSK Biocensus on behalf of Dŵr Cymru Welsh Water (DCWW) for a proposed development at Llanishen and Lisvane Reservoirs, in north Cardiff. The development will serve as a hub for recreation, health and wellbeing in the north Cardiff area, reconnecting people with water and the environment whilst protecting, conserving and enhancing the conservation value of the site.

This EcIA report has been prepared following a request for a EIA Screening Opinion<sup>1</sup> from Cardiff Council in accordance with the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 and The Town and Country Planning (Environmental Impact Assessment) (Wales) (Amendment) Regulations 2019 (herein collectively referred to as the 'EIA Regulations').

Cardiff Council has confirmed, through Screening Opinion No. SC/19/00007/MJR (shown in Appendix 3 ), that the impacts of the proposed development are unlikely to result in significant effects on the environment and as such the proposed development does not constitute EIA development.

### 2.2 Purpose of the Report

The purpose of this Ecological Impact Assessment (EcIA) report is to set out the ecological baseline and identify the Important Ecological Features (IEF) that were present. Following this an assessment of the likely environmental impacts arising from the development proposals for Lisvane and Llanishen Reservoir on the IEF's. How these impacts will be minimised through scheme design and other mitigation measures, will be discussed.

As well as potential impacts on ecological features a few other potential impacts are also assessed, for example noise, traffic and air quality.

### 2.3 Structure of the report

This report begins with a brief overview of the site and the proposed development in the context of the Llanishen and Lisvane reservoirs recreational hub. Information is provided on the on the data sources used, as well as assumptions and limitations.

Section 3 Describes the legislative and policy context for the development;

Section 4 Summarises the methodology and scope of the assessment;

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<sup>1</sup> APEM (2019). Environment Impact Assessment (EIA) Screening Report, Llanishen and Lisvane reservoirs Draft Master Plan. APEM Scientific Report P00003743. Dŵr Cymru Welsh Water, May 2019, v2.0 Final, 57 pp.



- Section 5 Summarises the ecological baseline;
- Section 6 Provides a description of the development proposals;
- Section 7 Summarises environmental design and embedded mitigation;
- Section 8 Presents an assessment of the environmental impacts of the proposed development during both the construction and operational phase;
- Section 9 Details compensation and enhancement, if required;
- Section 10 Describes monitoring proposals;
- Section 11 Conclusions.

## 2.4 Site Description

The proposed development site encompasses two reservoirs: Lisvane Reservoir to the north; and Llanishen Reservoir to the south. The site was mostly bordered by tall hedges, with mixed and broadleaved woodland to the south and some parts of the north and west.

The grassy embankments around both reservoirs have a SSSI designation (CCW Citation Ref CY00136EA, notified 2005) due to their diverse assemblage of fungi. Lisvane Reservoir is also a SSSI on account of its over wintering wildfowl population. Llanishen Reservoir is designated as a Cardiff Council SINC because of its large population of common toads and presence of locally rare water plants. The stone pitching around the reservoir margin is known to support locally important populations of lichens, and several locally uncommon mosses. The majority of the grassland and scrub woodland outside the SSSI area has been designated as a local authority SINC, mainly because of its populations of grass snakes and glow worms. Llanishen Reservoir Dam is a Grade 2 Listed Building (CADW Ref 87591, designated July 2009) as an integral part of the nineteenth century water-supply system for Cardiff.

A detailed ecological baseline is presented in Section 5, whilst Full details of the SSSI citations and the SINC citations are included within the Phase 1 Habitat Survey report<sup>2</sup>, which is included in the Appendix 2 to this EclA.

## 2.5 Project Description

A summary of the proposed development is given below:

The proposed development will provide a variety of facilities for activities that meet the recreational, health & wellbeing needs of local residents and visitors, including water sports (e.g. sailing, canoeing, kayaking, paddle boarding, zorbing), land based activities (e.g. walking, dog walking, running, wildlife watching), learning, conservation & recreation zones.

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<sup>2</sup> APEM (2018). Llanishen and Lisvane Reservoirs, Phase 1 Habitat Survey 2017. APEM Scientific Report P1937. Welsh Water, July 2019 Final, 123 pp

A landmark Visitors Centre (with restaurant, meeting room, training rooms, shower and changing facilities for example) will be constructed and act as the main hub for the visitor activities.

## 2.6 Information Sources

The following information sources have been used when producing this EclA report. Note that the information used to inform the ecological baseline is detailed separately in Section 4.3 (Table 1).

- APEM (2019). Environment Impact Assessment (EIA) Screening report, Llanishen and Lisvane reservoirs Draft Master Plan. APEM Report P00003743. Dwr Cymru Welsh Water, May 2019, v2.0 Final.
- Dwr Cymru Welsh Water Llanishen and Lisvane Draft Master Plan (May 2019);
- MOMENTUM Structural Engineers 9April 2019) Lisvane Flood Risk and Surface Water Strategy (April 2019);
- Dwr Cymru Welsh Water. Llanishen and Lisvane Draft Site Management Plan.
- ARCADIS (April 2019) Llanishen and Lisvane Reservoir Visitor and Water sports activity Centre – Transport Assessment;
- Llanishen and Lisvane Footpath Construction Methodology unauthored dated 22/5/19;
- Feilden Clegg and Bradley Studios Lisvane and Llanishen Design and Access Statement.

## 2.7 Assumptions and Limitations

This EclA has assumed no significant material change has occurred to the distribution of habitats present on site. As the majority of the survey work supporting the ecological baseline are less than 2 years old, this is considered to be a reasonable assumption.

It is also assumed that the primary and tertiary mitigation measures outlined in Section 7 will be implemented. DCWW have already produced a Site Management Plan (SMP) and an EIA screening report outlining these measures this, again, is considered to be a reasonable assumption.

## 3. Planning Policy and Legislation

### 3.1 Designated Sites

SSSI are sites of national level importance for nature conservation. They are designated by Natural Resources Wales (NRW) and receive protection under the Wildlife and Countryside Act 1981.

SINCs are sites of county level importance for nature conservation. They are designated by the local authority and are protected through Local Plan or Local Development Framework policies.

The presence of a designated site on or close to an application site does not preclude development, but it does mean that careful consideration is usually needed to ensure that significant adverse effects on the important nature conservation features are avoided.

### 3.2 Priority habitats and species

The Environment (Wales) Act 2016 requires all the Welsh public authorities, when carrying out their functions, to seek to “maintain and enhance biodiversity” where it is within the proper exercise of their functions. In doing so, public authorities must also seek to “promote the resilience of ecosystems”. Public authorities are required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience. As part of the Act, Section 7 refers to “a list of the living organisms and types of habitat which ... are of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales.”. The lists of species and habitats of principal importance previously identified in Section 42 of the NERC Act are replaced by new Section 7 lists of priority species and habitats in Wales. The interim lists are the same as the Section 42 lists.

### 3.3 Non-native invasive species

The Wildlife and Countryside Act 1981 makes it unlawful to introduce or cause the spread of certain non-native invasive species: these are listed in Schedule 9 of the Act.

### 3.4 Breeding Birds

All species of bird are protected under Section 1 of the Wildlife and Countryside Act 1981. This makes it an offence to intentionally or recklessly kill, injure or take any wild bird; damage or destroy a nest while it is in use or being built; or take or destroy an egg. Certain species listed on Schedule 1, including Kingfisher, have further protection from disturbance while building a nest; while in, on or near a nest containing eggs or young; or disturbance to dependent young.

### 3.5 Bats

All bat species and their roosts and resting places are protected in the UK under Schedules 5 & 6 of the Wildlife and Countryside Act, 1981 (as amended) and the Conservation of Habitats and Species Regulations, 2017. Taken together, the legislation makes it an offence to:

- Deliberately (or intentionally) kill, injure or capture (or take) a bat,
- Deliberately (intentionally) damage or destroy any breeding site or resting place (i.e. a bat roost),

- Deliberately or recklessly obstruct access to any bat roost,
- Deliberately, intentionally or recklessly disturb a bat, in particular disturbance which is likely to: impair the ability of the bat to survive, breed, reproduce, or to rear or nurture young; impair the ability of the bat to hibernate or migrate; or significantly affect the local distribution or abundance of the affected bat species

A bat roost is defined as 'any structure or place, which is used for shelter or protection' or a 'breeding site or resting place'. Because bats commonly use the same roosts at particular times of the year after periods of absence, the roost is protected whether or not bats are actually present.

### 3.6 Badger (*Meles meles*)

Badgers and their setts are protected under the Protection of Badgers Act 1992. This legislation makes it an offence to:

- Wilfully kill, injure or take a badger (or attempt to do so);
- damage or destroy a badger sett or any part of it;
- obstruct access to a badger sett;
- disturb a badger when it is occupying a badger sett;

The legislation includes other provisions regarding cruel ill-treatment of badgers, possession or sale of badgers and so on which are not considered relevant here.

### 3.7 Otter (*Lutra lutra*)

The European otter is the only native UK otter species. Otters are fully protected under Schedule 5 (Section 9) of the Wildlife and Countryside Act 1981 (as amended) and under Conservation of Habitats & Species Regulations 2017. Taken together, the legislation makes it an offence to:

- Deliberately (or intentionally) kill, injure or capture (or take) an otter;
- Deliberately (intentionally) damage or destroy any breeding site or resting place;
- Deliberately or recklessly obstruct access to any breeding site or resting place;
- Deliberately, intentionally or recklessly disturb an otter, in particular disturbance which is likely to: impair the ability of the bat to survive, breed, reproduce, or to rear or nurture young; impair the ability of the bat to hibernate or migrate; or significantly affect the local distribution or abundance of the affected bat species.

## 4. Methodology

### 4.1 Scope of the Assessment

This EclA assesses the main environmental impacts likely to arise from the proposed development and how these impacts will be addressed through mitigation. Due to the limited extent of proposed physical infrastructure development, a key focus is the long – term management, maintenance and enhancement of the ecological features present. Specifically, carefully balancing ecological requirements with an increase in recreational activity.

### 4.2 Desk Studies

No formal record centre data search was undertaken. Instead, a summary of existing knowledge of the site was gleaned from the surveys that have been carried out to date. An informal call was also made to the Cardiff County Ecologist, during the preparation of the Phase 1 Habitat survey<sup>2</sup>, to obtain information on the nearby SINC sites.

A full suite of both habitat and species information gathered throughout 2016 and 2017 has been incorporated into the assessment process (See Section 4.3).

### 4.3 Field Assessments and Surveys

To date, there have been several technical environmental and ecological reports that have been produced related to the planned site development, since 2016. The existing environmental baseline information from these reports and surveys has been used to inform this report. Full details of the technical reports have not been repeated here, rather a summary is presented with the technical reports available as an Appendix 2 to this EclA.

The environmental reports that have been used to inform the EclA report are detailed below in Table 1:

**Table 1 Technical reports used to compile the ecological baseline**

Technical reports
Llanishen Reservoirs Badger Advice Note, APEM, July 2016;
APEM (2017). Assessment of grassland fungi at Lisvane and Llanishen reservoirs. APEM Scientific Report P00001231. Dwr Cymru Welsh Water, January 2017, v2.0 Final, 39 pp;
APEM (2017). Lisvane Reservoir SSSI Wintering Waterfowl Condition Assessment. APEM Scientific Report P00001231. Dwr Cymru Welsh Water, April 2017, v2.0 Final, 20 pp;
APEM (2017). Llanishen Reservoir drawdown: Procedure to protect breeding waterbirds. APEM Scientific Report P00001506. Dwr Cymru Welsh Water, May 2017, v1.2 Draft, 26 pp;
APEM (2018). Llanishen and Lisvane Reservoirs, Phase 1 Habitat Survey 2017. APEM Scientific Report P1937. Welsh Water, July 2019 Final, 123 pp;
APEM (2018). Lisvane and Llanishen reservoirs: Survey of grassland fungi 2017. APEM Scientific Report P00001937. Dwr Cymru Welsh Water, January 2018, v3 Final, 33 pp.
APEM (2018). Llanishen and Lisvane Reservoirs: Glow worm survey 2018. APEM Scientific Report P00001937. Dwr Cymru Welsh Water, September 2018, v2 Final, 12 pp.
APEM (2018). Lisvane Access Road Habitat Survey. APEM Scientific Report P00001937. Dwr Cymru Welsh Water, March 2018, v3.0 Final, 41 pp.
APEM (2018). Llanishen & Lisvane Reservoirs Crayfish Survey. APEM Scientific Report P00002816. Dwr Cymru Welsh Water, September 2018, v3 Final, 23 pp.
APEM (2019). Lisvane and Llanishen reservoirs: Survey of grassland fungi 2018. APEM Scientific Report P00001937. Dwr Cymru Welsh Water, February 2019, Final, 30 pp.
Monthly ECoW reports, submitted from APEM to DCWW, dating from May 2017 to present.
Llanishen Reservoirs Badger Advice Note, APEM, July 2016;

#### 4.4 Assessment

The methodology for the ecological assessment process is set out below:

In line with guidance from the Chartered Institute of Ecology and Environmental management (CIEEM 2018) the importance of an ecological feature, as determined with reference to legal, policy and/ or nature conservation considerations, has been assessed within the following geographical context.

- International and European;
- National (i.e. Wales);
- County (i.e. Cardiff); and
- Local.

The assessment will identify the Important Ecological Features (IEF's) and assign an ecological value to them in accordance with the geographical context outlined.

Under the CIEEM guidelines impacts on biodiversity are assessed not only on magnitude, but also characterised and described as positive/negative together with their extent, duration, reversibility, timing and frequency.

The assessment will highlight the likely impacts arising from the development proposals and how this might affect the IEF's identified. Impacts can also be defined as being direct or indirect. A direct impact is defined as an impact resulting in the direct interaction of an activity with an environmental or ecological component. An indirect impact is defined as an impact on the environment which is not a direct result of a project or activity, often produced away from or as a result of a complex impact pathway. Following the classification of an effect, a clear statement is made as to whether the effect is classified as 'significant' or 'not significant'.

The assessment of effects is carried out assuming that primary and tertiary mitigation is in place (see Section 7).



## 5. Baseline Ecological Conditions

### 5.1 General

Llanishen and Lisvane reservoirs are located in the north of Cardiff, within a suburban residential area approximately 7km from the city centre, as shown in Figure 1, with a central grid reference at approximately ST 18720 81776.

They lie within a suburban residential area, but the site itself is mostly bordered by undeveloped land, including the Nant Fawr Community Woodland to the south and east, Rhydypenau Park to the south-west, allotments to the north-west, and fields and woodland to the north.



Figure 1 Llanishen and Lisvane reservoirs location

### 5.2 Designated Sites

#### 5.2.1 Statutory

The site encompasses two SSSI:

- Lisvane Reservoir SSSI is designated for its overwintering wildfowl;
- Llanishen and Lisvane Reservoir Embankments SSSI is of special interest for its diverse assemblage of grassland fungi including up to 25 species of waxcap.

Both these sites are considered to be of national ecological value.

Full details of the SSSI citations are included within the Phase 1 Habitat Survey report<sup>2</sup>, which is included in the Appendix 2 to this EcIA.



### 5.2.2 Non-Statutory

The site also encompasses non-statutory SINC and a number are also adjacent to the reservoirs. These sites are detailed in Table 2 below:

**Table 2 Non-Statutory SINC Sites**

Site name	Interest features
Llanishen Reservoir	Designated because of its large population of common toads and presence of locally rare water plants. The stone pitching around the reservoir margin is known to support locally important populations of lichens, and several locally uncommon mosses
Llanishen Reservoir grassland and scrub	Designated, mainly because of its populations of grass snakes and glow worms.
Lisvane Reservoir Wood	A small block of woodland to the north of Lisvane Reservoir, showing ground flora characteristic of ancient semi-natural woodland including Dog's Mercury, Wood Speedwell and Yellow Archangel
Ty Llwyd Meadows	Ty Llwyd Meadows are designated for a series of patches of marshy grassland set in improved grassland which is mown for hay.
Nant Fawr Community Woodlands	An area of semi-natural woodland originally part of the ancient Coed-y-Llewyn, together with rough grassland and the Nant Fawr stream
Nant Fawr Meadows	An area of grassland and hedgerows, supporting Harvest Mouse. The fields support unimproved neutral grassland, areas of which are subject to seasonal inundation
Rhydypennau Complex	An area of marshy Alder carr and secondary woods that complements the adjacent Llanishen Reservoir.
Gwernybendy	An area of semi-natural Oak/Alder and Birch woodland attached to the western side of the Llanishen Reservoir. There are areas of commercial planting, but the site exhibits a ground flora indicative of ancient semi-natural woodland
Coed-ty-Llwyd	Coed-ty-Llwyd is an Oak/Alder woodland with varied ground flora indicative of ancient semi-natural woodlands woodland including Ramsons, Soft Shield Fern and Wood Meadow-grass.

All of these SINC sites and associated features would be of County ecological value.

Full details of the SINC citations are included within the Phase 1 Habitats Survey report<sup>2</sup> which is included in the Appendix 2 to this EclA.

In addition to the above, Llanishen Reservoir Dam of Cultural Heritage listed Grade 2 as an integral part of the nineteenth century water-supply system for Cardiff.

The boundaries of the statutory and non-statutory designated sites are presented in Figure 2.

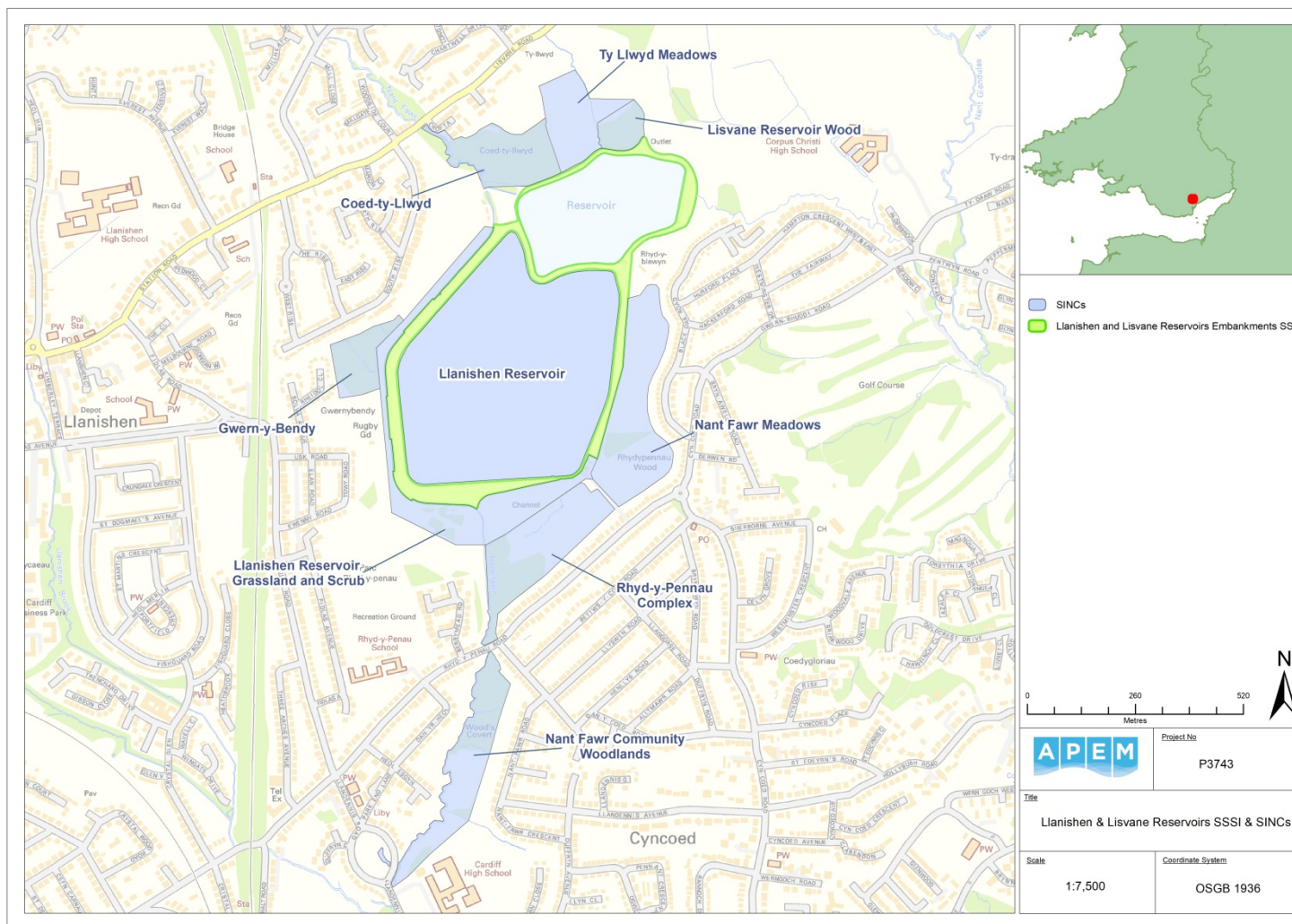


Figure 2 Boundaries of designated sites

## 5.3 Plants and Habitats

### 5.3.1 Habitats

The site encompasses two reservoirs; Lisvane Reservoir to the north, and Llanishen Reservoir to the South. Lisvane Reservoir supports an open water area of approximately 8 hectares. Llanishen Reservoir is currently mostly empty (awaiting refill following essential works on the scour valving in the base of the reservoir) but would normally have a water area covering approximately 23 hectares. Both reservoirs are bordered by grassy embankments that are mown several times per year.

The Nant Fawr stream flows around the western side of the site and is culverted in some parts. Where it flows in a stone-lined channel, known as the reservoir bywash channel. The stream banks support a mix of tall herbs and grassland. A strip of land to the west side of the bywash channel currently supports a mix of damp grassland and herbs following removal of scrub during 2017.

Several areas to the south of Llanishen Reservoir have been subject to scrub clearance and engineering work during 2017. Currently these areas supported a mix of bare and disturbed ground with sparse and patchy vegetation.

The site is mostly bordered by tall hedges, with wider areas of woodland and plantations to the south and some parts of the north and west. The southern woodland forms part of Rhydypenau Wood. Rhydypenau Wood is relatively young but dense, damp woodland. It includes a series of shaded, mostly seasonally flooded ponds.

Gwernybendy Wood located at the most westerly part of the site is an area of semi-natural ancient deciduous woodland, with a diverse woodland ground flora. It is currently in a neglected condition and becoming colonised by non-native species and several parts have been damaged by the extension of adjacent gardens.

The whole site is currently contained within security fencing with controlled access into the site only from the north (the Main entrance, via the B4562) and the south (the Rhyd-Y-Penau Road entrance).

The main Phase1 habitat types recorded on site are:

- Broadleaved woodland;
- Broadleaved plantation;
- Mixed plantation;
- Conifer plantation;
- Scrub/ hedge;
- Semi-improved neutral grassland;
- Stream;

- Standing water/ ponds; and
- Ruderal vegetation.

In addition, the stone pitching and exposed mud around Llanishen Reservoir is an unusual habitat feature that does not fall easily within the conventional habitat survey categories. In some cases, the boundaries between habitat types are indistinct, and some form a mosaic unmapable as separate habitat types.

Notable habitats deserving specific detailed mention include the broadleaved woodland south of Llanishen Reservoir. This area is a relatively young woodland with a high proportion of scrubby Willow (*Salix sp.*) and Alder (*Alnus glutinosa*). The oldest trees in this part of the site are around several old fishponds, and comprise mainly Alder with an understorey of Brambles (*Rubus fruticosus*) and occasional Hawthorn (*Crataegus monogyna*), Elder (*Sambucus nigra*), Holly (*Ilex aquifolium*), Spindle (*Euonymus europaeus*), Wild Privet (*Ligustrum vulgare*) and Field Maple (*Acer campestre*).

Gwernybendy Wood, located at the west of the site, was an ancient woodland SINC, dominated by alder and ash. It also includes mature oak trees, and understorey trees including Holly, Spindle, Elder and Dogwood (*Cornus sanguinea*).

The reservoir embankments support a moderately diverse grassland flora, especially in their upper parts. The dominant grasses include Yorkshire fog (*Holcus lanatus*), Cock's-foot (*Dactylis glomerata*), Sweet vernal-grass (*Anthoxanthum odoratum*), Rough meadow-grass (*Poa trivialis*), Red fescue (*Festuca rubra*), and associated forbs including Common bird's-foot trefoil (*Lotus corniculatus*), Common knapweed (*Centaurea nigra*), Sorrel (*Rumex acetosa*) Ribwort plantain (*Plantago lanceolata*), Primrose (*Primula vulgaris*), Bluebell (*Hyacinthoides non-scripta*), Selfheal (*Prunella vulgaris*), Meadow vetchling (*Lathyrus pratensis*), Ox-eye daisy (*Leucanthemum vulgare*), and Rough hawkbit (*Leontodon hispidus*). Several locally uncommon plants in the grassland include Devil's-bit scabious (*Succisa pratensis*), Betony (*Betonica officinalis*), Common spotted orchid (*Dactylorhiza fuchsia*) and Common twayblade (*Listera ovata*) but are generally infrequent. One area of damp grassland at the foot of the embankment west of the reservoir was especially notable for its botanical diversity, and included Flea sedge (*Carex pulicaris*), Pale sedge (*Carex pallescens*), Adder's-tongue (*Ophioglossum vulgatum*) and Devil's-bit scabious.

Much of the semi-improved grassland adjoining the bywash channel exists as a mosaic of tall flower-rich semi-improved damp grassland, tall wetland and ruderal herbs and scattered scrub.

Hedges and broadleaved woodland are UKBAP habitats. Most examples of wooded habitat within the site do not have especially high botanical value, but Gwernybendy Wood is listed as ancient woodland and still retains some good quality woodland ground flora. Ponds and streams are also BAP priority habitats. The ones in the project area are of artificial origin but still support a good range of associated species. The Llanishen stone pitching is particularly important habitat for its lichen flora and as habitat for reptiles. The semi-improved grassland habitat is very variable in its diversity and does not easily fit into BAP categories. The species-rich grassland areas to the north, south and west of the reservoirs are at least locally valuable for their flora, in addition to the drier areas on the embankments being of national significance for their grassland fungi.

Full details of the habitat surveys are included in the Appendix 2 to this EclA, whilst the distribution of habitats is presented on Figure 3.

### 5.3.2 Protected and notable plant species

The only plant species observed during the Phase 1 survey that is subject to special protection under the Wildlife and Countryside Act was the Bluebell. However, this protection only relates to its sale so is not relevant to the development.

Many of the plant species confirmed during the survey are not subject to special protection but are considered to be locally uncommon, including Adder's tongue, Betony, Common valerian (*Valeriana officinalis*), Devil's-bit scabious, Herb Paris (*Paris quadrifolia*), Greater duckweed (*Spirodela polyrhiza*), Lesser pond-sedge (*Carex acutiformis*), Pale sedge, Purple moor-grass (*Molinia caerulea*), Saw-wort (*Serratula tinctoria*), Solomon's seal, Twayblade and Wood club-rush (*Scirpus sylvaticus*). Herb Paris and Solomon's seal, which were present in Gwernybendy, are subject to a Local Biodiversity Action Plan species statement. As interest features of the Llanishen Reservoir grassland and scrub SINC and the Gwernybendy SINC the species – rich grassland and ancient woodland flora are of County ecological value.

More than twenty non-native plant species or species that are not native in South Wales, have been recorded on the site, including Japanese Knotweed (*Fallopia japonica*), Cherry laurel (*Prunus laurocerasus*) and Himalayan Balsam (*Impatiens glandulifera*).

The grassland fungi on the site have been surveyed annually since 2016, confirming that the site still exceeds the SSSI designation criteria. Olive earth-tongue (*Microglossum olivaceum*) is a UK BAP Priority species, and the Cardiff LBAP has a species action plan for waxcaps. The fungi diversity in the grassland/ embankments is therefore considered to be of national significance.

Full details of the plant and habitat surveys are included in the Appendix 2 to this EclA.



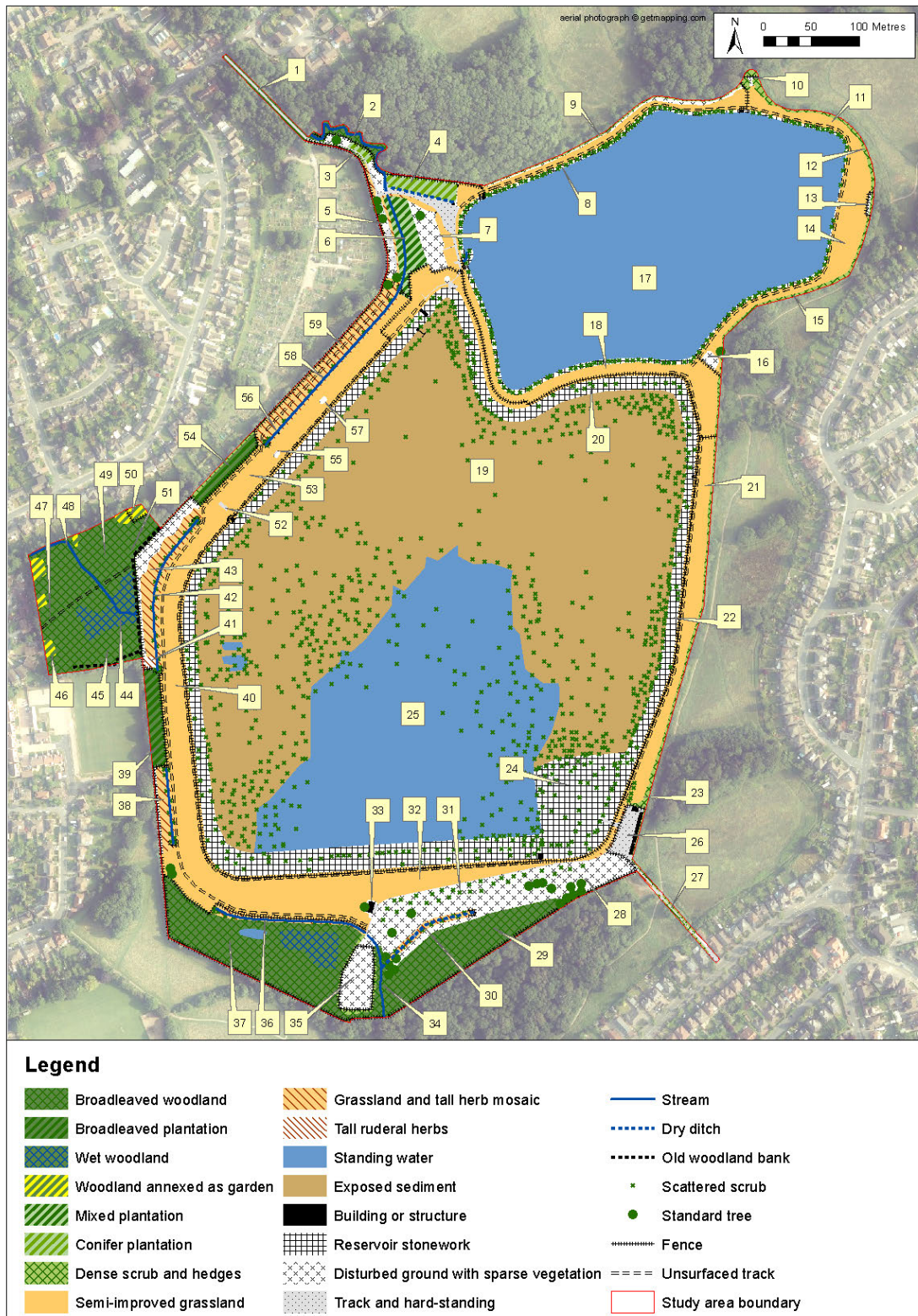


Figure 3 Phase 1 habitat figure

## 5.4 Species

### 5.4.1 Invertebrates

A population of glow worm (*Lampyrus noctiluca*) has been known to be present at Llanishen and Lisvane reservoirs for many years, although there have been very few recent sightings. A survey was carried out in July and August 2018 and confirmed that glow worms are still present, although only apparently in very low numbers. The current condition of the habitat for glow worms appears to have deteriorated over recent years due to a range of factors including succession of grassland to scrub woodland, clearance for engineering works, and potentially an increase in light pollution.

### 5.4.2 Crustaceans

In August 2018 a North Atlantic signal crayfish (*Pacifastacus leniusculus*) survey, through a combination of manual searches and trapping surveys were undertaken across the site including in the adjacent Nant Fawr stream, revealed no evidence of the crayfish.

### 5.4.3 Amphibians

Common toad (*Bufo bufo*) is a UK BAP Priority species and is especially significant at Llanishen Reservoir as a key feature of the SINC designation. Common frog and palmate newt are also present and breed in the site's wetland habitats. Most of the project area is likely to be used as foraging habitat by amphibians, and features such as banks and woodland could be used as hibernation sites.

### 5.4.4 Reptiles

The site appears to support good numbers of grass snakes (*Natrix natrix*), which are protected under the Wildlife and Countryside Act. Small numbers of slow worms (*Anguis fragilis*), which are similarly protected, may also be present. All native reptiles are protected through the Cardiff LBAP. Within the reservoir land, the stone pitching, sunny scrub margins, and areas of longer grass are likely to be the habitats most favoured by reptiles.

### 5.4.5 Fish

The native fish species in the Nant Fawr indicate that the stream are of local importance for fish, and likely to have reasonably good water quality. European eel (*Anguilla anguilla*) and brown trout (*Salmo trutta*) are both UK BAP priority species.

### 5.4.6 Birds

Any areas of trees and scrub within the project area could be used by nesting birds, which would all be protected under the Wildlife and Countryside Act. No Schedule 1 bird species have been confirmed breeding within the site, but kingfishers (*Alcedo atthis*) have increased in number through 2017 and might feasibly breed in the future if suitable habitat is present. A number of species recorded as red list species of conservation concern (Eaton et al 2015) have been recorded including Bullfinch (*Pyrrhula pyrrhula*), song thrush (*Turdus philomelos*) and reed bunting (*Emberiza schoeniclus*) all showed at least some breeding behaviour during 2017, though none were confirmed as breeding successfully on the site.

In 2017 a condition assessment of the overwintering waterbird interest features of the Lisvane Reservoir SSSI, Cardiff, was carried out using the Common Standards Monitoring (CSM) approach. The condition assessment concluded that Lisvane Reservoir SSSI is in favourable condition for the interest features Mallard (*Anas platyrhynchos*), Teal (*Anas crecca*), Tufted Duck (*Aythya fuligula*), Pochard (*Aythya farina*), Diver spp. and Grebe spp. but in unfavourable condition for Coot (*Fulica atra*).

#### 5.4.7 Badgers

Badgers (protected under the Badgers Act 1992) are present in the southern woodland, with several clusters of holes spread through approximately 60 m of woodland and functioning as a main sett.

#### 5.4.8 Otters

Signs of otters (protected by the Wildlife and Countryside Act and Conservation of Habitats and Species Regulations 2010) were observed occasionally through 2017, along the stream and at the edge of Llanishen Reservoir. The use of the site by otters appears to be limited, mainly as animals pass along the Nant Fawr stream from time to time.

#### 5.4.9 Bats

Bats, protected under the same legislation as otters, are likely to use the site for foraging. Bats could also utilise trees within the site for roosts.

Full details of the species surveys are included in the Appendix 2 to this EclA.

## 5.5 Important Ecological Features

Following a detailed review of the baseline conditions summarised above, the following habitats and or species are Important Ecological Features (IEF):

- The wintering waterfowl of the Lisvane Reservoir SSSI;
- The wax cap fungi assemblage of and the Llanishen and Lisvane Reservoir Embankments SSSI;
- The aquatic plants and toads associated with the Llanishen Reservoir SINC;
- The species-rich grassland, glow worms and reptile populations associated with the and Llanishen Reservoir grassland and scrub SINC;
- The other SINC sites that adjoin the reservoirs;
- The fish assemblage present within the Nant Fawr.

As well as the above, there several legally protected species present that although not regarded as IEF's will need consideration in the assessment to ensure compliance with the relevant legislation. These include:



- Nesting birds
- Roosting bat (if present)
- Badgers
- Otters

## 6. Proposed Development

### 6.1 Description of the Proposed Development

The rationale for the proposed development on the site is:

*“To be a hub for recreation, health and wellbeing, reconnecting people with water and our beautiful environment whilst protecting, conserving and enhancing the conservation value of the site”.*

In recent years, prior to DCWW securing the 999yr lease, the site was environmentally neglected and was informally accessed by dog walkers and members of the public. This informal access lead to desire lines and trampling of species-rich grassland and areas supporting a diverse fungi assemblage and nutrient enrichment from dog waste, again leading to a decline in floral and fungi diversity. The development proposals aim to regulate and manage public access whilst protecting and enhancing the ecological features present.

The Draft Master Plan for the development is shown in Appendix 1 .

The various development components are summarised in Table 3 below:

**Table 3 Master Plan development components**

Component	Master Plan no.	Details
Access road	1	Upgrading of the north access road (from the B4562, the Main Entrance). This will be the main vehicle access into the site. It will include a Traffic Management System.
Visitors Centre and car park	2	Landmark hub building where visitor activity is concentrated. It has been designed to provide panoramic views of the reservoirs. It will include a restaurant, meeting room, training rooms, shower & changing facilities and equipment stores.
Slipway and floating pontoon	3	To facilitate access and egress into Llanishen Reservoir for the some of the water based activities.
Access pontoon	4	Facilitating water access to the Lisvane Reservoir.
Picnic Area	5	Open access green space, with interpretation.
Gwern-Y-Bendy-Wood Conservation Zone	7	A conservation zone with access managed through organised educational/ conservation groups and ranger led activities and tours.
Learning zone	8	An education zone with an outdoor classroom will be created in Rhydypenau Wood to support experiential learning. A Welsh roundhouse will be constructed as a training project, to provide skills development.

Viewpoint/ rest point	10	Vantage point overlooking Llanishen Reservoir situated on the grass embankment.
Water based activities	11	Wide range of activities such as sailing, canoeing, kayaking, paddle boarding, picnic boats, zorbing. A small boat shed will be required to enable maintenance and servicing of boats and equipment. There will be a seasonal watersports provision on Lisvane Reservoir to minimise the impact on the overwintering bird population (see component 12 below). Watersports will be available on Llanishen reservoir all year round.
Lisvane Reservoir Winter Conservation zone	12	<p>Lisvane Reservoir will be managed in a way that ensures disturbance levels are kept to a minimum to protect overwintering wildfowl populations through the creation of a winter conservation area. Water access to Lisvane will be not be permitted during the winter months (October to March). Depending upon seasonal conditions and birds present, the closure of water access may be extended into September and/ or April.</p> <p>The path around the crest of Lisvane will be closed between points A &amp; B on the Masterplan from October to March. Depending upon seasonal conditions and birds present, the closure may be extended into September and/or April.</p> <p>Dog walking will not be permitted around the crest of Lisvane between points A &amp; B on the Masterplan all year round. The design of the footpaths will enable access between the higher and lower level paths between the two reservoirs over winter so that the path on the Llanishen side can be closed.</p>
Access gates/ points	n/a	Access into the site will be provided at four points: the Main Entrance, Towy Road Gate, Rhyd Y Penau Gate and Black Oak Gate.
Footpaths	n/a	Informal paths around the crest of both reservoirs and the base of Llanishen will be upgraded to form an Upper Footpath and a Lower Footpath around the site. These waymarked paths will guide visitors around the site. The crest footpath and paths below the reservoirs have been designed to be in green areas of least fungi significance. Access onto/ off the footpath will be carefully considered in the context of grassland fungi value. Waymarked paths will be reinforced with signage and interpretation and the on-site ranger team.
Open Bird hides		Open space viewing hide for bird watching.

Potable water and foul water services will be extended from the existing base wide network. Gas and electricity will be provided via connections to existing networks.

It is anticipated that the main construction phase of the development will last approximately 18 months commencing late 2019. The construction compound will be located on the temporary carpark near the Main Entrance.

### *Size of the development*

The proposed construction/ built environment aspects of the development are comprised of the Visitors Centre, car parking area, entry/ access gates and control aspects, and access roads. The total ground footprint of all the buildings and infrastructure components to be constructed is estimated to be approximately 1.0ha.

The works associated with the car parking and access roads are taking place partially where existing infrastructure is located, for example, the Lisvane Road access road onto the site already exists but require widening to accommodate increased traffic and visitor numbers. The existing access road is a single-track width with an asphalt surface. The total area of the access road is approximately 0.2 hectares.

The construction of the upper and lower footpath would occupy 0.85 hectares of land within the Llanishen and Lisvane Reservoirs Embankments SSSI and 0.2 hectares from the Llanishen Reservoir Grassland and Scrub SINC.

The other aspects of the development, such as the water-based activities, the Long Garden, the Learning Zone, the Gwern-Y-Bendy Conservation Zone are all 'green' developments, involving management and enhancement of the current environment. Therefore, it is not anticipated that these components will cause significant environmental impacts.

## **7. Environmental design and mitigation**

There several primary and tertiary mitigation measures have been identified through the assessment process and have been incorporated into the design and construction planning of the proposed development.

Primary mitigation is often referred to as 'embedded mitigation' and includes modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project. This mitigation thereby becomes a fundamental part of the design for which consent is sought, and which does not require additional action to be taken.

Tertiary mitigation is defined as mitigation that will be required regardless of any assessment, as it is imposed (for example, because of legislative requirements and/or standard sectoral practices). This also includes those measures contained within the agreed CEMP.

As the primary mitigation measures have been embedded into the design, and tertiary mitigation measures are legal requirements, or are standard practices that will be implemented, the assessment of likely significant effects section 8 of this EclA assumes that these measures are in place.

## 7.1 Construction

During the construction phase of the development the Principal Contractor will prepare a CEMP which will address the implementation of appropriate construction practices. The CEMP will be prepared based on current best practices with guidance sought from the relevant consultees. The CEMP will:

- State the construction mitigation associated with operating plant in terms of the best practice methods to control, for example, noise and reduce air quality impacts. Information will be provided on the installation of hoardings and fencing surrounding the proposed development site, to limit the visual impact of construction activities.
- Provide information on methods that will minimise the risk of contamination of any surface water or groundwater;
- A sustainable drainage system (SuDS) will be implemented to minimise surface water runoff and will include standard pollution prevention control measures.

All construction activities will be undertaken in accordance with the recommendations of BS 5228 'Code of Practice for Noise and Vibration Control on Construction and Open Sites'. This code details the legislative background to noise control, along with the recommended procedures for effective liaison between developers, site operators and local authorities. Methods of how to minimise the impact of site noise on site workers and residents are also provided.

A Construction Traffic Management Plan (CTMP) will be prepared that will contain information on construction related traffic including working hours, construction traffic routes and contractor car parking. This document will not only manage transport issues but will also assist in the reduction of noise associated with increased traffic.

Any activities which may impact on the site's ecological opportunities, for example, vegetation clearance during nesting bird season will be supervised and authorised by an appointed ECoW or be subject to further surveys and assessments.

The construction (and any small-scale demolition required) associated with the development will inevitably generate waste. However, the use of resources can be minimised through construction site best practice and by maximising the amount of materials that can be re-used or recycled. A Site Waste Management Plan (SWMP) produced prior to the start of construction will detail these measures. Waste will also be produced during the operational phases of the proposed development although this will be limited, where feasible, with a focus on recycling.

DCWW are aware they are responsible for environmental management for the overall delivery of the Project in compliance with relevant environmental legislation, the mitigation measures to be set out in the CEMP and any Requirements to be implemented as part of planning conditions.

DCWW will ensure that there is a dedicated Environmental Manager who will either be employed by DCWW or a nominated member of the Principal Contractor's staff.

## 7.2 Operation

A number of mitigation measures covering the operational phase have been embedded into the scheme design, namely:

DCWW has prepared a Draft SMP in consultation with NRW, which covers operational conservation management on the site (across all the ecological habitats and species), heritage management, visitor management, education, site maintenance, health and safety and community involvement.

Overall the ecological value of the site will be safeguarded by protecting the most environmentally sensitive areas through a number of controls: temporal and spatial zoning of activities, way marked paths, signage and interpretation, an on-site ranger team and the creation of new byelaws.

The Environmental Management System (EMS) within the SMP details measures to prevent the potential contamination of land through the management of waste. This includes the appointment of a waste warden who makes regular checks to ensure compliance with statutory waste requirements and the adoption of a waste action plan aimed at increasing recycling and reducing waste.

Specific measures to reduce operational impacts on ecological features outlined in the SMP include the following:

### *7.2.1 To avoid disturbance to wintering wildfowl*

- Formal watersports activities will be concentrated on Llanishen reservoir;
- No third-party organisations will have direct access to the water for recreational activities to ensure that numbers present on the reservoir are maintained at an appropriate level;
- On and around Llanishen and Lisvane, DCWW will only permit wind or personally propelled water sport activities plus a small number of low powered electric leisure boats. Safety boats will be used to maintain water safety and for instructional use, but these tend not to be used at any speed for any length of time; Only four stroke, water cooled engines will be used on safety boats to minimise noise and pollution risk.
- Water access to Lisvane will be not be permitted during the winter months (October to March), except for strict operational requirements;
- The path around the crest of Lisvane will be restricted between points A & B on the Masterplan from October to March;

### *7.2.2 To maintain and safeguard the SSSI fungi assemblage*

- Grassland areas within the SSSI that occur on the reservoir embankments will be managed using a strict specification set out in the SMP which has been agreed between DCWW and NRW;

- Paths to provide access around the reservoirs have been designed so as to cause minimum impact upon high value grassland areas, by avoiding areas of high fungi or plant diversity;
- Paths and will be surfaced to discourage access off the path;
- Waymarked paths will be reinforced with signage and interpretation and the on-site ranger team;
- Through the use of short leads only dogs will be kept under close control and not allowed to trample, damage or foul on protected grassland areas. Dog Control Orders will be in place to allow site staff to issue fixed penalty notices for breach of site regulations.

*7.2.3 To avoid disturbance to foraging bats and glow worms:*

- External lights will not be left switched on at night and internal lighting will be prevented from spilling outside the building through careful light management and internal barriers such as window blinds where practical;

*7.2.4 To avoid disturbance to badgers:*

- Visitors and members of the public will be steered away from the badger setts to ensure disturbance is maintained as low as possible. Setts will be monitored for activity and any signs of excavations into dam embankments will be consulted upon with an appropriately qualified ecologist.

*7.2.5 To ensure the public behave in a sympathetic and appropriate manner:*

- The site signage, the educational activities and the site warden staff will serve to educate the public and ensure that they behave in a sympathetic and appropriate manner.



## 8. Assessment of Effects and Mitigation Measures

This section discusses the potential effects during the construction and operational phases of the development, assuming primary and tertiary mitigation are in place and outlines any additional secondary mitigation measures that might be required. Finally, the potential for cumulative impacts are considered.

### 8.1 Potential impacts

It is considered that the development proposals may give rise to the following potential impacts. Impacts are divided into the construction and operational phases of the development:

#### 8.1.1 Construction

There is the potential for the construction works (visitor centre and path upgrades) to potentially disturb (noise, visual and lighting) the wintering waterfowl assemblage of Lisvane reservoir, this would be temporary for the duration of the construction phase but would potentially be significant causing displacement of the wintering wildfowl. Therefore, the main construction of the visitor centre should be programmed to occur outside of the period when wildfowl are present.

As set out in Section 7 All construction activities will be undertaken in accordance with the recommendations of BS 5228 'Code of Practice for Noise and Vibration Control on Construction and Open Sites'. A detailed noise assessment will be carried out by the Principal Contractor to identify specific mitigation measures for the development. Noise levels will not exceed any boundary noise limits set out in any planning condition Requirements.

During the operation stage of the development the control of noise levels and any potential significant environmental effects will be managed through the effective implementation of the DCWW's EMS and SMP, which will be reviewed and updated as appropriate.

Based on these measures it is unlikely that there will be any significant effects on ecological receptors from the development on noise levels during either construction or operational phases.

The physical footprint of the new visitor centre and the access road upgrade have avoided the boundary of both SSSI, so no direct habitat loss will occur. The creation of the upper and lower footpath would result in the loss of a small area of grassland habitat (0.85 hectares 13% of the SSSI total of 6.5 hectares) on the reservoir embankments. This would result in a net loss of grassland embankment habitat that could potentially support a species-rich assemblage of plants and fungi and would be a permanent loss of habitat.

However, as indicated in Section 7, before DCWW secured the site informal access had begun to damage the plant and fungi interest through trampling and nutrient enrichment from dog faeces. The formalising of footpaths with a limited number of surfaced paths will reduce the impacts of trampling from unregulated access. In addition, DCWW have been granted assent by NRW to allow works to occur within the SSSI boundary, including a broad assent



for activities associated with the proposed recreation elements of the current development proposals. As outlined in Section 7 and indicated on the draft master plan the location of footpaths will avoid areas of grassland with a diverse wax cap or grassland flora. Actions outlined in the draft SMP will manage the remaining SSSI embankment grassland to maintain and enhance the plant and fungi diversity. Therefore, although there is a residual loss of habitat this will be compensated through enhanced management and removing the trampling and nutrient enrichment through regulation and formalising access.

The footpath works would involve the permanent loss of 0.2 hectares from the Llanishen Reservoir Grassland and Scrub SINC. As outlined above for the SSSI, there is a residual loss of habitat this will be compensated through enhanced management and removing the trampling and nutrient enrichment through regulation and formalising access.

The upper parts of the stone pitching around Llanishen reservoir support a diverse lichen community and this habitat could be lost during renovation works. The DCWW Dam Safety team is responsible for maintenance of dam walls and stonework associated with either reservoir, any maintenance works will be carried out in such a manner as to safeguard the existing lichen communities. It is therefore not envisaged that construction will cause any loss of lichen communities.

There will be some habitat loss associated with the construction of the upgrades to the access road (0.2 hectares in extent) this would involve the loss of some broadleaved tree cover, and may involve a very small loss of habitat designated under the Coed-ty-Llwyd SINC. Some grassland habitat designated as SINC may be lost to accommodate engineering works and footpath upgrades (0.2 hectares), but this will be kept to a minimum. As outlined in Section 7 and indicated on the draft master plan the location of footpaths will avoid areas of grassland with a diverse grassland flora.

A number of broadleaved trees may require removal to accommodate the access road. Previous survey work highlighted some limited potential for roosting bats, under dense ivy on some trees. Prior to works commencing any trees to be removed will be subject to a detailed bat survey. If roosting bats are identified then subject to consultation, appropriate provision of alternate roost provision (e.g. bat boxes) and successful licence application to NRW, the tree will be removed under licence. Therefore, significant impacts on bats are not expected.

Likewise, any additional vegetation removal required will either occur outside of the bird breeding season (late February to August inclusive) or will be subject to a nesting bird check by the Ecological Clerk of Works, prior to removal. These measures are detailed in the CEMP and for this reason significant impacts on nesting birds are not expected.

Due to the discrete nature of the physical development and the limited loss of grassland and other habitat no significant impacts on glow worms or reptiles are expected during the construction phase.

The largest potential air quality impact will be the emissions associated with construction activities; dust and particulate matter (PM<sub>10</sub>) from construction processes and nitrogen dioxide (NO<sub>2</sub>) and PM<sub>10</sub> from construction vehicles. However, the impacts with respect to ecological receptors are likely to be minimal with the effective implementation of good construction practices, as outlined in the CEMP.

In terms of operational air quality impacts, there will be no net increase in vehicle movements over previous or current levels as car parking capacity would be broadly similar

and it is envisaged that a proportion of visitors would arrive on foot from nearby residential areas. There will therefore be no impact on ecological receptors due to changes in air quality arising from the development.

Based on this assessment it is anticipated that with the effective implementation of the mitigation measures using best practice construction techniques, that it is unlikely that there will be any significant effects on ecological receptors from the development on air quality during either the construction or operational phases.

The construction phase of development poses the highest risk of exposing contaminated land. Prior to any disturbance works, more detailed studies will be carried out by DCWW to establish if remedial work is required prior to construction activities commencing.

Sewage will be discharged into the existing mains sewer and is not expected to lead to the contamination of land or water.

Based on this assessment it is anticipated that with the effective implementation of the mitigation measures that potentially contaminated land will not pose a significant risk to ecological receptors during construction or operation of the development nor will the development lead to the contamination of land or water.

The main sensitive water bodies in the site are Llanishen Reservoir, Lisvane Reservoir and the Nant Fawr watercourse.

The potential for flooding or contamination of any surface water during the construction phase would be minimised through the effective implementation of a CEMP that will adopt best practices and appropriate guidance from the NRW. The CEMP will contain a Water Management Plan (WMP) which will set out good practice for safeguarding water resources and quality on the Project Site.

### *8.1.2 Operational*

Due to the primary mitigation measures outlined in Section 7, in particular the mitigation measures outlined in the Draft Site Management Plan it is envisaged that there will be no significant negative effects associated with the operational phase of the development.

It is anticipated, that with effective implementation of the measures outlined in the draft SMP that there is likely to be a net positive impact as the site is managed for the benefit of both people and wildlife. Implementation of the habitat management measures will regulate access reducing the potential for trampling and disturbance and likely benefit the habitats and species present.

## **8.2 Cumulative Effects**

The site is owned by DCWW with no other parties having access or rights to the site. Given the limited extent and level of the proposed development it is not considered likely that other developments which exist outside the Llanishen and Lisvane reservoirs site boundary will together have a potential cumulative impact.

## **9. Compensation and Enhancement**

No compensation measures are envisaged as being required.

Enhancement measures are summarised in Section 7 and detailed in the Draft SMP.

## **10. Monitoring**

Monitoring of the implementation of the primary and tertiary mitigation outlined will be essential to ensure no significant effects arise. Monitoring and reporting protocols during the construction phase will be detailed in the CEMP and other construction phase documentation, whilst during the operational phase the Draft SMP will detail the monitoring procedure.

## **11. Conclusions**

As the physical development footprint is discrete in nature, having largely avoided designated sites, and that the rest of the development proposals involve development of existing green infrastructure (rather than physical development). That a comprehensive CEMP will be implemented during construction and that a draft SMP has been produced pertaining to the operational phase it is envisaged that the proposed development is unlikely to give rise to significant negative environmental effects.

Overall, it is considered that the development proposals are likely to have a significant positive effect.

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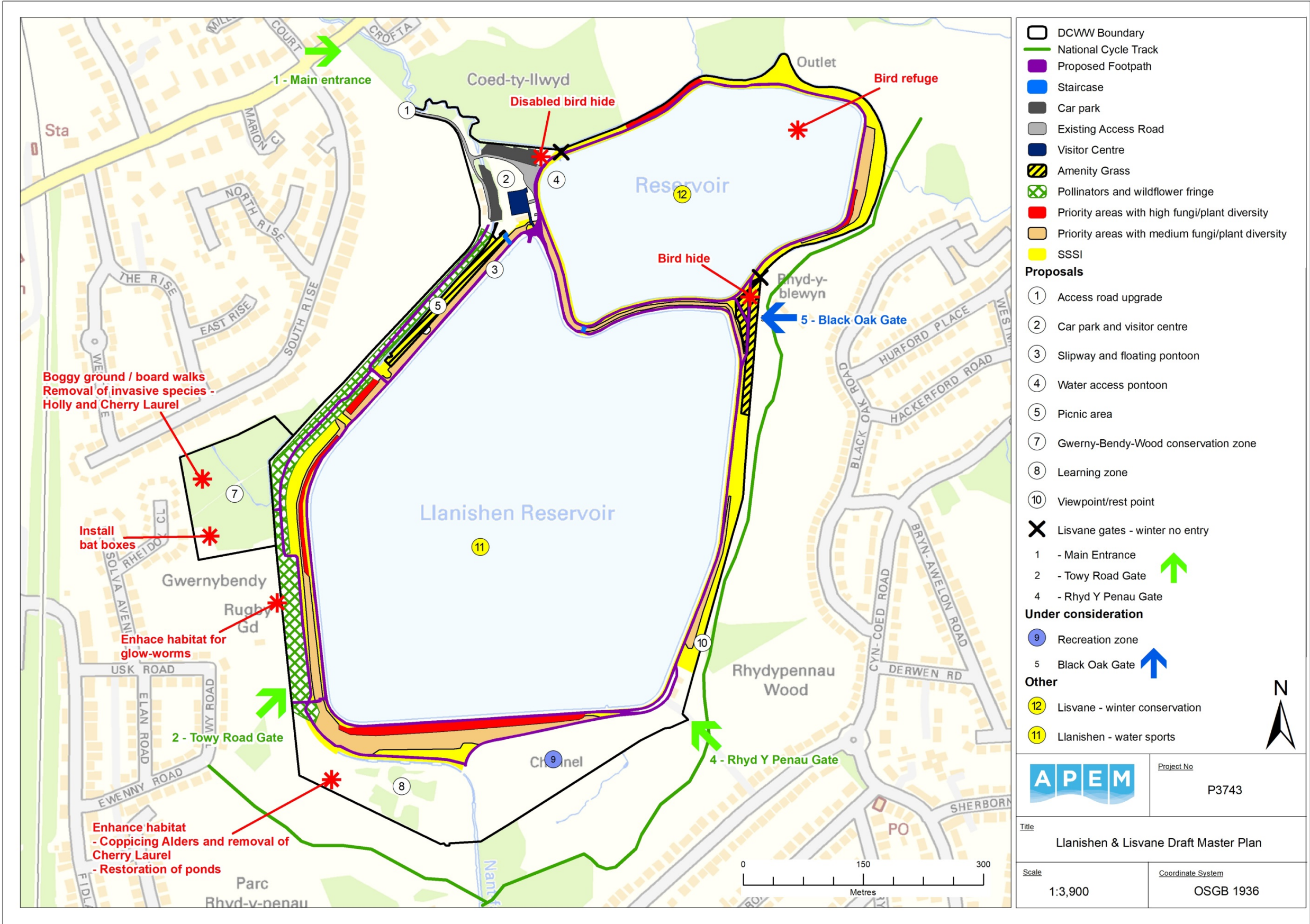
ARCADIS (April 2019) Llanishen and Lisvane Reservoir Visitor and Water sports activity Centre – Transport Assessment.

Llanishen and Lisvane Footpath Construction Methodology unauthored dated 22/5/19.

Feilden Clegg and Bradley Studios Lisvane and Llanishen Design and Access Statement

## Appendix 1 Draft Master plan





## Appendix 2 Reports used to compile baseline

Llanishen Reservoirs Badger Advice Note, APEM, July 2016.

APEM (2017). Assessment of grassland fungi at Lisvane and Llanishen reservoirs. APEM Scientific Report P00001231. Dwr Cymru Welsh Water, January 2017, v2.0 Final, 39 pp.

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Monthly ECoW reports, submitted from APEM to DCWW, dating from May 2017 to present.

Llanishen Reservoirs Badger Advice Note, APEM, July 2016.



## Appendix 3 Cardiff Council EIA Screening Opinion

Dear Mr A Waters

**Town and Country Planning Acts 1990 (As Amended**

**Screening Opinion No. SC/19/00007/MJR**

**Proposal: REQUEST FOR AN EIA SCREENING OPINION FOR PROPOSED DEVELOPMENT TO SERVE AS A HUB FOR RECREATION, HEALTH AND WELLBEING**  
**Location: LLANISHEN AND LISVANE RESEVOIR, LISVANE ROAD, LISVANE, CARDIFF, CF14 0SA**

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In accordance with the powers delegated to me by the County Council under the above Act, my decision is as follows:

### Summary Decision:

I refer to your submission dated 3 June 2019 which enclosed a screening report by APEM dated May 2019.

The proposals as described are not considered likely to realise such significant environmental effects as to require the submission of an Environmental Statement to allow the Local Planning Authority to determine a planning application for the proposal.

### Reasoning

The above proposal has been screened with regard to the need for the preparation of an Environmental Statement to accompany any planning application as may be submitted, in accordance with Regulation 6 of the Town And Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (The Regulations).

The proposed development is not Schedule 1 development.

Circular 11/99 advises that development listed in Schedule 2 is likely to require EIA if it is likely to have significant effects on the environment, by virtue of factors such as its size, nature or location (paragraph 28). Schedule 2 development is of a type listed in Schedule 2 which:

is located wholly or in part in a 'Sensitive Area' as defined in regulation 2(1); or

meets one of the relevant criteria or exceeds one of the relevant thresholds listed in

the second column of the table listed in Schedule 2.

The site contains the Lisvane Reservoir and Llanishen and Lisvane Reservoir Embankments Sites of Special Scientific Interest (SSSIs) which are 'Sensitive Areas' as defined by the regulations. The proposed development is therefore 'Schedule 2' development.

The Llanishen and Lisvane Reservoir Embankments SSSI are designated for their diverse assemblage of grassland fungi, including over 25 species of waxcap. Lisvane Reservoir is a SSSI for its wintering wildfowl.

Llanishen Reservoir is also a Grade 2 Listed Building (CADW Ref 87591, designated July 2009) as an integral part of the nineteenth century water-supply system for Cardiff.

As required by Regulation 5(8) I would confirm that, in making my decision, I have considered:

All the information provided within your request for the Council's opinion;

- a. The available results of other environmental assessments carried out pursuant to Union legislation other than legislation implementing the requirements of the Directive;
- b. The selection criteria for screening set out in Schedule 3 as follows:

#### The Characteristics of Development

The proposals are for the creation of 'hub' for recreation, health and well-being at Llanishen and Lisvane Reservoirs, a site of approximately 25 Hectares, including:

A two-storey landmark visitor and watersports centre approximately 1,000 sqm footprint;

- . Non-motorised watersports e.g. sailing, canoeing, kayaking, paddle boarding;
- . Footpath routes;
- . Bird watching;
- . Education, picnic and play areas.

The visitor centre would be accessed via an existing lane from Lisvane Road to the northwest, which also provides access to South Rise Allotments. This lane would need to be widened to a 2-way carriageway with a 3 metre wide shared footway/cycleway alongside, necessitating some tree and habitat loss.

The footpath network within the site is being finalised in consultation with Natural Resources Wales. Current proposals are for upper and lower routes around the reservoir embankments which are located in areas of least significance regarding the SSSI designation. Access for dogs and walkers may be restricted around sensitive parts of the site at certain times of the year in order to protect the SSSI interests.

Even if a development is categorised as 'Schedule 2' development under the regulations, the key issue is whether the proposed development is *likely* to have significant effects on the environment by virtue of factors such as its size, nature or location. The presence of SSSIs within this site does not automatically lead to the conclusion that EIA is required. Although

Welsh Office Circular 11/99 advises that the likely environmental effects of Schedule 2 development will often be such as to require EIA if it is to be located in or close to SSSIs (paragraph 37), it does not follow that every Schedule 2 development in (or affecting) these areas will automatically require EIA (paragraph 38).

The development described above is being carefully developed in consultation with Natural Resources Wales to ensure that the SSSI interests within the site are maintained or enhanced. For example, footpaths within the designations are being carefully located in the least sensitive locations and access is proposed to be managed at certain times of the year. It is therefore considered that the effects on the environment are unlikely to be so significant as to justify concluding that EIA is required.

Although the site size is large, comfortably exceeding the 5 hectare threshold for urban development projects under 10(b) of schedule 2, it is noted that the majority of the site is covered by the water bodies and the actual proposed development covers a much smaller area of the site.

Another category for urban development projects in 10(b) of Schedule 2 is non-residential development exceeding 1 hectare. Other than the two-storey visitor centre and associated car park and access widening, the proposals are mainly for recreational routes around the reservoirs. Taken in isolation, the proposed visitor centre, associated car park, and widened access are unlikely to have significant effects on the environment.

The application intends to become a visitor attraction that will generate increased car movements to/from Lisvane Road to the northwest. The proposed car parking within the site is limited to c. 100 spaces and sustainable travel options are being developed. It is considered that the transport impacts of the development can be satisfactorily assessed through a Transport Assessment accompanying the application as a supporting document.

Other developments are planned or under construction in the vicinity including:

Up to 1,000 dwellings, a primary school and village centre north and east of Lisvane (14/02891/MJR) (partly under construction);

Land at north east Cardiff, between Lisvane and Pontprennau, is allocated in the Local Development Plan (January 2016) for a mixed use comprehensive development of a minimum of 4,500 homes, employment and other associated community uses and supporting infrastructure. This 'Strategic Site' allocation includes land immediately north of Lisvane Reservoir, although there are no planning applications for this land at present; The Council has aspirations to construct a 3 metre wide cycleway and a 2 metre wide footpath to the east of the site, forming a recreational route through the Nant Fawr Corridor from Roath Park to the north.

The mixed use development currently under construction, known as 'Churchlands,' required EIA before the development was approved. Any future development within this allocation immediately north of the reservoirs will also be accompanied by an Environmental Statement.

The segregated cycleway and footpath proposals through the Nant Fawr meadows east of the site would provide connections with the reservoir proposals and the Strategic Site to the

north. However, it is not considered that, cumulatively, this would warrant the need for an Environmental Statement to accompany the application given that the scale of the development, being a footpath and cycleway, is small in scale and there would be no vehicular access along this recreational route.

There are no known significant resource or waste implications for the proposals. It is noted that natural materials will be used in the construction process. It is noted that a site waste management plan will maximise the amount of materials that can be re-used or recycled. It is noted that a Construction and Environmental Management Plan (CEMP) will be applied during the construction period.

It is not considered that significant air or noise pollution implications would arise from the development.

Part of the west boundary of the site, including part of the land reserved for the visitor centre, is located within Zone C2 as defined by the Development Advice Map (DAM) referred to in Technical Advice Note 15 (July 2004). Any future application will need to be accompanied by a Flood Consequences Assessment to

The risks to human health as a result of the development are expected to be minimal/nil.

#### Location of Development

The reservoirs are located in the northeast of Cardiff and the site is currently closed to public access. Llanishen Reservoir is drawn down, although some re-filling through rainfall has occurred.

The site is in close proximity to existing residential areas of Cyncoed, Lisvane and Llanishen and is positioned at the northern end of a natural green corridor that follows the Nant Fawr stream through the city.

The SSSI designations and considerations of their impact have been considered previously in this report and are not repeated here, other than to confirm that the environmental impacts upon these designations are unlikely to be significant as a consequence of careful design and management in consultation with Natural Resources Wales. A

It is not considered that the development will place significant pressures on the natural environment. It will remain a private site with controlled access for the public.

The site is located within the urban fabric and is unlikely, due to its use and location, to impact upon the heritage and nature conservation designations.

The development will have impact on the heritage significance of the Llanishen Reservoir Dam and DCWW would not in any way compromise the dam as it provides the key attribute (the reservoir) on the site. Based on this screening review it is anticipated that with the effective implementation of mitigation measures, that it is unlikely that there will be any significant effects from the development on the historic environment during either the construction or operational phase.

#### Types and Characteristic of the Potential Impact

I have considered the likely types and characteristics of the potential impact of the proposal (including having regard to potential alternatives, limitations or conditions), and taken into account the impacts (i.e. their magnitude, their nature, their extent, their intensity and complexity, their probability, their duration, frequency and reversibility, their cumulative impact and options to reduce).

The proposed development is likely to be an attraction for visitor in the North Cardiff area and further afield. Traffic impacts are likely to be the greatest impact in this regard. It has already been stated that a Transport Assessment will ensure that these impacts are properly assessed however it is unlikely that significant transboundary impacts will be experienced, judging by the limited car parking available at the site and the promotion of alternative sustainable means of travel.

There is likely to be some impact experienced by local residents in the early life of the development during good weather spells and holidays. However, these impacts could be satisfactorily assessed during the processing of an application and are not considered to require EIA.

The impacts of the proposals are unlikely to be highly complex or have an intensity that justifies EIA development.

The likely impacts are measurable and predictable, reducing the need for EIA.

I have concluded that:

That the proposed development does not fall within Schedule 1 of the Regulations, and that there is no mandatory requirement for an Environmental Impact Assessment;

Despite the development being Schedule 2 Development due to the presence of the Llanishen and Lisvane Reservoir Embankments and Lisvane Reservoir SSSIs within the site, the impacts of the development are unlikely to result in significant effects on the environment.

In summary, I would confirm that the Local Planning Authority does not consider the proposals to be a major development of more than local importance, does not consider the development would significantly impact on any environmentally sensitive or vulnerable locations and does not consider the development would have any unusually complex or hazardous effects. It is the Local Planning Authority's opinion that the development does not constitute EIA development.

Yours faithfully

**James Clemence**

**Head of Planning**