

Biodiversity Impact Calculator



Oxpens

On behalf of SEED Landscape Design Ltd

March 2020

Ecology by Design Ltd,

Hampden House, Monument Park, Chalgrove, Oxon OX44 7RW.

Tel 01865 893346 www.ecologybydesign.co.uk

Project Code	Title	Date of Issue
EBD00856	Oxpens	14 th April 2020

	Name	Date
Prepared by	Kate Philpot BSc, MSc, GradCIEEM	28 th March 2020
Checked by	Ben Gardner BSc (Hons) MCIEEM CEnv	14 th April 2020

Copyright Ecology by Design Ltd. All rights reserved.

No part of this report may be copied or reproduced by any means without prior written consent from Ecology by Design Ltd. If you have received this report in error please destroy all copies in your possession or control and notify Ecology by Design Ltd.

This report has been commissioned for the exclusive use of the commissioning party unless otherwise agreed in writing by Ecology by Design Ltd; no other party may use, make use of or rely on the contents of the report. No liability is accepted by Ecology by Design Ltd for any of this report, other than for the purposes for which it was originally prepared and provided.

Opinions and information provided in this report are on basis of Ecology by Design Ltd using due skill, care and diligence in the preparation of this report and no explicit warranty is provided as to its accuracy. It should be noted that no independent verification of any of the documents or information supplied to Ecology by Design Ltd has been made.

Contents

- 1 Executive Summary 2**

- 2 Introduction..... 3**
 - 2.1 Background and Survey Objectives..... 3*
 - 2.2 Site Description..... 3*
 - 2.3 Proposed Works..... 3*

- 3 Methods 3**
 - 3.1 Preliminary Ecological Appraisal 3*
 - 3.2 Biodiversity Impact Calculator..... 3*

- 4 Results..... 4**
 - 4.1 Biodiversity Impact Calculator..... 4*

- 5 Conclusions..... 5**

- 6 References..... 5**

- 7 Appendix 1 – Site Landscaping 6**

1 Executive Summary

Ecology by Design Ltd was commissioned by SEED Landscape Design Ltd to undertake a biodiversity impact assessment of land at Oxpens near Wigginton in Oxfordshire (SP37967 33536). The client seeks to submit a planning application under paragraph 79 to develop a residential property on the land. Under paragraph 79 the scheme design will be of 'exceptional quality' and will seek to significantly enhance the site for wildlife. The biodiversity impact calculator tool has been utilised to demonstrate how the proposed enhancements to the land will significantly increase biodiversity on site.

The site contains an MG4 lowland meadow, a fragment of semi-natural woodland, ash plantation woodland and a man-made pond. There is a stone barn on the edge of the meadow.

The Biodiversity Impact Calculator returned a net biodiversity gain of 31.92 habitat units and 5192.26 hedgerow units.

This calculation does not consider non-metric recommendations within the preliminary ecological appraisal (Ecology by Design 2019). The clients plans for the installation of bat, bird and insect boxes across the site and provisions for nesting barn owl to be made within the existing barn, will all have a further benefit to biodiversity but are not accounted for in the biodiversity impact calculator.

2 Introduction

2.1 Background and Survey Objectives

Ecology by Design Ltd was commissioned by SEED Landscape Design Ltd to undertake a biodiversity impact assessment of land at Oxpens near Wigginton in Oxfordshire (SP37967 33536). The client seeks to submit a planning application under paragraph 79 to develop a residential property on the land.

The objective of this report is to quantify the impact of this development on the biodiversity currently on site.

This document should be read in conjunction with the detailed Design Development Document (SEEDLandscape, 2020) which provides detail on the biodiversity and landscape proposal.

2.2 Site Description

The site is situated to the west of Wigginton a small village in Oxfordshire. The site comprises lowland MG4 grassland and ash plantation woodland with a manmade pond at the centre. The site is surrounded on all sides by farmland with a mixture of grazing and arable fields.

2.3 Proposed Works

The development proposal will include a paragraph 79 dwelling with associated access and landscaping. The landscaping will include wild, naturalistic gardens with limited formal management, the pond on site will be enhanced for wildlife. Habitat creation will include damp woodland, a new area of meadow, enhanced native woodland planting in place of the current ash plantation and enhanced hedgerow planting along the boundaries. The barn will be retained and provisions for a nesting barn owl provided. The MG4 grassland meadow is considered to be of high conservation value and will not be developed, instead it will be appropriately managed and enhanced.

3 Methods

3.1 Preliminary Ecological Appraisal

A preliminary ecological appraisal (PEA) was conducted on 4th April 2019 by Ecology by Design (Ecology by Design, 2019). An NVC and eDNA survey were also undertaken of the site during 2019.

3.2 Biodiversity Impact Calculator

Data from the PEA and the proposed site plan were used to complete the Natural England biodiversity metric 2.0 calculation tool (Natural England, July 2019). This tool is an update of the original DEFRA metric piloted in 2012 and the most up-to-date biodiversity impact calculator available.

4 Results

4.1 Biodiversity Impact Calculator

The Biodiversity Impact Calculator returned a net biodiversity gain of 31.92 habitat units and 5192.26 hedgerow units. This equates to a percent net gain in biodiversity of 34.59% for habitat and 126.34% for hedgerows.

Table 1. Biodiversity Impact Calculator summary:

Summary Figures		
Net project biodiversity units <small>(including all on-site & off-site habitat retention/creation)</small>	Habitat units	31.92
	Hedgerow units	5192.26
	River units	0.00
Total project biodiversity % change <small>(including all On-site & Off-site Habitat Creation + Retained Habitats)</small>	Habitat units	34.59%
	Hedgerow units	126.34%
	River units	0.00%

The net gain results in the enhancement of the on-site pond which will be enlarged to a more naturalistic shape, ledges will be cut into the banks and it will be planted with marginal and aquatic vegetation. The meadow will be completely retained and enhanced through appropriate management and supplementary seeding if necessary. The native broadleaved semi-natural woodland pocket will also be retained and enhanced. The plantation woodland is dominated almost entirely by ash which are expected, in time, to die from ash die back which is already present in surrounding hedgerows. For this reason, as a replacement, a native broadleaved woodland with improved woodland ground flora and a grassland meadow will be created. This will dramatically increase habitat and species diversity in this area. The current ash plantation woodland will also be the area in which a small section is cleared for the new dwelling. Around the new dwelling ornamental and native species will be planted, this will form a very naturalistic and wild “garden” space with limited intensive management.

The creation of the habitats above will create species and structural diversity in the most botanically poor part of the site and will also provide different ecosystems for which they can flourish. The lines of trees and defunct hedgerows around the retained meadow will all be improved with native species planting to help improve their connectivity. They will also be managed appropriately to provide food year-round for birds and invertebrates and nesting opportunities.

The new trees and hedgerow plants will mostly be native and consist of a variety of species.

5 Conclusions

The Biodiversity Impact Calculator returned a net biodiversity gain of 31.92 habitat units and 5192.26 hedgerow units. This is a considerable net gain, especially when the non-metric enhancements including the integrated bat and bird boxes and enhancement of the barn for barn owl are not taken account of by the metric and hence provide considerable additional benefit.

6 References

SEED (2019) *Developed Masterplan rev C*. (OXO_002 – stage 3) SEED, Bath.

SEED (2019) *Design Development Document*. (OXO_005 – stage 3) SEED, Bath.

SEED (2019) *New woodland section*. (OXO_006 – stage 3) SEED, Bath.

SEED (2019) *Meadow and Lake Section*. (OXO_007 – stage 3) SEED, Bath.

SEED (2019) *Damp wood, bats and birds*. (OXO_008 – stage 3) SEED, Bath.

DEFRA (2010) *Biodiversity offsetting pilots*.

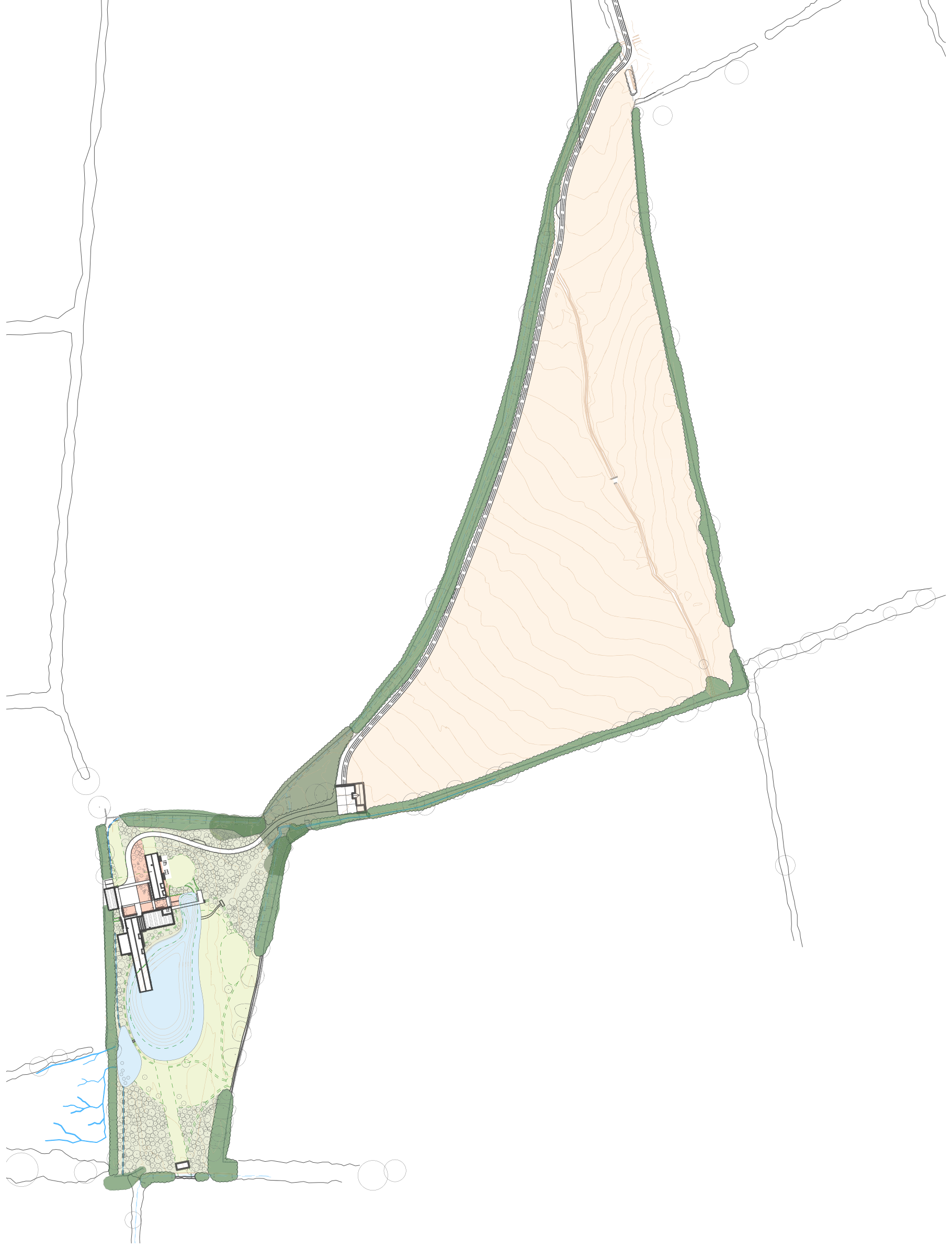
Ecology by Design (2019) *Oxpens, Preliminary Ecological Appraisal*.

JNCC (2007) *Handbook for Phase 1 Habitat Survey. A technique for environmental audit (reprint)*. Joint Nature Conservation Committee, Peterborough.

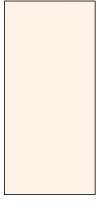
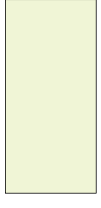
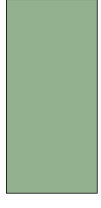
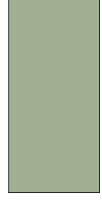
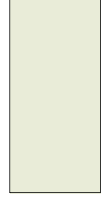



Natural England (2019) *The Biodiversity Metric 2.0*.

7 Appendix 1 – Site Landscaping

See next page.



KEY / LEGEND

-  46050m² of Damp Meadow improved through management
-  5430m² of Proposed Native Meadow and species rich lawn
-  1862m (linear meters) of Existing Hedgerow and hedgerow trees improved through management
-  2720m² of Existing Woodland improved through management
-  6000m² of Proposed Native Woodland
-  3735m² of improved lake with wetlands and marginals habitats
-  500m² of Naturalist ornamental Planting
-  320m² of Building footprint