LAND SOUTH OF JUNCTION 34, M4, HENSOL

ENVIRONMENTAL STATEMENT NON-TECHNICAL SUMMARY
FEBRUARY 2014

Land South of Junction 34, M4, Hensol

Environmental Statement

Non-Technical Summary

Prepared on behalf of Renishaw Plc

February 2014

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Prepared on behalf of Prepared on behalf of
Renishaw Plc

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Ref: 20184

Date: 18th February 2014

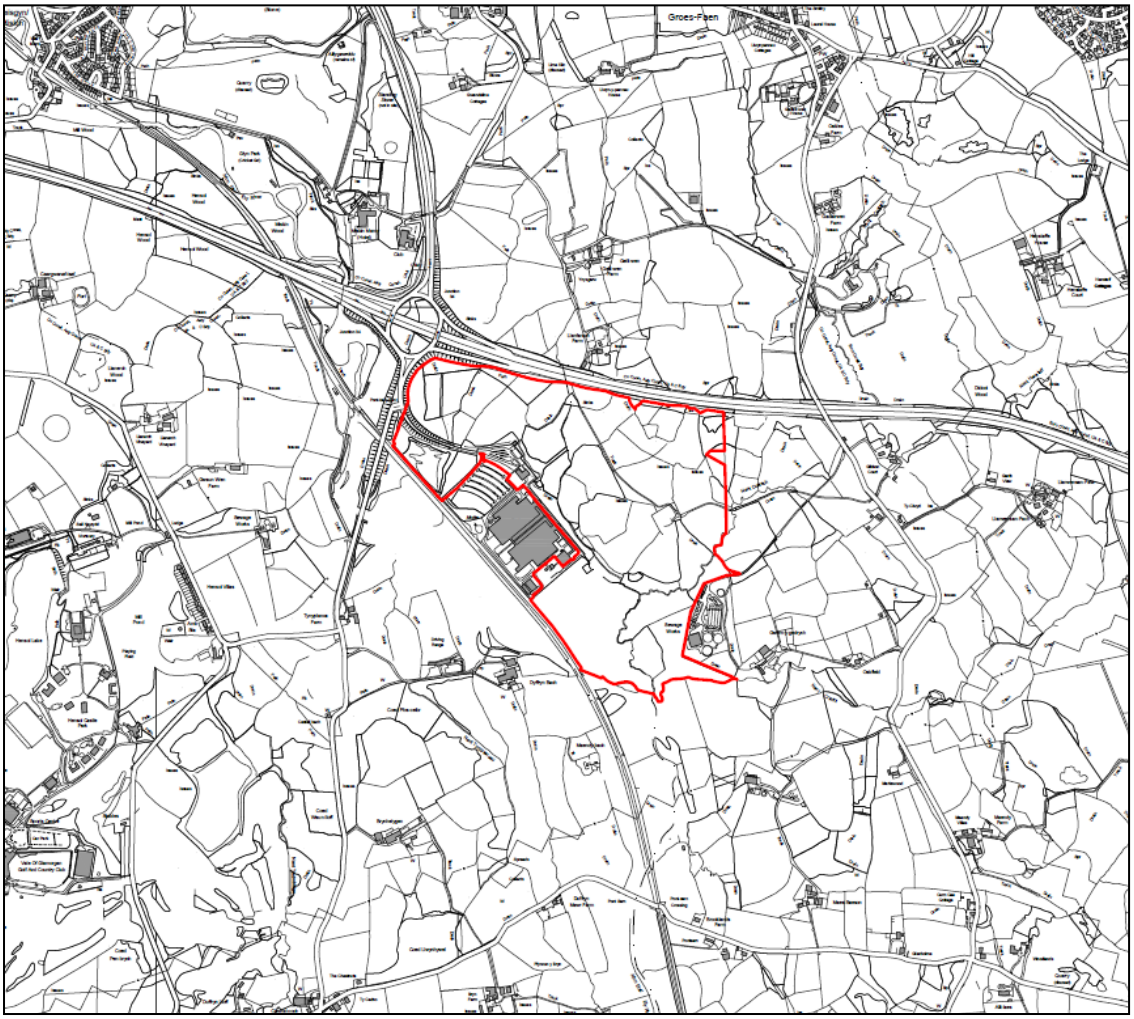
CONTENTS

1.0 INTRODUCTION

1.1 Renishaw Plc (the "Applicant"), is applying for outline planning permission for the development of land situated to the south of junction 34 of the M4, Hensol.

1.2 The site (hereafter referred to as the "Application Site") as shown in **Figure 1** is 67.7 hectare (ha) in area and is situated within the Vale of Glamorgan (VoG).

Figure 1 (Application Site red line boundary)



1.3 This report provides a non-technical summary of the Environmental Statement (ES) prepared to accompany the planning application. The ES presents the findings of an Environmental Impact Assessment[1] (EIA) undertaken in support of the planning application.

[1] Prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2011

1.4 The full findings of the ES are presented in a comprehensive set of documents that can be viewed at:

The Vale of Glamorgan Council
Dock Office
Barry Docks
Barry
CF63 4RT

Tel: 01446 704681
Email: developmentcontrol@valeofglamorgan.gov.uk

1.5 The ES may be purchased in volumes, the costs for which are set out below:

- Non-Technical Summary (NTS) – £20
- Volume 1: ES Main Text & Figures - £100
- Volume 2 & 3: ES Appendices - £150
- Full copy (Volumes 1 & 2 with NTS) of the ES on CD - £20

1.6 For copies of any of the above please contact the Environmental Planning team at Barton Willmore:

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7 Soho Square
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2.0 THE APPLICATION SITE & PROPOSED DEVELOPMENT

Application Site

2.1 The Application Site is situated to the south of the M4 Motorway, south east of junction 34. The South Wales Mainline railway line and the existing Renishaw Plc manufacturing facility (formerly owned by Bosch) forms the southern boundary. The Felin Isaf Castle Mound Scheduled Ancient Monument (SAM) is located adjacent to the railway line close to the western boundary. A waste water treatment plant and agricultural land lie adjacent to the east of the Application Site.

2.2 The Application Site extends to 67.7 hectares and comprises agricultural fields and existing areas of woodland. The Agricultural Land Classification survey has identified 9ha of Grade 3a land (approximately 19% of the site), 10ha of Grade 3b land (approximately 21% of the site) and 28.5ha of Grade 5 land (approximately 60% of the site). No significant contamination issues have been identified on the Application Site.

2.3 Land within the north west of the Application contains wetland habitats which Natural Resources Wales (NRW) has indicated are of national nature conservation value.

2.4 The Application Site comprises a central low rounded hill which is generally well drained and surrounded by low-lying, marshy ground.

2.5 The underlying geology is classified by the Environment Agency as a Secondary A Aquifer. These are permeable layers of rock capable of supporting water supplies at local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

2.6 There are a number of watercourses within and in close proximity to the Application Site. The Nant Coslech watercourse flows from north to south along the eastern boundary of the Application Site before outfalling to the River Ely close to the southern boundary. An unnamed tributary flows through the centre of the Application Site before joining the Nant Coslech upstream of the Ely confluence. The River Ely (Afon Elai) flows in a south-easterly direction on the opposite side of the railway embankment. There is also a network of drainage ditches within the Application Site and a number of waterbodies.

2.7 The Application Site comprises undeveloped farmland which drains via natural processes ultimately into the Nant Coslech river system. Due to the topography and the hillside present, surface water runoff is directed from this high point to the north and existing marshland area and to the south and west to the Nant Coslech.

2.8 The Application Site is located within a Flood Zone. The source of river flooding on the Application Site is associated with the Nant Coslech.

2.9 To the south west of the Application Site is the River Ely and associated floodplain, which is designated as a Site of Special Scientific Interest (SSSI). The north west of the Application Site contains wetland habitats which have indicated are of national nature conservation value.

2.10 There are no listed buildings within the Application Site. Miskin Manor (Grade II) is the nearest listed building within the immediate surroundings of the Application Site, located approximately 500m to the north-west. The Felin Isaf Castle Mound SAM is located adjacent to the railway line close to the western boundary.

2.11 Miskin Manor Registered Park and Garden (RPG) is located approximately 260m to the north-west of the Application Site, beyond the junction of the M4 and A4119. Hensol Castle RPG is located approximately 870m to the south-west of the Application Site and approximately 2.2km to the west is the Talygarn RPG and Conservation Area.

2.12 Access to the Application Site is provided from the west which links directly to junction 34 of the M4 Motorway. The nearest railway station is located at Pontyclun, approximately 2km to the northwest.

2.13 There are no Public Rights of Way (PROW) within the Application Site, although there are a number of PROWs in close proximity. To the east, a PROW extends across agricultural farm land from the waste water treatment works, immediately adjacent to the Application Site, to the road to Peterston-Super-Ely. To the south-west, beyond the River Ely, two PROWs link the A4119, past the golf driving range and Dyffryn Bach Farmhouse, south to Duffryn Mawr Farmhouse, within approximately 240m of the Application Site at its nearest point. To the north, a PROW follows the road to Llanfarach Farm, within approximately 110m of the Application Site, to the north of the M4.

2.14 The Application Site is not located within an Air Quality Management Area[2] (AQMA). The closest AQMA (Mwyndy in the Rhondda Cynon Taf administrative area) is located approximately 2km to the north of the Application Site. Air quality in the VoG is generally good, with measured concentrations of pollutants well below the air quality objectives.

2.15 Currently, the dominant noise source at the Application Site is from road traffic on the M4 motorway located to the north. Due to the nature of the manufacturing undertaken at the existing Renishaw facility, noise generation is generally low.

Proposed Development

2.16 The formal description of development (which are hereafter referred to as the "Proposed Development") is:

"Outline planning application with all matters reserved except for access, for development comprising Class B1, B2 and B8 uses; a Hotel/Residential Training Centre (Class C1/C2); and ancillary uses within Classes A1, A2, A3; associated engineering and ground modelling works and infrastructure, car parking, drainage and access, for all uses, provision of utilities infrastructure (including an energy centre(s)); landscaping and all ancillary enabling works."

2.17 The outline application is defined by a set of parameters that place limits on the amount, extent and type of development that could come forward under future detailed planning proposals. The parameters include:

- the location and types of land use;
- the maximum heights of buildings in storeys and in metres Above Ordnance Datum (AOD);
- landscaping and open space; and
- access points and circulation within the Proposed Development.

[2] An Air Quality Management Area is a defined area by virtue of Section 82(3) of the Environment Act 1995, where it appears that the air quality objectives prescribed under the UK Air Quality Strategy will not be achieved. In these areas, a Local Authority must designate Air Quality Management Areas, within which an Action Plan can be proposed to secure improvements in air quality so that prescribed air quality objectives can be achieved.

2.18 The development parameters for the Proposed Development are shown on **Figure 2.**

2.19 The Proposed Development will be predominately residential in nature and will include the land uses detailed in **Table 1**.

Table 1: Land Use

Use	**Area (ha)**	**Floorspace (sq. m)**
Renishaw Expansion (Area A) Comprising B1, B2 and B8 uses	9.57	33,909.61
Area B Comprising B1, B2 and B8 uses	18.57	92,903.04
Area C Comprising B1. B2 and B8 uses, *of which*:	6.64	25,548.34
Ancillary A1, A2, A3 uses	-	1,300
Area D (Hotel/ Residential Training uses)	1.45	9,290.30
Energy Centre	0.08	-
Access Infrastructure	0.98	-
Green Infrastructure	30.57	-
Total Application Site Area	**67.77**	**162,951.29**

2.20 Development platforms will be created in parts of the Application Site to enable the employment units to be built and protect the development from flood risk.

2.21 The Proposed Development realigns the watercourse southwards through development Area B to accommodate the layout of key buildings within the Application Site. The proposed diversion will be sized to accommodate flood flows and maximise ecological potential.

2.22 The maximum building height in Area A and Area B is 41mAOD and 51mAOD respectively. The maximum approximate building height in Areas C and D is 46mAOD and 39mAOD respectively. To incorporate the option to intstall an energy centre facility, a building height of up 10m (from finished ground level) and associated flue height of up to 20m (from finished ground level) has been specified. Given that the design of the Proposed Development is only at the outline stage, the nature and exact location of the energy centre is not currently known.

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Revision		Date	Drn	Ckd
M	Minor Amendments	17.01.14	N.O.	A.P.
N	Minor Amendments	27.01.14	M.D.	A.P.
P	Change to area B height	04.02.14	ALC	AP

Legend

- 67.77Ha

Application Site Boundary

Primary Site Access (as existing)

Plot Development Access Locations

A	B1, B2, B8 Employment use, inc. car parking & servicing areas - up to 13m height (33,909.61m² / 365,000sq ft) *	- 9.57Ha
B	B1, B2, B8 Employment use, inc. car parking & servicing areas - up to 21m height (92,903.04m² / 1,000,000sq ft) *	- 18.57Ha
C	B1, B2, B8 Employment use inc. car parking & servicing areas - up to 12m height (25,548.34m² / 275,000sq ft) of which up to 1300m² / 14,000sqft ancillary A1, A2, A3 uses can be provided*	- 6.64Ha
D	Hotel / Residential training centre, C1 / C2 Use - up to 9m height (9,290.30m² / 100,000sq ft) *	- 1.45Ha
E	Zone for access infrastructure	- 0.98Ha

Green Infrastructure

W	Zone for revisions to earthform, diversion of watercourse and strategic drainage provision	- 5.63Ha
X	Retained Tree Preservation Areas	- 5.25Ha
Y	10m wide landscape buffer to railway line	- 0.31Ha
Z	Open Space zone for ecological protection / mitigation areas	- 19.38Ha

NOTE:
The zones for the maximum development height is an amalgamation of the broad proposed ground level zones and building height zones. Figures are given as Above Ordnance Datum (AOD).

Final building floor levels for the development may range from 0m to +1m above the proposed ground levels.

* - Zones to incorporate an independent or integrated energy centre facility (maximum area of 800sqm) with a building height of up to 10m and associated flue height of up to 20m.

Figure 2

Project
LAND SOUTH OF JUNCTION 34, M4, HENSOL

Drawing Title
PARAMETER PLAN
(& LAND USE SCHEDULE)

Date	Scale	Drawn by	Check by
27.01.14	1:2500@A1	M.D.	AP

Project No	Drawing No	Revision
20184	RG11	P

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2.23 The Proposed Development will be accessed using the existing access road south of Junction 34 of the M4 which is currently used for access to the Renishaw manufacturing facility. As part of the Proposed Development, both the M4 Junction 34 and the existing junction on the site access road that leads to Pendoylan will be upgraded to provide a traffic signal controlled arrangement. Access to Renishaw's existing facility will be maintained.

2.24 The Proposed Development includes 30.51 ha of green infrastructure, which will include areas of open space, strategic drainage provision, ecological protection and mitigation areas, retained Tree Preservation Areas and landscaping.

2.25 The Proposed Development includes the following ecological enhancement and mitigation measures:

- Marshy grassland of nature conservation value to be retained and managed appropriately;
- Balancing ponds to be designed for nature conservation and managed appropriately;
- New tree and shrub planting on banks;
- Species rich grassland to be retained and managed appropriately;
- Recently established wet woodland to be retained and managed appropriately.

3.0 EIA METHODOLOGY

3.1 EIA is a procedure used to assess the likely significant effects of a proposed development on the environment.

3.2 It enables the significant effects to be considered by a local planning authority before a decision is made about the planning application. The effects considered relate to the construction activities and the operational development.

3.3 Within the ES the significance of each environmental effect has been identified. The significance reflects the relationship between:

- The sensitivity, importance or value of the affected receptor (such as people or wildlife); and
- The actual change taking place to the environment (i.e. the magnitude or severity of an effect).

3.4 Most environmental disciplines classify effects as negligible, adverse or beneficial, where effects are minor, moderate or major. Some disciplines use bespoke criteria based on published guidance. Each chapter of the ES states which effects are considered significant.

3.5 The ES includes a description of the current environmental conditions known as the baseline conditions, against which the likely significant effects on the environment have been assessed. Baseline surveys were undertaken in 2012-2014.

EIA Scoping

3.6 A request for a Scoping Opinion was sent to VoG on 5th November 2013. At the time of writing the NTS, A formal Scoping Opinion had not been issued by VoG.

3.7 The ES considers the following subjects:

- Socio-Economics;
- Landscape & Visual Effects;
- Archaeology & Cultural Heritage;
- Traffic & Transport;
- Noise & Vibration;

- Air Quality;
- Ground Conditions;
- Agriculture & Soil Resources;
- Flood Risk & Drainage; and
- Ecology & Nature Conservation.

Stakeholder Engagement and Public Consultation

3.8 Although VoG has not issued a formal Scoping Opinion, a number of consultation responses to the request have been received from the following organisations:

- VoG (various departments);
- Rhondda Cynon Taff (various departments);
- Network Rail;
- The Glamorgan Gwent Archaeological Trust; and
- Cardiff Council.

3.9 Engagement with the local community has been undertaken in the form of a two day public exhibition (24th November and 11th December 2012). One event was held in Pendoylan and the other in Pentyclun. A further engagement event was carried out on the 20th November 2013 with the Parish Councils for Pendoylan and Pontyclun, and also the Hensol Residents Group, to feedback on the key issues raised in the 2012 consultation events and to explain how the project has responded. Representatives of the project team were present at the exhibition to answer any queries raised.

3.10 Full analysis of the comments received is contained in the Statement of Community Engagement submitted in support of the application.

Cumulative Effects

3.11 Within EIA, the cumulative effects of a development in conjunction with other consented but not yet built development in the area are considered. Cumulative effects are generally considered to arise from the combination of effects from the Proposed Development and permitted schemes in the vicinity. Details of the cumulative schemes considered in the ES are included in **Table 2** and their locations are shown on **Figure 3.**

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Revision	Date	Drn	Ckd
-	-	-	-

Legend

Site Boundary

Commited Development Schemes:

11/1330 and 12/1102 - Land adjacent to Cowbridge Road and A473, Talbot Green

07/0938 - Fire Service Headquarters, Lanelay Hall, Talbot Green, Pontyclun.

2005/00087/FUL - Hensol Castle, Miskin, Pontyclun

2011/00680/FUL - Llanerch Vineyard, Hensol

08/0438/13 - Rhondda Cynon Taf (RCT) Western Power Distribution Site, Church Village

N

Figure 3

Project
Land South of Junction 34, M4, Hensol

Drawing Title
Cumulative Schemes Plan

Date	Scale	Drawn by	Check by
08.01.2014	1:50,000 @ A3	AS	ED

Project No	Drawing No	Revision
20184	E03	-

0 500 1000 1500 2000 2500m

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Table 2: Cumulative Schemes

Local Authority	Scheme	Application Reference Number	Description
VoG	Hensol Castle, Miskin, Pontyclun	2005/00087/FUL	Mixed-use redevelopment including conversion and extension of castle as hotel, conversion of ward blocks to residential use, development of holiday accommodation, new 2 storey staff accommodation and restoration of walled garden.
	Llanerch Vineyard, Hensol	2011/00680/FUL	Proposed single storey events complex on the site of existing poolhouse, car park area (approximately 64 spaces) and retention of cafe/restaurant and cookery school.
RCT	Western Power Distribution Site, Church Village	08/0438/13	Redevelopment of the existing site for 80 residential units, comprised of 2,3 and 4 bedroom detached and semi- detached units on a site totalling 3.2 hectares.
	Land adjacent to Cowbridge Road and A473	11/1330	Outline application for proposed residential development at Lanelay Hall comprising conversion of existing building and additional residential units.
	Land South of A473 Headquaters, Talbot Green	12/1102	Erection of a Sainsbury's supermarket (same food store as included in below outline application), service yard, petrol filling station and new access from A473.
	Fire Service Headquaters, Lanelay Hall, Talbot Green	07/0938	Outline application for a new town centre comprising food store, petrol filling station, retail floor space, café, financial & professional services, food & drink, office, D1 space, 8 screen cinema, 80 bed hotel, multi-storey and surface level car park and associated infrastructure.

3.12 It should be noted that a separate list of cumulative schemes was agreed with VoG for inclusion in the Transport Assessment.

Alternatives

3.13 The EIA Regulations require an ES to detail any alternative options that have been considered for the Proposed Development.

The 'do nothing' Alternative

3.14 The 'do nothing' Alternative refers to the option of leaving the Application Site in its current state. If the Proposed Development did not come forward it is likely the

majority of the Application Site would remain in agricultural use and the contribution to employment provision would not be realised.

Consideration of Alternative Locations and Uses

3.15 An Alternative Site Assessment (ASA) exercise has been undertaken as part of the planning application, to identify and evaluate the potential opportunity to deliver the Proposed Development at other sites throughout the VoG and the adjoining authorities of RCT and Cardiff City Council (CCC).

3.16 Three alternative sites were identified with the VoG, two within RCT and three within CCC which met the criteria. In addition, five existing employment sites were identified which are presently on the market.

3.17 A detailed review of these sites was undertaken which looked at environmental and planning constraints to development. The assessment found that there are no alternative sites which are available, suitable or deliverable that could accommodate the Proposed Development.

3.18 No other uses for the Application Site have been considered as part of this current planning application.

Consideration of Alternative Designs

3.19 The Proposed Development submitted for approval is the result of a thorough analysis of environmental constraints and opportunities and market demand. The nature of the Application Site and its surroundings has also been a key consideration. Consultation with VoG, statutory consultees and members of the public has been a key influence in the design evolution.

Construction Programme

3.20 The construction of the Proposed Development is anticipated to commence in early 2016, subject to gaining planning permission, with an assumed completion year of 2018.

3.21 Construction is likely to include the following stages:

- Enabling works;
- Site preparation (including excavation and grading);
- Provision of infrastructure;
- Construction of substructure;
- Construction of superstructure;
- Fit out of buildings; and
- Landscaping, creation of associated open space / land for mitigation.

3.22 A Construction Environmental Management Plan (CEMP) will be prepared for the Proposed Development that will provide the methods of managing environmental issues, such as noise and dust during construction.

3.23 The hours of work on the Application Site are anticipated to be 08:00 to 20:00 Monday to Friday and 08:00 to 13:00 on Saturdays. By arrangement, there may be some out of hours construction deliveries made to the Application Site.

4.0 SOCIO-ECONOMICS

4.1 The ES has included an assessment of the effect of the Proposed Development on socio economics for the construction and operation phases. The following topics have been considered as part of the assessment:

- Effect in population; and
- Effect on employment.

Construction

4.2 The exact construction programme is not yet known and therefore two construction job scenarios have been assessed. Both represent the same overall amount of development and construction cost figure but assess different construction durations. Option 1 would provide an average job count of 1,419 over a 24 month construction period. Alternatively the construction phase may stretch to 30 months (Option 2) this would result in an average job count of 1,132. The job count would be higher under Option 1 due to a greater intensity of labour over a shorter period of time. The effect on employment during the construction phase would be moderate and beneficial.

4.3 Effects on population will be negligible during the construction phase.

Completed Development

4.4 The Proposed Development will provide a range of employment uses and could potentially generate between 2,555 and 3,069 jobs on the Application Site. It is considered this will have a moderate beneficial effect on employment. In terms of effects on population, the effect is considered to be minor beneficial as the Proposed Development will have a positive effect on the proportion of economically active residents in the area.

Cumulative Effects

4.5 Consideration has been given to the socio economic effects of the six identified cumulative schemes.

4.6 During the construction and operational phase, the cumulative effect with regard to employment creation is considered to be moderate beneficial. With regard to effects on population, the cumulative effect is considered to be minor beneficial as the schemes will have a positive effect on the proportion of economically active residents in the area.

5.0 LANDSCAPE & VISUAL EFFECTS

5.1 The ES has included an assessment of the likely effects of the Proposed Development on landscape character and features and the visual amenity of the area from surrounding public and private viewpoints for the construction and completed Proposed Development phases.

5.2 The assessment has shown that the Application Site is generally well contained in terms of views. The Application Site comprises predominantly grazing, pasture fields and blocks of woodland, including low lying areas of marshy grassland. The character and features of the Application Site show a strong landscape framework of established woodland, tree belts and hedgerows. However, the Application Site is subject to urbanising and detracting influences, including industry, sewage works and transport infrastructure, which reduce the sensitivity of the landscape, affect the sense of remoteness and tranquillity, and have a detracting influence on landscape character.

5.3 The Application Site falls within the local planning designation of the Ely Valley and Ridge Slopes Special Landscape Area. The designation protects areas of the Vale of Glamorgan that are considered important for their geological, natural, visual, historic and cultural significance. It is not intended to prevent development, but ensure that careful consideration is given to the siting, orientation, layout and landscaping of proposed developments to ensure that the special qualities and characteristics of the SLA are protected.

Construction

5.4 During construction, mitigation measures would include good site management, maintenance and housekeeping, implemented and monitored through the CEMP, which would minimise visual intrusion during demolition and construction works, particularly with regard to the routing of construction traffic and the location and lighting of the construction compound. However, temporary effects on landscape character will result from the construction phase. Given the scale of development effects are considered to range between minor and moderate adverse.

5.5 In terms of effects on landscape features during the construction phase, there will be a moderate adverse effect on woodland and hedgerows within the Application Site, as approximately of 62% hedgerows and 32% of woodland will be lost to accommodate the Proposed Development. A moderate to minor adverse effect is

predicted for watercourses and a major to moderate adverse effect is predicted for fields.

5.6 Visual effects are limited to near and middle distance public vantage points and private views within the vicinity of the Application site. Effects will be temporary during the construction phase and are considered to range from minor to moderate adverse.

Operational Phase

5.7 The Parameter Plan for the Proposed Development takes into account the existing landscape features, habitats and hydrological regimes of the Application Site in determining the development plot locations and the green infrastructure proposals.

5.8 The Landscape Strategy Plan sets out the proposed landscape and visual mitigation measures, which have been developed in conjunction with the Ecological Mitigation Strategy to achieve a balance between ecological and hydrological requirements and the need to integrate the Proposed Development into the surrounding landscape and maintain the visual enclosure of the Application Site.

5.9 With regard to effects on landscape features, as set out above, the Proposed Development will result in the permanent loss of approximately 60% of fields, 32% of woodland and the medium-term loss of 62% of hedgerows to accommodate the Proposed Development. This will result in a major adverse effect on woodland and hedgerows, major to moderate adverse effect on fields, and a moderate to minor adverse effect on watercourses at Year 1. However, the implementation of the Landscape and Ecological mitigation measures will result in no major adverse residual effects at Year 15, and moderate adverse residual effects on woodland and fields.

5.10 In terms of effects on landscape character, the Proposed Development will result in the loss of fields, hedgerows and woodland, and the introduction of built form into the Application Site. This would be offset by a range of benefits in the form of enhanced management of marshy grassland of National nature conservation value which is currently in decline, the management of the open nature of the fields, new woodland and hedgerow planting and positive ongoing management of key landscape features within the Application Site. Adverse effects on landscape character at Year 1 range from a Major to Moderate adverse effect on the Ely Valley

Landscape Habitats aspect area; a Moderate adverse effect on the Vale of Glamorgan Rural Landscape Cultural aspect area; and Moderate to Minor adverse effects on the Ely Valley North Visual and Sensory aspect area and the Vale of Glamorgan LCA 15 Ely Valley. The landscape character of the Application Site is already subject to urbanising influences limiting its perception as open countryside, and therefore is not considered to have a detrimental impact upon the landscape character at the local landscape level or on the other aspect areas.

5.11 At Year 15, the establishment of the Landscape and Ecological mitigation will reduce the significance of effects on landscape character to moderate adverse effects on the Ely Valley Landscape Habitats aspect area, with no likely significant effects on the remaining aspect areas or landscape character areas.

5.12 In terms of visual receptors, there would be very limited numbers of receptors experiencing adverse visual effects at Year 1. This is limited to Moderate adverse effects on residents of Llanfarach Farmhouse and Moderate to Minor adverse effects on residents of Dyffryn Bach Farmhouse, which are in close proximity to the Proposed Development, although only partial views are afforded. Approximately four residential properties with potential middle distance views of the Proposed Development are likely to experience a Moderate to Minor adverse effect.

5.13 Moderate adverse visual effects are predicted for short sections of two PROWs, P2/18/2 and 347 which are afforded occasional near distance views of the Proposed Development.

5.14 Following the implementation of the Landscape and Ecological mitigation, residual effects at Year 15 are limited to a moderate to minor adverse visual effect on one residential receptor (Llanfarach Farmhouse). This assumes that recessive colouration will be used to reduce the prominence of built form within the views.

Cumulative Effects

5.15 The four schemes located to the north of the M4 are located within different landscape character areas and the Zone of Theoretical Visibility mapping has illustrated that there is no inter-visibility between the schemes and the Application Site. Therefore they have been scoped out of the cumulative assessment.

5.16 The two schemes located south of the M4 have been assessed. However, due to their scale, distance from the site, existing screening and lack of visual receptors that will have view of more than one scheme, no significant cumulative effects have been identified.

6.0 ECOLOGY & NATURE CONSERVATION

6.1 A desk study and detailed surveys have revealed that the Application Site comprises mainly marshy grassland, wet woodland and grazing pasture, with overgrown hedgerows, mature trees and drainage ditches. Planted woodland, dense scrub, swamp and a number of ponds are also present. The River Ely and its tributary, the Nant Criafol, flow alongside the southern edge of the Application Site. The Nant Coslech, another tributary of the River Ely, flows through the eastern part of the Application Site.

6.2 Large parts of the Application Site have been recognised as being of county value to nature conservation by the VoG. These comprise two areas of marshy grassland and three areas of wet woodland. There is further wet woodland of similar value adjacent to the eastern boundary of the site. The Welsh Government's nature conservation agency, Natural Resources Wales, considers that these large areas of marshy grassland have the potential to be of national value for nature conservation. The River Ely and its adjacent habitats have been designated as a site of national importance to nature conservation on the basis that it supports Monk's-hood, which is a rare plant species.

6.3 The habitats within the Application Site were found to support a rich and diverse assemblage of animal species. The ponds and watercourses supported aquatic invertebrates, and the mature trees, marshy grassland, wet woodland and the tree-lined banks of the Nant Coslech were found to be of value for terrestrial invertebrates.

6.4 In terms of protected species, although the fritillary butterfly was once present in marshy grassland, it is now extinct on site. Surveys of the ponds also confirmed that the great crested news was not recorded on-site.

6.5 Due to the low-lying, wet conditions, the Application Site is suitable for amphibians. However, it is largely unsuitable for reptiles, and surveys only revealed a small population of common lizards.

6.6 A large number of birds were recorded, both over-wintering and present in the breeding season, including species of conservation concern. The various habitats, in particular the wet woodland, hedgerows and marshy grassland, provide foraging

habitat, shelter and nesting sites for birds. The Application Site also provides optimal habitat for foraging and commuting bats, and high levels of activity of at least six bat species were recorded. Two bat tree roosts were identified in trees.

6.7 Signs of otter were found along the banks of the Nant Coslech, and it is possible that otters may also forage across the site, in particular in the areas of wet woodland. A number of badger setts were identified at the western end of the site, but none of these were 'main setts'. Polecats are also present, and hedgehogs are likely to be present, however both dormice and water voles are absent. Two invasive plant species, Japanese Knotweed and Indian Balsam, were recorded on the site.

Construction

6.8 The construction of the Proposed Development would result in the loss of: 2.84ha of the areas of marshy grassland of national nature conservation value; 2.1ha of marshy grassland and 4.35ha of wet woodland of county value; 3,141m of hedgerows, including many mature hedgerow trees; two ponds; two badger setts; and 1,887m of drainage ditches and associated habitats would be lost or diverted. The two bat tree roosts would be retained.

6.9 A CEMP would be produced before construction works took place. This would ensure that damage to the retained habitats and watercourses is prevented.

6.10 An 'Ecological Mitigation Strategy' has been developed that would be in place at the outset of the development. This plan would be further developed into a more detailed 'Ecological Mitigation and Management Plan' as the development is brought forward in consultation with Natural Resources Wales and the VoG Council Ecologist. The strategy includes measures to protect, maintain and enhance retained habitats within the Application Site.

6.11 The Ecological Mitigation Strategy also includes measures to ensure that animal species are protected during construction and to control the spread of invasive plant species.

6.12 Although the construction of the Proposed Development would initially lead to habitat loss and some significant adverse effects, implementing the proposed mitigation measures would ensure that these effects would either be minimised or

avoided, and benefits for wildlife would be realised in the long term. The contributions made to the projects taking place outside the site would ensure that other areas of marshy grassland and wet woodland are maintained and enhanced, and thus help to improve habitat connectivity in the wider countryside. This would be of benefit to nature conservation.

Completed Development

6.13 The Ecological Mitigation Strategy includes measures to create new habitats and features of value to wildlife, including a large area of marshy grassland/wetland, tree and shrub belts, and ponds. Conservation management of the retained and newly created habitats would ensure their value to wildlife is maintained in the long term. The combination of retained and new habitats would ensure that wildlife can move freely across the site along 'green corridors', and this would be assisted by ensuring the built development takes wildlife into account, by providing otter ledges in culverts, gaps under fences for hedgehogs and a bat-friendly lighting scheme. Additional enhancements for wildlife would include log piles for amphibians and reptiles, and the provision of bat and bird boxes.

6.14 The strategy also includes commitments to contribute to two habitat enhancement projects in the VoG. One of these involves managing marshy grassland sites to enhance them for marsh fritillary butterflies and the other involves enhanced management of sites of county importance to increase their value for wildlife.

Cumulative Schemes

6.15 A cumulative assessment has been undertaken which has found that no cumulative effects are likely to occur on any of the key ecological receptors identified.

7.0 ARCHOAEOLOGY & CULTURAL HERITAGE

7.1 The Application Site does not contain any designated cultural heritage assets. However, the scheduled monument of Felin Isaf Castle Mound lies in close proximity to the Application Site and there are 11 listed buildings and two Registered Parks and Gardens within the surrounding 1km (all Grade II).

7.2 The evidence currently available indicates that there is potential for significant archaeological remains within some confined areas of the Application Site. The importance of these remains is not considered sufficient to constrain development. However, further archaeological investigation is being carried out to more fully assess the significance of the identified archaeological remains within the site, the results of which will inform the programme of archaeological mitigation.

Construction

7.3 During construction, the primary effect of the Proposed Development on the archaeological resource will be from direct destruction or damage of remains during groundwork. All of the archaeological remains identified fall within areas of the Application Site that will be subject to extensive below ground disturbance. Any archaeological remains that are confirmed to be of significance by trial trenching will be subject to mitigation in the form of preservation by record through an archaeological watching brief or open area excavation depending upon the nature and significance of the remains. With mitigation measures in place the effect of the Proposed Development upon the buried archaeological resource is considered to be minor adverse. However, archaeological investigation of the remains identified will enhance the archaeological record of the region and has the potential to make a significant contribution to regional research agendas. This is considered a minor beneficial long term effect.

7.4 A number of hedgerows within the Application Site are classed as historically important under the hedgerow regulations. Despite mitigation measures to secure the long term survival of retained hedgerows, construction of the Proposed Development will result in the removal of around 60% of these hedgerows which is considered a moderate adverse impact.

7.5 The assessment has found that the Proposed Development will have either no impact or a negligible impact on the fabric, character or setting of any designated

heritage asset due mainly to the distances involved and the lack of clear lines of view between their locations and the Application Site.

Completed Development

7.6 The archaeological resource within the Application Site will have either been removed or preserved in situ during the construction phase. There would be no effects from the completed Proposed Development on archaeology. Effects would occur in the construction phase only.

7.7 The assessment has found that the Proposed Development will have either no impact or a negligible impact on the fabric, character or setting of any designated heritage asset due mainly to the distances involved and the lack of clear lines of view between their locations and the Application Site.

Cumulative Effects

7.8 The assessment has found no potentially significant cumulative effects upon the archaeological and cultural heritage resource of the area are likely to occur during either the construction phase or operational phase.

8.0 TRANSPORT & ACCESS

8.1 The Proposed Development will increase traffic movements and change travel patterns on the local highway network. An assessment has been undertaken during the construction and operational phases of the Proposed Development on public transport and a number of different traffic related environmental effects including:

- Impacts on pedestrians and others in regards to:
    - Journey length and local travel patterns;
    - Amenity; and
    - Severance
- Impacts on vehicle travellers in regards to:
    - View from the road; and
    - Driver stress.

Construction

8.2 During the construction phase, the Proposed Development will be built out in phases. Vehicle movements will be associated with the delivery of the construction materials for each individual phase, and construction workers.

8.3 An estimate has been made of the likely traffic generation during construction based on guidelines and includes Heavy Goods Vehicles and construction workers travelling to and from the Application Site. The assessment has shown that with implementation of traffic management measures and the CEMP, there will be a negligible effect on public transport and all other aspects of the highway network.

Completed Development

8.4 A Travel Plan has been prepared for the Proposed Development which includes measures and targets to reduce unsustainable travel in order to reduce the transportation effects of the operation of the Proposed Development as far as possible. This includes appropriate on-site parking for motorcycles, cars, HGVs an bicycles and the installing of new bus stops within the Application Site. The Travel Plan will also target the reduction of single car journeys. Off-site improvements to the highway will be undertaken at Junction 34 of the M4. Therefore, during the operation of the Proposed Development there will be an increase in traffic however

implementing the above mitigation measure means that impacts on journey length and time, amenity, severance, view from the road and driver stress will be negligible.

Cumulative Effects

8.5 The traffic flows for the cumulative schemes assessed have been included within the projected 2018 background traffic flows used in the main assessment in the chapter and therefore cumulative effects are considered to be negligible.

9.0 AIR QUALITY

9.1 The ES has included an assessment of the effect of the Proposed Development on air quality for the construction and operation phases. The Application Site is not located within an Air Quality Management Area[3] (AQMA). The closest AQMA (Mwyndy in the Rhondda Cynon Taf administrative area) is located approximately 2km to the north of the Application Site. Air quality in the VoG is generally good, with measured concentrations of pollutants well below the air quality objectives.

Construction

9.2 The construction works have the potential to create dust and particulate matter (PM_{10}). During construction it will therefore be necessary to apply good site practice and a package of mitigation measures to minimise dust creation. Even with these measures in place, there remains a risk that some receptors might be affected by occasional dust-soiling impacts. Hoever, any effects will be temporary and relatively short lived and the overall impacts during construction are considered to be negligible.

Completed Development

17.1 The operational air quality assessment has assessed the likely significant effects on identified human and ecological receptors from road traffic emissions associated with the Proposed Development and from emissions from the proposed on-site energy centre.

17.2 The effect on human receptors from road traffic emissions is considered to be negligible and with mitigation in the form of careful siting, the effect on human receptors from the energy centre is also considered to be negligible.

17.3 With regard to ecological receptors, the assessments in the ES demonstrate that with planting, inherent to the design of the Proposed Development buffering sensitive habitats from airborne contamination there will be no significant effects from air quality on sensitive habitats.

[3] An Air Quality Management Area is a defined area by virtue of Section 82(3) of the Environment Act 1995, where it appears that the air quality objectives prescribed under the UK Air Quality Strategy will not be achieved. In these areas, a Local Authority must designate Air Quality Management Areas, within which an Action Plan can be proposed to secure improvements in air quality so that prescribed air quality objectives can be achieved.

Cumulative Effects

9.3 There are no anticipated cumulative construction impacts, due to the other sites being located significantly further from the Proposed Development than the distance over which any dust impacts are likely to occur.

9.4 The traffic data used within the assessment includes the traffic from identified committed schemes in the vicinity of the Application Site, therefore no additional cumulative assessment has been undertaken and the cumulative effect is the same as reported above (negligible).

10.0 NOISE & VIBRATION

17.4 The Application Site has been assessed for its suitability for development in terms of the current noise and vibration environment. The dominant noise source at the Application Site is from road traffic on the M4 motorway located to the north. With regard to noise from the existing Renishaw facility, due to the nature of the manufacturing undertaken, noise generation is generally low.

Construction

10.1 The Proposed Development is generally well separated from residential properties and the assessment has found that noise arising from the construction of the Proposed Development can be effectively mitigated both on and offsite by measures to be included in the CEMP.

10.2 The existing Renishaw facility to the south west of the Application Site contains some equipment that is highly sensitive to vibration and therefore as assessment of the effects of vibration on this equipment has been undertaken. The assessment found that there is potential for short term, temporary vibration effects from construction of the Proposed Development. However, this can be effectively mitigated by careful selection of low vibration equipment and maintaining suitable separation distances during some construction operations.

10.3 Vibration effects on locations outside the Application Site are not expected to be significant, however consultation with Network Rail will be undertaken to ensure vibratory construction techniques do not adversely affect the railway which runs adjacent to the Application Site. This matter would be addressed with Network Rail as part of the CEMP.

10.4 Vibration effects on people within the Application Site are expected to be negligible. The likelihood of cosmetic damage to buildings and effects any other vibration sensitive equipment is very low and can be mitigated by maintaining suitable separation distances or changing construction techniques.

Completed Development

10.5 The effect of traffic associated with operation of the Proposed Development has been assessed and it is anticipated that there will be a negligible increase in road traffic noise.

10.6 Without mitigation measures there is some likelihood of a moderate to minor adverse effect from operational noise within individual areas of the Proposed Development. However, with appropriate mitigation measures in place it is expected that the noise effects will be reduced to negligible.

10.7 Vibration effects from the operation of the Proposed Development on effects on vibration sensitive equipment can be effectively mitigated and the residual effect is considered to be negligible.

Cumulative Effects

10.8 There are not anticipated to be any cumulative effects in terms of demolition or construction noise and vibration due to the distance between the Application Site and the cumulative schemes considered.

10.9 Cumulative effects may occur from different phases within the Proposed Development if demolition or construction activities overlap. This will be considered within the CEMP when more details on construction is available. In view of the relatively long distances to noise sensitive properties and the relatively high background noise levels it is not expected that with appropriate mitigation there will be any significant adverse effects.

10.10 There are not anticipated to be any cumulative effects in terms of operational noise and vibration.

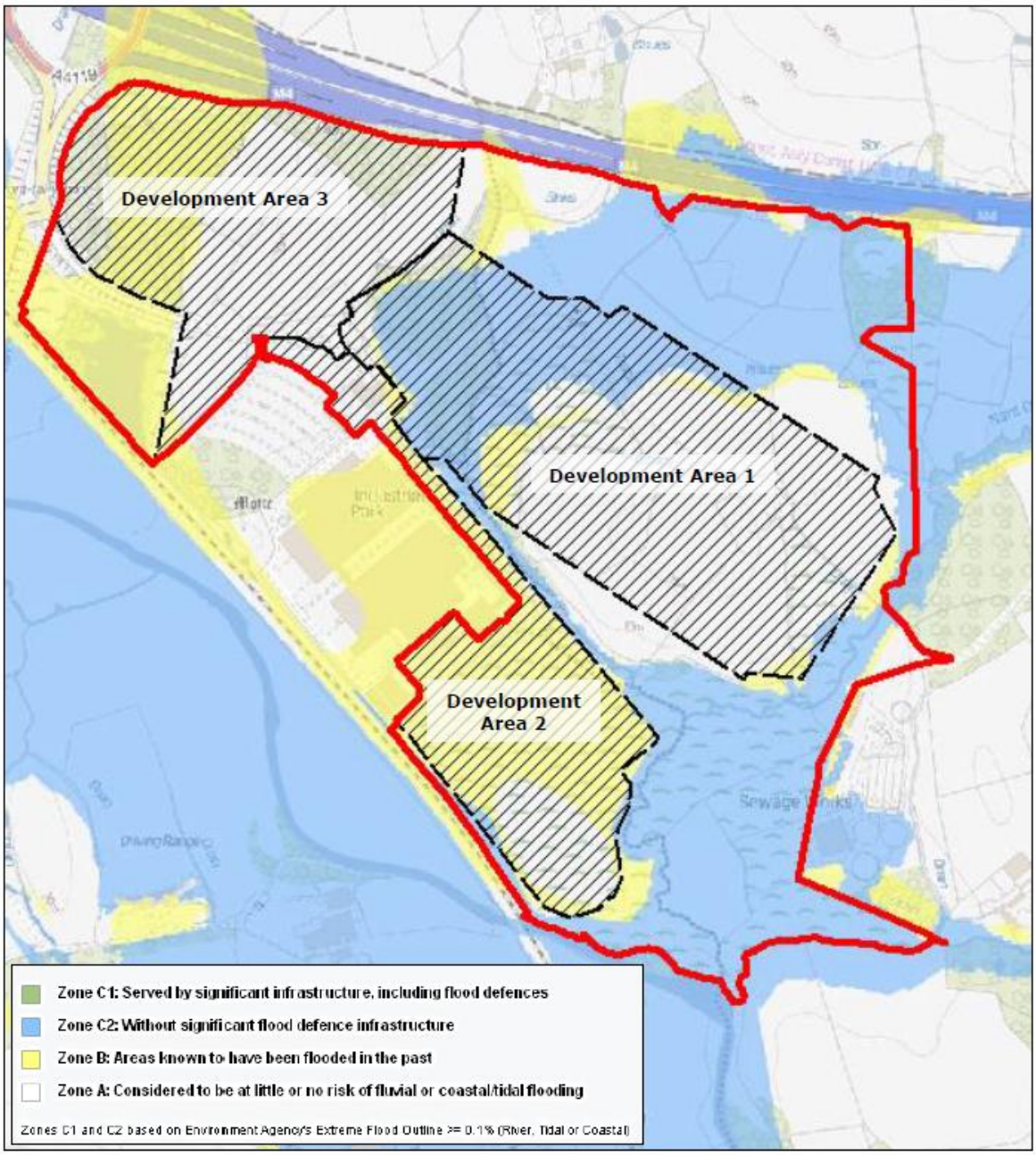
11.0 FLOOD RISK & DRAINAGE

11.1 The assessment has considered the effects of the Proposed Development in terms of water supply, water quality, groundwater quality, foul water drainage, surface water drainage and flood risk for the construction and operation phases.

11.2 There are a number of watercourses within and in close proximity to the Application Site. The Nant Coslech watercourse flows from north to south along the eastern boundary of the Application Site before outfalling to the River Ely close to the southern boundary. An unnamed tributary flows through the centre of the Application Site before joining the Nant Coslech upstream of the Ely confluence. The River Ely (Afon Elai) flows in a south-easterly direction on the opposite side of the railway embankment to the Application Site. There is also a network of drainage ditches within the Application Site and a number of waterbodies.

11.3 The Application Site is located within a Flood Zone. (see **Figure 4** on the following page).

Figure 4 – Area at risk of flooding on the Application Site



Construction

11.4 After mitigation to divert the watercourse around the development areas during the construction phase, the effect on existing flood risk would be negligible. This is because the intention is to maintain existing flow continuity between this watercourse and the Nant Coslech.

11.5 Ground and surface waters will be protected from adverse construction effects by following best practice measures and complying with Natural Resources Wales guidance. The effect of the construction of the Proposed Development on water quality during the construction phase is considered to be negligible.

Completed Development

11.6 To facilitate the Proposed Development and ensure it is protected from flooding, ground levels will be raised to create a suitable development platform.

11.7 With regard to the operation of the Proposed Development, with suitable sustainable drainage (SuDs) systems in places, effects on drainage and water quality can be managed so any effects will be of negligible significance.

11.8 The proposed floodplain management scheme (including the watercourse diversion and plot raising) will ensure there is no increase in flood risk downstream from high magnitude river flood events (1 in 100 year) so the effect on flood risk from these events is considered to be negligible. However, for more extreme flood events (1 in 1000 year return period event) the assessment has shown that there would be a minimal increase in flood risk downstream so the effect of this is considered moderate adverse. However, due to the predominantly agricultural land use downstream, the wide expanse of River Ely floodplain that the effect upon it, it is considered that the overall effect will be minor adverse.

Cumulative Effects

11.9 There are unlikely to be any cumulative effects from a flood risk and drainage perspective as a result of the development of any of the identified cumulative schemes.

11.10 It is assumed that each cumulative scheme will be subject to the same national guidance, including the requirement for reducing surface water runoff and/or ensuring there is no increase in discharge that could increase flood risk elsewhere. All of the sites identified are located upstream of the Proposed Development so would not be at risk of any increased flood risk resulting from the proposed floodplain alterations following construction of the Proposed Development and minimal changes to flood levels downstream of the Application Site.

11.11 The cumulative effect of the Proposed Development and the identified cumulative schemes is therefore considered to be negligible.

12.0 GROUND CONDITIONS

12.1 The assessment of potential environmental effects with respect to Ground Conditions has been carried out by considering the baseline conditions and stages of the Proposed Development that could potentially result in an adverse or beneficial change to the environmental status of the ground conditions at the Application Site.

12.2 The baseline conditions have been assessed by undertaking both a desk study and intrusive ground investigations (Phase 1 assessment) on the Application Site.

12.3 Effects have been assessed for both the construction and operation phases of the Proposed Development.

Construction

12.4 The likely areas of disturbance during the construction phase of the Proposed Development include the excavations for foundations, earthworks related to site levelling and bunding, soil stockpile, and the exposure of other new areas of ground, such as site compounds. Measures will be undertaken at these areas as appropriate, in line with a CEMP, so as to minimise the potential for the movement of sediments into surface watercourses.

12.5 The potential for contamination on the Application Site will be assessed further if the Proposed Development is granted planning permission. A further ground investigation would be undertaken to confirm the scale and nature of any contamination at the Application Site and inform a more detailed risk assessment and strategy to clean up and contamination found.

12.6 At this stage, based on the findings of the Phase 1 site investigation, following the incorporation of mitigation measures including compliance with industry standard codes of best practice, the majority of potential effects associated with land contamination during the construction phase are considered to be negligible. However, without knowing the precise contamination levels present, the potential for moderate adverse residual effects on the wetlands in the north of the Application Site and the River Ely SSSI have been identified due to their national importance. It should be noted, however, that this is a worst case assessment and once further investigation is undertaken and mitigation measures have been

adopted a measurable significant negative effect is considered unlikely to occur. Regular monitoring of these sensitive areas will be undertaken and if an adverse effect is identified, then the source of the impact shall be traced and appropriate action taken to prevent further significant adverse effect.

12.7 Other mitigation measures that will be adopted during the construction phase include appropriate use of personal safety clothing and equipment, and adoption of safe practices such as dampening down of soil to protect human health. To protect controlled waters such as the wetlands and SSSI, basic control measures should again include appropriate best practice measures such as secondary containing of fuels and lubricants and measures to reduce soil erosion.

Completed Development

12.8 Mitigation measures for the operational phase of the Proposed Development will be targeted largely at protecting human health, the wetlands in the north of the Application Site and the River Ely SSSI. The majority of residual effects from the operation of the Proposed Development have been assessed as a worst case as minor adverse. However, the potential for on-site and off-site contamination to adversely effect local watercourses, wetlands, the River Ely SSSI and groundwater quality is considered to be moderate adverse. As with the construction phase assessment, this is a worst case assessment and once contamination levels are confirmed and mitigation measures identified at this stage are refined, a measurable significant adverse effect is considered unlikely to occur.

12.9 At this stage, likely mitigation measures assuming that contamination is present may include the use of soil cover systems in areas of landscaping. Radon gas protection measures are required, which will also mitigate risk from other hazardous ground gases.

Cumulative Effects

12.10 It is considered that there will be no cumulative effects on ground conditions and contamination resulting from the Proposed Development and the cumulative schemes considered. Ground condition effects are largely site specific and the Application Site is independent of other sites in the area, these sites are therefore unlikely to have a cumulative effect on the Application Site or surrounding area (including the wetlands in the north of the site or the River Ely SSSI).

13.0 AGRICULTURAL & SOIL RESOURCES

13.1 The ES has included an assessment of the effect of the Proposed Development on agricultural land and soil resources for the construction and operation phases.

Construction

13.2 The Application Site comprises approximately 70% agricultural land which lies within the ownership of the Applicant. Until the 30th November 2013 a grazing agreement was in place, as part of a larger agricultural area. The loss of this land from the farm business, should the grazing agreement be renewed, has been assessed as likely to have a minor adverse effect on farm viability.

13.3 A large proportion of the agricultural land within the Application Site (60%) is considered to be poor in terms of agricultural productivity (Agricultural Land Classification[4] (ALC) Grade 5), with only 19% (9ha) falling under the Best and Most Versatile (BMV) classification. There would be a loss of approximately 40ha of agricultural land, including 9ha of BMV land. This land will be permanently lost to agriculture, with no scope to mitigate for the loss. The Proposed Development is therefore likely to have a direct, permanent moderate adverse effect on agricultural land.

13.4 The effect on soil resources is considered to be negligible, following the implementation of mitigation measure, principally, good practice in relation to soil handling in accordance with current guidance to ensure the effective and sustainable re-use of soils within the Application Site.

13.5 No effects on agricultural and soil resources are anticipated during the operation of the Proposed Development.

Completed Development

13.6 It has been assumed that the grazing land retained within the Application Site would need to continue to be grazed, in accordance with an agreed Ecological Mitigation Management Plan.

[4] Agricultural land in England and Wales is graded between 1 and 5, depending on the extent to which physical or chemical characteristics impose long-term limitations on agricultural use. Grade 1 land is excellent quality agricultural land with very minor or no limitations to agricultural use, and Grade 5 is very poor quality land, with severe limitations due to adverse soil, relief, climate or a combination of these. Grade 3 land is subdivided into Subgrade 3a (good quality land) and Subgrade 3b (moderate quality land). The best and most versatile agricultural land comprises Grades 1, 2 and 3a.

Therefore no effects on agricultural and soil resources are anticipated during the operation of the Proposed Development.

Cumulative Effects

13.7 From the assessment of the identified cumulative schemes, Hensol Castle, Miskin, Pontyclun appears to comprise mainly the re-development of existing buildings, and is therefore considered to have limited effect on agriculture or soil resources.

13.8 Of the remaining scheme no impacts on agriculture or soils have been identified and as such it is considered that there would be no significant cumulative effects on agriculture or soil resources.