ADDITIONAL CAR PARKING, PROLOGIS PARK BIRMINGHAM INTERCHANGE, BLACKFIRS LANE, SOLIHULL

BIODIVERSITY IMPACT ASSESSMENT

A Report to: IAC Group Ltd. c/o CBRE

Report No: RT-MME-153311-05, Rev A

Date: January 2021

MIDDLEMARCH ENVIRONMENTAL

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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development”.

Report Version	Date	Completed by:	Checked by:	Approved by:
Final	18/12/2020	Chris Walsh MSc (Principal Consultant)	Hannah Train GradCIEEM (Senior Ecological Consultant)	Tom Docker CEcol MCIEEM (Managing Director)
Final, Rev A	7/01/2021	Chris Walsh MSc (Principal Consultant)	Hannah Train GradCIEEM (Senior Ecological Consultant)	Tom Docker CEcol MCIEEM (Managing Director)

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management’s Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client’s brief, no site investigation can ensure complete assessment or prediction of the natural environment.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In August 2020 IAC Group Ltd. c/o CBRE commissioned Middlemarch Environmental Ltd to undertake a Biodiversity Impact Assessment associated with a proposed development at Prologis Park Birmingham Interchange in Solihull.

Middlemarch Environmental Ltd previously completed a suite of ecological and arboricultural assessments in 2016 to support a planning application (PL/2016/02001/PPOL) associated with the construction of Buildings A and B, comprising:

- Preliminary Ecological Appraisal (Report RT-MME-121758);
- Great Crested Newt Habitat Suitability Index Assessment (Report RT-MME-122297-01);
- Reptile Survey (Report RT-MME-122297-02);
- Breeding Bird Survey (Report RT-MME-122297-03);
- Bat Surveys (Report RT-MME-122297-04);
- Arboricultural Survey (Report RT-MME-122442-01); and,
- Arboricultural Impact Assessment (Report RT-MME-122442-02).

This Biodiversity Impact Assessment is submitted in support of a full planning application for the creation of additional car parking spaces to serve Units A and B and updated surveys and assessments are required.

This document sets out the findings of the quantitative assessment of biodiversity impacts of the proposed development scheme and provides a discussion of the value of the habitats on site and their significance, the projected impacts upon them and the potential for achieving biodiversity net gain, through appropriate habitat creation and enhancement.

This assessment considers the likely measurable biodiversity net gain that can be delivered through the December 2020 Landscape and Environment Management Operations report (LEMO) incorporated in the proposed scheme, compared against both the habitats currently present on site and the landscaping scheme for the 2016 developments (2109-PL001-1L & 2109-PL001-Q2).

In addition to the Biodiversity Impact Assessment, Middlemarch Environmental Ltd has also completed an Ecological Impact Assessment (EcIA, Report RT-MME-153311-04) and an Ecological Mitigation Strategy (EMS, Report RT-MME-153311-06) which should be read in conjunction with this report.

1.2 SITE DESCRIPTION AND CONTEXT

The site under consideration is located at Prologis Park Birmingham Interchange in Solihull, centred at Ordnance Survey Grid Reference SP 18570 85126.

The site is located on the south-eastern fringes of Birmingham and forms part of the Birmingham Business Park, which is situated immediately north of Birmingham Airport and the National Exhibition Centre.

The site comprises an irregularly shaped parcel surrounding existing Buildings A and B. The western boundary of the site is delineated by Coleshill Heath Rd and the southern boundary is formed by Blackfirs Lane.

The habitat within the site consist of the existing car parking area and other areas of hardstanding which include small areas of amenity grassland and decorative borders of introduced shrub. The remainder of the site comprises the landscaping scheme for the 2016 development (2109-PL001-1L & 2109-PL001-Q2). The south and west of the site consist of formal landscaping comprising mixed plantation woodland and species poor semi-improved grassland. A large proportion of the 2016 landscaping scheme has been overtaken by tall ruderal growth. In the south west corner of the site two large depressions form a Sustainable Urban Drainage (SUD) scheme. The SUDs comprise of bare earth and lack aquatic vegetation. The SUDs were dry at the time of inspection. Hedgerows run along the southern and western boundaries of the study area.

The habitat surrounding the site is a mixture of low density residential areas, intensively managed grassland, arable land, large industrial units, employment complexes (offices) and small areas of scrubland and mature semi-natural woodland. To the south east of the site Bickenhill Parkway (B4438) and large area of

hardstanding (car-parking areas associated with the National Exhibition Centre) act as a significant barrier to the movement of terrestrial animals.

Around the site hedgerows and vegetated domestic curtilage boundaries are common, with some also including mature standard trees. The majority of hedgerows are defunct with large gaps where the woody vegetation has failed.

1.3 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.1.

Document Name / Drawing Number	Author
6632-11 Rev C	Aja architects
6632-01 Rev F	Aja architects
Landscape and Environment Management Operations report	JB Landscape Associates

Table 1.1: Documentation Provided by Client

2. METHODOLOGY

2.1 HABITAT BASELINE

A baseline biodiversity value for the site was established through a Phase 1 survey carried out by Chris Walsh (Principal Consultant, Middlemarch Environmental Ltd) in September 2020. This survey determined the type and extent of the habitats currently present on site as well as noting their current condition.

The Phase 1 mapping was conducted in accordance with the criteria detailed in the Joint Nature Conservation Committee 'Handbook for Phase 1 Habitat Survey: A technique for environmental audit' (2010)[1], for more details regarding survey methodology please refer to Report RT-MME-153311-04.

2.2 CALCULATION OF NET LOSS/GAIN

The assessment was undertaken using the Warwickshire, Coventry and Solihull – Biodiversity Offsetting: Biodiversity Impact Assessment Calculator (Version 19.1).

This calculator requires habitats present on site to be described using Phase 1 Habitat Mapping methodology and their present condition determined using the Farm Environment Plan (FEP) condition assessment criteria. The calculator provides habitat value rating in terms of Biodiversity Units (BU).

The method for assessing the biodiversity value of the site is outlined in the "Guide to the Warwickshire, Coventry and Solihull, Biodiversity Offsetting Biodiversity Impact Assessment Calculator (Version 18) (May 2014)[2]." In brief it entails the following:

- Calculation of the existing biodiversity value of the site.

Then the value of the site post development is calculated by:

- Determination of the value of the habitats to be retained including any enhancements; and,
- Calculation of the biodiversity value of new habitats to be created.

The FEP condition assessment criteria adhere to those detailed within the Natural England Higher Level Stewardship Environmental Stewardship Handbook, fourth addition (2013)[3].

The handbook provides listed assessment criteria for different types with the attainment of good, moderate, or poor condition being achieved by a given habitat when it meets the following thresholds:

- Good – meets all FEP Condition Assessment criteria;
- Moderate – meets all but one FEP Condition Assessment criteria; and,
- Poor – 2 or more FEP Condition Assessment criteria are failed.

If the handbook does not provide criteria for a specific Phase 1 habitat type professional judgment is applied as to the closest applicable habitat type within the handbook.

[1] https://hub.jncc.gov.uk/assets/9578d07b-e018-4c66-9c1b-47110f14df2a
[2] https://api.warwickshire.gov.uk/documents/WCCC-863-791
[3] http://publications.naturalengland.org.uk/publication/2827091

3. ECOLOGICAL BASELINE AND IMPACT ASSESSMENT

3.1 EXISTING HABITATS

As part of the Ecological Impact Assessment (Report RT-MME-153311-04) a Phase 1 Habitat Survey of the site was undertaken in September 2020. Table 3.1 provides a list and description of the habitats recorded during this survey, along with their existing condition (as per The FEP condition assessment criteria).

Habitat	Description	Condition
Area Based Habitats		
Amenity grassland	Small areas of intensively managed amenity grassland were located adjacent to units A and B.	Poor
Bare ground	Exposed sandy soil with little to no vegetative covering was located the drainage channels south of the existing parking provision and within the 'soak away' drainage pools to the south west of the site.	Poor
Hard standing	Tarmacked or concreted slabbed areas. Comprising of the existing car parking resources and pedestrian walkways.	Poor
Introduced shrub	Small areas of shrub planted borders comprising non-native ornamental species.	Poor
Mixed plantation woodland	All areas comprised a mixture of deciduous and coniferous tree species of both native and ornamental varieties including: common hazel (*Corylus avellana*), English oak (*Quercus robur*), lime (*Tilia cordata*), silver birch (*Betula pendula*), Himalayan birch (*Betula utilis jacquemontii*), black alder (*Alnus glutinosa)* blackthorn (*Prunus spinosa*), cherry (*Prunus avium*) and assorted maples (*Acer* spp.) and *Pinus* sp. Most trees appeared less than three years of age and were still within tree guards. A small number of more mature trees (5-6 years) were present within the plantation areas. The understory of three areas of plantation woodland to the west and north west of the site consisted of bare ground. The understory of the four areas to the south and south west of the site was dominated by tall ruderals.	Poor
Species poor semi-improved grassland	The different areas of species poor semi-improved grassland were relatively uniform in their species composition across the site, likely a result of the use of the same seed-mix and management regime for their creation. The most common species were noted as being: Common Bent (*Agrostis capillaris*), black knapweed (*Centaurea nigra*), false oat (*Arrhenatherum elatius*), broad-leaved dock (*Rumex obtusifolius*), common sorrel (*Rumex acetosa*), ox-eye daisy (*Leucanthemum vulgare),* meadow foxtail (*Alopecuris Pratensis*), Timothy (*Phleum pratense*), meadow fescue (*Festuca pratensis*), ribwort plantain (*Plantago lanceolate*) and self-heal (*Prunella vulgaris*). Evening primrose (*Oenothera biennis*) was also noted as present but occasional.	Poor
Standing water (pond)	To the west of unit A a small area of standing water has formed in a depression in the landscaping scheme. The pond did not have any aquatic vegetation or vegetation indicative of wetland areas suggesting it is temporal. The water quality appeared poor, being opaque with very few aquatic invertebrates present.	Poor
Tall Ruderal	Tall ruderal growth was present across much of the site. The most frequent species noted were: common sorrel (*Rumex acetosa*), creeping thistle (*Cirsium arvense*), globe thistle (*Echinops sphaerocephalus*), white clover (*Trifolium repens*), nettle (*Urtica dioica*), rose-bay willow herb (*Chamaenerion angustifolium*), ragwort (*Senecio jacobaea*), ribwort plantain (*Plantago lanceolate*), white campion (*Silene latifolia*). Infrequent neutral grassland species were noted as being present including false oat grass (*Arrhenatherum elatius*) and meadow foxtail (*Alopecurus pratensis*).	Poor

Table 3.1: Summary of Existing Habitats (continues)

Habitat	Description	Condition
Linear Habitats		
Species poor hedgerow with trees	Lengths of hedgerow run along the boundary of the study areas along its southern and western limits. The hedgerows were species poor, with no 30m length examined containing five or more native woody species. The dominant woody species comprised hawthorn (*Crataegus monogyna*), willow (*Salix sp.*) and common alder (*Alnus glutinosa*). Crab apple (*Malus sylvestris*) and sycamore (*Acer sp.)* were also present but infrequent. Both lengths contained a small number of mature oaks (*Quercus robur*) some of which displayed veteran characteristics (i.e. decay holes, physical damage to trunk and crevices in the bark). The hedgerows are defunct (i.e. not stock-proof) and possess numerous sections along their length where the woody vegetation has failed leading to the creation of gaps. These gaps had recently been replanted as part of the previous landscaping scheme and numerous small whips less than three years of age and still within their tree guards were noted. The hedgerows along both the southern and western boundaries vary between 1m-2.5m in width and lack ground features such as ditches and banks which are often associated with hedgerows of greater biodiversity value. The understory of both hedgerows comprises almost entirely of bramble and bracken.	-

Table 3.1 (continued): Summary of Existing Habitats

Drawing C153311-05-01 details the current extent of the habitats currently present within the site.

3.2 DEVELOPMENT IMPACTS

3.2.1 Habitat Retention and Creation

All habitats currently present on site and beyond the boundary of the development footprint will be retained, including:

- Mixed plantation woodland;
- Species poor semi-improved grassland; and,
- Species poor hedgerow with trees.

Through appropriate habitat management (please refer to LEMO), 0.97ha of the retained species-poor semi-improved grassland and 0.57ha of the retained tall ruderal will be enhanced over a five-year period to establish 1.54ha of semi-improved neutral grassland. A new area of standing water (pond) 0.05ha in size will be created, including the planting of appropriate wetland/marginal vegetation. The pond and its supporting wetland habitat will be established over a five-year period.

Once established these habitats (along with rest of the habitats on site) will be appropriately managed to maintain their biodiversity value at their target condition for the operational lifespan of the development scheme.

3.2.2 Habitat Loss

The following areas of habitat will be lost through the scheme and replaced with built form and/or sealed surfaces:

- Amenity Grassland: 0.06ha
- Bare Ground: 0.03ha
- Introduced Scrub: 0.02ha
- Mixed Plantation Woodland: 0.06ha
- Poor Semi-Improved Grassland: 0.41ha
- Standing water: 0.01ha
- Tall Ruderal: 0.07ha

3.3 LANDSCAPING PROPOSALS

After extensive discussions with Middlemarch Environmental Ltd., J B Landscape Associates have created a Landscape and Environmental Management Operations report (LEMO) which details the methods of creation and management prescriptions to allow for the likely establishment of all habitats on site to both their target type and condition within five years of the commencement of works.

Once established these habitat (along with rest of the habitats on site) will be appropriately managed to maintain their biodiversity value at their target condition for the operational lifespan of the development scheme.

3.4 HEADLINE RESULTS

Table 3.2 details the headline results of the habitat improvement to be delivered as part of the proposed scheme compared to the habitats currently present onsite (as determined during the September 2020 Phase 1 habitat survey). Full details of the Biodiversity Metric calculations can be found in Appendix 1.

Table 3.3 details the headline results of the habitat improvement to be delivered as part of the proposed scheme compared to the landscaping scheme for the 2016 development scheme (2109-PL001-1L & 2109-PL001-Q2) which is depicted in drawing C153311-05-Initial_Landscaping. Full details of the Biodiversity Metric calculations can be found in Appendix 2.

	Biodiversity units	Hedgerow units	River units
On-site baseline	11.63	2.46	N/A
On-site post-intervention	23.28	2.46	N/A
Total net unit change	11.65	0	N/A
Total net % change	100.17%	0%	0%

Table 3.2: Biodiversity Impact Assessment – Headline Results; Proposed Habitat Improvements Compared to Current Onsite Habitats.

	Biodiversity units	Hedgerow units	River units
On-site baseline	15.02	0.7	N/A
On-site post-intervention	23.28	2.46	N/A
Total net unit change	8.26	1.76	N/A
Total net % change	54.99%	251%	0%

Table 3.3: Biodiversity Impact Assessment – Headline Results; Proposed Habitat Improvements Compared to 2016 Landscaping Scheme

The biodiversity value of the existing site is calculated at **11.63BU**.

The hypothetical biodiversity value of the of the 2016 approved landscaping scheme is calculated at **15.02BU**

The post-development biodiversity value of the habitats to be retained, enhanced, created and restored (as detailed in the LEMO) its **23.28BU** after five years following the commencement of the management plan.

As such, it has been displayed that the proposed development scheme (if approved) will result in a **100%** net gain to biodiversity compared to is current value, and a **55%** net gain to biodiversity compared to the hypothetical value of the 2016 approved landscaping scheme.

4. HABITAT MANAGEMENT AND MONITORING

4.1 HABITAT CREATION AND ENHANCEMENT, YEARS 0-5

All habitat creation and enhancement measures to occur on-site in the first five years (the establishment period) are provided in detail within the LEMO (ref).

4.2 HABITAT MONITORING AND ONGOING MANAGEMENT, YEAR 5 ONWARDS

At the end of the habitat establishment period, ecological monitoring of the habitats onsite will be conducted and the results provided to the local planning authority. A report will be compiled, detailing the habitats present, their extent, their current condition and the site's total biodiversity value will be calculated. Should the biodiversity value of the site be determined to be less than detailed in tables 3.2 and 3.3 further management prescriptions will be including within the monitoring report detailing what actions will occur to amend the habitat management so as to achieve the site's net gain targets.

Further monitoring reports, adhering to the above layout, will continue to be provided to the local planning authority at five-year intervals.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

It has been quantitatively determined, beyond reasonable likelihood, that the proposed development will not result in a net loss to biodiversity. Solihull Metropolitan Borough Council (MBC) has, at this time, sufficient information to discharge their 'Biodiversity Duty' as regard to ensuring that the proposed development will not result in a net-loss to biodiversity (in a manner consistent with Planning Policy Guidance (PPG) interpretation[4] of Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006).

It has been quantitatively determined, beyond reasonable likelihood, that the proposed development will deliver a net gain to biodiversity within the Solihull Borough and so should be afforded proportional positive weighting by the authority (in line with the guidance with paragraph 175 of the National Planning Policy Framework (NPPF) 2019[5]) when reaching a planning determination.

The proposed development has also been demonstrated as being consistent with the requirements of Policy P10 of the Solihull MBC Adopted Local Plan 2013 in that:

"…Developers will be required to undertake a full ecological survey and to deliver a net gain or enhancement to biodiversity… Where development is permitted, appropriate mitigation of the impacts and compensation where relevant will be required to deliver a net gain in biodiversity, habitat creation…"

The habitat creation/establishment/improvement measures detailed within the LEMO should be considered sufficient to increase the site's biodiversity value to 23.28BU within five years of the commencement of works detailed. This represents a 100% net gain over the site's current value and a 55% net gain over the hypothetical biodiversity value of 2016 approved landscaping scheme.

5.2 RECOMMENDATIONS

R1 The enaction of the habitat creation/establishment measures within the LEMO to allow for the likely delivery of a net gain of 23.28BU within five years of the commencement of works should be secured via an appropriately worded planning condition.

R2 The submission of appropriate monitoring and ongoing habitat management reports at five year intervals, commencing from the cessation of the habitat establishment period (and being subject to any future legislative and best practice guidance changes), should become a condition of any future planning approval.

[4] https://www.gov.uk/government/collections/planning-practice-guidance
[5] https://www.gov.uk/government/publications/national-planning-policy-framework--2

6. DRAWINGS

Drawing C153311-05-01 – Extended Phase 1 Habitat Survey, September 2020

Drawing C153311-05-Initial_Landscaping – Landscaping scheme for 2016 development

C153311-05-01

Legend

- Site boundary
- Species-poor hedgerow with trees
- Amenity grassland (A)
- Bare ground
- Building
- Hardstanding
- Introduced shrub
- Mixed plantation woodland
- Poor semi-improved grassland (SI)
- Standing water
- Tall ruderal
- Target note
- Proposed site layout

N

Project	Prologis Park, Birmingham Interchange
Drawing	Phase 1 Habitat Map and Proposed Development
Client	IAC Group c/o CBRE
Drawing Number: C153311-05-01	Revision: 00
Scale @ A3: 1:1,500	Date: December 2020
Approved By: CW	Drawn By: VO

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C153311-InitialLandscaping

Legend

- Site boundary
- Initial landscaping site layout
- Native hedge
- Ornamental hedge
- A — Amenity grassland
- Building/hardstanding
- Existing trees retained
- Introduced shrub
- Marshy grassland
- Mixed plantation woodland
- SI — Poor semi-improved grassland

N

Project	Prologis Park, Birmingham Interchange
Drawing	Initial Landscaping
Client	IAC Group c/o CBRE
Drawing Number: C153311-InitialLandscaping	Revision: 00
Scale @ A3: 1:1,500	Date: October 2020
Approved By: CW	Drawn By: VO

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APPENDICES

Appendix 1 – Warwickshire, Coventry and Solihull – Biodiversity Offsetting: Biodiversity Impact Assessment Calculator (Version 19.1), Car Parking A & B, Prologis Park Birmingham Interchange, Blackfirs Lane, Solihull: Current habitats onsite compared to proposed scheme.

								Habitat Biodiversity Value					
	Existing habitats on site Please enter all habitats within the site boundary			Habitat distinctiveness		Habitat condition		Habitats to be retained with no change within development		Habitats to be retained and enhanced within development		Habitats to be lost within development	
T. Note	code	Phase 1 habitat description	*Habitat area (ha)*	*Distinctiveness*	*Score*	*Condition*	*Score*	*Area (ha)*	*Existing value*	*Area (ha)*	*Existing value*	*Area (ha)*	*Existing value*
		Direct Impacts and retained habitats			A		B	C	A x B x C = D	E	A x B x E = F	G	A x B x G = H
B	J12	Grassland: Amenity grassland	0.85	Low	2	Poor	1	0.79	1.58			0.06	**0.12**
	J4	Other: Bare ground	0.64	Low	2	Poor	1	0.61	1.22			0.03	**0.06**
	n/a	Built Environment: Buildings/hardstanding	1.06	none	0	Poor	1	1.06	0.00				
	J14	Other: Introduced shrub	0.07	Low	2	Poor	1	0.05	0.10			0.02	**0.04**
	A132	Woodland: Mixed plantation	1.03	Low	2	Poor	1			0.96	1.92	0.07	**0.14**
	B6	Grassland: Poor semi-improved grassland	1.42	Medium-Low	3		1			0.97	2.91	0.45	**1.35**
	G1	Wetland: Standing water	0.01	High	6	Poor	1					0.01	**0.06**
	C31	Other: Tall ruderal	0.71	Medium-Low	3	Poor	1			0.57	1.71	0.14	**0.42**
		Total	5.79				Total	2.51	2.90	2.50	6.54	0.78	2.19
													∑D + ∑F + ∑H
												Site habitat biodiversity value	11.63

Before/after impact		Indirect Negative Impacts Including off site habitats	K					Value of loss from indirect impacts K x A x B = Li, Lii	Li - Lii
	Before								
	After								
	Before								
	After								
	Before								
	After								
	Before								
	After								
	Before								
	After								
		Total	0.00						0.00 M
									HIS = J + M
									Habitat Impact Score (HIS) **2.19**

CAUTION - Destruction of habitats of high distinctiveness, e.g. lowland meadow or ancient woodland, may be against local policy. Has the mitigation hierarchy been followed, can impact to these habitats be avoided?

Any unavoidable loss of habitats of high distinctiveness must be replaced like-for-like.

	Proposed habitats on site (Onsite mitigation)			Target habitats distinctiveness		Target habitat condition			Time till target condition		Difficulty of creation / restoration		*Habitat biodiversity value*
T. Note	code	Phase 1 habitat description	*Area (ha)*	*Distinctiveness*	*Score*	*Condition*	*Score*		*Time (years)*	*Score*	*Difficulty*	*Score*	
		Habitat Creation	N		O		P			Q		R	(N x O x P) / Q / R
	n/a	Built Environment: Buildings/hardstanding	0.66	none	0	Poor	1		3 Years	1.1	Low	1	**0.00**
	G1	Wetland: Standing water	0.05	High	6	Good	3		5 years	1.2	Medium	1.5	**0.50**
	B5	Grassland: Marsh / Marshy grassland	0.01	High	6	Good	3		5 years	1.2	High	3	**0.05**
	A132	Woodland: Mixed plantation	0.06	Low	2	Moderate	2		5 years	1.2	Medium	1.5	**0.13**
		Total	**0.78**										
		Habitat Enhancement						Existing value S (= F)					((NxOxP)-S)/Q/R
B	B22	Grassland: Semi-improved neutral grassland	0.97	Medium	4	Good	3	**1.92**	5 years	1.2	Low	1	**8.10**
	B22	Grassland: Semi-improved neutral grassland	0.57	Medium	4	Good	3	**1.71**	5 years	1.2	Low	1	**4.28**
	A132	Woodland: Mixed plantation	0.96	Low	2	Moderate	2	**2.91**	5 years	1.2	Low	1	**0.78**
		Total	**2.50**										

Trading down correction value	0.00
Habitat Mitigation Score (HMS)	**13.84**
	HBIS = HMS - HIS
Habitat Biodiversity Impact Score	**11.65**
Percentage of biodiversity impact loss	

	Loss	Gain	Impact
Woodland Habitat	0.14	0.91	**0.77**
Grassland Habitat	1.47	12.43	**10.96**
Wetland Habitat	0.06	0.50	**0.44**
Other Habitat (including Built Environment)	0.52	0.00	**-0.52**
Total	2.19	13.84	**11.65**
		Trading down	**0.00**
			11.65

Warwickshire, Coventry & Solihull - Hedge Impact Assessment Calculator

KEY	
	No action required
	Enter value
	Drop-down menu
	Calculation
	Automatic lookup
	Result

This sheet calculates the impacts to hedges and lines of trees in and around the site.

These units are not transferrable as compensation for either the Habitat or Connectivity Impact Assessment scores.

Please fill in both tables

Please do not edit the formulae or structure
To condense the form for display hide vacant rows, do not delete them
If additional rows are required, or to provide feedback on the calculator please contact WCC Ecological Services

		Existing Hedgerow features on site		**Hedgerow distinctiveness**		**Hedgerow condition assessments**									**Hedgerow Biodiversity Value**					
															Hedgerow features to be retained with no change within development		**Hedgerow features to be retained and enhanced within development**		**Hedgerow features to be lost within development**	
T. Note	code	Hedgerow habitat description	*Feature length (km)*	*Distinctiveness*	*Score*	*A1*	*A2*	*B1*	*B2*	*C1*	*C2*	*D1*	*D2*	***Condition Score***	*Length (km)*	*Existing value*	*Length (km)*	*Existing value*	*Length (km)*	*Existing value*
		Direct Impacts and retained features			A										C	A x B x C = D	E	A x B x E = F	G	A x B x G = H
	n/a	Hedges: non_species rich hedge with woodland indicator plant	0.69	Medium	4									1	0.69	**2.76**				
		Total	0.69											Totals	0.69	2.76	0.00	0.00	0.00	0.00
																				∑D + ∑F + ∑H
																		Site Hedge Biodiversity Value		2.76

Before/after impact	**Indirect Negative Impacts**	K											Value of loss from indirect impacts K x A x B = Li, Lii	Li - Lii		
Before																
After																
Before																
After																
Before																
After																
Before																
After																
Before																
After																
	Total	0.00												0.00	M	
																HIS = J + M
															Hedge Impact Score (HIS)	**0.00**

Appendix 2 – Warwickshire, Coventry and Solihull – Biodiversity Offsetting: Biodiversity Impact Assessment Calculator (Version 19.1), Car Parking A & B, Prologis Park Birmingham Interchange, Blackfirs Lane, Solihull: 2016 landscaping scheme compared to proposed scheme.

								Habitat Biodiversity Value					
	Existing habitats on site Please enter <u>all</u> habitats within the site boundary			**Habitat distinctiveness**		**Habitat condition**		**Habitats to be <u>retained</u> with no change within development**		**Habitats to be retained and <u>enhanced</u> within development**		**Habitats to be <u>lost</u> within development**	
T. Note	code	Phase 1 habitat description	*Habitat area (ha)*	*Distinctiveness*	*Score*	*Condition*	*Score*	*Area (ha)*	*Existing value*	*Area (ha)*	*Existing value*	*Area (ha)*	*Existing value*
		Direct Impacts and retained habitats			A		B	C	A x B x C = D	E	A x B x E = F	G	A x B x G = H
B	J12	Grassland: Amenity grassland	2.08	Low	2	Poor	1					2.08	**4.16**
	n/a	Built Environment: Buildings/hardstanding	1.23	none	0		1					1.23	**0.00**
	J14	Other: Introduced shrub	0.09	Low	2	Poor	1					0.09	**0.18**
	A3	Woodland: Scattered trees	0.02	Medium	4	Poor	1					0.02	**0.08**
	B5	Grassland: Marsh / Marshy grassland	0.29	High	6	Moderate	2					0.29	**3.48**
	A132	Woodland: Mixed plantation	0.88	Low	2	Moderate	2					0.88	**3.52**
	B6	Grassland: Poor semi-improved grassland	1.20	Medium-Low	3		1					1.20	**3.60**
		Total	5.79				Total	0.00	0.00	0.00	0.00	5.79	15.02
													∑D + ∑F + ∑H
											Site habitat biodiversity value		15.02

Before/after impact	**Indirect Negative Impacts** Including off site habitats	K	Value of loss from indirect impacts K x A x B = Li, Lii	Li - Lii
Before				
After				
Before				
After				
Before				
After				
Before				
After				
Before				
After				
	Total	0.00		0.00

M	HIS = J + M
Habitat Impact Score (HIS)	**15.02**

Warwickshire, Coventry & Solihull - Hedge Impact Assessment Calculator

Please fill in both tables

KEY	
	No action required
	Enter value
	Drop-down menu
	Calculation
	Automatic lookup
	Result

This sheet calculates the impacts to hedges and lines of trees in and around the site.

These units are not transferrable as compensation for either the Habitat or Connectivity Impact Assessment scores.

Please do not edit the formulae or structure
To condense the form for display hide vacant rows, do not delete them
If additional rows are required, or to provide feedback on the calculator please contact WCC Ecological Services

	Existing Hedgerow features on site			Hedgerow distinctiveness		Hedgerow condition assessments									Hedgerow Biodiversity Value: Hedgerow features to be retained with no change within development		Hedgerow features to be retained and enhanced within development		Hedgerow features to be lost within development	
T. Note	code	Hedgerow habitat description	*Feature length (km)*	*Distinctiveness*	*Score*	*A1*	*A2*	*B1*	*B2*	*C1*	*C2*	*D1*	*D2*	***Condition Score***	*Length (km)*	*Existing value*	*Length (km)*	*Existing value*	*Length (km)*	*Existing value*
		Direct Impacts and retained features			A										C	A x B x C = D	E	A x B x E = F	G	A x B x G = H
	n/a	Hedges: non_species rich hedge	0.27	Low	2									1					**0.27**	**0.54**
	n/a	Hedges: non_species rich hedge	0.08	Low	2									1					**0.08**	**0.16**
		Total	0.35											Totals	0.00	0.00	0.00	0.00	0.35	0.70
																				∑D + ∑F + ∑H
																		Site Hedge Biodiversity Value		0.70

Before/after impact	Indirect Negative Impacts	K	Value of loss from indirect impacts: K x A x B = Li, Lii	Li - Lii
Before				
After				
Before				
After				
Before				
After				
Before				
After				
Before				
After				
	Total	0.00		0.00 M
				HIS = J + M
				Hedge Impact Score (HIS) **0.70**