JM Ecology

DODDINGTON LANE, STUBTON, LINCOLNSHIRE
BIODIVERSITY NET GAIN ASSESSMENT REPORT

DOCUMENT CONTROL	
CLIENT	GraceMachin
PROJECT CODE	JME_2404
DOCUMENT REFERENCE	JME_2404_BNG_01_V2
AUTHOR	AR BSc (Hons) ACIEEM
REVIEWED BY	JM BSc (Hons) MCIEEM
VERIFIED BY	JM BSc (Hons) MCIEEM
DATE	MAY 2025
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1. BACKGROUND INFORMATION

1.1 This Biodiversity Net Gain (BNG) assessment has been completed on behalf of GraceMachin. It has been produced to inform the proposed development for four residential dwellings.

1.2 This report is provided alongside the Statutory Biodiversity Metric calculation (excel spreadsheet) which is the basis of the assessment and should therefore be read in conjunction. A summary of the result is however provided at the end of this report.

1.3 This report also follows a Preliminary Ecological Appraisal (PEA) by JM Ecology in 2025 (report reference: JME_2404_PEA_01_V1 Preliminary Ecological Appraisal) for the scheme which has been issued in support of the project. As such it should be read in conjunction.

1.4 This assessment was completed with due consideration for the BNG Good Practice Principles (Baker, Hoskin & Butterworth, 2019) and the BNG: Good Practice Principles for Development CIEEM, IEMA, CIRIA, UK (2019); more details have been provided later in this report.

Site Details

1.5 The Site comprises ridge and furrow modified grassland, with hedgerow boundaries located on the southern outskirts of the village of Stubton in the South Kesteven District of south-western Lincolnshire. Adjacent habitats comprise rural arable fields with associated hedgerows, and blocks of woodland and the wider village to the north forming a rural setting.

Figure 1-1: Site Context

Contains OS data © Crown copyright, open-source data (2025).

Purpose of This Report

1.6   The purpose of the BNG Assessment is to gather data on existing habitats at the Site and the value assigned to these habitats using Natural England's Statutory Biodiversity Metric - Calculation Tool (Natural England Joint Publication, 2024) as well as assessing the habitats post intervention from works, management or development activity. The report also includes data relating to habitats lost, retained, created or enhanced.

1.7   The report will also provide an overview of the BNG Good Practice Principles (Baker, Hoskin & Butterworth, 2019) and legislation and planning policy.

2. LEGISLATION AND POLICY

National

2.1   The Environment Act (2021) mandates the requirement of 10% net gains for biodiversity and as such should be the aim of all new developments. Alongside this, the Biodiversity Gain Requirements Regulations 2024 also informed relevant components of this assessment.

2.2   The National Planning Policy Framework (NPPF, 2024) informs Local Planning Authorities planning policies and when reviewing planning applications affecting features of value to nature conservation.

2.3   The NPPF is available at https://www.gov.uk/government/publications/national-planning-policy-framework--2.

Local

2.4   Local planning policy was also reviewed including the following resources:

- The South Kesteven Local Plan 2011-2036
- MAGIC maps statutory sites and Priority Habitats under the NERC Act (2006).

3. METHODOLOGY

Habitat Survey and Condition Assessment

<u>Habitat Survey</u>

3.1 A UK HAB survey was completed on the 3rd April 2025 by AR BSc (Hons) ACIEEM. AR has over 10 years' experience as a professional ecologist and is certified to complete **MoRPh River Condition Assessment**[1] surveys for BNG/habitat Assessments.

<u>Habitat Condition Assessment Survey</u>

3.2 This was completed on the 3rd April 2024 by AR BSc (Hons) ACIEEM. AR has extensive experience of BNG assessments through extensive project experience and BNG best practice training provided by the Chartered Institute of Ecology and Environmental Management.

3.3 During this survey the habitats were assessed against the Natural England habitat condition assessment criteria (Natural England Joint Publication, 2024). The condition assessment criteria are dependent on the habitats present on-Site, with each assessment containing sets of criteria which are either passed or failed. Criteria include things such as species composition, presence of undesirable species and percentage cover.

The Biodiversity Metric Calculator

3.4 The Statutory Biodiversity Metric calculator (Natural England Joint Publication, 2024) was used to calculate the ecological baseline of the Site. This habitat types, conditions and areas were inputted into the metric to form the habitat baseline. Additionally, the biodiversity metric calculation tool collects information on distinctiveness and strategic significance. These categories are described in more detail below.

3.5 Habitats are assigned distinctiveness bands. These are based on an assessment of the distinguishing features of a habitat, including consideration of species richness, rarity (at local, regional, national and international scales), and the degree to which a habitat supports species rarely found in other habitats. The distinctiveness band of each habitat is preassigned in the Statutory Biodiversity Metric and are based on the UK Habitat Classification system.

3.6 The Statutory Biodiversity Metric assesses terrestrial habitats under two broad but separate groups including area Habitat Biodiversity Units (habitat area such as grassland, woodland or other areas of habitats which are measured in hectares); and hedgerow Biodiversity Units (Linear features such as hedgerows or lines of trees which are measured in kilometres).

<u>Strategic Significance</u>

3.7 The Statutory Biodiversity Metric considers Strategic Significance. Strategic Significance is defined as the spatial location of a habitat in relation to preferred locations for biodiversity.

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[1] Modular River Survey MoRPh River Condition Assessment Certification- information available at : River Condition Assessment for appraisals & Biodiversity Net Gain calculations – Modular River Survey

3.8   This is broken down into three categories for input into the Statutory Biodiversity Metric as described below:

- Within area formally identified in local strategy – the Site or habitat type is within the local planning documents or frameworks;
- Location ecologically desirable but not in local strategy; and
- Area/compensation not in local strategy/no local strategy.

3.9   The following data sources were searched to gather information on the strategic significance of the Site and its habitats:

- The South Kesteven Local Plan 2011-2036;
- Woodland Trust Veteran Tree Inventory;
- Lincolnshire Biodiversity Action Plan 2011-2020;
- Ancient Woodland Inventory; and,
- MAGIC maps statutory sites and Priority Habitats under the NERC Act (2006).

Limitations

3.10   Despite efforts made during the field survey to provide a comprehensive account of the site, it is important to acknowledge that no investigation can guarantee complete characterisation and accurate prediction of the natural environment. Moreover, it is crucial to recognise that habitats are dynamic entities prone to change.

3.11   The results and recommendations within this report are valid for up to two years from the date of survey, assuming there are no significant changes to the Site or its immediate surroundings.

4.   BASELINE RESULTS

Baseline Results (On-Site)

4.1   For an on-Site Baseline Habitat Plan see Appendix 1, for Site photos previous PEA report.

4.2   **There are no irreplaceable habitats on-Site.**

HABITAT	DESCRIPTION	Area / Length	Condition Assessment Result
Modified Grassland (G3)	G2 and G3 were located within the central area and the northern section of the Site. These grasslands were both ridge and furrow, with the only different being the direction of the ridge and furrow. G2's ridge and furrow was directed east/west with G3's directed north/south. Both grasslands had similar species composition and swards with a 40cm tussocky sward, with no recent grazing or cutting evident. Species comprised dominant cock's foot and false oat grass with abundant perennial rye grass and occasional fescue as well as meadow fox tail. Forbs included abundant nettle, occasional dock, cow parsley and hogweed with rare dandelion and spear thistle. No more than 3-4 species per m^2 was identified by the surveyor. Habitat condition sheet used: 5. Grassland Low Distinctiveness.	0.5987	Pass B and D Poor
Modified Grassland (G4)	G4 was located along the eastern boundary of the Site and comprised of a shorter sward, up to 10cm, which as not tussocky and likely previously used as a grassland track. Dominant grassland species comprised perennial rye grass, meadow foxtail and fescue with abundant white clover, broadleaved plantain and creeping buttercup and rare dandelion. No more than 5 species per m^2 was identified by the surveyor. Habitat condition sheet used: 5. Grassland Low Distinctiveness.	0.0507	Pass C E F G Poor
Bramble Scrub (SCR1)	The eastern boundary adjacent to H2 has not been managed and comprised of dominant dense bramble *Rubus fruticous agg*. scrub, as well as areas of mixed scrub and blackthorn scrub. Habitat condition sheet used: 20. Scrub.	0.0205	N/A Auto score

HABITAT	DESCRIPTION	Area / Length	Condition Assessment Result
Mixed Scrub (SCR3)	An area comprising dog rose with elder hawthorn and bramble was present along the western Site boundary, adjacent to areas of bramble scrub (SCR1). Habitat condition sheet used: 20. Scrub.	0.0116	Pass C Poor
Blackthorn Scrub (SCR4)	An area comprising of just blackthorn scrub was present within the central area of the Site adjacent to the western boundary. Habitat condition sheet used: 20. Scrub.	0.0163	Pass A, B, C, D Moderate
Mixed Scrub (SCR5)	SCR 5 comprised bramble, hawthorn and elder Habitat condition sheet used: 20. Scrub.	0.0084	Pass A, B, C, D Moderate
Tall forbs	An area of tall forbs was present within the north-western corner of the Site. This area comprised dominant common nettle with creeping thistle, cut-leaved cranesbill, golden bell and cow parsley with common hogweed. Habitat condition sheet used: 22: Urban.	0.0050	Pass: B and C Moderate
Native hedgerow associated with ditch (H2)	H2 was located along the western boundary of the Site and where the hedgerow ended was not apparent. It formed one hedgerow with the adjacent field with a dry ditch running underneath. The hedgerow was approximately 1.8m high and over 2m wide, with dominant hawthorn as well as bramble ash and blackthorn, common privet and dog rose. It was intensively managed and was not considered species rich as it did not contain 6 species per 30m. Habitat condition sheet used: 8. Hedgerow.	0.132	Pass A1, A2, B1, B2, D2 Moderate

HABITAT	DESCRIPTION	Area / Length	Condition Assessment Result
Native Hedgerow (H3)	H3 was located on the northern boundary of the Site adjacent to a residential property. This hedgerow had been recently heavily cut back, with stems of hawthorn measuring 10-20cm wide, which were likely part of a mature hedgerow. The dominant species comprised hawthorn with ivy and elder measuring 1.5m wide and 1.5m high. Habitat condition sheet used: 8. Hedgerow.	0.075	Pass D1, B2 Poor
Native Hedgerow with trees (H4)	H4 was located along the eastern Site boundary, forming the northern section. This hedgerow comprised of dominant hawthorn with mature ash trees which were in good health. Habitat condition sheet used: 8. Hedgerow	0.066	Pass A1, A2, B1, B2, C1, D1, D2, E2 Good

Strategic Significance

4.3   The Site is not located in a nature recovery area. From a review of local and national policy documents, the habitats was assessed under the lowest strategic significance band **'Area/compensation not in local strategy/no local strategy'** owing to their limited value and lack of recognition in local or national policy/nature strategies.

4.4

Baseline Habitat Impacts

4.5 The Table below provides a summary of the impacts to the baseline habitats as a result of development. For full details see the associated Statutory Biodiversity Metric Calculation.

4.6 For a baseline habitat plan see Appendix 1.

Table 4.1: Baseline Habitat Outcome as Result of Proposal

HABITAT	IMPACT OF PROPOSAL
Modified Grassland (G3)	Majority loss to facilitate proposal
Modified Grassland (G4)	Majority loss to facilitate proposal, with area on the southern section of the site set aside for enhancement
Bramble Scrub (SCR1)	Retention of all habitat
Mixed Scrub (SCR3)	Retention of all habitat
Blackthorn Scrub (SCR4)	Majority loss to facilitate proposal
Mixed Scrub (SCR5)	Majority loss to facilitate proposal
Tall forbs	Majority loss to facilitate proposal
Native hedgerow associated with ditch (H2)	Retention of all habitat
Native Hedgerow (H3)	Retention of all habitat
Native Hedgerow with trees (H4)	Retention where possible – losses to facilitate site access and visibility splays

Retained Habitats

4.7 No habitats will be retained as part of the development proposals with the exception of the area of grassland and scrub to the south of the Site which will be used to enhance biodiversity.

4.8 All hedgerows with the exception of H4 will be retained, with a section of H4 lost to facilitate access and visibility splays. It has been assumed that 10m to either side of the road will be lost.

4.9 For proposed habitat interventions map see Appendix 2.

5. PROPOSED HABITAT CREATION

5.1 Habitat created is proposed in Table 5.1 below. For specific habitat creation, management and monitoring prescriptions a **HMMP** is recommended to deliver the landscaping scheme successfully and should be secured by way of a planning condition. This HMMP should build on the outline prescriptions set out in this section to demonstrate feasibility of biodiversity enhancement in principle.

5.2 All habitats proposed for creation are **assigned the lowest strategic significance score** owing to their limited initial ecological value upon creation, and on basis of the context as components of a development Site.

5.3 The urban habitats including the buildings, infrastructure and vegetated gardens have not been included below as these will not form part of a future HMMP document and will be within private ownership and do not require monitoring or to meet target conditions.

5.4 For specific locations of the proposed habitats listed below see Appendix 2.

Table 5.1: Habitat Creation

PROPOSED HABITAT	DIFFICULTY TO CREATE	TARGET CONDITION	ACHIEVING TARGET CONDITION
Mixed Scrub	**Low**	**Moderate**	The new scrub creation will be targeted to score a 'moderate condition' as provided on the Statutory Metric Condition Assessment Sheet 20 'Scrub Habitat Type.. The following Criteria will be targeted, as described below: Criterion A: The habitat will need to meet this criteria by meeting the definition of UK HABS habitat definition for scrub which is at least 80% native, at least three native woody species and no more than 75% cover is of a single species. This will be fulfilled by removing the majority of the bramble scrub and planting of a range of scrub species. Criterion C: Any invasive species and species indicative of suboptimal condition will be removed. Criteria D: the scrub will be managed on a rotational basis to allow natural regeneration and scattered scrub to form along the edge of this habitat.
Rural Trees	**Low**	**Moderate**	The 12 new tree planted will be targeted to score a 'moderate condition' as provided on the Statutory Metric Condition Assessment Sheet 9 'Individual Trees Habitat Type.. The following Criteria will be targeted, as described below: Criterion A: The tree is a native species - only native species will be planted at the Site Criterion D: little or no management will be undertaken on the trees so that they retain over 75% of their expected canopy for their age range and height. Criterion F: More than 20% of the canopy will over sail vegetation beneath. The trees will be planted within the biodiversity enhancement area and will over sail both scrub and grassland.
Native Species Rich	**Low**	**Moderate**	The new hedgerow creation will be targeted to score a 'moderate condition' as provided on the Statutory Metric Condition Assessment Sheet 8 'Hedgerow Habitat Type..

Hedgerows with Trees			The following Criteria will be targeted, as described below: Criterion A1 and A2: The height and width of the hedgerow will be managed to no less than 1.5m. Criterion B2: The hedgerow will be continuous in canopy and any failed planting will be replaced. Criterion C1: at least one side of the hedgerow will form the biodiversity area and therefore the ground will be undisturbed for over 1m. Criterion C2: The hedgerow will be adjacent to other neutral grassland which will not have more than 20% of nutrient enriched soil indicator plant species. Criterion D1: should any invasive plants colonise the hedgerow, these will be removed. Criterion D2: The hedgerow will be managed to benefit biodiversity and therefore will not be subject to excessive management. The HMMP will cover any remedial measures should this criteria be failed in any of the monitoring surveys. Criterion E2: Should any of the hedgerow trees become unhealthy, these will be treated or replaced as required.

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6. PROPOSED HABITAT ENHANCEMENT

6.1   Habitat Enhancement is proposed in Table 6.1 below. For specific habitat enhancement, management and monitoring prescriptions a **HMMP** is recommended to deliver the landscaping scheme successfully and should be secured by way of a planning condition. This HMMP should build on the outline prescriptions set out in this section to demonstrate feasibility of biodiversity enhancement in principle.

6.2   All habitats proposed for creation are **assigned the lowest strategic significance score** owing to their limited initial ecological value upon creation, and on basis of the context as components of a development site.

6.3   For specific locations of the proposed habitats listed below see Appendix 2.

Table 6.1: Habitat Enhancement

BASELINE HABITAT	PROPOSED HABITAT	DIFFICULTY TO ENHANCE[2]	TARGET CONDITION CHANGE	ACHIEVING TARGET CONDITION
Modified Grassland	**Other Neutral Grassland**	**Low**	**Poor - Moderate**	The modified grassland to be retained as part of the development proposals will be enhanced. The grassland enhancement area will include an area to the south of the Site. The enhancements to this grassland will be targeted to score a 'moderate condition' as provided on the Statutory Metric Condition Assessment Sheet 6 'Grassland Medium, High and Very High Distinctiveness'. The following Criteria will be targeted, as described below: Criterion A: The habitat will need to meet this criteria by meeting the definition of g3c Other Neutral Grassland UK HABS habitat definition which states: *'A neutral grassland that does not meet the definition of either g2a or g3b and meets at least three of these four criteria: 1. >20% cover of broadleaved herbs and sedges; 2. >8 species per m² (including forbs, grasses, sedges and rushes, and excluding bryophytes); 3. ≥1 grass species that is not generally sown for intensive agricultural production (ie. Rye- grasses Lolium spp., Timothy Phleum pratense, Cock's-foot Dactylis glomerata, Meadow fescue Festuca pratensis) is at least abundant; 4. Cover of Rye-grasses Lolium spp. and White Clover Trifolium repens, where present, is <30%'.* This will be achieved by firstly allowing natural colonisation of the grassland for the first five years. Species within close proximity (field adjacent to the north-east) to the Site include those characteristic of g3b other neutral grassland of both grassland and forb species. The grassland should be reassessed after five years to determine species composition. Once this assessment has been undertaken then appropriate interventions can be undertaken in order to control species uncharacteristic of g3b other neutral grassland or introduce characteristic species. Criterion B: A diverse seed mixture will be sown which will contain a range of grass types. In addition the grass mix

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[2] Difficulty to create taken directly from Biodiversity Metric Assessment Calculator/technical information

BASELINE HABITAT	PROPOSED HABITAT	DIFFICULTY TO ENHANCE[2]	TARGET CONDITION CHANGE	ACHIEVING TARGET CONDITION
				will include yellow rattle which will supress grass growth in areas forming natural variation in sward heights. Should this fail, then areas of grassland can be left with no management for 2-3 years on a rotational basis to form tussocks in the sward. Criterion D: Any scrub which may form within the grassland will be regularly managed and not account for over 20% of the total grassland area. The grassland will be at least annually cut and therefore any scrub formation will be controlled. Any bracken *Pteridium aquilinum* which may form within the grassland will be regularly managed and not account for over 20% of the total grassland area. The grassland will be at least annually cut and therefore any bracken formation will be controlled. Criterion E: No invasive species are currently present within the grassland. Should any invasive species colonise the Site, an appropriate management plan to control any invasive species will be formed. Appropriate ongoing management of the grassland, i.e. digging out of any species indicative of a suboptimal condition will be ongoing through the establishment of the grassland in years 1-5. Remedial measures will be identified during monitoring and will be further detailed within a HMMP.
Bramble Scrub and Mixed Scrub	Mixed Scrub	Low	N/A - Moderate	The bramble and mixed scrub to be retained as part of the development proposals will be enhanced. The scrub enhancement area will include an area to the south of the Site along the western boundary. The enhancements to this scrub will be targeted to score a 'moderate condition' as provided on the Statutory Metric Condition Assessment Sheet 20 'Scrub Habitat Type.. The following Criteria will be targeted, as described below: Criterion A: The habitat will need to meet this criteria by meeting the definition of UK HABS habitat definition for scrub which is at least 80% native, at least three native woody species and no more than 75% cover is of a single species. This will be fulfilled by removing the majority of the bramble scrub and planting of a range of scrub species. Criterion C: Any invasive species and species indicative of suboptimal condition will be removed. Criteria D: the scrub will be managed on a rotational basis to allow natural regeneration and scattered scrub to form along the edge of this habitat.

7. DISCUSSION AND CONCLUSION

Biodiversity Net Gain Results Summary

7.1   Based on the masterplan and the proposed habitat enhancements and creation for the grassland, scrub and trees a BNG has been achieved for the proposed development area habitats.

7.2   A summary of the results set out within this assessment and the supporting Statutory Biodiversity Metric calculator tool & figures is provided below.

7.3   The proposed development will result in an overall habitat area unit change of **+0.18,** resulting in an overall net gain of **+10.97%** for area habitats**.**

7.4   Based on the masterplan and the proposed habitat creation of a new native species rich hedgerows and trees a BNG has been achieved for the proposed development hedgerow habitats.

7.5   The proposed development will result in an overall hedgerow unit change of **+0.38**, resulting in an overall net gain of **+16.67%** for hedgerow lengths**.**

7.6   For full calculation details consult the associated Statutory Natural England Biodiversity Metric calculation spreadsheet which was submit alongside this report. QGIS shapefiles can also be provided upon request.

Trading Summary

7.7   **The trading rules have also been satisfied as part of the assessment which is a key requirement of BNG**. This component of the metric seeks to secures like for like (or better) habitat compensation and enhancement.

7.8   A Biodiversity Gain Plan and HMMP are required to detail/provide prescriptions associated with habitat creation/enhancement, long-term (30 year) management and monitoring. This should be secured through the planning system by way of a condition if and when a scheme at the Site receives approval. The HMMP should build upon the outline prescriptions set out in this report.

8. REFERENCES

- Baker, J. (2016). Biodiversity Net Gain: Good practice principles for development. CIEEM, IEMA, CIRIA, UK.

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- CIEEM (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management. Winchester, UK.

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- Natural England Priority Habitat Inventory Accessed at Priority Habitat Inventory (North) (England) | Priority Habitat Inventory (North) (England) | ArcGIS Hub

- The Biodiversity Gain Requirements (Irreplaceable Habitats) Regulations 2024. Available at: The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024 (legislation.gov.uk)

- UK Hab, 2023 UK Habitat Classification System V2.0

- Woodland Trust Ancient Tree Inventory. Accessed at Tree Search - Ancient Tree Inventory (woodlandtrust.org.uk)

APPENDICES

APPENDIX 1: Baseline Habitat Map

Baseline Habitat Plan — Doddington Lane, Stubton, Lincolnshire

Note
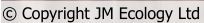
1. Do not scale this drawing.

2. This drawing is to be read in conjunction with all relevant reports

Key

- Site boundary
- g4 - modified grassland
- h3 - dense scrub
- s - sparsely vegetated land
- Hedgerows

H3

SCR5

SCR4

SCR1

SCR1

H2

SCR3

G3

G3

G4

H4

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Client

GraceMachin

Project Title

DODDINGTON LANE, STUBTON, LINCOLNSHIRE

Drawing Title

Baseline Habitat Plan

Drawn:	AR	Reviewed:	JMcL
Project no:	JME_2404	Date: 23.05.25	Scale@A3: 1:1000

0   10   20   30   40   50 m

N

Drawing Number

JME_2404_DR1_V2

APPENDIX 2: Post Development Habitat Map

Key

▭	Site boundary
▨	g3c - other neutral grassland
▨	h3 - dense scrub
▨	u1 - built-up areas and gardens
▨	u1b - developed land. sealed surface
▬▬	Retained hedgerows
▬▬	New hedgerows
●	New trees

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Client

GraceMachin

Project Title

DODDINGTON LANE, STUBTON, LINCOLNSHIRE

Drawing Title

Post-Development Habitat Plan

Drawn:	AR	Reviewed:	JMcL
Project no:	JME_2404	Date:	23.05.25	Scale@A3:	1:1000

Drawing Number

JME_2404_DR2_V2

0   10   20   30   40   50 m

N

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