



BJ Collins
PROTECTED SPECIES SURVEYORS

BIODIVERSITY NET GAIN ASSESSMENT
OF
ARTIFICIAL GRASS PITCH
LANGTON GREEN RECREATION GROUND

A report to:

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Report to:	Surfacing Standards Limited
Report Title:	Biodiversity Net Gain Assessment of Langton Green Recreation Ground
Survey Site/Job:	Langton Green Recreation Ground, 4 Winstone Scott Ave, Langton Green, Tunbridge Wells. TN3 0JJ
OS Grid Reference:	TQ 5417 3970
Survey Date(s): Mapping Date:	24 th of July 2023
Surveyed by:	Mr B J Collins MSc MCIEEM
Mapped by:	Mr N Clayton BSc (Hons) ACIEEM
Architect/Agent:	Surfacing Standards Limited
Planning Reference:	

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Report Status	Date	Author(s)	Reviewed by
Final version	29/09/2023	Nick Clayton BSc (Hons) ACIEEM	B J Collins MSc MCIEEM

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The evidence which we have prepared and provided is true and has been prepared and provided in accordance with the guidance of The Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

RELIANCE - The report describes the conditions and ecological features on the site (and possibly its environs) at the time of survey and that this may (is likely to) change over time. Reliance upon the findings of this report should be determined in accordance with the Chartered Institute of Ecology and Environmental Management guidance on the longevity of ecological surveys, see Advice Note (April 2019) On the Lifespan of Ecological Reports and Surveys CIEEM.

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SUMMARY

This report has been prepared by BJ Collins – Protected Species Surveyors Ltd on behalf of the agent: Surfacing Standards Ltd.

The report provides the results of a Biodiversity Net Gain Assessment of a section of the Langton Green Recreation Ground. . The survey site is centred upon the Ordnance Survey grid reference of TQ 5417 3970.

The proposal is to construct a new artificial sports pitch with floodlights over the footprint of an existing natural turf football pitch .

The attached and supporting Biodiversity Net Gain Metric identifies that the creation of the artificial pitch will result in net loss of biodiversity in the absence of mitigation and compensation.

The habitat that will be lost comprises of amenity grassland and eighteen individual trees removed. This will result in a loss of a total of 2.19 Habitat units within the metric in the absence of compensation actions.

With compensatory habitat enhancements included the total % loss of habitat within the metric, with the landscaping enhancements proposed, achieves the 10% required.

The gains delivered within this Biodiversity Net Gain assessment are:

Habitat Units: a change from a 2.19 unit loss to a net gain of 0.38 units (this is a positive gain of 17.45%).

The trading rules within the DEFRA calculation tool have been satisfied with the proposed development plan.

All of the proposals will require a detailed management plan and adaptive monitoring for a minimum of 30 years from the implementation of those habitats as per guidelines.

1 INTRODUCTION

This report has been prepared by BJ Collins – Protected Species Surveyors Ltd on behalf of the agent Surfacing Standards Ltd. The report provides the results of a Biodiversity Net Gain Assessment in accordance with DEFRA guidance for achieving net gain for biodiversity. The site is located on the Langton Green Recreation Ground, Winstone Scott Avenue, Langton Green, Tunbridge Wells.

The area to be impacted extends to approximately 0.61 ha and the site is centered upon the Ordnance Survey grid reference of TQ 5417 3970.

The evidence is presented in the form of DEFRA Biodiversity Metric calculations for the site based on an assessment undertaken in accordance with the standard methodology (Pranks et al, 2021 & Butcher et al 2020). The objective of the 2023 survey was to assess the site using the Biodiversity Net Gain Assessment 4.0 (DEFRA Metric).

The proposal is to construct a new artificial sports pitch with floodlights.

The survey area comprises one main habitat type: Modified Grassland (amenity grassland) which is regularly mown to a very low sward, alongside 18 trees identified as T1 to T18 inclusive are to be removed; these have been classified as Rural Trees for convenience. No other habitats are to be directly affected by the proposals. The location of the survey site is provided in figure 1 below.



Figure 1: The location of the site highlighted in red.

2 METHODOLOGY

2.1 Habitat Condition Survey to inform BNG Calculations

To inform the Biodiversity Net Gain (BNG) Calculations, the habitat types and condition of the habitats within the site were assessed on the 24th of July 2023 in accordance with the standard methodology. The habitats on the site were assessed and categorised in order to provide baseline information and subsequent interpretation of the ecological value of the site.

2.2 BNG Calculations

The latest version of the DEFRA Metric 4.0 has been used to calculate the baseline value of the site (before development) and the post-development value in order to calculate the Total Net Unit Change. The broad habitat type 'Individual trees' has been used where a tree (or a group of trees) over 7.5cm in diameter at breast height (DBH) does not meet or contribute towards the definition of another broad habitat type. The tree sizes and areas have been assessed using the guidelines as shown below in table 1.

Size class	Diameter at breast height (cm)	Metric RPA radius (m)	Metric area equivalent (ha)
Small	greater than 7cm and less than or equal to 30cm	3.6	0.0041
Medium	greater than 30cm and less than or equal to 90cm	10.8	0.0366
Large	greater than 90cm	15.6	0.0764

Table 1: Tree size classes and area equivalents taken from DEFRA Metric 4.0 guidelines.

2.3 Minimum Mapping Units

The minimum mappable area used is equal to or above 25 m², the minimum mappable length of a linear feature is equal to or above 5 m.

2.4 Personnel

The Habitat Condition Survey was undertaken by Barry Collins MSc MCIEEM. the BNG Calculations were undertaken by Nick Clayton BSc (hons) ACIEEM.

2.5 Limitations

The survey was undertaken inside of the optimum season for habitat surveys (April to September/October). There were no access restrictions. Overall, there were no significant limitations.

3 BASELINE CONDITIONS



Figure 2. Site Boundary and Habitat Map using UKHAB

3.1 On-site Habitats and Habitat Condition Assessments

3.1.1 Grassland: Modified grassland- g4 (0.61 ha) - (Map indicator 1)

Modified grassland (Metric ref 1) at the site contains: The grassland is dominated by Annual meadow grass (*Poa annua*), Perennial ryegrass (*Lolium perenne*), Common bent (*Agrostis capillaris*). Herbs included Pineapple weed (*Matricaria discoidea*), Cleavers (*Galium aparine*), Smooth sow-thistle (*Sonchus oleraceus*), Dandelion (*Taraxacum sp.*), Hoary plantain (*Plantago media*), White clover (*Trifolium repens*), Common cat's ear (*Hypochaeris radicata*), and Daisy (*Bellis perennis*).

DEFRA Condition Assessment: Assessment required (Condition Sheet: Grassland Low distinctiveness)
Assigned score: 1 – Poor

Total Habitat Units: 1.22

Condition Assessment Criteria		Condition Achieved (Y/N)
1	There are 6-8 vascular plant species per m2 present, including at least 2 forbs (this may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition.	N
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	N
3	Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m2 (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet. "	N
4	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	Y
5	Some scattered scrub (including bramble <i>Rubus fruticosus</i> agg.) may be present, but scrub accounts for less than 20% of total grassland area.	Y
6	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Y
7	Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type."	Y
Essential criterion 1 achieved - NO		
Number of criteria passed - 4		
Condition Assessment Result	Condition Assessment Score	Poor

Table 2. Grassland (low) Condition Assessment Sheet taken from Biodiversity Metric 4.0 - Habitat Condition Assessment Sheets with Instructions



Photograph 1 - showing the sward associated with the proposal, looking northerly from the southern boundary.

3.1.2 Rural Trees - (0.065 & 0.073 ha) - (Map indicator 2 & 3)

The sixteen trees identified as T1 to T16 (inclusive) are all over the 75 mm DBH size but below the 300 mm required to be classes as medium size, they have therefore been classified as small rural trees for convenience. They are located to the north and south of the proposal within an area of stock fence and defunct native hawthorn hedgerow, largely missing. The fence line is covered with occasional dense growths of bramble (*Rubus fruticosus* agg). The trees appear to be established by natural regeneration from the more mature trees within the wider boundary. The species present consisted of overgrown Hawthorn (*Crataegus monogyna*), Oak (*Quercus robur*), Ash (*Fraxinus excelsior*), Elder (*Sambuca nigra*) and Sycamore (*Acer pseudoplatanus*).



Photograph 2 - showing the southern boundary treeline, taken from the southeast corner.



Photograph 3 - showing the northern boundary treeline, taken from the north-west corner.

DEFRA Condition Assessment: Assessment required (Condition Sheet: Urban trees) Assigned score: 1 – Poor.

Habitat Units: 0.30

The two medium sized trees (T17 and T18) are to be removed as part of the proposal; these two trees are identified as Locust Tree (*Robinia pseudoacacia*) an invasive schedule 9 species they have been classified as medium rural trees for convenience.

DEFRA Condition Assessment: Assessment required (Condition Sheet: Urban trees) Assigned score: 2 – Moderate

Habitat Units: 0.67

Condition Assessment Criteria		Condition Achieved (Y/N) Trees T1 to T16	Condition Achieved (Y/N) Trees T17 and T18
1	The tree is a native species (or at least 70% within the block are native species).	N	Y
2	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	N	Y
3	The tree is mature (or more than 50% within the block are mature).	N	N

4	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Y	Y
5	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	N	N
6	More than 20% of the tree canopy area is oversailing vegetation beneath.	N	N
Condition Assessment Result		Score Achieved	
Passes 5 or 6 criteria		Good (3)	
Passes 3 or 4 criteria		Moderate (2)	
Passes 2 or fewer criteria		Poor (1)	

Table 3. Urban Tree Assessment Condition Sheet taken from Biodiversity Metric 4.0 - Habitat Condition Assessment Sheets with Instructions

3.1.3 Other woodland, broadleaved - (0.01 ha)

The vast majority of the area broadleaved woodland surrounding the site is outside of the development proposal, with the exception to the woodland to the eastern boundary, which is a narrow band of trees between two sections of the playing field. This area will be retained as is but there will be two of the mature invasive tree species, which are abundant in the strip, removed.

There will also be some pruning to the approaching veteran oak tree in this area, although it will be retained. The invasives lower the condition assessment of this woodland to low.

Condition Sheet: WOODLAND Habitat Type						
UK Habitat Classification (UKHab) Habitat Type(s)						
Woodland and forest - Other woodland; broadleaved						
Condition Assessment Criteria						
Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator	Notes (such as justification)

A	Age distribution of trees	Three age-classes ¹ present.	Two age-classes ¹ present.	One age-class ¹ present.	3	There are three age classes present including approaching veteran oak, mature species and regen
B	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland ² .	Evidence of significant browsing pressure is present in 40% or less of whole woodland ² .	Evidence of significant browsing pressure is present in 40% or more of whole woodland ² .	3	No evidence of browsing
C	Invasive plant species	No invasive species ³ present in woodland.	Rhododendron <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species ³ <10% cover.	Rhododendron or cherry laurel present, or other invasive species ³ >10% cover.	1	There is a 30% cover of Robinia pseudoacacia
D	Number of native tree species	Five or more native tree or shrub species ⁴ found across woodland parcel.	Three to four native tree or shrub species ⁴ found across woodland parcel.	Two or less native tree or shrub species ⁴ across woodland parcel.	2	
E	Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native ⁵ .	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native ⁵ .	<50% of canopy trees and <50% of understory shrubs are native ⁵ .	2	
F	Open space within woodland	10 - 20% of woodland has areas of temporary open space ⁶ . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted ⁷ .	21 - 40% of woodland has areas of temporary open space ⁶ .	<10% or >40% of woodland has areas of temporary open space ⁶ . But if woodland <10ha has <10% temporary open space, please see Good category ⁷ .	1	

G	Woodland regeneration	All three classes present in woodland ⁸ ; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland ⁸ .	No classes or coppice regrowth present in woodland ⁸ .	1	
H	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback ⁹ .	11% to 25% mortality and/or crown dieback or low-risk pest or disease present ⁹ .	Greater than 25% tree mortality and or any high-risk pest or disease present ⁹ .	3	
I	Vegetation and ground flora	Recognisable NVC plant community ¹⁰ at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community ¹⁰ at ground layer present.	No recognisable woodland NVC plant community ¹⁰ at ground layer present.	2	
J	Woodland vertical structure	Three or more storeys across all survey plots or a complex woodland ¹¹ .	Two storeys across all survey plots ¹¹ .	One or less storey across all survey plots ¹¹ .	1	
K	Veteran trees	Two or more veteran trees ¹² per hectare.	One veteran tree ¹² per hectare.	No veteran trees ¹² present in woodland.	2	
L	Amount of deadwood	50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities ¹³ .	Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	1	

M	Woodland disturbance	No nutrient enrichment or damaged ground evident ¹⁴ .	Less than 1 hectare in total of nutrient enrichment across woodland area and or less than 20% of woodland area has damaged ground ¹⁴ .	More than 1 hectare of nutrient enrichment and or more than 20% of woodland area has damaged ground ¹⁴ .	1	Total score 23
Total Score (out of a possible 39)						
Condition Assessment Result			Condition Assessment Score		Result Achieved	
Total score >32 (33 to 39)			Good (3)		POOR	
Total score 26 to 32			Moderate (2)			
Total score <26 (13 to 25)			Poor (1)			

3.1.4 Artificial unvegetated, unsealed surface - (0.0046 ha) - (Map indicator 4)

A small area of path created of bare ground age classes present

DEFRA Condition Assessment: N/A assessment not required.

Habitat Units: 0.00

3.2 Baseline Total Habitat Units

Map ref	Baseline Habitat On-site	Area (ha)	Habitat Units (HBU)
1.	Modified grassland	0.61	1.22
2.	Rural tree (16 small)	0.0651	0.30
3.	Rural tree (2 medium)	0.0732	0.67
4.	Artificial unvegetated, unsealed surface	0.0046	0.00
Total		0.75	2.19
Total (Excluding area of Individual trees)		0.61	1.22

Table 4: A table showing the baseline values of habitats to be affected by the proposals.

4 EXISTING AREA INCLUDING OFF-SITE

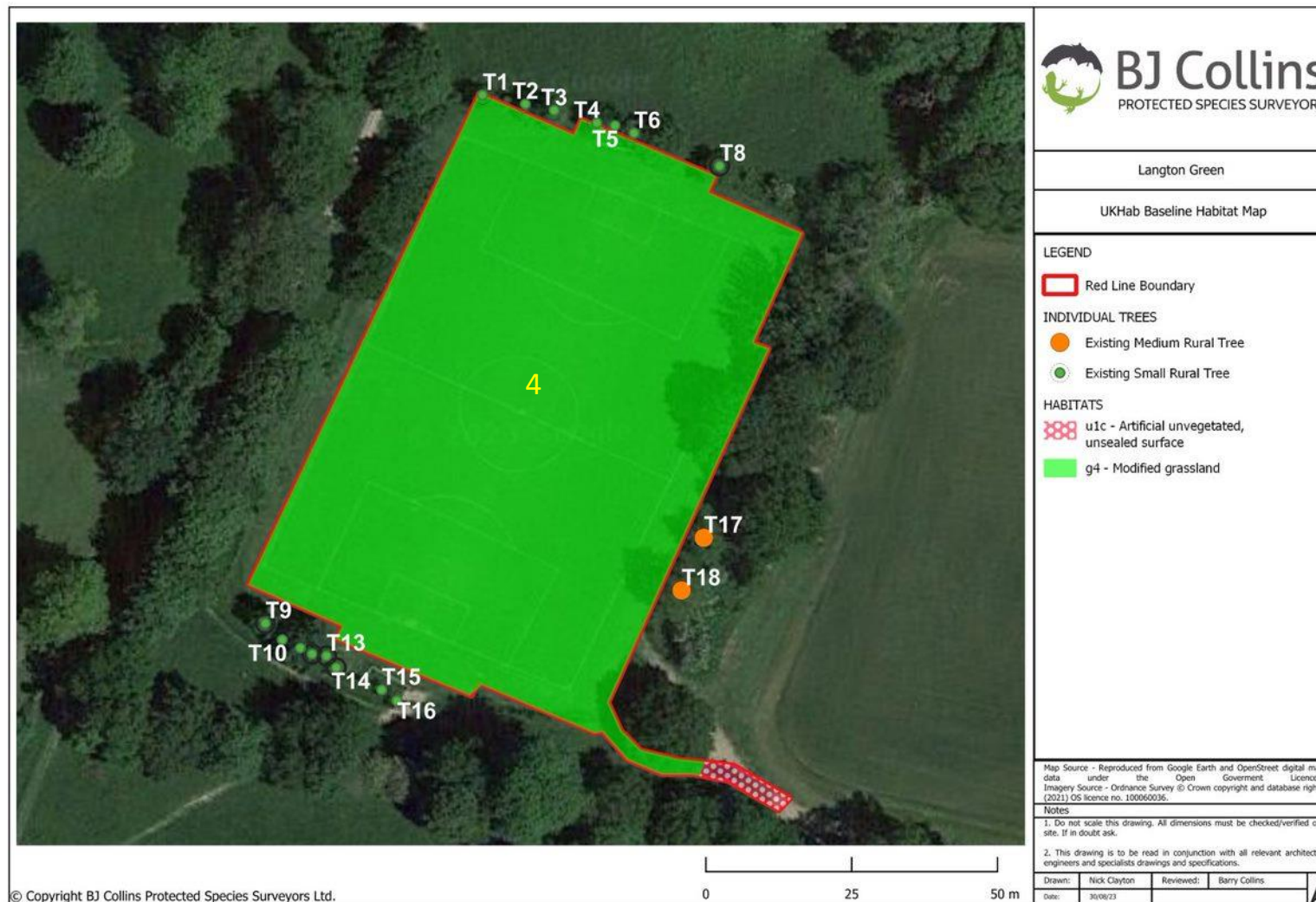


Figure 4. Proposed Design showing on and off-site Proposals.

5 PROPOSED DESIGN INCLUDING OFF-SITE

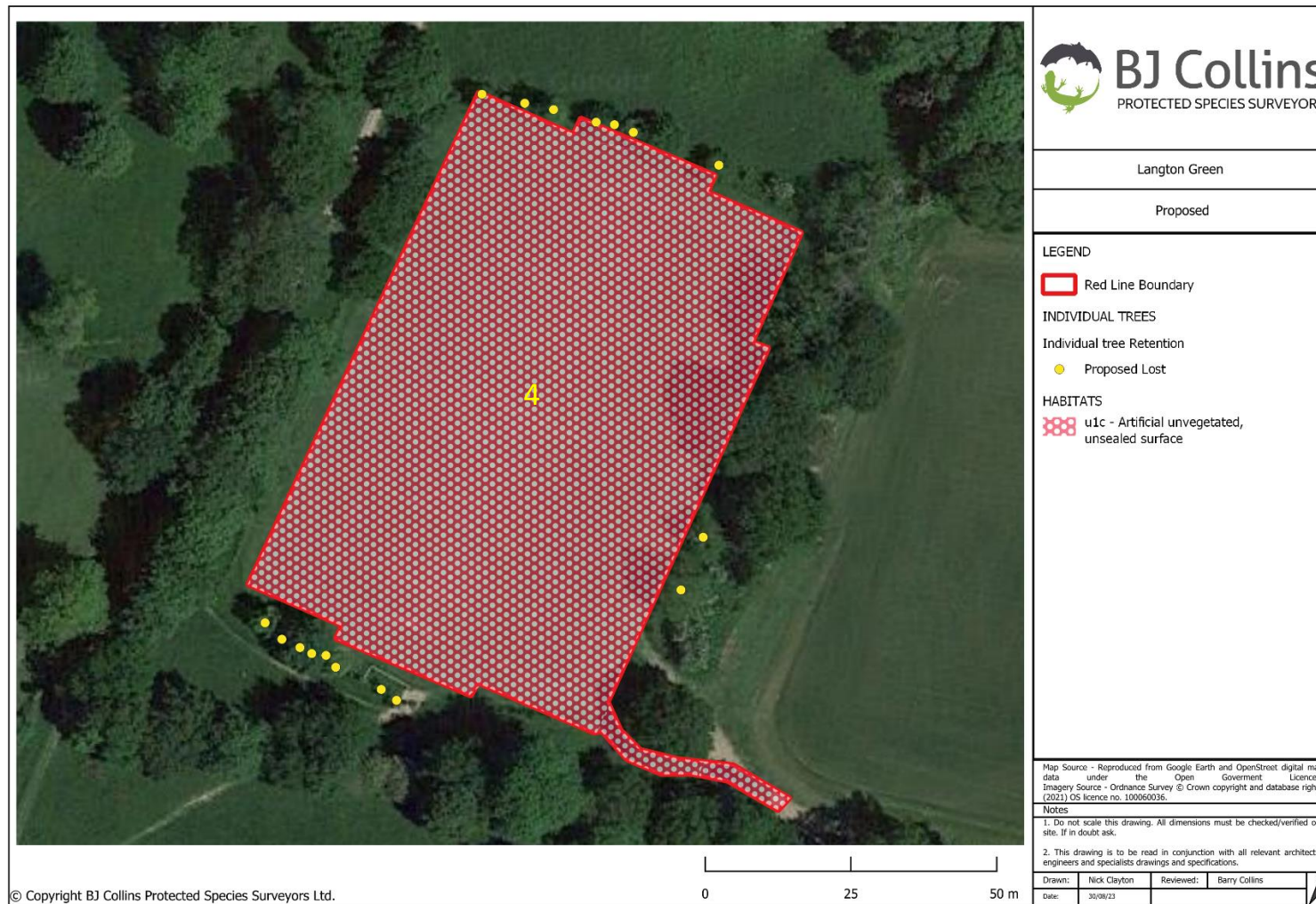


Figure 5. Proposed Design showing on and off-site Proposals.

5.1 On-site Habitat Creation

5.1.1 Artificial unvegetated, unsealed surface (0.6146 ha)

This is the total area of the artificial pitch and pathway towards the pitch.

DEFRA Minimum Targeted Condition: N/A

Created Habitat Units delivered: 0.00

5.1.2 New Trees (0.7329 ha)

Proposed: Urban trees x 20 Medium (0.7329 ha)

A total of 20 large trees to be planted around site. Precise placement and management strategy has not been assessed at this moment however targeted condition will be at least Moderate.

These trees will be native and of local provenience from a reputable supplier.

These trees will be: Extra Heavy Standard size x20.

DEFRA Minimum Targeted Condition: Moderate

Created Habitat Units delivered: 2.58

6 BNG RESULTS

6.1 Habitats

Habitat Units: Total Net Unit Change of 0.38 (positive; equivalent to a gain of 17.45%).

6.2 Habitats units required to meet target

In order to achieve the biodiversity net gain target of 10% (2.409 HBU overall) from the project a total of **0** habitat units is required.

6.3 Trading Rules

The trading rules within the DEFRA calculation tool have **been satisfied** with the proposed development plan.

Please see the excel document for full calculation details labelled:

V2_Langton Green_Biodiversity Metric 4.0 auditing and accounting for biodiversity calculation tool - Macro Enabled

Langton Green		Return to results menu	
Headline Results			
Scroll down for final results ▲			
On-site baseline	Habitat units	2.19	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	2.58	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site net change (units & percentage)	Habitat units	0.38	17.45%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Off-site baseline	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	Habitat units	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.38	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Spatial risk multiplier (SRM) deductions	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
FINAL RESULTS			
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.38	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	17.45%	
	Hedgerow units	0.00%	
	Watercourse units	0.00%	
Trading rules satisfied?	Yes ✓		

Figure 6. A screenshot of the metric results

References

Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1 at <http://www.ukhab.org/>

Panks, S. White, N. Newsome, A. Potter, J. Heydon, M. Mayhew, E. Alvarez, M. Russell, T. Scott, S.J. Heaver, M. H. Scott, S.H. Treweek, J. Butcher B. & Stone, D. (2021). Biodiversity metric 4.0: Auditing and accounting for biodiversity – User Guide. Natural England. ISBN 978-1-78354-779-1.

7 Further photographs



Photograph 4. Showing the site point at which the artificial pitch will be constructed.



Photograph 5. Showing one the two Robinia pseudoacacia (invasive schedule 9) trees to be removed.