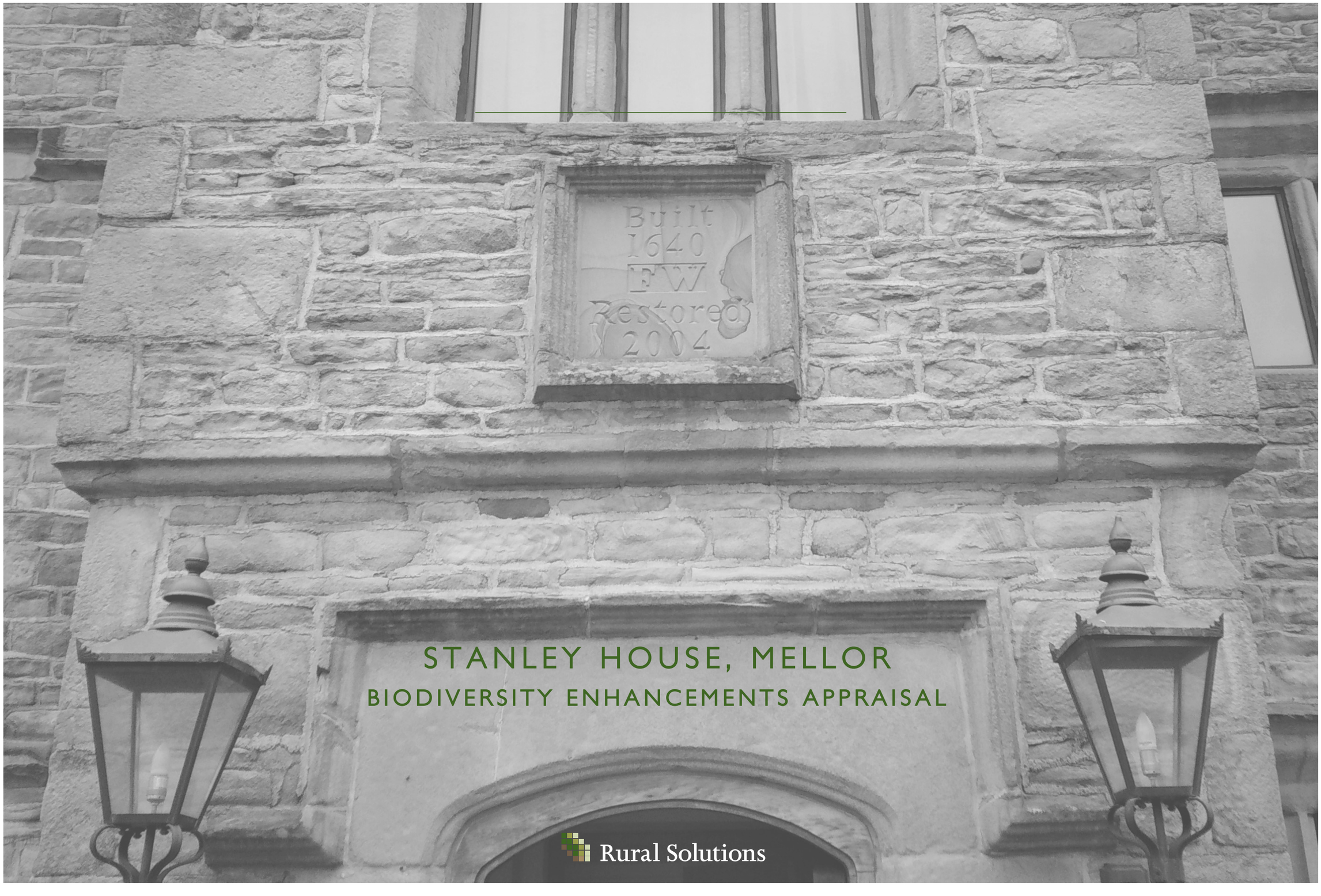

STANLEY HOUSE, MELLOR

BIODIVERSITY ENHANCEMENTS APPRAISAL

Rural Solutions

AUTHOR	VERSION	CHECKED	DATE	DESCRIPTION
SW	R1	DJP		Biodiversity Enhancement Plan Initial Version

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MELLOR

BIODIVERSITY
ENHANCEMENTS
APPRAISAL

MONTE BLACKBURN LTD

SEPTEMBER 2020

PREPARED BY
RURAL SOLUTIONS LTD

RUR002074/R1

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MELLOR

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INTRODUCTION

Rural Solutions was commissioned by client Monte Blackburn Ltd to conduct a baseline habitat enhancement appraisal on a proposal site. From this we have worked on developing enhancement options that if implemented would lead to the enhancement of biodiversity by at least a minimum value of 10% across the estate as a whole.

Known as Stanley House Hotel, the site is located within the area of Mellor, Ribble Valley at SD 645 299. The site can be accessed via a private road off the A677 and it is approximately 5.8 hectares in size. Proposed plans for the site briefly include the landscaping around and remodelling of the stately home that is currently used as a hotel.

The onsite survey work and data collection for this report was conducted by Principal Ecologist David Pollard BSc (Hons) MRSB. The data collation, spatial analysis and document production was carried out by Senior Ecologist Sarah Woods MSc BSc (Hons) AMRSB. David has over 30 years experience in the field of Natural History and has been a professional Ecologist for the last 20 years working on a diverse range of projects. Sarah is a highly qualified and experienced Ecologist who has been working in Wildlife Management for over 10 years, specialising in Combined Human and Natural Systems.

The Department for Agriculture and Rural Affairs (DEFRA) very simply describes the concept of biodiversity net gain as 'an approach which aims to leave the natural environment in a measurably better state than beforehand'. Following the recently unveiled Environment Bill, all planning applications will require a minimum 10% biodiversity increase by law following completion of the development.

Taking into account the nature and location of the assessment site and the future plans proposed for the site, assessments of the biodiversity of Stanley House were carried out and an enhancement strategy developed.

In order to determine the appropriate level of mitigation and improvement works necessary to ensure the target of at least 10% biodiversity increase is met, a baseline survey is carried out on the site to establish a pre-works biodiversity score. To determine a 10% increase, biodiversity on site must be assessed in a quantifiable way.

Using the information collected from a site walkover, computer based scoping assessment of the project and remote sensing datasets, calculations of the initial ecological value of the site were made using geographical modelling software. From this initial value, it was possible to determine the best prospective habitat enhancements to include as part of the overall landscape plan, and recommendations of various habitat types that will significantly enhance onsite biodiversity.

Initially, it is essential to visit site and to assess the different habitat types that are present there. Phase 1 Habitat surveys are conducted with the aims to describe and record all of the habitats present on a site in order to inform future land uses, the potential presence for protected species on site and opportunities for ecological enhancement. This assessment is based upon the guidelines set out by the Joint Nature Conservation Committee.

The differing habitat types that can be found on site give information as to the natural condition of a site including the biotic and abiotic factors present, effectively determining what the ecological potential of an area may be at present and in future under management.

Datasets regarding the topography, land use, local planning strategy and records of protected species in the area are located, downloaded and combined with the information from the walkover survey into an interactive map using Geographical Information Systems (GIS). This then forms a Phase 1 Habitat map with additional metadata that can then be used to generate values as part of a Baseline Biodiversity Habitat Assessment.

A Phase 1 Habitat Map detailing the current habitats on site at Stanley House can be seen overleaf.

PHASE 1 HABITAT MAP

Phase 1 Habitat Map for the proposed site

Site Name: Stanley House
Site Location: Ribble Valley, Mellor, Lancashire
Client Name: Monte Blackburn Ltd
Project Reference: RUR002074

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CALCULATING BIODIVERSITY AT STANLEY HOUSE

In order to fully assess the biodiversity value of a site and determine what a 10% biodiversity increase may entail, a value for the current state of the site must be created using predetermined values.

These predetermined values are based on DEFRA's biodiversity metric and information from Natural England, and include habitat distinctiveness, condition, value for protected species, functional connectivity, strategic importance, area of the habitat and what percentage of the site it comprises.

These values are then collated and put through a computer modelling software to give an overall biodiversity score for that site.

The biodiversity score produced by the model is accompanied by a rough qualitative valuation of carbon sequestration which ranges from negligible to very good in terms of habitats on site, and this can sometimes be a factor in determining which enhancements are most suitable.

In addition to the scores that are outputted from this model are several recommendations for improvement and necessary mitigation strategies, both habitat specific and for a wider estate scale. These suggested opportunities can then be easily incorporated into enhancement strategies to account for simple increases in biodiversity net gain.

If more land is used in the mitigation process than the original site outline, known as offsetting, this is accounted for within the modelling process to allow for an accurate depiction of the biodiversity net gain.

The basic methodology as to how this assessment is carried out is as follows:

- Initially, a site visit is conducted to establish the type of habitats present on site using the Phase 1 Habitat Survey methodology. The habitats on site are also assessed for their current condition and any connectivity between the habitat types that may not be seen on satellite imagery, such as dormice bridges, hedgehog tunnels and burrows for example, are noted down.

- Datasets are analysed for features of the site and the ecological niche that it occupies. Concurrently, a Phase 1 Habitat Map is produced. This map is then combined with the metadata describing the features of each on site habitat as found through the dataset analysis, to produce values for input.

- The values are inputted into a computer model built with statistical software. This computer model automatically adds the necessary multipliers and calculates an overall biodiversity score for the site, as well as additional values in the form of a carbon sequestration qualitative score and recommeded mitigation strategies for each individual habitat on a site based mainly on the distinctiveness or rarity of the habitat.

- Enhancements for the site are proposed and new values based on those enhancements are created within the modelling software. This then produces a new biodiversity score that is indicative of the site's biodiversity value after works are completed onsite. The values produced are conditional upon the successful implementation and continued maintenance of the site over the minimum care terms set out by Natural England and DEFRA.

- The new biodiversity value produced during the appraisal can then be compared to the initial baseline biodiversity value and the percentage difference calculated.

- The enhancement measures may require revision if the 10% criteria has not been met, but the finalised output will always exceed 10% biodiversity net gain on every site as long as the mitigation and enhancement measures are put in place.

- Finally, a scheme of future management actions is established to ensure that the improvement works that are put in place can be maintained in a favourable condition for the long term. This secures the value of the habitat for the future, establishing a high level of biodiversity for at least thirty years following the habitat enhancement works. This is the minimum length of time that is needed for the enhancement measures to be approved by DEFRA and Natural England, as stated within the Net Gain section of the Environment Bill 2019.

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BIODIVERSITY VALUE AND RECOMMENDED ENHANCEMENTS

On the site at Stanley House, a total of three separate habitat types were found during the Phase 1 survey. These included:

- Amenity Grassland
- Woodland/Standing Trees (semi-mature)
- Developed Surface
- Small Waterbody

Overall the majority of the habitats were in poor condition and offered low distinctiveness overall. These habitats were of limited functional connectivity, allowing few species to move between areas to maintain genetic diversity.

There was limited value for protected species across the site as a whole, with the wooded areas offering the best value for protected species on site. The protected species that benefit best from this habitat type include nesting birds mainly, but also other species such as hedgehogs and potentially bats in the larger mature trees, although no evidence has been found at this point.

The overall value for biodiversity on the site was calculated by the model to be 1.14 biodiversity units within the overall area of the site at Stanley House.

In accordance with standard procedure, basic mitigation principles should be adhered to. These include:

- A low level lighting scheme should be implemented during and post construction to prevent the disruption of nocturnal species who may use the site for foraging and commuting. This can be achieved by avoiding direct lighting of habitats such as hedgerows and woodland, and postioning lights to avoid unnecessary light spill.
- If vegetation needs to be removed, it should be outside of the bird nesting season (March-September). If that is not feasible, then a pre-removal check should be carried out by a competent, qualified ecologist.
- Potential for pollution spill should be minimised wherever possible, especially near watercourses or waterbodies.

If the enhancement actions listed to the right are completed then the biodiversity of the site will increase to 10.66, an increase of 835% overall. This increase is highly feasible and can be achieved through a relatively simple set of actions carried out during and post works. Rural Solutions will be happy to support and offer guidance wherever necessary, so please contact us if any assistance is required.

A list of recommended actions based on gaining the largest increase in biodiversity for the least expenditure and physical output is listed to the right. These actions have already been included within the developemnt of the overall Landscape Strategy for the site, which is a seperate document, available on request.

Other enhancement options are available to increase biodiversity and these can be discussed and ascertained in the next stage of works.

ENHANCEMENT RECOMMENDATIONS

The best ways to increase biodiversity on site are as follows:

- Improve the connectivity of the existing woodland by increasing the tree planting on site. This increases the ability of protected species to be able to move around the site and within the wider landscape, contributing to genertic diversity and reducing habitat fragmentation.

- Increase the amount of open green space on site by creating areas of amenity grassland instead of new developed areas with reagrds to new parking areas. This will only marginally increase the habitat quality on site as it is considered to be a habitat type of low distinctiveness, but the increase in connectivity and establishment of wildlife corridors on site will be increased, improving the biodiversity of the overall site. This will also increase the carbon capture potential of the whole site as well.

- Erect several bird boxes at suitable locations around the site. Ideally these should be south facing and located at approximately head height, with the exception of wren boxes which should be installed lower. A variety of bird boxes should be used to provide for a range of species. Ideally at least one bird of prey box should be erected on site, but this should be kept be away from the other installed boxes.

- Provide roosting habitat for bats. The site offers good value for foraging and commuting species, so it is highly recommended that roosting opportunities are added into the site. These can be in the form of bat bricks which are incorporated within the building itself, or bat boxes installed at locations throughout the site. These should be predominantly south facing and at head height or higher.

- Some native planting should be carried out in the field around the proposed development site. These can include trees, flowers or shrubs that are wind and sunlight tolerant, and if trees or shrubs are chosen, then they should be protected with tree guards to prevent deer grazing before the plants have had time to fully establish. The new planting will require regular watering and replanting if they fail to establish. Fruiting trees are the best species to plant in terms of biodiversity and as such these should be included within the planting strategy. These suggestions can form part of the formal gardens that are planned. Non-native species that are not invasive but do provide a source of nectar or fruit can also be planted to good effect but it is always recommended that native planting be considered first.

PROPOSED ENHANCEMENT ACTION LOCATIONS

Proposed Enhancements for the Development

Site Name: Stanley House Hotel
Site Location: Stanley House, Mellor, Ribble Valley
Client Name: Monte Blackburn Ltd
Project Reference: RUR002074

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APPENDIX 1: ABBREVIATED CALCULATIONS MODEL - PRE WORKS ESTIMATED BIODIVERSITY VALUE

Habitat Type	Area coverage (Hectares)	Distinctiveness Multiplier	Condition Multiplier	Connectivity Multiplier	Strategic Multiplier	Protected Species Multiplier	Carbon Sequestration	Overall Value	Minimum mitigation
Urban - Amenity grassland	0.68	Low - 2	N/A - 1	N/A - 1	N/A -1	N/A - 1	Low - 1.5	0.189	Same distinctiveness or better habitat required
Urban - Woodland	0.74	Medium - 3	Moderate - 2	Fairly poor - 1.5	Medium (not in strategy, ecologically good) - 1.5	Moderate - 2	High - 2.5	3.023	Same broad habitat or higher distinctiveness required
Urban - Sustainable urban drainage feature (SUDs)	0.11	Low - 2	Moderate - 2	Moderate - 2	Medium (not in strategy, ecologically good) - 1.5	Moderate - 2	Low - 1.5	0.059	Same distinctiveness or better habitat required
Urban - Developed land; sealed surface	3.36	Very Low - 1	N/A - 1	N/A - 1	N/A -1	N/A - 1	N/A - 1	2.308	Compensation not required
Sum of area:	4.89						Overall Value: 5.580	Final Value (divided by site area): 1.14	

Calculations derived from the latest version of DEFRA's Biodiversity Metric and their recent Ecosystem Services report.

APPENDIX 2: ABBREVIATED CALCULATIONS MODEL - POST WORKS ESTIMATED BIODIVERSITY VALUE

Habitat Type	Area coverage (Hectares)	Distinctiveness Multiplier	Condition Multiplier	Connectivity Multiplier	Strategic Multiplier	Protected Species Multiplier	Carbon Sequestration Value	Overall Value	Minimum mitigation
Urban - Amenity grassland	1.67	Low - 2	N/A - 1	Good - 3	N/A -1	N/A - 1	Low - 1.5	2.885	Same distinctiveness or better habitat required
Lakes - Ponds (Non-priority habitat)	0.11	High - 4	Fairly Good - 2.5	Moderate - 2	High (ecologically good and in strategy) - 2	Good - 3	Medium - 2	0.250	Same habitat required
Urban - Developed land; sealed surface	2.34	Very Low - 1	N/A - 1	N/A - 1	N/A -1	N/A - 1	N/A - 1	0.944	Compensation not required
Urban - Woodland	1.43	Medium - 3	Good - 3	Good - 3	High (ecologically good and in strategy) - 2	Good - 3	High - 2.5	57.116	Same broad habitat or higher distinctiveness required
Urban - Vegetated garden	0.25	Low - 2	Good - 3	Fairly Good - 2.5	Medium (not in strategy, ecologically good) - 1.5	Fairly Good - 2.5	Medium - 2	0.606	Same distinctiveness or better habitat required
Sum of area:	5.9						Overall = 61.801	Total Value (following division by site): 10.655	

Calculations derived from the latest version of DEFRA's Biodiversity Metric and their recent Ecosystem Services report.

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