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PROPOSED LANDSCAPING HOLBEACH CAMPUS UNIVERSITY OF LINCOLN SPALDING

HABITAT MANAGEMENT AND MAINTENANCE PLAN (HMMP)

(September 2024)

REPORT REF: 2290 - PHA



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1. INTRODUCTION

Paul Hicking Associates has produced this Habitat Management & Maintenance Plan (HMMP) for University of Lincoln Estates Department, for the provision of an HMMP for the proposed landscaping at the Holbeach Campus, Spalding in accordance with condition 4 of the planning approval Ref: H09-0319-24.

Condition 4: Prior to any vegetation clearance (defined as the deliberate removal of semi-natural vegetative habitat e.g., grassland, trees, and native shrubs); or prior to the commencement of any development hereby permitted (whichever comes first); a written 30-year Habitat Management and Maintenance Plan (HMMP) for the Site in question shall be submitted to and approved in writing by the Local Planning Authority.

This HMMP outlines the rational for the site. University of Lincoln Estates Department (**ULED**), (*Owner*), will retain and manage the habitats identified within this HMMP.



Aerial site photograph.

1.1 DOCUMENT PURPOSE

The purpose of this document is to provide a single point of reference for all ecological mitigation, compensation enhancement measures and management proposed as part of the permitted and proposed landscaping works. These measures include:

- Avoidance and mitigation measures implemented during the construction phase of development to minimise the adverse effects upon biodiversity resources;
- Compensation measures, including the creation of new habitats to replace those lost to development;
- Implementation of enhancement features that are permanent for the lifetime of the development;
- Management prescriptions for those habitats retained or created through the development to ensure they maximise their biodiversity value;
- Implementation timetable and responsibilities for all proposed measures;
- Monitoring requirements.

This version of the HMMP has been prepared and developed in accordance with B.S. 42020:2013 Section 11.1, to a level commensurate with the current stage of project development and implementation. It establishes the mitigation strategy, design and management principles necessary to ensure effective delivery of the ecological vision for the site.

The HMMP is intended to be the vehicle for delivery of biodiversity planning obligations under current development plans at the site and to provide a reporting and review mechanism of the habitat management prescribed. The HMMP has been produced so that it can be easily amended and adapted to meet changes in management prescriptions and funding and where possible the introduction of additional management prescriptions where required e.g., climate change.

The HMMP is intended to be used for a minimum period of 30 years with review every 2.5 years.

1.2 EXISTING PLANS AND DOCUMENTS.

A number of existing site-specific plans and documents have been used to prepare this report.

For instance:

- University of Lincoln Architectural Design Drawings (UL);
- Paul Hicking Associates Biodiversity Net Gain Report (PH).

In addition to site-specific information, the Lincolnshire Local Biodiversity Action Plan (LBAP) and the UK BAP have also been referred to for local and national biodiversity targets.

1.3 STATEMENT OF MANAGEMENT AIMS.

The implementation of this Ecological Design Strategy will aim to increase the diversity and quality of habitats within the proposed development and ultimately the quality variety of fauna that can be supported to that which currently exists. Wherever possible, the site will be managed within a sustainable horticultural and silvicultural system to ensure that the habitats created are able to maintain their value for biodiversity.

The principle aims of this plan are to:

- maintain and enhance the overall biodiversity value of the post-development site;
- take opportunities to create habitats of ecological and local landscape value;
- introduce enhancement features that are maintenance free and permanent for the lifetime of the development;
- strengthen the ecological connectivity with habitats outside the development boundary with new habitats of higher value to those that currently exist;
- monitor and report the success of the plan using measurable targets;
- regularly review the plan to ensure it is appropriately targeted;

Management objectives have been set for each ecological feature, i.e. species or habitat, with targets set which are to be reviewed annually.

Management objectives will be SMART – Specific, Measurable, Achievable, Relevant and Time-specific.

1.4 ECOLOGICAL VALUE.

Pre-development the site contained semi-natural habitats of semi-improved grassland, hardstanding pathways and native trees of poor to moderate condition. The aim of the development is to achieve post development semi-natural habitats of moderate condition. This is achievable through the implementation of the habitats and management prescriptions outlined within this HMMP to achieve a realistic site-wide value of moderate condition.

1.5 ECOLOGICAL TRENDS WHICH MAY INFLUENCE MANAGEMENT.

The aim of the development is for the establishment of habitats of moderate condition. This is seen as an achievable and desired condition for healthy habitats within the site however, some habitats may be able to be improved to achieve the climax value of good condition. This is generally seen to be achievable where habitats are able to either, in the case of trees, reach full maturity or for terrestrial grassland habitats increase in species richness and diversity above a normal base-line. This is only achievable where the implementation of management goes beyond the standard methods and funding normally available and more care and attention is required to ensure that habitats are able to increase in species richness and maturity. This may also only be achievable where the influence of

activities and use of the site are able to be separated from direct impact upon habitats. The following is suggested and are methods which may not necessarily require additional funding but are to be focused on when undertaking management objectives;

i. Ensure all grassland habitats are maintained and cut using the required 'hay meadow' method of management however, the requirement for site users not to walk or interact directly with these habitats will be required at all times. This will ensure that there are no physical impacts to limit growth and species richness.

ii. Manage trees to increase their diameter and structure above 45-60cm and/or full maturity. Ensure canopy structure is well maintained, remove and reduce deadwood and ensure trees do not fall into decline. Maintain areas around the tree to allow them to expand to full size. Ensure that they do not become damaged through site use.

iii. Monitor the effects of climate change and the impact of extreme hot weather and flood conditions to ensure that these do not impact on the health and condition of the habitat structure.

1.6 OPPORTUNITIES WITHIN THE WIDER ECOLOGICAL NETWORK.

The existing and proposed habitats are connected directly to an established wider ecological network beyond the site with connectivity to woodland, grassland, arable farmland and hedgerows and riparian habitats forming a wider wildlife corridor to the north of the site. Therefore, the position of the site forms a vital link within the corridor. It is therefore important to ensure that all post-development habitats remain healthy, free from dominant and invasive/non-native species as prescribed as they provide a safe corridor for commuting, foraging and hibernation for a wide range of species of reptiles, amphibians, mammals and invertebrates.



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1.7 BIODIVERSITY NET GAIN.

The DEFRA 'Small Sites' metric calculation indicates a net biodiversity gain against the new landscaping proposals. This is achieved by the enhancement of a significant area of retained grassland to form an area or areas of neutral grassland on a meaningful and achievable scale. Management using a hay meadow method of grassland management a part of the overall grassland cutting regime will be required with all arisings removed to avoid nutrient enrichment. The introduction of a wildflower meadow mix supplied by Naturescape and suitable to the soil conditions present can be introduced to increase species richness.

A total of 500m^2 of grassland enhancement is required to achieve +0.2406 habitats units (17.14%).

The introduction of a species rich grassland habitat will be of importance adding to a mosaic of existing habitats as neutral grassland/wildflower meadow is an important habitat which has declined by 97% at local and national levels and hence why this is an important habitat of focus within the HMMP.

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2. HABITATS AND FEATURES TO BE MANAGED.

The new landscaping design propose the creation of the following post-completion habitats;

- Neutral grassland;
- Modified grassland;
- Native species tree planting;

The new landscaping works also provides the opportunity for the introduction of the following features;

- Shelter with integral hibernacula and green roof;

2.1 NEUTRAL GRASSLAND.

At least 500m^2 of neutral grassland is to be created the form of wildflower meadow through the enhancement of an area of existing modified grassland. This habitat is used to mitigate the loss of existing modified grassland habitat. Moderate condition can be achieved if the following conditions are met: sward height is managed in a sensitive manner which will result in the growth of a varied sward (at least 20% of the grassland is above 7cm and at least 20% of the sward is below 7cm), cover of scrub (including bramble) is less than 5% (any nearby scrub areas should be managed in such a way that scrub is not allowed to encroach upon the grassland); non-native invasive species are not planted and are prevented from growing (any areas where grassland boarders gardens should be managed to prevent invasive species from growing into the grassland); physical damage accounts for less than 5% of total area (it is strongly recommended that signs up be placed up on all areas where people would be able to access the grassland, with text explaining that this is a wildflower area and must not be walked on). The following mixes provided by 'Naturescape' are recommended;

Amenity neutral grassland – to be seeded with N2f Tall herb mix 5g/m2 and N14 flowering lawn mix 5g/m2 supplied by Naturescape

Naturescape – T: 01949 806592. www.naturescape.co.uk.

2.2 MODIFIED GRASSLAND. Modified grassland forms the majority of the terrestrial habitat within the site. A section of this will be lost to accommodate the proposed new hard landscaping. To protect the retained grassland habitat fencing will be erected to provide a 1.5m wide working zone in front of the proposed landscaping works. This is to ensure that retained grassland remains health and undamaged. The grassland will then be managed using the existing cutting regime to maintain a short 25mm thick sward. Any grassland which becomes damaged will be replaced with new grassland turf and/or seed obtained from the original source when first laid/sown.

2.3 NATIVE SPECIES TREE PLANTING

Urban trees planted throughout the development. 4no. additional new trees are to be planted and a selection of species are recommended from the list below. All existing retained trees in close proximity to the works are to be protected in accordance with BS 5837 : 2012.

- Hornbeam (*Carpinus betulus*);
- Field Maple (*Acer campestre*);
- Common dogwood (*Cornus sanguinea*);
- Silver birch (*Betula pendula*);
- Cherry (*Prunus avium*);
- Rowan (*Sorbus aucuparia*);
- Whitebeam (*Sorbus aria*);
- Apple (*Malus sp.*);
- Holly (*Ilex aquifolium*).

2.4 INTRODUCED FEATURES.

- Shelter with integral hibernacula and green roof;

2.5 SHELTER WITH INTEGRAL HIBERNACULA AND GREEN ROOF.

A new prefabricated shelter will be constructed and located within the hard landscaping. The shelter is to incorporate pre-fabricated nest chambers and hibernacula. A low-maintenance Sedum roof is to be included on the roof of the shelter and is to comprise of a pre-cultivated blanket. Moderate condition can be achieved if carefully maintained.

Sky Garden Sedum Blanket SGSB01
T: 01242 620905





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3. SCHEDULE OF WORKS AND RESPONSIBILITIES (PRIOR TO HANDOVER).

3.1 University of Lincoln Estates Department will be responsible for the supervision of all new landscape works.

3.2 The schedule below is to be used to record the completion of each new habitat and the installation of habitat features:

Table 1: Schedule of Works.

Habitat	Location	Work Required	Implemented by	Timing	Date Completed
Neutral grassland.	See Landscaping plan.	Seed mix to prepared soil/grassland.	ULED.	Sept-Oct Or Mar-Apr	
Modified grassland.	See habitats plan 4.12 plan.	Seed mix to prepared soil/grassland.	ULED.	Sept-Oct Or Mar-Apr	
New tree planting.	See habitats plan 4.12 plan.	Plant from container grown stock.	ULED.	Nov-Jan	
Sedum mat roof	See Landscaping plan.	Install Sedum matt onto roof shelter.	ULED.	Install post installation of roof membrane.	
Features	Location	Work Required		Timing	Date Completed
Shelter	See Landscaping plan.	Install structure including hibernacula and nest box features.	ULED	Post - construction of hard landscaping.	

4. HABITAT SPECIFIC MANAGEMENT PRESCRIPTIONS.

4.1 General – Management aims to be holistic to encompass the site as a whole rather than focus on specific individual habitats with minimum intervention. Management is to include the requirements of good practice arboriculture and horticulture which is free from chemicals and pesticides and is to include any works recommended by the Landscaping plan and any relating management plan but should not compromise any principle for the provision of good quality species rich habitats. The site is to be kept clear of litter and debris.

4.2 Neutral grassland – management aims to provide a high-quality habitat for a wide range of species with a focus on invertebrate populations as these provide a food source for birds and mammals. Attracting pollinators such as bees benefit the health and quality of the site as a whole through successive pollination of all site habitats.

Management responsibility – All neutral grassland is to be managed by (**ULED**).

4.3 Modified grassland – management aims to provide a good quality of amenity grassland. This is an existing habitat which is currently managed to maintain a neat cut sward. Management is to be maintained at existing level and cutting regime.

Management responsibility – All modified grassland is to be managed by (**ULED**).

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4.4 Trees – Management is to focus on the successful establishment of new trees, health and care of existing trees. Trees are considered high in biodiversity value as they provide shelter and are colonised by wide range of invertebrate species communities along with providing features within the landscape.

Management responsibility – All Trees are to be managed by (**ULED**).

Management responsibility – All Hedgerows to be managed by (**ULED**).

4.5 Shelter with hibernacula – The provision of these features provides opportunities which are not currently available within the site. Management focuses of the provision of features which are durable and relatively maintenance free or are easily maintained.

4.6 Sedum Green Roof – Management is to focus on the heath and continuous plant cover of the sedum roof to ensure system functionality and sustainability. Annual maintenance is required to remove invasive/unwanted species, clear gutters and drains from leaf litter, dead flower heads and debris. Replace struggling areas with new plug plants, sedum cuttings and fertilizer.

Management responsibility – Green roof to be managed by (**ULED**).

FUNDING AND RESOURCES.

4.7 The University of Lincoln will provide the funding and resources for maintenance of the habitats and features outlined within this HMMP. The proposals outlined within this HMMP are commensurate to the available funding for habitat management at Holbeach Campus. Tables 2 to 4 prescribe the level of the annual work required and are to be used to set the level of annual funding required to ensure that all habitats achieve the target level of ecological value required and also provide the trigger points for any additional funding required for the replacement and re-instatement of habitats and features which fail or require replacement. The structure of the shelter is maintenance free and only require annual visual inspection.

CLIMATE CHANGE.

4.8 The Met Office currently states that the effect of climate change across the UK is expected to see winters to be 30% wetter and summers between 1 and 6^{o}C warmer and 60% dryer, depending on the region. This is expected to create more frequent and intense weather extremes. The grassland habitats can be an indicator of the impact of change as these will display signs of bare earth or decline and change is species composition towards more

dominant draught or wet tolerant species during periods of draught or excess water and therefore reducing species composition. Management will be required to respond to changes with the potential requirement for additional watering or the introduction of additional drainage to improve permeability. The introduction of additional draught or wet tolerant species mixes may be required.

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4.9 Table 2 – Management Prescriptions.

Feature	Management/Monitoring	Timing	Frequency
General	Provide staff and resident information pack. Encourage staff and residents to record wildlife. Keep site clear of litter and debris.	All year	As required
Neutral grassland	To be a 'hay meadow' style management late July and September, changing between earlier (July) to later cuts (September) to avoid cutting at the same time each year. All arisings to be removed to avoid nutrient enrichment.	Late July and Sept	Annually
Modified grassland	To be cut as required to maintain a dense healthy sward.	As current	Annually
Trees	Replace any dead trees.	Nov-Mar	Annually
	Remove tree guards once trees are well established.	Oct-Feb	Years 3 to 5 as required
	Prune to promote good growth and structure. Remove any dead wood and use debris to form habitat piles.	Oct-Feb	Annually
	Monitor for signs of poor health and formation of dead wood fungal growth.	Oct-Feb	Every 2 years
Sedum Green Roof	Generally, maintenance free but inspect twice a year to ensure all gutters and outlets are clear and remove debris and invasive plants. Encourage struggling areas with new plug plants and seeds.	May and September	Spring and Autumn
Invertebrate Hibernacula and Refugia	Generally, maintenance free but inspect and repair and replace as necessary as the materials used degrade over time.	Nov-Feb	Annually

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4.10 Table 3 - Work requiring a Five-year review for the lifetime of the development.

Feature	Management/Monitoring	Action	Timing	Frequency
Trees	Replacement of dead plants.	Replant. If extensive seek advice on soil and ground conditions.	Nov-Mar	Every Five years

4.11 Table 4 – Annual Programme of Work.

Feature	Management/Monitoring	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
General	Walk site and remove litter	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Neutral grassland	To be a 'hay meadow' style management late July and September, changing between earlier (July) to later cuts (September) to avoid cutting at the same time each year. All arisings to be removed to avoid nutrient enrichment.							✓		✓			
Modified grassland	Existing cutting regime to be maintained.				✓	✓	✓	✓		✓			
Trees	Replacement of dead plants.	✓	✓	✓								✓	✓
	Remove tree guards when established.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Monitor tree health	✓	✓								✓	✓	✓
	Pruning works to mature trees.	✓									✓	✓	✓

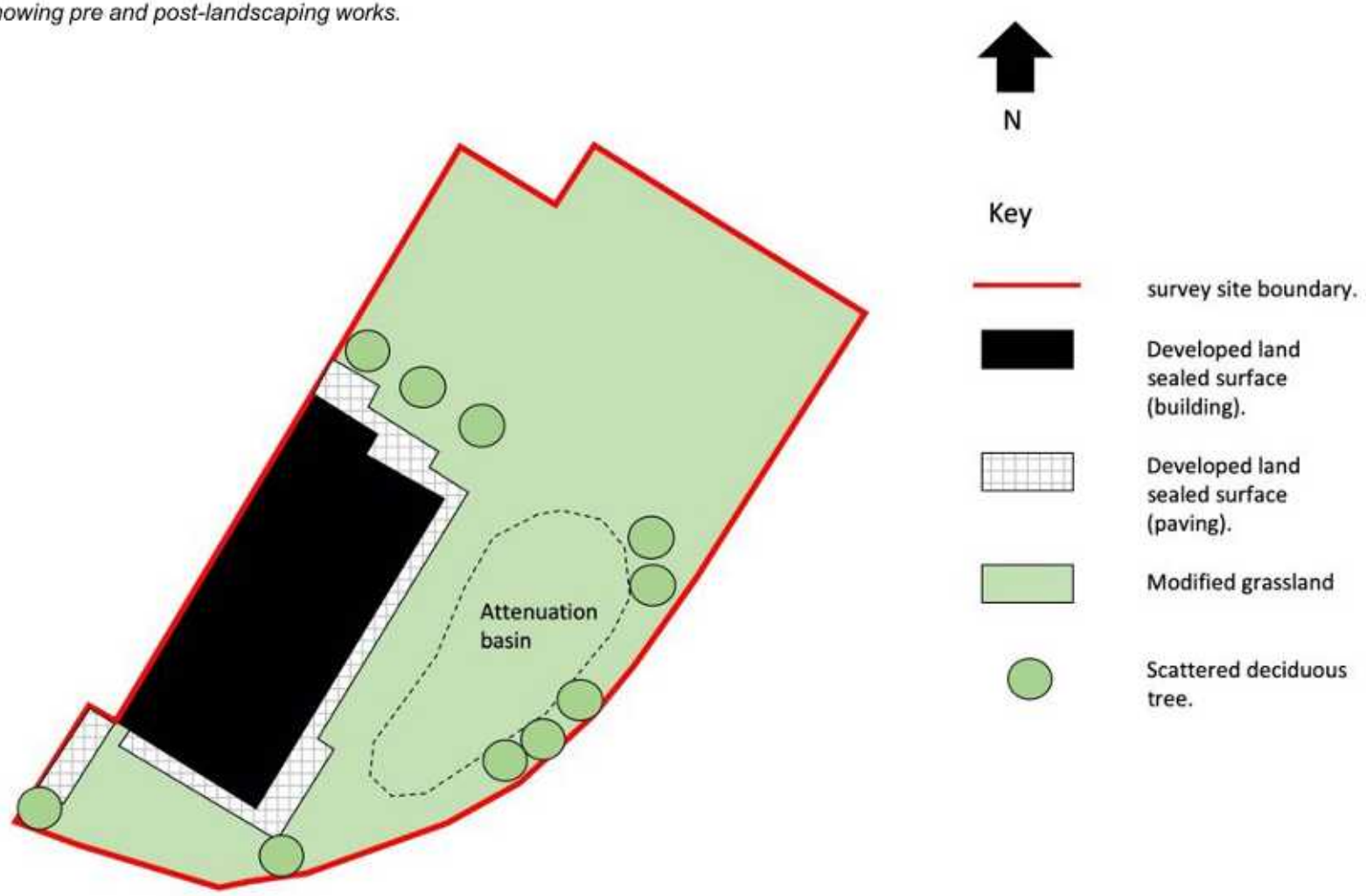
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Sedum Green Roof	Inspect twice a year spring and autumn to remove unwanted vegetation. Replace any struggling areas with new plug plants or seed.					✓				✓			
Invertebrate Hibernacula	Inspect condition of hibernacula	✓										✓	✓

N.B. All species recorded within the development site to be submitted to county biological records centre and the relevant local groups and organisations. Paul Hicking Associates will provide a tool-box talk to the university to encourage them to provide us with records for submission to the local records office.

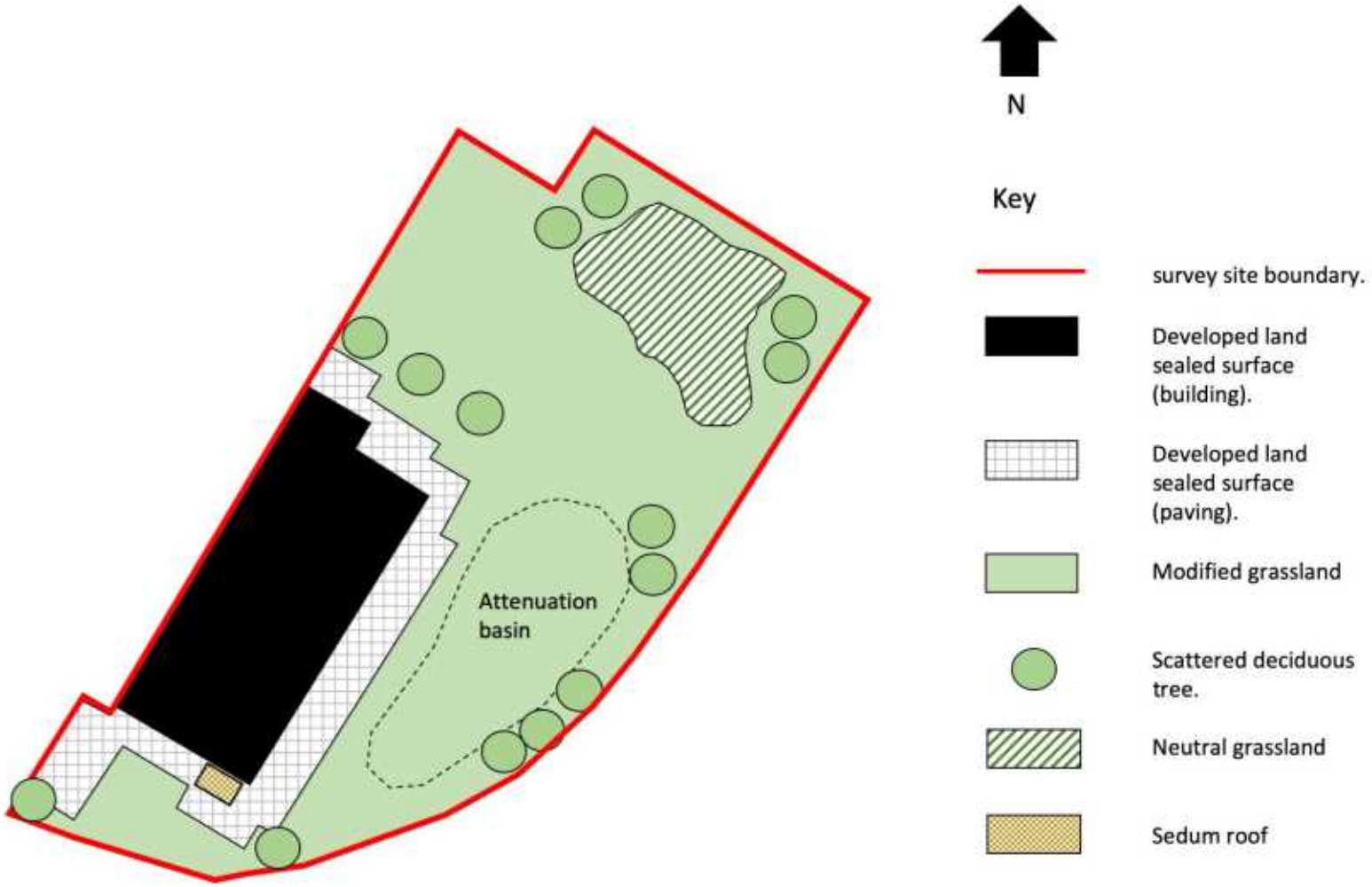
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4.12 Site plans showing pre and post-landscaping works.



PLAN OF HABITATS PRE-LANDSCAPING PROPOSALS

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PLAN OF HABITATS POST-LANDSCAPING PROPOSALS

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