



Ecological Mitigation, Enhancement and Management Plan

Land at 11-15 South Street Havant, Hants, PO9 1BU

JNP Developments

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Industry Guidelines and Standards

This report has been written with due consideration to:

- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.

The desk studies and field surveys undertaken to provide a Preliminary Ecological Appraisal (PEA) might in some cases be all that is necessary.

(BS 42020, 2013)

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1.0 Introduction

Arbtech Consulting Limited was instructed by JNP Developments to produce an Ecological Mitigation, Enhancement and Management Plan for Land at 11-15 South Street Havant, Hants, PO9 1BU (hereafter referred to as “the site”). The plan was required to inform a planning application for part demolition, part conversion and new build residential development to create a mix of 1 x bed, 2 x bed and 3 x bed apartments, maisonettes and houses. (hereafter referred to as “the proposed development”). This plan has been produced to satisfy the LPA following feedback on the planning application.

The ecology report recommends that the developed site incorporates a number of bat roosting boxes, although does not specify a number or type. I would recommend that a minimum of two such features ideally integral bat bricks rather than external boxes on each new/redeveloped building. In addition, artificial lighting has the potential to impact bats at this site and therefore a sensitive lighting strategy will be required. In addition to bats, the site has been shown to support nesting birds. The nests are described as belonging to feral pigeons and therefore not a strictly protected species: works will nevertheless need to ensure that active bird nests are not disturbed. I would also recommend that nesting boxes for bird species such as Common Swift and Starling are included within the developed site.

A condition relating to the feedback above is anticipated, so this report should discharge any such condition if relevant.

A plan showing the proposed development is provided in Appendix 1.

The aim of this plan is to outline mitigation measures required to minimise impacts on biodiversity as well as to outline habitat creation and enhancement opportunities and long-term management which will ensure that a net gain in biodiversity is achieved and maintained on the site, in accordance with the National Planning Policy Framework (NPPF).

This plan has been informed by a Preliminary Ecological Appraisal and Preliminary Roost Assessment survey which was completed by Arbtech Consulting Ltd on 28th April 2023 (Arbtech, 2023).

2.0 Site Context and Survey Information

2.1 Site Location and Landscape Context

The site is located at National Grid Reference SU71068218 and has an area of approximately 0.2ha comprising existing commercial and residential buildings. It is surrounded by residential and commercial buildings in all directions. St Faith's Church and graveyard is adjacent to the northwest. Residential houses and gardens are situated to the southeast. The wider landscape comprises of park areas 230m northwest and 166m southwest, each adorned with trees. The A27 is 320m south and the rail line lays 380m north. A site location plan is provided in Appendix 2.

2.2 Ecological Information

Table 1 summarises the survey findings for the site and outlines any potential impacts as a result of the proposed development along with recommendations and biodiversity enhancement opportunities, as detailed in the PEA PRA report (Arbtech, 2023).

Table 1: Summary of baseline survey information, potential impacts, recommendations and biodiversity enhancement opportunities for the site (Preliminary Ecological Appraisal and Preliminary Roost Assessment survey, Arbtech Consulting Ltd, 2023)

Feature	Survey Results Summary	Impact Assessment	Recommendations	Biodiversity Opportunities	Enhancement
Designated sites	There are 6 statutory sites within 2km of the site, the closest being Chichester and Langstone Harbours SSSI Ramsar and SAC located 1.05km from the site. The site lies within the impact risk zone for Chichester Harbour SSSI and residential developments are listed as a possible high risk for this designation. Presence of non-statutory sites cannot be ascertained without data from the local record center. However, due to the built up nature of the site and immediate surroundings, it's considered unlikely that any such sites would be present in the immediate vicinity.	No impacts to designated sites are anticipated due to the small scale and distance of the proposed development from such sites (where known) as well as the urban location of the site with surrounding physical barriers. Construction impacts to designated sites unlikely due to the distance of statutory designated sites and the built up surroundings indicating that no non-statutory sites are present in the immediate vicinity. The proposed development will result in a net increase in residential dwellings. This may increase recreational pressure on nearby designated sites including Chichester Harbour SSSI.	The HRA Stage 1 Screening Report (Arbtech, 2022) identified the possible risk to nearby European sites posed by recreational disturbance but concludes that these can be addressed via the LPA HRA mechanisms. The provision of homeowner packs outlining the presence of nearby designated sites and advice for reducing impacts to these areas would further lower any risk to these areas	None.	

Habitats and flora	There are no notable habitats within the site but deciduous priority listed woodland habitats are present within 1km of the site, the closest being 244m northeast of the site. Habitats on site have negligible value, comprising of buildings and developed land with minimal vegetation present.	The site will see a loss of a small number of young sycamore trees, but the remainder of the site is unvegetated, and therefore impacts to biodiversity is minimal. Proposed tree and shrub planting is recommended as part of the works and would compensate for any losses	Tree and shrub planting of new landscaping in the area should be native or nectar rich/fruited species that would benefit local wildlife.	Possibility to incorporate green walls or green roofing into the new buildings.
Roosting bats B3	Building B3 has low value for roosting bats.	The proposed development will result in the demolition of this building. This would result in the destruction of any bat roosts present and could cause disturbance, death or injury to bats.	One bat emergence or re-entry survey is required during the active bat season (optimal May to August, suboptimal September) to confirm presence or likely-absence of a bat roost in the building. Infra-red cameras should be used as an aid. Three surveyors are required to provide full coverage of the building. If bat roosts are confirmed in the building two additional surveys may be required to characterise the roost and to inform an EPSL application to Natural England. Surveys should be a minimum of two weeks apart. The EPSL application requires that surveys have been undertaken within the most recent active bat season and planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission.	To be confirmed upon completion of the surveys.
Roosting bats B4	Building B4 has low value for roosting bats.	The proposed development will result in the renovation and conversion of this building. This could result in damage to any bat roosts present as this will involve some roof repairs and alterations to the structure and could cause a disturbance, death or injury to bats.	One bat emergence and re-entry surveys are required during the active bat season (optimal May to August, suboptimal September) to confirm presence or likely absence of a bat roost in the building. Both of the surveys should be completed during	To be confirmed upon completion of the surveys.

			the optimal survey period mid-May to August inclusive. Infra-red cameras should be used as an aid. Surveys should be a minimum of two weeks apart. Two surveyors are required to provide full coverage of the building. If bat roosts are confirmed in the building two additional survey may be required to characterise the roost and to inform an EPSL application to Natural England. The EPSL application requires that surveys have been undertaken within the most recent active bat season and planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission.	
Roosting bats B5 and B6	B5 and B6 contains roost features that could support roosting bats. A full PRA was not done on this building as they wont be directly impacted by the proposed works.	B5 and B6 will not be altered or modified as part of the proposal but may experience some light and noise disturbance from nearby works, due to the proximity to B1.	Owing to the nature of the proposed development and the low potential for impacts to bat roosts, further bat surveys are considered to be disproportionate. It is anticipated that any risk to bats can be reduced to an acceptably low level through the implementation of a precautionary working method during and post-development. This will include the following measures: • Works should avoid altering the roof space of B5. If this cannot be avoided then a bat emergence or re-entry survey is required during the active bat season (optimal May to August, suboptimal September) to confirm the presence or likely absence of a bat roost in the building. • Avoid any light spilling onto the roof space of B5 during works and after works are complete.	To be confirmed upon completion of the surveys.

			Ensure any scaffold used around B1 does not obstruct B5.	
Birds	There are active bird nests under the archway of B1 from feral pigeons. There are also indications that birds have been going inside B3 as well. Due to the structure of several of the buildings, there may be other nests hidden elsewhere.	There will be demolition of several buildings on the site and alterations of others. The loss of such habitats is likely to be inconsequential to local bird populations owing to their low value and the presence of more extensive habitats locally. However, the proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests.	Works should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the buildings should be undertaken immediately, by qualified ecologist, prior to the commencement of work. All active nests will need to be retained until the young have fledged.	The installation of 4 bird boxes at the site will provide additional nesting habitat for birds. The bird boxes will be installed on new buildings as well installed on the walls of retained buildings. General purpose bird boxes should be positioned 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight. Species-specific bird boxes should be installed in line with manufacturers specifications. The installation of swift bricks is recommended within the new buildings, particularly on those on the southern boundary, at a height at least 5m.
Hedgehog.	The habitat on site is of poor value for hedgehogs with very few grass and herb species for foraging. However, one tenant noted that they do regularly feed a hedgehog most nights, indicating that one may be regularly onto the site, attracted by this food opportunity.	There will be heavy construction work in this area, including the demolition of several existing buildings. This is likely to be inconsequential to local hedgehog populations owing to their low value and the presence of more extensive habitat locally. However, construction activities could result in the death or injury of hedgehogs, if present.	A precautionary working method will be implemented during construction, full details in table 8.	Incorporating pollinator friendly planting, green roofs and walls or installed insect bricks and boxes will all aid in benefiting invertebrates.

3.0 Provision of New Landscaping and Species-Specific Enhancements

Table 3: Provision of New Landscaping and Species-Specific Enhancements

Works	Specification						
Persons Responsible	The Biodiversity Champion will be responsible for the provision of the new landscaping and species-specific enhancements. The occupier of the proposed development (i.e. the landowner or managing agent) will be responsible for the management of these features post development.						
Management Term	The management prescriptions outlined within this table must be implemented over a period of at least 30 years.						
Site Visit and Reporting	The ECoW will make a final site check and sign off once the landscaping and installation of species-specific enhancements are complete.						
Tree and Shrub Planting	Overview: New tree and shrub planting will be incorporated into the development, as shown in appendix 1: Objectives: - To plant native trees and shrubs that will provide pollinating, foraging, and refuge opportunities for protected and/ or notable species groups including amphibians, bats, birds, hedgehogs, invertebrates, and reptiles. - Ensure that good horticultural practice is employed to encourage long-term health and vitality of all trees and shrubs. - Ensure well-balanced crowns and/ or natural shape by preventing over competition. Creation Method: Ground preparation and planting - Each tree and shrub should be panted within a hole three times as wide of the supplied pot and of a similar depth. Root balls should be soaked thoroughly in water before planting and root balls should be loosened to expose restricted roots before planting. The planted trees and shrubs should then be backfilled ensuring there are no air pockets around roots or any roosts protruding out of the ground. Timing - It is best to prepare the land during the summer ready for planting between November and March. Planting trees and shrubs before the new year helps ensure better rooting and subsequent establishment including faster growth during the first growing season. Management Prescriptions: Table 3.3: New tree and shrub planting. <table><tr><th>Management</th><th>When</th><th>Rationale</th></tr><tr><td>At the end of each growing season all plant failures are to be 100% replaced</td><td>When required; checked annually in Autumn.</td><td>To maintain amenity and wildlife value.</td></tr></table>	Management	When	Rationale	At the end of each growing season all plant failures are to be 100% replaced	When required; checked annually in Autumn.	To maintain amenity and wildlife value.
Management	When	Rationale					
At the end of each growing season all plant failures are to be 100% replaced	When required; checked annually in Autumn.	To maintain amenity and wildlife value.					

		If required, provision of stakes and guards. Guards to be left on for a minimum of 5 years	N/A	Protect from damage
		Stakes should be checked and any broken or damaged stakes during this time would be removed (as above) and replaced with ties re-fixed	When required; checked annually in Autumn.	Maintain protection
		Remove weeds	When required; checked twice annually in early spring and in Autumn.	Reduce competition for resources nutrients etc.by weeds
		Application of bark mulch at a depth of 50 mm	Immediately after planting and then when required; checked annually in Autumn.	Reduce competition for resources nutrients etc.by weeds
		Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow
		Apply a light dressing of well-rotted manure	Annually in the winter	Note the overuse of manure fertilisers will encourage vigorous grasses and weeds to grow.
		Removal of spent flowers from perennial plants should be removed through 'deadheading'	Twice annually, late spring and in the Autumn.	Allows plants to place more energy into re-growth.
		Watering should be undertaken before and after planting out and as necessary for the continued thriving of all planting.	When required; provide more water during periods of draught and less water during times of prolonged rain.	Ensures plants do not dry out and subsequently fail.

	Check and replace any plant failures once a year For the first 5 years To ensure no gaps form.
Bat Boxes	Eleven bat boxes are recommended to be installed into the fabric of new and retained buildings on site. Built-in boxes require no maintenance and are less prone to vandalism and disturbance than traditional externally-mounted boxes. Bat boxes specification: - Eleven Vivara Pro Build-In Bat Boxes (or similar alternative brand) will be installed on the building, as shown in Figure 1. - Bat boxes should be positioned 3-5m above ground level facing in a south, southeast, or southwest aspect with a clear flight path to and from the entrance, away from artificial light. Suitable locations are shown in Appendix 3.  Figure 1: Vivara pro build-in Bat Box (image credit https://www.nhbs.com/) Recommended Management: The proposed bat boxes are designed to require no management or maintenance. Furthermore, preventing physical disturbance of bat boxes will increase the chances of occupation by roosting bats. However, it is recommended that the bat boxes are inspected annually for the first five years outside of the typical active season for bats (May to September inclusive) following installation. Bat boxes must be replaced if they are damaged, removed, or have fallen from their recommended location.
Bird Boxes	Swift bricks will be incorporated into the fabric of the new buildings. Although designed for swifts, they have been utilised by a broad range of UK bird species and are therefore considered “universal”. Build-in boxes require no maintenance and are less prone to vandalism and disturbance than traditional externally-mounted nest boxes. Bird box specification: - Eight Pino Build-In Swift Boxes (or a similar alternative brand) will be installed on the building, as shown in Figure 3. - The boxes will be positioned high up under the eaves, facing north, east and west to provide a range of microclimates. Locations are shown in appendix 3.



Figure 2: Pino built in swift box Pino Build-in Swift Box (image credit <https://www.nhbs.com/>)

Recommended Management:

The proposed bird boxes are designed to require no management or maintenance. Furthermore, preventing physical disturbance of bird boxes will increase the chances of occupation by nesting birds. However, it is recommended that the bird boxes are inspected annually for the first five years outside of the typical nesting bird season (March to September inclusive) following installation. Bird boxes must be replaced if they are damaged, removed, or have fallen from their recommended location.

**Wildlife sensitive
lighting strategy**

External Lighting

All external lighting will be installed in accordance with current guidance issued by the Bat Conservation Trust and Institute of Lighting Professionals: *Guidance Note 08/23: Bats and Artificial lighting at Night* (BCT & ILP 2023). External lighting will be installed in a way as to limit artificial light spill over habitats of value to protected and/ or notable species potentially using the site. Specifically, artificial lighting will be installed to illuminate car parking and pedestrian access areas located centrally within the site only, whereby light installation that could subject peripheral habitats on and directly adjacent to the site to excessive artificial light spill will be avoided. External lighting will be installed as to avoid excessive light spill over:

- Retained habitats of elevated value including peripheral tree lines and hedgerows.
- The boundaries of the site which could be used by foraging and commuting bats.
- The newly installed species-specific habitat prescriptions (see **Appendix 3**).

The following lighting design prescriptions are considered suitable for the type and scale of the proposed development to minimise the impacts of artificial lighting on site on bats and other protected/ notable species. External lighting will be installed in accordance with the below design prescriptions:

- **Reducing the operating time of lighting and levels of illuminance provided via:**
Preventing the use of motion sensors where possible to allow lights to be turned off permanently whilst not in use.
Where the use of motion sensors is desirable, light sensors should be set to lighting periods of no longer than 30 seconds to prevent unnecessary light spill.
- **Avoiding light spill via:**
The use of directional lighting by using luminaires with rear shields and an upwards lighting ratio of zero.
- **Light type:**
Use of lamps that minimise UV emissions or use UV filters to reduce the attractiveness of the lamp to invertebrates as not to attract invertebrates away from bat foraging habitat.

Use high-pressure sodium or LED lamps, ideally warm white as this has a low relative attractiveness of invertebrates.

Installing lighting systems that deliver no greater than a 3lux average illuminance, with a maximum horizontal illuminance of 0.6 uniformity (subject to appropriate maintenance factors).

Internal Lighting

Impacts of artificial light spill through windows will be mitigated by fitting internal lighting fixtures in line with recommendations within Guidance Note 08/23 (BCT & ILP 2023). Specifically, in order to limit light spill through windows, internal lighting will be recessed into the ceiling and set back a minimum of 1m from all windows as to limit horizontal light spill. A schematic representation of the effect of these lighting prescriptions is provided on **Figure 3** below.

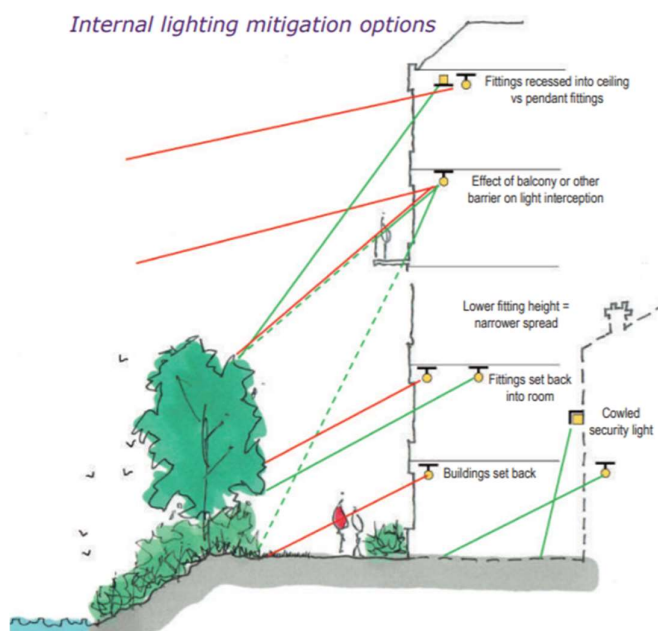


Figure 3: Internal Lighting mitigation options. Image taken from Guidance Note 08/23 (BCT & ILP 2023).

Appendix 1: Proposed Development Plan



Appendix 2: Site Location Plan



Appendix 3: New Landscaping and Species-Specific Enhancements Plan

