

Ecological Design Strategy
Heaton Park Villas, Huddersfield
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1. Summary

- 1.1.1 This Ecological Design Strategy (EDS) was commissioned by Mick Dunn on behalf of the client, Lorin Piele on 14th January 2020, to inform the proposed construction of a new detached dwelling on approximately 0.15 ha of land at Heaton Park Villas in Huddersfield (Ordnance Survey Grid Reference: SE 13204 16742). This work was commissioned with the aim of addressing Condition 3 of the planning permission (Application Ref.: 2020/62/92670/W).
- 1.1.2 Prior to works commencing tree protection fencing should be installed. The construction management should take account of pollution prevention guidance (including siting compound and fuel stores away from the stream). Site staff should be briefed by the foreman on presence of the stream and pollution prevention measures to be enacted. Any further tree or shrub management should be undertaken in advance of bird breeding season (March to August), or preceded by a nesting bird check.
- 1.1.3 No lighting plan currently exists for the scheme; however, the client has agreed to a lighting constraints plan which specifies no new external lighting to the south of the dwelling other than low height wall mounted PIR lights. The lighting constraint measures proposed will ensure the southern boundary woodland edge remains dark, with external lighting in other areas minimised.
- 1.1.4 A new concrete lined pond will be constructed in place of an existing concrete channel. This pond will be planted with native aquatic species only, to increase its benefit to site wildlife and avoid the risk of non-native aquatic species spreading to a downstream waterbody. New shrub and fern planting is specified for existing terrestrial habitats.
- 1.1.5 In order to increase the site's appeal to roosting bats and nesting birds, two integrated bat boxes, one integrated swift box and two general purpose bird boxes will be installed on the site. A log pile will also be constructed and maintained on site, to a design intended to allow it to also be used by resting hedgehog.

2. Introduction

- 2.1.1 This Ecological Design Strategy (EDS) was commissioned by Mick Dunn on behalf of the client, Lorin Piele on 14th January 2020, to inform the proposed construction of a new detached dwelling on approximately 0.15 ha of land at Heaton Park Villas in Huddersfield (Ordnance Survey Grid Reference: SE 13204 16742). The site location is shown in Figure 1.

Figure 1. Site location



- 2.1.2 This work was commissioned in order to address Condition 3 of the planning permission (Application Ref.: 2020/62/92670/W), which states:

3. No development shall take place until an ecological design strategy (EDS) addressing mitigation and enhancement has been submitted to and approved in writing by the local planning authority.

The EDS shall include the following.

- a. Purpose and conservation objectives for the proposed ecological works.*
- b. Location (shown on appropriate scale plans) of specific make and model, or design, of habitat boxes, such as bat boxes, bird boxes and hedgehog refuges. Habitat boxes to be integral to new structures where appropriate.*
- c. Details of how the design of boundary treatments will not obstruct the movement of hedgehogs.*
- d. Planting schedule and planting plan showing the inclusion of native species of tree and shrub to be included within/at the boundary of the application area, and how this achieves the stated purpose.*

- 2.1.1 No prior ecological survey work had been undertaken in connection with this application. The wider Heaton Park Villas site has a relatively complex planning history and a former permission for eight new houses (2005/61/94635/W2) has largely been constructed, although the new house, proposed for the existing red-line boundary was never built. A subsequent permission (2010/62/91615/W2)

allowed for the construction of two houses within the red-line boundary, to include the culverting of the watercourse as it runs through the site. The current permission has dropped to a single detached dwelling and seeks to retain and enhance the water course.

- 2.1.2 In order to gain an understanding of the site, ecological constraints present and opportunities for ecological enhancement, a walkover survey of the site was undertaken by Robert Bell (MCIEEM) on 21st January 2021.

3. Existing Site

- 3.1.1 The existing site comprises an elongated area of land which includes part of the Heaton Park Villas access road at its northern end. The southern boundary of the site comprises part of Gledholt Wood and an amenity grassland lawn, whilst the site's eastern boundary comprises a tree-line between tennis courts and the site. The western boundary comprises recently constructed dwellings and their curtilages. Glenholt Wood Local Nature Reserve is located c.30m south of the site.
- 3.1.2 The site includes a single building (swimming pool) with the majority of the remainder of the site comprising quite recently worked ground (within last few years) that has been partially colonised by a narrow range of plant species including bramble *Rubus fruticosus* agg., pendulous sedge *Carex pendula*, foxglove *Digitalis purpurea*, creeping bent *Agrostis stolonifera* and Yorkshire fog *Holcus lanatus*. One mature sycamore *Acer pseudoplatanus* tree on the site's eastern boundary falls within the site and the eastern tree-line is located at the top of a dry-stone retaining wall. Consequently, it is higher than the remainder of the site. The most ecologically interesting feature comprises a stream, which flows from an off-site concrete-lined pond to the north, through a concrete-lined channel and past the swimming pool, before draining into a pipe and re-appearing south of the site boundary. A breach in the wall of the concrete channel has resulted in a small (c.3m²) pond in an area of excavated ground, which has been colonised by starwort (*Callitriche* spp.). On a shaded bank to the west of the stream are a number of recently planted cypress trees, together with single semi-mature European larch *Larix decidua* and holly *Ilex aquifolium* specimens, with pendulous sedge at the base. Several ornamental species are also present at the northwest corner of the site including bamboo. A mature weeping willow *Salix babylonica* overhangs the site from the western boundary.
- 3.1.3 The swimming pool comprises a single-storey building with a flat felt covered roof. The external walls are stone with the upper section rendered. An overhanging roof on the west elevation covers a glazed front. Windows are wood framed and double glazed, whilst the partially failed gutter is uPVC. The building displays negligible bat roost potential.

Plate 1. Looking south onto site



Plate 2. Concrete channel carrying stream near northwest corner of swimming pool, noting small pond (to right of image) formed by leaking concrete channel



Plate 3. Shaded bank to west of swimming pool



4. Purpose and Conservation Objectives

4.1.1 The strategy is to achieve the following:

- To ensure the optimal benefits to biodiversity are achieved, in line with the aims of NPPF Section 15.
- To provide protection to existing trees both on and outwith the site.
- To avoid pollution incidents entering the site watercourse.
- To prevent the spread of non-native plants into the Gledholt Woods waterbody.
- To avoid lighting impacts upon Gledholt Woods.
- To provide a new pond, planted with native aquatic species.
- To provide bat roost provision, suitable for use by common crevice dwelling species of bats.
- To provide new bird nesting opportunities, suitable for swift and various hole nesting bird species, including blue and great tit.
- To increase the complexity of the treeline/ecotone along the eastern boundary, understorey by the planting of holly.
- To increase native plant species on the bank beside the pond through fern planting.
- To increase habitat for amphibians, invertebrates and small mammals, through creation of a log pile.

5. Detailed Scheme Prescription

Pollution prevention measures

5.1.1 Best practice precautionary measures when working near streams, as detailed in CIRIA guidance (Conolly and Charles, 2005) and various DEFRA/Environmental Agency guidelines, that have replaced the Pollution Prevention Guidelines

(Environment Agency, 2007) will be followed. In particular, site compounds and any fuel storage to be sited away from the stream. Interceptors should be used, if necessary, to prevent surface water drainage causing the runoff of silt into the stream. All mechanical equipment should be equipped with spill kits and operators should be trained in their usage. The foreman will brief all site workers regarding the presence of the stream and will be made responsible for ensuring all pollution prevention measures are enacted.

Tree protection

- 5.1.2 Retained trees on the site boundary will be protected during construction, in accordance with measures prescribed in 'British Standard 5837 (2012): Trees in relation to design, demolition and construction'. Root Protection Zones (RPZs) will be calculated and implemented to prevent harm to these features. Heras fencing should be installed along the edge of the RPZs prior to any other works commencing on site and contractors should be informed not to enter these areas.

Nesting bird protection

- 5.1.3 It does not appear that tree or shrub vegetation removal will be required as part of this scheme. If, however, any tree management or shrub removal work is required, then this should either be removed outside the main bird nesting season (March-August (inclusive) or should be preceded by a nesting bird check to be undertaken by an ecologist.

Sensitive lighting design

- 5.1.4 No lighting plan currently exists for the scheme, however, the client has agreed to the lighting constraints plan detailed in Appendix 2. The lighting constraints plan specifies that no new external lighting will be installed to the south of the dwelling, with lighting on the south and east elevation of the dwelling restricted to low height (2m or below) PIR operated security lighting only. Up-lighting on the west elevation of the dwelling will be avoided. Lighting along the section of eastern boundary north of the dwelling, will be designed in an ecologically sensitive way. Observing these restrictions is expected to avoid significant light spill across the southern boundary woodland edge.

Pond creation and planting

- 5.1.5 A new pond of approximately 20m², is to be created in the location of the existing concrete channel (See Appendix 1). The new pond will be concrete lined and will have a gentle flow at times of high rainfall. It is however proposed to design it in order that flow passes along one side of the pond. This new waterbody will be planted with native aquatic species only, both for the benefit of site wildlife and to prevent the spread of non-native and aquatic species into the downstream waterbody in Glenholt Woods.
- 5.1.6 This new pond is to be planted with three bunches of common water-starwort *Callitriche stagnalis* (already present in the adjacent overflow waterbody, from where it could potentially be collected) and three bunches of spiked water milfoil *Myriophyllum spicatum*. Both species comprise submerged oxygenating plants. Marginal species (to grow in shallows with leaves above surface level) will comprise marsh marigold *Caltha palustris*, brooklime *Caltha palustris* and gypsywort *Lycopus europaeus*. Two plants of each species will be bought, to be planted out in 9cm pots filled with aquatic compost. Finally, two plants of frogbit *Hydrocharis morsus-ranae*,

will be added, also planted-out in pots. These species can be bought from Naturescape (<https://www.naturescape.co.uk/>), or another suitable supplier of native plants, to be planted out during the summer-time (May to September).

Native shrub and fern planting

- 5.1.7 Land between the dwelling and access road will comprise a driveway, which continues through a covered area to parking bays located south of the house. Between the parking bays and swimming pool will be a terraced garden.
- 5.1.8 In order to enhance retained habitats, three holly *Ilex aquifolium* shrubs will be planted at the base of retained sycamore trees along the eastern boundary. As these plants mature, they will provide new foraging and nesting habitat for a range of species, whilst also increasing the complexity to the eastern boundary tree-line. This will also help to screen residual noise and light spill from the development.
- 5.1.9 In addition, four new ferns will be planted along the bank to the west of the swimming pool (Plate 3). These ferns will comprise two specimens of lady fern *Athyrium filix-femina* and two specimens of hart's tongue fern *Asplenium scolopendrium*. It is considered likely these plants will thrive in this shaded area and may be expected to spread, in order to provide ground cover and new opportunities for invertebrates in this area.
- 5.1.10 These species can be bought from Naturescape (<https://www.naturescape.co.uk/>), or another suitable supplier of native plants.

Log-pile

- 5.1.11 Logs, already present on site, will be moved to create a log-pile 1m³ in size, to be located in the shaded southwest corner of the site. A hollow area, approximately 20cm in length, height and width, should be constructed in the centre of this feature, to be access by a 10cm passage. This feature is primarily intended to provide a moist habitat for invertebrates and amphibians, however, it could also provide a suitable refuge for hedgehogs *Erinaceus europaeus*.

Bat boxes

- 5.1.12 Two integrated bat boxes will be incorporated into the new dwelling, with one on the south elevation and a second on the west elevation. These units will be integrated into the walls 1m below wall-top height, as shown on Figure 2. The units to be installed are to comprise Build-In Woodstone Boxes. Given the site's location relative to Gledholt Woods it is expected these units will have a high chance of future use with the two boxes offering complementary roosting micro-climates.
- 5.1.13 Both this box type and the other box types subsequently listed can be bought from either NHBS (<https://www.nhbs.com/>) or Wildcare (<https://www.wildcare.co.uk/>).

Figure 2. Integrated bat box locations

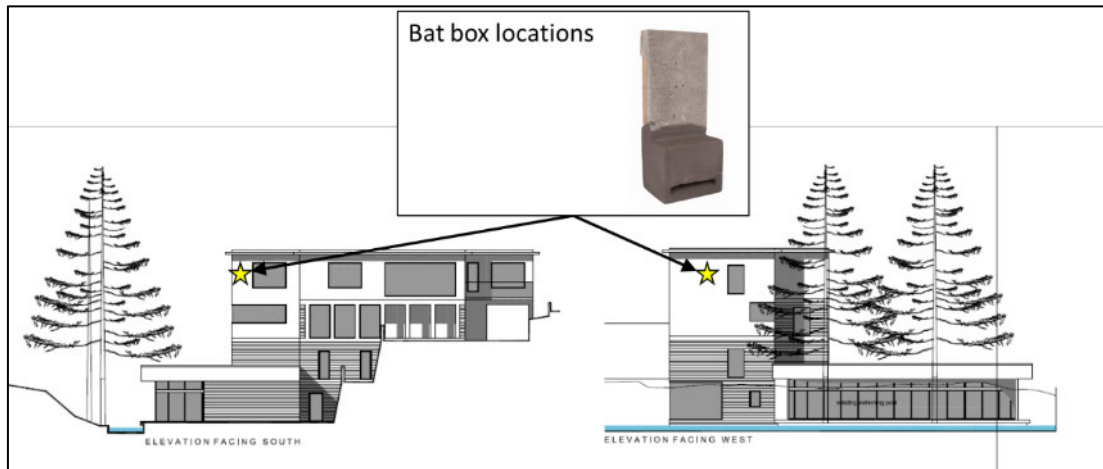


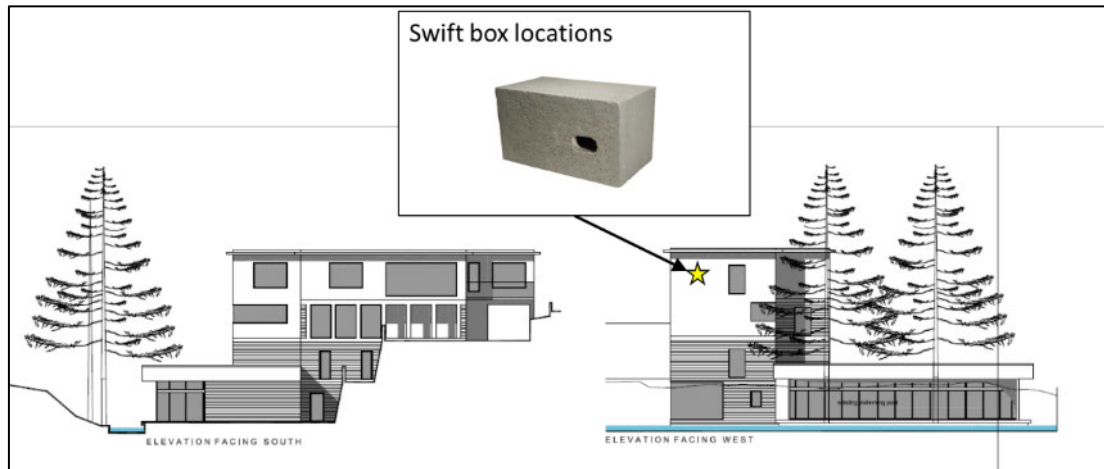
Plate 4. Build-In Woodstone Boxes, showing appearance behind render finish



Swift box

- 5.1.14 A single swift box will be installed in the west elevation of the new dwelling. This unit will comprise a Woodstone Build-in Swift Nest Box A. As with the bat boxes, this unit is to be integrated into the wall during construction. This unit is to be installed at wall top height and swifts will benefit from the large drop available from the box location. Installed on the west elevation this box is considered unlikely to overheat due to its limited exposure to the sun during the day.

Figure 3. Swift box location



General purpose bird nest boxes

- 5.1.15 Two general purpose externally mounted Woodstone bird boxes will be installed at wall top height on the existing south facing wall of the swimming pool (Figure 4). Whilst south facing elevations are generally avoided when siting bird boxes, in this instance the wall is heavily shaded and given its proximity to the neighboring woodland, it is considered an ideal location. The boxes to be installed are Vivara Pro Seville 32mm WoodStone Nest Boxes.

Figure 4. Location for general purpose bird nest boxes on swimming pool wall



6. Timetable of Works

Table 1. Works timetable

Development activities and timing		
Activity	Timing	Notes
Pollution prevention measures	To be enacted prior to works on site commencing – Spring 2021	Foreman responsible for briefing staff on presence of stream and protection measures in place. Also responsible for ensuring measures are delivered correctly
Tree protection fencing	To be installed prior to site works commencing – Spring 2021	
Nesting bird protection	Any additional tree/shrub removal to be undertaken between March and August, or to follow nesting bird check by ecologist	Only relevant if additional tree canopy reduction or other shrub removal required
Sensitive lighting design	External lighting to be installed on completion of dwelling construction	Lighting constraints plan to form basis of lighting design
Pond creation and planting	Pond creation at any time. Planting in Summer 2021 or Summer 2022	
Native shrub and fern planting	Spring 2021 or Autumn/Winter 2021	Avoid planting in summer due to risk of plants dying during dry spells
Log pile	Any time of year	
Bat boxes	Installed during construction of external walls	
Swift box	Installed during construction of external walls	
General purpose bird nest boxes	Can be installed at any time during the development	

Persons responsible for implementation of works

- 6.1.1 The client (Lorin Piele) is responsible for the purchase of materials and installation of all measures detailed in this document.

Aftercare, long-term maintenance and monitoring

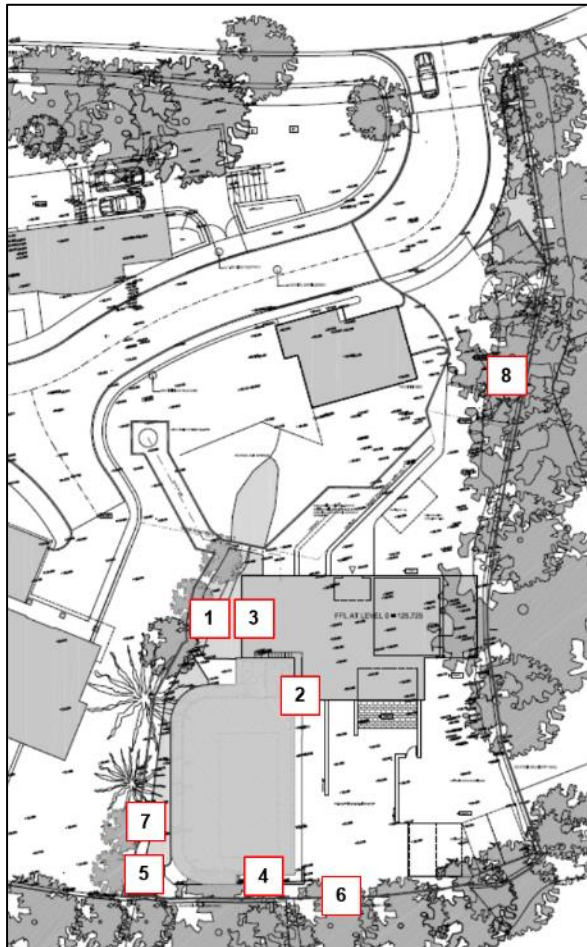
- 6.1.2 The client should periodically check that pollution prevention measures are being adhered to by the construction team.
- 6.1.3 In the first autumn after planting, the holly shrubs and ferns should be checked. If these plants have died, then they should be replaced.
- 6.1.4 The general-purpose bird boxes should be checked and old nest material cleared each autumn in order to increase the likelihood of being used the following year.

7. References

Connolly, S and Charles, P (2005) Environmental Good Practice Pocket Book. CIRIA, London.

Environment Agency (2007) Pollution Prevention Guidelines – Works and maintenance in or near water: PPG5. Now retracted, but available from: <https://www.gov.uk/government/collections/pollution-prevention-guidance-ppg>.

Appendix 1. Ecological Enhancements Plan



1 – Existing concrete channel to be widened to form concrete lined pond c. 20m². To be planted with only native aquatic species.

2- x1 bat tube to be integrated into wall.

3 – x1 swift box and x1 bat tube to be integrated into wall.

4 – x2 general purpose wall mounted bird boxes fixed to external swimming pool wall.

5 – 1m³ log pile to be constructed in shaded corner, using logs already present on site.

6 – Lighting restrictions to be observed as per separate lighting restrictions plan.

7 – x3 lady's fern and x3 hart's tongue fern to be planted on shaded bank

8 – Planting of x 3 shade tolerant native shrubs at base of sycamore trees, to comprise either holly, yew or hazel.

Appendix 2. Lighting Constraints Plan

