

# ECOLOGICAL CONSTRUCTION WORKING METHOD STATEMENT

Lower Mill Estate - Minety Lake Phase 3  
Minety Lake North West  
&  
Minety Lake West

for

Habitat First Group

April 2020

THE **Landmark**  
PRACTICE

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*\*D denotes a Draft version*

*The information which we have prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.*

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## 1.0 INTRODUCTION

### Purpose of the Report

- 1.1 This Ecological Construction Working Method Statement (ECWMS) has been prepared on behalf of the Habitat First Group by The Landmark Practice (TLP). It specifies the measures which will be employed to safeguard wildlife and habitats, both created and retained, during the construction of Phase 3 of the Minety Lake development at the Lower Mill Estate which includes the areas known as Minety Lake North West and Minety Lake West. Following the production of the original ECWMS by TLP in 2013, it has been updated periodically to support various Reserve Matters Applications for ongoing phases of development.
- 1.2 This document will provide details of:
- The measures to be undertaken to avoid and reduce risk to wildlife and habitats (i.e. mitigation/compensation);
  - The details of ecological enhancements to be delivered; and
  - The contact details in case of queries or in the event that protected/notable species are found on site in the absence of an Ecological Clerk of Works (ECoW).

### Planning Context

- 1.3 The Minety Lake development was initially granted full planning permission as 11/013126/FUL in 2011. The intention is that the scheme set out in the planning permission will be constructed in phases. Phase 3 consists of the areas known as:
- Flagham Village;
  - Barberry Village and Country Club;
  - Akeman Village;
  - Triturus Village; and
  - Minety Lake (core).
- 1.4 This ECWMS was originally prepared to satisfy Condition 27 of the planning permission (11/013126/FUL) for Phase 3 of the Minety Lake development.
- 1.5 Development of Minety Lake Phase 3 required the attainment of a Natural England European Protected Species Mitigation (EPSM) Licence due to the confirmed presence of a population of great crested newts (*Triturus cristatus*). The licence was granted in July 2015 (licence no. 2015-10311-EPS-MIT-1). Following grant of the licence, amphibian exclusion fencing was installed and trapping and translocation of great crested newts along with common species of amphibians and reptiles was undertaken from areas surrounding the site.
- 1.6 As highlighted above, the ECWMS was revised to include supplementary details and to satisfy Condition 17 of permission 14/05286/FUL relating to Lakeshore Reserve, was again revised and updated to include supplementary details for Lakeshore Reserve based on the latest permission 19/03616/FUL and to satisfy Condition 16 of said permission. This revision includes supplementary details for Minety Lake North West and to satisfy Condition 18 of permission 17/02967/FUL relating to Minety Lake North West, and has also been updated to include supplementary details for Minety Lake West area in

anticipation of future development and planning applications being submitted for this area, as sales progress on site.

Condition 18:

*“Before works can begin on site an ecological construction working method statement (WMS) shall be submitted to the LPA for approval.*

***Reason:** To ensure Birds, Bats, reptiles, water voles and Great crested newts are protected and their habitats enhanced in accordance with the Wildlife and Countryside Act 1981 as amended, the National Planning Policy Framework, the Conservation of Habitats and Species Regulation 2010 and in accordance with PPS9 and Cotswold Local Plan Policies 9 and UT.1.”*

### **The Minety Lake Development**

- 1.7 The Phase 3 development site occupies approximately 12.5 ha of land to the south of Spinney Lake within the Lower Mill Estate (LME). The development is bordered by Flagham Brook to the south, a belt of trees and Minety Lane to the west and the existing Howell’s Mere and Clearwater developments. Development comprises of luxury vacation homes plots, ancillary buildings, and associated landscaping around a newly constructed lake.
- 1.8 Minety Lake North West and Minety Lake West is located in the western half of this development, adjacent to Minety Road, and comprises 14 luxury vacation homes within ML North West and their supporting infrastructure, set in landscaped surroundings. Future development of ML West is illustrated in **Figure 6.1**.
- 1.9 Lower Mill (LME) is a privately owned estate that offers luxury vacation homes set within a nature reserve. One of the principal objectives of the estate is that of maintaining the semi-natural habitats, created and retained, for the purposes of enhancement for wildlife. This is seen as a distinguishing feature of the development.
- 1.10 Details of the avoidance, mitigation and enhancement measures recommended in the Further Ecological Surveys report (TLP, 2011b) which relate to the Phase 3 site (including lakeshore) are detailed below. Enhancement measures are also illustrated on the Phase 3 Landscape Masterplan (**Figure 3**) and in greater detail for ML North West and ML West in **Figure 5, 6.1 & 6.2**. It is important to note that the recommendations apply to the entire site and, therefore, certain mitigation and enhancement measures for species (e.g. reptiles and great crested newts) will be required in areas that fall outside the Phase 3 site.
- 1.11 Works that require supervision by an Ecologist (e.g. pre-construction surveys, species translocation programmes) or an Ecological Clerk of Works (ECoW) (e.g. vegetation clearance) are noted in **Tables 1** and **2**.

## **2.0 IDENTIFICATION OF ECOLOGICALLY SENSITIVE RECEPTORS**

- 2.1 The entire Phase 3 site (including Minety Lake North West and Minety Lake West) was subject to an Extended Phase 1 Habitat survey on 17 May 2010 (TLP, 2011a). A walkover survey was subsequently undertaken on 12 December 2012 by TLP to update changes to habitats within the Phase 3 site. Species-specific surveys of the Phase 3 site were undertaken in 2010 and 2011 (TLP, 2011b). Further surveys of great crested newt were carried out by TLP in 2012 (TLP, 2012) and surveys of otter and water vole undertaken by

TLP in 2012 and 2013 relating to separate proposals, directly to the north-east of the Phase 3 site.

- 2.2 The ecological assessment undertaken in 2010 identified habitats within or immediately adjacent to the site which have the potential to support protected/notable species (referred to below as Ecologically Sensitive Receptors or ESRs). Planning conditions and legal obligations place a responsibility on the developer and agents of the developer to protect these features during the construction phase.
- 2.3 The following protected/notable habitats and species occur within or directly adjacent to the site (**Figure 2** refers).

#### **Aquatic Habitats**

- 2.4 The Phase 3 site is located directly adjacent to Spinney Lake to the north and Flagham Brook and Swillbrook Lakes to the south. Eight small waterbodies occur within the site. One is permanently wet throughout the year (Footprint 1), the remaining seven are highly variable, ephemeral and are seasonally wet. Five of these waterbodies (Footprints 2, 3, 4, 5 and 6) are surrounded by marshy grassland and scattered scrub. Waterbodies (Footprints 1a and 7) are located within ephemeral/short perennial vegetation. The permanent waterbody (Footprint 1) is located within a small area of semi-improved grassland contained within planted earth banks, adjacent to the Estate offices.

#### **Trees, Scrub and Marshy Grassland**

- 2.5 The site contains numerous mature willows in addition to linear belts of semi-natural broadleaved woodland and hedgerow. Areas of bramble and willow scrub predominantly occur bordering Spinney Lake and Flagham Brook. A mosaic of marshy grassland, tall ruderal, ephemeral/short perennial and scattered scrub habitat occurs throughout the site.

#### **Bats**

- 2.6 The trees, scrub and grassland, in conjunction with the marginal habitat along the lakeshore, was found to support good numbers of foraging/commuting bats. None of the trees were identified as having potentially suitable features for roosting bats (TLP, 2011b).

#### **Otter**

- 2.7 Otter field signs, in the form of spraints and footprints have been previously recorded at Flagham Brook. This feature forms the southern boundary of the phase. No otter field signs have been recorded along the margin of Spinney Lake within the Phase 3 site during the surveys.

#### **Hazel Dormouse**

- 2.8 Wooded and scrub areas along the western and southern boundary of Phase 3 were identified as potentially suitable for hazel dormouse. This habitat was surveyed between 2010 and 2011. No conclusive evidence of hazel dormouse was found during the survey (TLP, 2011b & TLP, 2012).

#### **Badger**

- 2.9 Badger activity was identified in the linear belt of woodland/hedgerow bordering Minety Road and this feature appears to be function as a commuting corridor for badgers. Two possible outlier setts were found within this habitat. A single badger hair was identified

in the entrance of a disused pipe during 2010 surveys (TLP, 2011b). A single entrance outlier badger sett was recorded along the south-western boundary of the site during an updated survey in 2012 (TLP, 2013). Both setts appeared disused at the time of survey. A known main sett is located approximately 100 m south of the application site, within Swillbrook Lakes.

### **Water Vole**

- 2.10 During the 2010 surveys, no evidence of water voles was found along the southern margin of Spinney Lake (TLP, 2011b). Subsequent surveys of water courses to the north-east of the Phase 3 site (i.e. Spinney Lake outfall, River Thames corridor and Mill Race) were undertaken in the autumn of 2012 and spring of 2013.
- 2.11 During the 2012 survey, a feeding station (pile of cut vegetation consisting of large sections averaging 8-10 cm in length) and droppings attributed to water vole were found in a single location on the north bank of the Spinney Lake outfall. This indicated that a water vole colony was still present, having been recorded in this water course prior to 2007.
- 2.12 During the 2013 survey, evidence of water vole was again found along the Spinney Lake outfall in the form of feeding remains. However, no obvious water vole burrows were identified along this water course during any of the surveys.
- 2.13 Flagham Brook to the south of the Phase 3 site was not considered to be suitable for water vole. At the time of survey, it was entirely overgrown and overshadowed with little marginal or bank-side vegetation. Following selective vegetation clearance along the water course during the 2010/11 winter, sections of Flagham Brook have become more suitable for supporting water vole due to the establishment of aquatic and marginal vegetation in open areas.

### **Breeding Birds**

- 2.14 The trees, willow and bramble scrub within the site offer nesting, foraging and shelter habitat for a range of bird species.

### **Water/Wintering Birds**

- 2.15 The adjacent Spinney and Swillbrook Lakes and the marginal habitats along the edge by overwintering waterfowl (TLP, 2011c).

### **Reptiles**

- 2.16 The site provides good reptile habitat in the form of a diverse vegetation structure (marshy grassland, scrub and tall ruderal vegetation), and suitable features for foraging and shelter such as pond/lake habitat and piles of remnant building material. Reptile surveys undertaken in 2010 and 2011 identified a population of grass snake concentrated around Spinney Lake (TLP, 2011b).

### **Great Crested Newt**

- 2.17 Suitable terrestrial habitat for great crested newt (GCN) occurs within the Phase 3 site. All waterbodies within the Minety Lake development were surveyed in 2010 and 2012. Evidence of breeding GCN was identified in Footprint 1 (a permanent water body adjacent to the Estate office) and Footprint 4 (an ephemeral scrape located centrally within marshy grassland habitat) in both years.

- 2.18 The spring of 2012 was extremely wet and provided more suitable breeding conditions for GCN. It is therefore likely that, in most years, ephemeral waterbodies (Footprints 1a, 2, 3, 4, 5, 6 and 7) would be less suitable for breeding GCN. Nevertheless, their presence in Footprint 4 in 2012, demonstrates the extent of GCN movement within the area and there is a potential risk of GCN using waterbodies and suitable features within Phase 3 for foraging/hibernation.

#### **Roman Snails**

- 2.19 Roman snails were recorded along the western boundary of the Phase 3 site to the north of Flagham Brook, associated with the remnant gravel spoil mounds and open woodland, scrub and tall ruderal vegetation. Roman snails within the Minety Lake development have been translocated to a receptor site within the adjacent Swillbrook Lakes Nature Reserve.

### **3.0 LEGISLATIVE GUIDANCE/CONSIDERATIONS**

#### **Bats**

- 3.1 All species of British bat are listed as a European Protected Species (EPS) on Schedule 2 of the Conservation Regulations (Annex IV (a) to the Habitats Directive). This affords bats and their roosts strict protection under the Conservation of Habitats and Species Regulations 2017. Additional protection for bats is also afforded under the Wildlife and Countryside Act 1981 (as amended) and a subset of the British bat assemblage are listed as priority species under the Natural Environment and Rural Communities (NERC) Act 2006. As such it is an offence to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time); or
- Intentionally or recklessly obstruct access to a bat roost.

- 3.2 For bat species listed on Annex II of the EC Habitats Directive, additional protection is provided by the designation of protected sites, known as Special Areas of Conservation or SACs. Development potentially affecting a SAC or the buffer area around it is likely to require a Habitats Regulation Assessment. Annex II species include horseshoe bats, Barbastelle (*Barbastella barbastellus*) and Bechstein's bat (*Myotis bechsteinii*). No SACs designated for bat interest occur within 10 km of the Phase 3 site.

#### **Otter**

- 3.3 The otter is protected under Schedule 2 of the 2010 Regulations and Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Taken together, the 2010 Regulations and Act make an offence to:

- Intentionally or deliberately kill, injure or capture otters;
- Deliberately disturb otters; and
- Damage or destroy otter breeding sites or resting places.

#### **Hazel Dormouse**

- 3.4 Hazel dormouse (*Muscardinus avellanarius*) is fully protected under the Wildlife & Countryside Act 1981 (as amended) and the 2010 Regulations. The deliberate capturing,



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disturbing, injuring and killing of dormice is prohibited, as is damaging or destroying their breeding sites and resting place.

### **Badger**

3.5 Badgers and their setts are protected under the Protection of Badgers Act 1992. As such it is an offence to:

- Wilfully kill, injure or take any badger, or attempt to do so;
- Intentionally or recklessly damage, destroy or obstruct access to any part of a badger sett; and
- Disturb a badger when occupying a sett.

3.6 A licence from Natural England is required to permit such works which may directly impact upon a badger sett. These are issued only from 1 July to 30 November inclusive (i.e. outside the breeding season for badgers).

### **Water Vole**

3.7 The water vole receives protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under the Act it is an offence to:

- Intentionally capture, kill or injure water voles;
- Damage, destroy or block access to their places of shelter or protection (on purpose or by not taking enough care);
- Disturb them in a place of shelter or protection (on purpose or by not taking enough care); and
- Possess, sell, control or transport live or dead water voles or parts of them (not water voles bred in captivity).

### **Breeding Birds**

3.8 In Britain all wild birds are granted legal protection under the Wildlife & Countryside Act 1981 (as amended) and the EC Birds Directive. This legislation protects the birds, their eggs and nests whilst being built or in use. Legal protection makes it an offence to intentionally kill, injure, take or have in possession any wild bird or egg. It is also an offence to intentionally damage or destroy the nest of any wild bird whilst it is being built or in use. Birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) are subject to special penalties and are also protected from disturbance while nesting, including the disturbance of dependent young.

### **Reptiles**

3.9 All British reptile species are afforded some protection under The Wildlife and Countryside Act 1981 (as amended). These partial protections are found under Schedule 5 of the Act; Section 9(1) and all of Section 9(5). As such it is an offence to:

- Intentionally kill or injure an individual of these species; and
- Transport for sale or exchange, or offer for sale or exchange alive or dead individual or any part of an individual of these species.

3.10 Under Section 41 of the NERC Act 2006, all British reptile species, are listed as species of principal importance (SPI) for the purpose of conserving biodiversity.

- 3.11 Any works that could harm species of reptile must be carried out in a manner that ensures their protection i.e. by following the measures detailed in this ECWMS.

#### **Great Crested Newt**

- 3.12 GCN is a European Protected Species (EPS) and has full legal protection under The Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 making it an offence to:

- Intentionally kill or injure an individual of this species; and
- Transport for sale or exchange, or offer for sale or exchange alive or dead individual or any part of an individual of this species; and
- Damage or destroy its habitat.

- 3.13 This applies to all life-stages.

- 3.14 Under Section 41 of the NERC Act 2006, GCN is listed as species of principal importance (SPI) for the purpose of conserving biodiversity.

- 3.15 Any works that could result in a risk of killing, injury or disturbance to GCN must be carried out in a manner that ensures these risks are removed i.e. by following the measures as detailed in this ECWMS.

#### **Roman Snails**

- 3.16 Roman snails (*Helix pomatia*) are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). It is illegal to intentionally kill, handle or possess without a licence from Natural England.

## **4.0 PRECAUTIONARY MEASURES**

### Induction/Toolbox Talk

- 4.1 The Ecological Clerk of Works (ECoW) will ensure that anyone undertaking site clearance or construction works on the site (including sub-contractors) are made aware of the potential for the site to support amphibians (including GCN) and reptiles; where to expect them; their protected status; and the procedure to follow in the event that any are encountered during works. Where applicable this advice should be given through site inductions, tool box talks or similar. A copy of this ECWMS must be kept on site and available for inspection at all times. The Site Manager will be responsible for ensuring that any new members of site staff or contractors are made aware of the ecological sensitivities during site inductions.
- 4.2 Photographs to aid identification of protected species must be provided to the contractors and made available to all staff throughout the works (species identification sheets are provided at **Appendix B**). Site operatives must be vigilant to the presence of amphibians, reptiles and/or other wildlife in their working areas and encouraged to report any new evidence noted in their works area to the ECoW and/or Site Manager.

### Exclusion Fence

- 4.3 Phase 3 of Minety Lake remains enclosed by robust exclusion fencing. Proposed works at Minety Lake North West and Minety Lake West are unlikely to impact on exclusion fencing, as the fencing runs along the periphery of the site, adjacent to retained habitats

along Minety Lane and around the edge of Spinney Lake. However, prior to works commencing, any exclusion fencing in proximity should be checked for damage, with any damaged areas to be made right.

#### Timing of Works

- 4.4 All clearance works must be undertaken when amphibians and reptiles are likely to be fully active i.e. during March to October inclusive, though this will be subject to overnight temperatures and weather conditions providing suitable conditions. In addition, clearance works should also avoid the breeding bird season (March to August inclusive) allowing a site clearance window in September/October.
- 4.5 Alternatively, if clearance works are programmed during the breeding bird season (i.e. March to August inclusive), any habitat suitable for nesting birds (i.e. scrub and trees) must be subject to a nesting bird check by a suitably experienced ecologist immediately prior to works. If any active nests are found, however, site clearance will not be able to proceed in the vicinity of the nest site (c. 5 m cordon) until any chicks have fledged and the nest is no longer in use.

#### Trenching/Excavations

- 4.6 To prevent animals from becoming trapped in trenches or open excavations, these must be backfilled or covered before nightfall (preferably continuously following excavation). If, in exceptional circumstances, excavations cannot be backfilled or covered, they must be left with inclined ends to provide a means of escape. Any excavations left open overnight must be checked the following morning for protected species and, if found, the Site Manager should ensure that the project ecologist is informed immediately.

#### Site Storage Arrangements

- 4.7 It will be necessary to temporarily store materials on site during the construction of the development. Construction materials can provide opportunities for animals to shelter and the Site Manager must therefore ensure that the following measures are applied to minimise risk of killing/injury of protected species during construction:
- No materials to be stored within 5 m of bankside or any boundary hedgerows or trees;
  - Materials must always be stored off ground (i.e. on pallets) to avoid creating sheltering habitat for animals; and
  - Waste materials must be placed into skips and removed from site. No piles of waste material will be created which could provide nesting, sheltering or hibernation habitat for protected species.

#### Sensitive Lighting Scheme

- 4.8 Lighting may be required during construction for site safety and security. The use of artificial lighting is to be limited to the essential minimum throughout the site, and any lighting to be used should avoid upward pointing lights, with the spread of light being kept near to or below the horizontal. Lighting will be directional to the task that it is required for (general blanket lighting will be avoided) and angled away from all boundary features and lake edge habitat, in order to minimise effects on light sensitive species.
- 4.9 Where required, the times which lights are on must be controlled to avoid lights illuminated between, and including, dusk and dawn hours to allow dark periods for bats, and other wildlife. Lighting with a low UV component should be used to reduce

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invertebrate attraction, and directional lighting/shielding of lights with accessories such as hoods, covers, baffles and shields is to be used to avoid light spill.

- 4.10 The Principal Contractor must ensure that lights are managed to avoid any direct beams towards sensitive properties, land uses and habitats. Lights must be directed as such that light does not spill beyond the site boundary and does not affect adjacent habitats.

During Works

- 4.11 Should protected species be discovered during the construction phase of the development, the project ecologists Ecological Clerk of Works (ECoW) will be contacted to provide immediate ecological advice.

## 5.0 IMPACTS AND AVOIDANCE/PROTECTION MEASURES

5.1 **Table 1** provides the potential ecological impacts arising from construction activities and the avoidance/protection measures that must be followed to reduce the risk of such impacts occurring.

**Table 1:** Ecological impacts and protection measures

Ecologically sensitive receptor	Potential impacts	Protection measures	Person responsible
Retained habitats	Accidental damage/loss of habitat	All retained features including trees, hedgerows (specified for retention i.e. along western boundary) and Flagham Brook should be protected by appropriate fencing (in accordance with BS5837:2012). Working areas should be kept to a minimum to avoid unnecessary damage to retained features.	Site manager
	Pollution (sedimentation, oils etc.)	A pollution avoidance strategy will be produced and enforced to minimise risk of damage and pollution.	
	Disturbance	Artificial night time lighting will be kept to an absolute minimum to reduce potential disturbance to wildlife.	
Bats	Disturbance to foraging bats	Any artificial lighting should be directed away from marginal habitat (western boundary, Spinney Lake and Flagham Brook) and baffled to prevent light spill.	Site manager
Otter	Disturbance	Applies to works undertaken within 30 m of Spinney Lake and Flagham Brook: <ul style="list-style-type: none"> <li>• Due to the ability of otters to establish new holts and couches in a short period of time, a repeat otter survey should be undertaken immediately prior to start of ground clearance works.</li> <li>• Works should not take place at night or within 2 hours of sunset / sunrise to reduce potential disturbance to otters.</li> <li>• Artificial lighting should be avoided along the Flagham Brook.</li> </ul>	Ecologist/ Site manager
Badger	Disturbance and sett damage/destruction	A repeat badger survey should be undertaken immediately prior to the start of ground clearance works to ensure no new setts have been excavated or disused outlier setts have been re-colonised.	Ecologist

Ecologically sensitive receptor	Potential impacts	Protection measures	Person responsible
Water vole	Killing/injury and destruction of burrows	A repeat water vole survey should be undertaken prior to the start of construction works to identify any burrows present within proximity to development works (Flagham Brook).	Ecologist
Breeding birds	Disturbance and destruction of nests	Vegetation clearance will be undertaken outside the breeding bird season (March to August but seasonally variable) prior to the start of development works. If small areas of vegetation clearance are required during the nesting season, this may be possible if an ecologist or ECoW inspects the vegetation immediately prior to works.	Site manager/ ECoW/ Ecologist
Reptiles	Killing/injury	Grass snakes will be relocated from the development footprint to a suitable receptor site prior to the start of ground clearance works, in accordance with current best practice guidelines (Gent & Gibson (1998) and Herpetofauna Groups of Britain and Ireland (1998)).	Ecologist
Great crested newt	Killing/injury and loss of terrestrial and aquatic habitats	Great crested newts will be relocated from the development footprint to a suitable receptor site under a European Protected Species (EPS) licence, prior to the start of ground preparation works – Translocation Completed.	Ecologist
Roman snail	Killing/injury	Roman snails will be relocated from the development footprint to a suitable receptor site, prior to the start of ground preparation works – Translocation Completed.	Ecologist

## 6.0 MITIGATION AND ENHANCEMENT MEASURES

6.1 The mitigation and enhancement measures recommended in TLP's Further Ecological Surveys report for Minety Lake that relate to the Phase 3 site are detailed in **Table 2**. Enhancement measure which will be located with the area of Phase 3 known as Minety Lake North West and Minety Lake West are shown **Figure 5, 6.1 & 6.2**.

**Table 2:** Mitigation and enhancement measures

Ecologically sensitive receptor	Mitigation	Enhancement measures	Person responsible
Retained habitat	New trees will be planted to replace those lost to development and will include native species appropriate to the area.	Native tree and plant species will be used in the landscape planting scheme for Phase 3, including flowering and fruiting species that provide opportunities to birds, bats, invertebrates and small mammals within the site.	Site manager
	The retention of important habitats bordering Spinney Lake, Flagham Brook and the western boundary of Phase 3 (adj. to Minety Lake North West and Minety Lake West).	Native black poplars ( <i>Populus nigra betulifolia</i> ) will be included in the planting scheme as they are a Priority species in the Cotswold Water Park BAP.	
Bats	Adoption of the sensitive lighting strategy produced as part of the consented drawings for MP2 (drawing ref 2189-GA-107) to maintain dark areas within sensitive areas of the site. Areas of the site protected from light pollution include foraging habitat (i.e. lake margins) as well as flight corridors between foraging areas and surrounding landscape.	Bat roosting features will be incorporated into the new buildings, particularly those adjacent to existing foraging/commuting habitat. Any new roost features will be protected from artificial night time lighting.	Ecologist/ Site manager
Otter	Retain and/or enhance vegetation cover along the margin of Spinney Lake and Flagham Brook.	An artificial otter holts will be constructed on Minety Lake island (within Minety Lake North West) and possibly in a suitable location by Spinney Lake. The planting scheme to provide high quality habitat along Spinney Lake and Flagham Brook will offer valuable habitat to foraging and commuting otters.	Ecologist/ Site manager

Ecologically sensitive receptor	Mitigation	Enhancement measures	Person responsible
Hazel dormouse	Retain and/or enhance vegetation along the western and southern boundary of the application site.	Native tree and plant species will be used in the landscape planting scheme, including flowering and fruiting species to provide foraging opportunities for hazel dormouse, if present in the wider landscape.	Site manager
Badger	During site construction, no pits or holes will be left open overnight. Where this is unavoidable, measures to provide a means of escape for any badgers that may fall in (such as a wide plank of rough sawn wood) should be provided.	Inclusion of fruiting species within landscape planting scheme to provide a foraging resource for badgers.	Site manager
Water vole	Marginal vegetation along Flaghm Brook in proximity to construction footprint will be frequently cut (during site development) to discourage water voles inhabiting this section of the water course.	Creation of bank habitats in suitable locations along the margin of Spinney Lake and Flaghm Brook to provide potential burrowing habitat for water voles.	Site manager
Breeding birds	The installation of 10-20 bird boxes on retained trees throughout the Minety Lake development site to compensate for the loss of potential nesting habitat.	Incorporate bird nesting features into new buildings such as swift tiles/boxes, house sparrow terraces and house martin eaves nests. Construction of a swift tower on Minety Lake island.	Ecologist/ Site manager
Wintering water birds	The implementation of a sensitive lighting strategy will ensure impacts to wintering/water birds are minimised.	The creation of a new lake (Minety Lake) as part of the wider Minety Lake scheme will provide increased habitat for water birds.	Site manager
Reptiles	A detailed reptile mitigation strategy will be produced in conjunction with the great crested newt mitigation masterplan to relocate grass snakes from the development footprint.	Reptile habitat features (hibernacula and egg laying sites) will be created on islands within the new Minety Lake and in suitable locations around Spinney Lake. The creation of water vole banks and log piles around lake margin habitat will also benefit reptiles and other wildlife.	Ecologist/ Site manager
Great crested newt (GCN)	A detailed mitigation strategy for the capture, relocation and exclusion of GCN will be produced as part of a European Protected Species (EPS) licence application. Any GCN found within the Phase 3 site will be relocated to a receptor site within Swillbrook Lakes Nature Reserve which is directly adjacent to the development area.	Compensation and enhancement measures for GCNs include: <ul style="list-style-type: none"> <li>the creation of 1 GCN breeding pond within Phase 3 site</li> <li>the creation of 2 GCN breeding ponds within Swillbrook Lakes;</li> <li>the restoration of 3 existing ponds within Swillbrook Lakes; and</li> </ul>	Ecologist/ Site manager



Ecologically sensitive receptor	Mitigation	Enhancement measures	Person responsible
	<p>FP1 pond will be infilled prior to the start of development activities and reinstated upon completion of the Phase 3 development.</p>	<ul style="list-style-type: none"> <li>the creation of 14 additional waterbodies within the Minety Lake development, which may provide habitat for GCN.</li> </ul> <p>The marginal habitat retained/reinstated and enhanced along Spinney Lake will provide continued habitat connectivity to existing terrestrial habitat and potentially additional breeding habitat occurring to the east of the site. Retained and enhanced woodland/hedgerow habitat connects the Minety Lake development and Swillbrook Lakes sites and maintains terrestrial links to the core great crested newt population within Sandpool Farm Reserve, approximately 200 m to the west of the development area.</p>	

Ecologically sensitive receptor	Mitigation	Enhancement measures	Person responsible
Invertebrates including Roman snail	<p>A detailed mitigation strategy for the capture, relocation and exclusion of Roman snails will be produced.</p> <p>Any Roman snails found within the Phase 3 site will be translocated to a receptor site within Swillbrook Lakes Nature Reserve.</p> <p>The creation of Minety Lake and pond complexes offers great potential for a net gain in terms of the aquatic invertebrate biodiversity within the overall Minety Lake development.</p> <p>The new lake and lake margin areas will be designed to incorporate complexes of different habitats (<i>e.g.</i> permanent and temporary ponds, wet grassland, reedbed, tall herb, scrub and mature trees) in order to maximise habitat diversity and consequently the range of associated faunal species. The physical diversity of the new lake will be maximised by creating a convoluted shoreline with varying bank slope and water depth, whilst maximising the area of shallow water (less than 1 m deep) around the edges of the lake. Creation of islands (with diverse physical and habitat structure) within the lake will further increase the amount and range of habitats available to aquatic invertebrates and other wildlife.</p> <p>Colonisation of the new lake by aquatic invertebrates will be further facilitated by introducing silt and plant material from Spinney Lake.</p>	<p>Enhancement of the receptor site for Roman snails in advance of relocation.</p> <p>Inclusion of native barberry (<i>Berberis vulgaris</i>) in landscape planting scheme to provide egg-laying habitat for the barberry carpet moth (<i>Pareulype berberata</i>), a Priority species in the UK and Cotswold Water Park Biodiversity Action Plans (BAPs).</p> <p>Inclusion of blackthorn (<i>Prunus spinosa</i>) in the landscape planting scheme to provide egg-laying habitat for the brown hairstreak butterfly (<i>Thecla betulae</i>), a Priority species in the UK BAP.</p> <p>Creation of log/brush piles in suitable habitat such as the banks of Spinney Lake to provide habitat for a range of terrestrial invertebrates including Roman snails.</p>	Ecologist/Site manager

## 7.0 RESPONSIBLE PERSONS & LINES OF COMMUNICATION

### Responsible Persons

- 7.1 In the first instance the Site Manager is responsible for all site activities with the ECoW acting in a supporting and advisory role. Site clearance activities must be undertaken in accordance with the requirements of the ECWMS and relevant legislation.
- 7.2 In the event of operatives/contractors encountering protected species during construction works, a suitably experienced ecologist will be informed immediately. The same action is required in the event that any other wildlife is placed in a perilous position as a result of site activities.
- 7.3 The following contacts are provided for contractors to use in the unlikely event of the discovery of a protected species or in the case of a pollution incident affecting aquatic habitats during construction works.

Organisation	Contact number	Specialist advice
Dr P. Carter (HFG Chief Ecologist)	01285 869489	Site Ecology
The Landmark Practice	01179 230455	Licensed bat worker/all wildlife species
National Bat Helpline (run by the Bat Conservation Trust)	0845 1300 228	Bats
Natural England	0845 601 4523	General and licensing enquiries
The Environment Agency	0800 807 060 (incident hotline)	Pollution incidents

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## REFERENCES

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Herpetofauna Groups of Britain and Ireland (1998) *Evaluating local mitigation/translocation programmes: Maintaining Best Practice and Lawful Standards*. HGBI Advisory Notes for Amphibian and Reptile Groups (ARGs). HGBI, c/o Froglife, Halesworth. Unpubl.

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TLP (2013d) *Minety Lake Development: Phase 3. Ecological Construction Working Method Statement*. The Landmark Practice

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TLP (2020b) *Lower Mill Estate - Minety Lake Phase 3 (Minety Lake North West and Minety Lake West). Ecological Construction Working Method Statement*. For Habitat First Group (HFG). The Landmark Practice

## **APPENDIX A: SITE PHOTOGRAPHS**

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## APPENDIX A: SITE PHOTOGRAPHS



**Photograph 1:** Ephemeral/short perennial habitat in the southern part of the site.



**Photograph 2:** Ephemeral/short perennial habitat colonising disturbed ground in the centre of the site.



**Photograph 3:** Marshy grassland bordering willow scrub.



**Photograph 4:** The northern central area of the site comprises extensive areas of marshy grassland with small ephemeral ponds/scrapes.



**Photograph 5:** The northern boundary of the site bordering Spinney Lake.



**Photograph 6:** Permanent pond (Footprint 1) which supports a small breeding population of great crested newts and is located directly adjacent to the Lower Mill Estate office. This pond has now been removed under the GCN licence and will be reinstated.



**Photograph 7:** View along western site boundary from Minety Lane of tree belt/hedgerow habitat.



**Photograph 8:** Extensive area of bare, disturbed ground adjacent to the access road and the Estate office. This area is now being developed.



**Photograph 9:** View along Flagham Brook at its western end. This feature forms the southern boundary of the site.



## **APPENDIX B: SPECIES IDENTIFICATION SHEETS**



## What to do on site

If a suspected badger sett or signs of badger activity are found on or in proximity to the site then a member of The Landmark Practice Ecology Team should be contacted on **0117 923 0455**.

All works should cease until advice has been sought and appropriate control measures and/or licensing have been implemented.

## Identification

Badgers are easily recognisable with their characteristic black and white striped face. They can be up to 1m in length and can weigh up to 14kg. They are nocturnal so you are unlikely to see them in the day. Badgers live underground in setts which from above ground can appear as a single hole or multiple hole entrances. The sett entrance is usually D-shaped and around 300mm wide and 200mm high. There may be freshly excavated material or bedding such as dry grass, straw or other vegetation outside the sett entrance. They have distinctive footprints with five claws and a broad kidney shaped main pad.

## Where might you find them?

You may encounter badger setts almost anywhere including in gardens and urban areas, but they are most frequently found in woodland, areas of scrub and in hedgerows.

## Legislation

Both the animals and their setts are protected by law. It is a criminal offence for anyone without a licence to:

- Kill, injure or handle a badger;
- Disturb a badger when it is occupying a sett;
- Interfere with a badger sett by damaging or destroying it;
- Obstruct the access to, or any entrance of, a badger sett.

Carrying out any construction work in proximity to a badger sett without taking steps to positively avoid damage may constitute an offence.

In some cases an appropriate licence issued by Natural England may be required.



## What to do on site

If you come across a bat or suspect a roost while on site you must stop work immediately. A member of The Landmark Practice Ecology Team should be contacted on **0117 923 0455**.

All works should cease until advice has been sought and appropriate control measures and/or licensing have been implemented. Do not touch or disturb the bat, unless it is in harms way.

## Identification

- There are 18 species of bat in the UK, all of which are protected by law. They are a nocturnal species, so you are unlikely to see a bat in the daytime unless you have disturbed it in some way.
- The most common UK bat is the common pipistrelle. It is only 40 mm long and weighs about 5 grams.
- Bat droppings are very similar to mouse droppings but are crumbly, as they are made up from insect fragments.

## Where might you find them?

- Bats may be found in holes or crevices in trees, buildings, under bridges, tunnels, caves and underground cellars, if suitable roosting features are available to them.
- In buildings bats may use roof voids to roost, however, most species are crevice-dwelling and will take advantage of a variety of roosting features such as slipped/broken roof tiles, gaps beneath bargeboards and in areas with missing mortar. There is often no visible evidence of bat usage and so caution should be exercised when dismantling potential roosting features.
- Bats can use a hole as small as 15 mm wide to access a roost feature.
- In trees bats will utilise a variety of features such as split limbs, rot holes, peeling bark and woodpecker holes.

## Legislation

It is a criminal offence for anyone without a licence to:

- Kill, injure or handle a bat;
- Possess a bat (whether alive or dead);
- Disturb a roosting bat; and
- Damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not.

Offences can lead to fines of up to £5000 per bat and/or up to six months in prison.



## What to do on site

Dormice hibernate on or under the ground from around October until March or April, they are thus affected by ground disturbance in winter and early spring. Dormice can also be affected by vegetation removal during their active period of March to September.

If you come across a dormouse while on site you must stop work immediately and seek the advice of The Landmark Practice Ecology Team on **0117 923 0455**. All works should cease until advice has been sought and appropriate control measure and/or licencing implemented.

## Identification

- Dormice have golden brown fur and a characteristic furry tail. They are much smaller than a squirrel, being only 8cm long. They weigh 15-40g and live for four years.
- They are mostly nocturnal and their nest are usually very well hidden, so you are unlikely to see a dormouse.
- They make a finely woven nest using material such as honeysuckle bark and green leaves. The nest is about the size of a grapefruit with no obvious entrance hole, however they will also use old bird nests and hollow tree cavities to nest in.
- In summer they are largely arboreal and spend almost all their time in the branches of trees/ shrubs.

## Where might you find them?

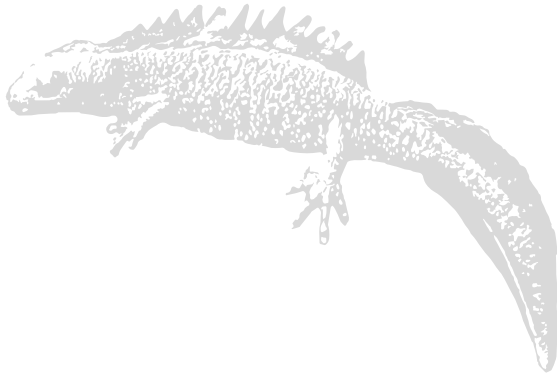
- Dormice normally occur in mature and diverse deciduous woodland. They are also frequently found in species-rich hedgerows and scrub habitats and less commonly in conifer plantations.
- In winter they hibernate, building a nest at ground level, often at the base of hedgerows or underneath leaf litter on the ground.

## Legislation

It is an offence to:

- Capture, injure or kill hazel dormice;
- Damage or destroy a dormouse resting place or breeding site;
- Deliberately or recklessly disturb a hazel dormouse while it's in a structure or place of shelter or protection;
- Block access to structures or places of shelter or protection;
- Possess, sell, control or transport live or dead hazel dormice, or parts of hazel dormice.

Prosecution could lead to an unlimited fine or up to 6 months imprisonment.



## What to do on site

Caution should be taken when working in proximity to waterbodies and when moving logs, rubble or root balls as these areas where newts may be sheltering.

If you come across any GCN you must stop work in the vicinity immediately and contact a member of The Landmark Practice Ecology Team on **0117 923 0455**. All works should cease until advice has been sought and appropriate control measures and/or licencing implemented.

## What are great crested newts?

- Great crested newts (GCN) (*Triturus cristatus*) are amphibians and are the largest of the UK's three newt species.
- Populations have declined throughout their European range due to habitat destruction, fragmentation and pollution.
- They are a 'European protected species' which means that the animals, and their eggs, breeding sites and resting places, are protected by law.
- Females lay their eggs in breeding ponds during the spring and their larvae eat aquatic invertebrates before emerging from ponds to disperse and find suitable hibernation sites during autumn.
- Adult GCNs are generally only found in waterbodies during the spring, they spend the majority of the year on land.

## Identification

GCN can grow up to 17cm in length. The males of this species have a serrated crest down their backs during the breeding season, and a white stripe along their tail. Both males and females have dark bumpy skin and an orange belly with black irregular spots.

## Where might you find them?

- Ponds and very slow moving watercourses, particularly during the spring (however the young will remain in the pond until the summer, some may even over-winter in the pond).
- On land GCN may be found within woodland, scrub, hedgerows, rough grassland, piles of stone, ballast and derelict sites surrounding ponds and watercourses at any time of the year.
- Since GCN are cold-blooded and cannot generate their own body heat, they hibernate over the winter in rubble piles, earth banks and the roots of trees/shrubs.

## Legislation

It is an offence to:

- Intentionally or recklessly kill, injure, capture, trade or even to disturb a GCN
- Damage, destroy or obstruct habitats where GCN live or breed

Prosecution could lead to a fine of up to £5,000 per newt and/or up to six months in prison.



## What to do on site

All vegetation on site to be cleared or disturbed should be checked for the presence of active bird nests, eggs and chicks by a suitably qualified ecologist.

If a bird nest or suspected nest is discovered, a minimum 5m buffer should be marked out with all work within the buffer ceased until advice of a suitably qualified ecologist has been sought. A member of The Landmark Practice Ecology Team should be contacted on **0117 923 0455**.

## Identification

- Birds most often nest in trees, hedges or dense vegetation. However, you may find them in a range of other places including buildings or on the ground.
- Not all birds build a stereotypical "nest," some will lay eggs in a scrape in the ground, build a mud nest or can be opportunistic using hollow trees or holes in buildings.
- Most birds tend to build nests and lay their eggs between the months of March and August. However, some species such as pigeons will nest year round as long as there is food available.

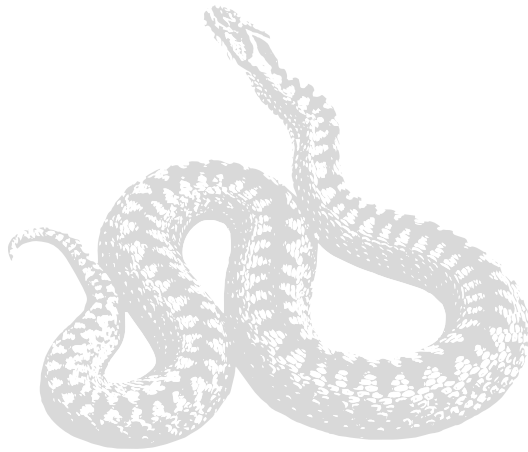
## Legislation

All birds, their nests and eggs are protected under UK law.

It is an offence to:

- Kill, injure or capture any bird;
- Take, damage or destroy a nest while it is in use or being built;
- Disturb any bird while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird;

Birds listed under Schedule 1 of the Wildlife and Countryside Act 1981 such as barn owl and peregrine falcon receive additional protection against reckless or intentional disturbance of their young or of adults whilst it is nest building or at a nest containing eggs or young.



SLOW-WORM



GRASS SNAKE



COMMON LIZARD

## What to do on site

Be especially careful when moving logs and piles of rubble, stone and ballast as these are places where reptiles may be sheltering. If reptiles are encountered on the site then work should stop immediately. A member of The Landmark Practice Ecology Team should be contacted on **0117 923 0455**.

## Identification

- Common UK reptile species potentially encountered on development sites include slow worm, grass snake, adder and common lizard.
- Male slow worms tend to be uniform in colour with brown/golden and grey/blue colourations most common, whereas females have dark flanks and a dark stripe down their back.
- Grass snakes are the largest species of snake found in the UK They are grey/green in colour with a distinctive yellow and black collar, black bars down the side and sometimes two rows of black marks down the back.
- Common lizards are brownish grey and have dark markings down their back and sides, they can move very quickly.
- Adders have a variable coloration and can be confused with grass snake. Males are typically grey with a black zigzag stripe, females generally brown with a dark brown zigzag stripe. Black adders are found in some areas.

## Where might you find them?

- Reptiles are cold blooded so can sometimes be found basking in sunny and exposed locations. More commonly you will encounter them sheltering under logs, rubble, piles of stone or ballast, or in rough grassland and areas of scrub.
- Adders have more specific habitat requirements than other common reptile species favouring heathland, moorland, meadows and open woodland.

## Legislation

All native species of reptile are protected under UK law.

It is an offence to:

- Intentionally kill or injure an individual of these species;
- Transport for sale or exchange, or offer for sale or exchange a live or dead individual or any part of an individual of these species.



ROMAN SNAIL



ROMAN SNAIL



GARDEN SNAIL

## What to do on site

If you come across a Roman snail while onsite you must stop work immediately. A member of The Landmark Practice Ecology Team should be contacted on **0117 923 0455**.

All works should cease until advice has been sought and appropriate control measures and/or licensing have been implemented. Do not touch or disturb the Roman snail, unless it is in harms way.

## Identification

The largest species of snail in the UK and their shell can grow up to a width of 45 mm. Their bodies are very pale and can measure up to 10 cm long. Their shells display a distinctive pattern of brown bands. They can be confused with larger species of garden snail, however their bodies are grey and their shells are yellowish-brown with dark flecks.

## Where might you find them?

- In the UK Roman snail are only found on well drained lime-rich soils, either chalk or limestone.
- They can be found in open woodland, rough and tussocky grassland, hedge banks, chalkquarries and areas of scattered scrub.
- The species requires loose, friable soil for burying into for hibernation and also for depositing eggs.
- An individual Roman snail may spend its entire life within an area of approximately 30 m in diameter.

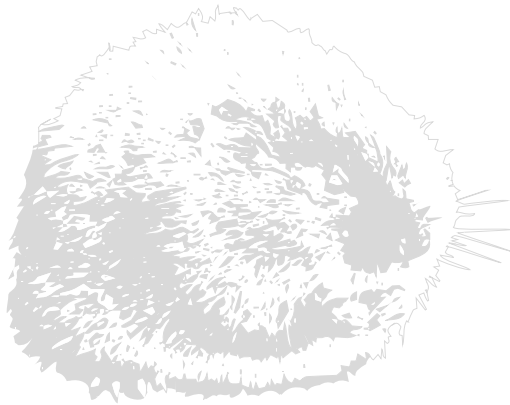
## Legislation

The Roman snail is listed on Schedule 5 of the Wildlife & Countryside Act, making it an offence to:

- Intentionally kill, injure or take (which includes handle) a Roman snail.
- Possess or control a live or dead Roman snail, or any part of a one.
- Sell, offer for sale or advertise for live or dead Roman snails.

Any intentional movement or handling, however temporary, of a Roman snail is only permissible if covered by a relevant defence in the Act, or carried out under licence.





## What to do on site

Water vole burrows can extend underground up to 5m from their entrances. If water voles are present on your site it is likely works will need to be carried out under the supervision of an Ecological Clerk of Works (ECoW) and may require a licence from Natural England. If you come across a water vole or signs of their presence while on site you must stop work immediately and seek the advice from a member of The Landmark Practice Ecology Team on **0117 923 0455**.

## Identification

Water voles (*Arvicola terrestris*) are the largest of the British voles, they are typically between 14-22cm long (not including the tail). They have a short, rounded body, blunt muzzle and small ears that are often almost entirely hidden in their thick dark chestnut-brown to black fur. Their tails are furry and are about 2/3 of their body length.

Burrow entrances are usually wider, than tall with a diameter of approximately 4-8cm and often found below and at the water's edge, sometimes with visible 'runs' between burrows. "Lawns" of closely cropped grass, occasionally with piles of chopped food, may surround burrow entrances. Water voles leave distinctive piles of droppings called latrines. Droppings are 8-12mm long, 4-5mm wide and cylindrical with blunt ends ('tic-tac' shape). The colour can vary from green to brown-black. Their footprints tend to splay and form a star shaped print.

## Where might you find them?

- Water voles occur mainly along well vegetated banks of slow flowing rivers, ditches, dykes and lakes, but can occasionally be found in small ponds and away from water. Water voles tend to be active more during the day than at night.
- The water vole is found throughout Britain, though it is less common on higher ground. It is infrequently recorded from parts of northern Scotland and is absent from Ireland.

## Legislation

Water vole are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

It is an offence to:

- Intentionally capture, kill or injure water voles;
- Damage, destroy or block access to their places of shelter or protection (on purpose or by not taking enough care);
- Disturb them in a place of shelter or protection (on purpose or by not taking enough care); and
- Possess, sell, control or transport live or dead water voles or parts of them (not water voles bred in captivity).

## FIGURES



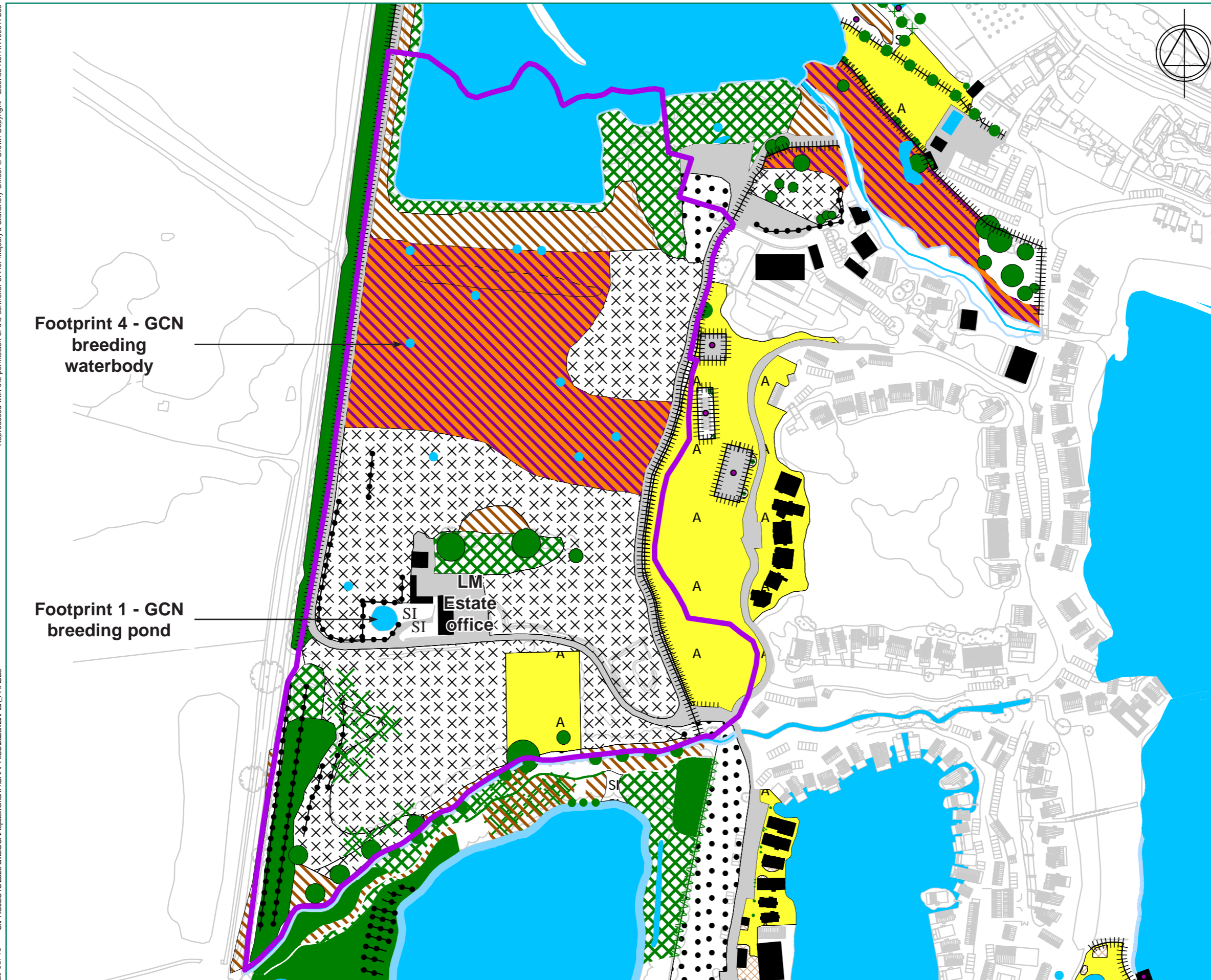
- Phase 1 development:**  
Howell's Mere Village
- Phase 2 development:**  
Copse Mere Village  
Watergarden
- Phase 3 development:**  
Minety Lake  
Akeman Village & Country Club  
Barberry Village & Country Club  
Flagham Village  
Triturus Village



















LOWER MILL ESTATE  
MINETY LAKE DEVELOPMENT  
PHASE 3  
15 YEAR LANDSCAPE & ECOLOGICAL  
MANAGEMENT PLAN

FIGURE 1  
Minety Lake Development  
Phasing Masterplan



Hope Chapel House Hope Chapel Hill  
Hotwells Bristol BS8 4ND  
Tel: 0117 923 0455 Fax: 0117 9253702  
www.thelandmarkpractice.com



-  Phase 3 development boundary
-  Marshy grassland
-  Poor semi-improved grassland
-  Amenity grassland
-  Ephemeral/short perennial
-  Tall ruderal
-  Scrub dense/continuous
-  Scattered scrub
-  Broadleaved semi-natural woodland
-  Bare ground
-  Standing water
-  Running water
-  Marginal vegetation
-  Earth bank
-  Fence
-  Buildings
-  Hardstanding
-  Location (as footprints) of ephemeral waterbodies




LOWER MILL ESTATE  
MINETY LAKE DEVELOPMENT  
PHASE 3  
15 YEAR LANDSCAPE & ECOLOGICAL  
MANAGEMENT PLAN

FIGURE 2  
Phase 1 Habitat Survey map



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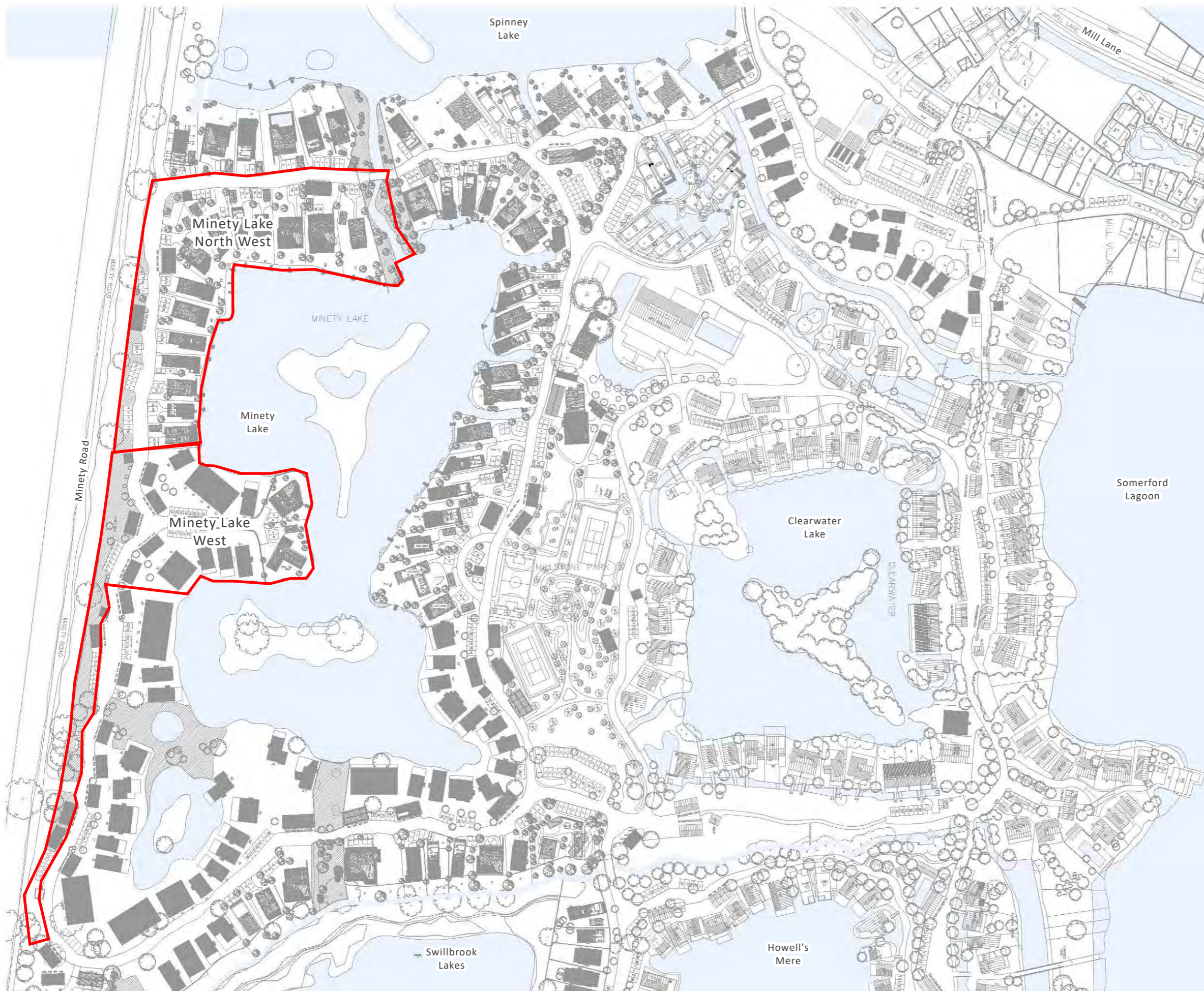
-  Phase 3 development boundary
-  Minety Lake North West
-  Minety Lake West

LOWER MILL ESTATE  
MINETY LAKE DEVELOPMENT  
PHASE 3  
15 YEAR LANDSCAPE & ECOLOGICAL  
MANAGEMENT PLAN

FIGURE 3  
Phase 3 Landscape Masterplan




Hope Chapel House Hope Chapel Hill  
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LEGEND

— Site boundaries

Scale 1 : 2,500 @ A3 

MINETY LAKE NORTH WEST

FIGURE 4  
Site Location

**THE Landmark**  
PRACTICE

Hope Chapel House Hope Chapel Hill Hotwells Bristol BS8 4ND  
T: +44 (0)117 923 0455 E: enquiries@thelandmarkpractice.com  
www.thelandmarkpractice.com

Drawn: JH Checked: AS Date: 25 Mar 20



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Environmental Planning

**GENERAL NOTES:**

- ALL DIMENSIONS AND LEVELS SHALL BE CHECKED ON SITE PRIOR TO CONSTRUCTION WORK COMMENCING.
- ALL LANDSCAPE DRAWINGS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEER'S AND ARCHITECT'S DRAWINGS AND SPECIFICATIONS.
- ALL DRAWINGS TO BE READ IN CONJUNCTION WITH THE LANDSCAPE SPECIFICATION.
- ANY DISCREPANCY CONCERNING THE DRAWINGS SHOULD BE REFERRED TO THE CA IMMEDIATELY.
- ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
- ALL LEVELS IN METRES.
- DO NOT SCALE OFF THIS DRAWING.
- EXISTING SERVICE ALIGNMENTS SHALL BE CHECKED ON SITE BY THE CONTRACTOR PRIOR TO CONSTRUCTION WORK COMMENCING.

**DRAWING NOTES:**

To be read with:  
Jetty Detail : 13331 - ML16 - Jetty

This plan supersedes drawing:  
2982\_L\_SW\_1\_01\_REV01

Rev:	Date:	Description:	Drawn:	Chkd:
01	03.07.18	Tree added	JS	AS
02	21.11.18	Updates for NMA Nov 2018	SB	JS
03	29.11.18	Updates for NMA Plot 27 Nov 2018	SB	JS
04	05.12.18	Updates for NMA - removal of jetty Plot 29	SB	JS
05	24.01.19	Jetties for each plot, update to marginal planting and meadow grassland areas	SB	AS
06	28.03.19	Updated application boundary	SB	AS
07	13.02.20	Landscape updated to approved unit layout	SB	AS

**THE Landmark PRACTICE**

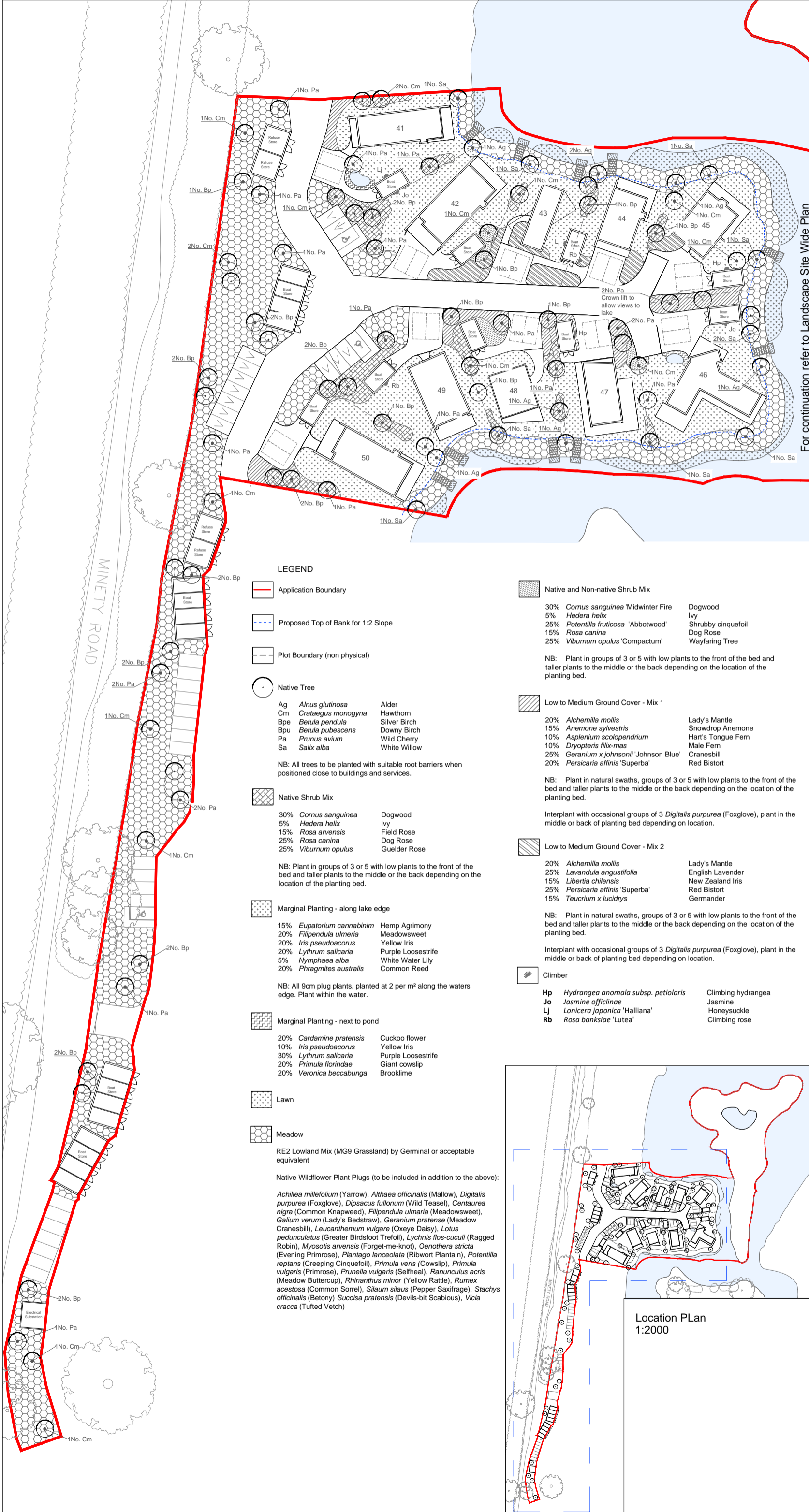
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MINETY LAKE NORTH WEST

FIGURE 5  
Softworks Landscape and Ecological Enhancement Plan



**LEGEND**

- Application Boundary
- Proposed Top of Bank for 1:2 Slope
- Plot Boundary (non physical)
- Native Tree
  - Ag *Alnus glutinosa* Alder
  - Cm *Crataegus monogyna* Hawthorn
  - Bpe *Betula pendula* Silver Birch
  - Bpu *Betula pubescens* Downy Birch
  - Pa *Prunus avium* Wild Cherry
  - Sa *Salix alba* White Willow
- NB: All trees to be planted with suitable root barriers when positioned close to buildings and services.
- Native Shrub Mix
  - 30% *Cornus sanguinea* Dogwood
  - 5% *Hedera helix* Ivy
  - 15% *Rosa arvensis* Field Rose
  - 25% *Rosa canina* Dog Rose
  - 25% *Viburnum opulus* Guelder Rose
- NB: Plant in groups of 3 or 5 with low plants to the front of the bed and taller plants to the middle or the back depending on the location of the planting bed.
- Marginal Planting - along lake edge
  - 15% *Eupatorium cannabinum* Hemp Agrimony
  - 20% *Filipendula ulmaria* Meadowsweet
  - 20% *Iris pseudoacorus* Yellow Iris
  - 20% *Lythrum salicaria* Purple Loosestrife
  - 5% *Nymphaea alba* White Water Lily
  - 20% *Phragmites australis* Common Reed
- NB: All 9cm plug plants, planted at 2 per m<sup>2</sup> along the waters edge. Plant within the water.
- Marginal Planting - next to pond
  - 20% *Cardamine pratensis* Cuckoo flower
  - 10% *Iris pseudoacorus* Yellow Iris
  - 30% *Lythrum salicaria* Purple Loosestrife
  - 20% *Primula florindae* Giant cowslip
  - 20% *Veronica beccabungna* Brooklime
- Lawn
- Meadow
  - RE2 Lowland Mix (MG9 Grassland) by Germinal or acceptable equivalent
  - Native Wildflower Plant Plugs (to be included in addition to the above):
  - Achillea millefolium* (Yarrow), *Althaea officinalis* (Mallow), *Digitalis purpurea* (Foxglove), *Dipsacus fullonum* (Wild Teasel), *Centaurea nigra* (Common Knapweed), *Filipendula ulmaria* (Meadowsweet), *Galium verum* (Lady's Bedstraw), *Geranium pratense* (Meadow Cranesbill), *Leucanthemum vulgare* (Oxeye Daisy), *Lotus pedunculatus* (Greater Birdsfoot Trefoil), *Lychnis flos-cuculi* (Ragged Robin), *Myosotis arvensis* (Forget-me-knot), *Oenothera stricta* (Evening Primrose), *Plantago lanceolata* (Ribwort Plantain), *Potentilla reptans* (Creeping Cinquefoil), *Primula veris* (Cowslip), *Primula vulgaris* (Primrose), *Prunella vulgaris* (Selfheal), *Ranunculus acris* (Meadow Buttercup), *Rhinanthus minor* (Yellow Rattle), *Rumex acetosa* (Common Sorrel), *Silaum silaus* (Pepper Saxifrage), *Stachys officinalis* (Betony), *Succisa pratensis* (Devils-bit Scabious), *Vicia cracca* (Tufted Vetch)

- Native and Non-native Shrub Mix
  - 30% *Cornus sanguinea* 'Midwinter Fire' Dogwood
  - 5% *Hedera helix* Ivy
  - 25% *Potentilla fruticosa* 'Abbotwood' Shrubby cinquefoil
  - 15% *Rosa canina* Dog Rose
  - 25% *Viburnum opulus* 'Compactum' Wayfaring Tree
- NB: Plant in groups of 3 or 5 with low plants to the front of the bed and taller plants to the middle or the back depending on the location of the planting bed.
- Low to Medium Ground Cover - Mix 1
  - 20% *Alchemilla mollis* Lady's Mantle
  - 15% *Anemone sylvestris* Snowdrop Anemone
  - 10% *Asplenium scolopendrium* Hart's Tongue Fern
  - 10% *Dryopteris filix-mas* Male Fern
  - 25% *Geranium x johnsonii* 'Johnson Blue' Cranesbill
  - 20% *Persicaria affinis* 'Superba' Red Bistort
- NB: Plant in natural swaths, groups of 3 or 5 with low plants to the front of the bed and taller plants to the middle or the back depending on the location of the planting bed.
- Interplant with occasional groups of 3 *Digitalis purpurea* (Foxglove), plant in the middle or back of planting bed depending on location.
- Low to Medium Ground Cover - Mix 2
  - 20% *Alchemilla mollis* Lady's Mantle
  - 25% *Lavandula angustifolia* English Lavender
  - 15% *Libertia chilensis* New Zealand Iris
  - 25% *Persicaria affinis* 'Superba' Red Bistort
  - 15% *Teucrium x lucidrys* Germander
- NB: Plant in natural swaths, groups of 3 or 5 with low plants to the front of the bed and taller plants to the middle or the back depending on the location of the planting bed.
- Interplant with occasional groups of 3 *Digitalis purpurea* (Foxglove), plant in the middle or back of planting bed depending on location.
- Climber
  - Hp *Hydrangea anomala subsp. petiolaris* Climbing hydrangea
  - Jo *Jasmine officinale* Jasmine
  - Lj *Lonicera japonica* 'Halliana' Honeysuckle
  - Rb *Rosa banksiae* 'Lutea' Climbing rose

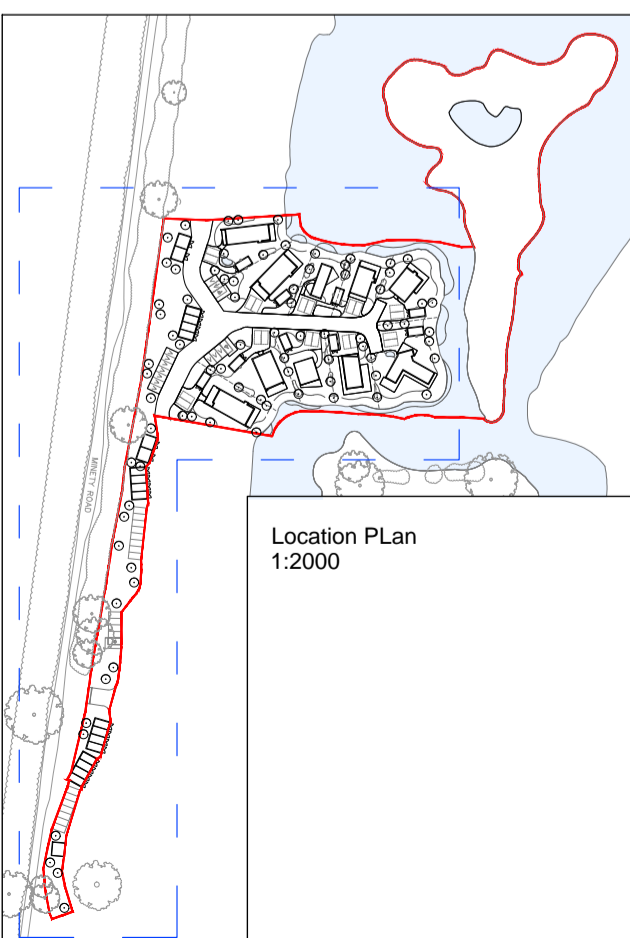
- GENERAL NOTES:**
- ALL DIMENSIONS AND LEVELS SHALL BE CHECKED ON SITE PRIOR TO CONSTRUCTION WORK COMMENCING.
  - ALL LANDSCAPE DRAWINGS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEER'S AND ARCHITECT'S DRAWINGS AND SPECIFICATIONS.
  - ALL DRAWINGS TO BE READ IN CONJUNCTION WITH THE LANDSCAPE SPECIFICATION.
  - ANY DISCREPANCY CONCERNING THE DRAWINGS SHOULD BE REFERRED TO THE CA IMMEDIATELY.
  - ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
  - ALL LEVELS IN METRES.
  - DO NOT SCALE OFF THIS DRAWING.
  - EXISTING SERVICE ALIGNMENTS SHALL BE CHECKED ON SITE BY THE CONTRACTOR PRIOR TO CONSTRUCTION WORK COMMENCING.

**DRAWING NOTES:**

To be read with:

- Landscape Site Wide Plan  
3183\_L\_MP\_0\_01
- Landscape General Arrangement  
3183\_L\_GA\_1\_01
- Landscape Hardworks Plan  
3183\_L\_HW\_1\_01

For continuation refer to Landscape Site Wide Plan



Rev:	Date:	Description:	Drawn:	Ch'd:
A	07/08/19	Minor amendments to planting at easements	JH	SB

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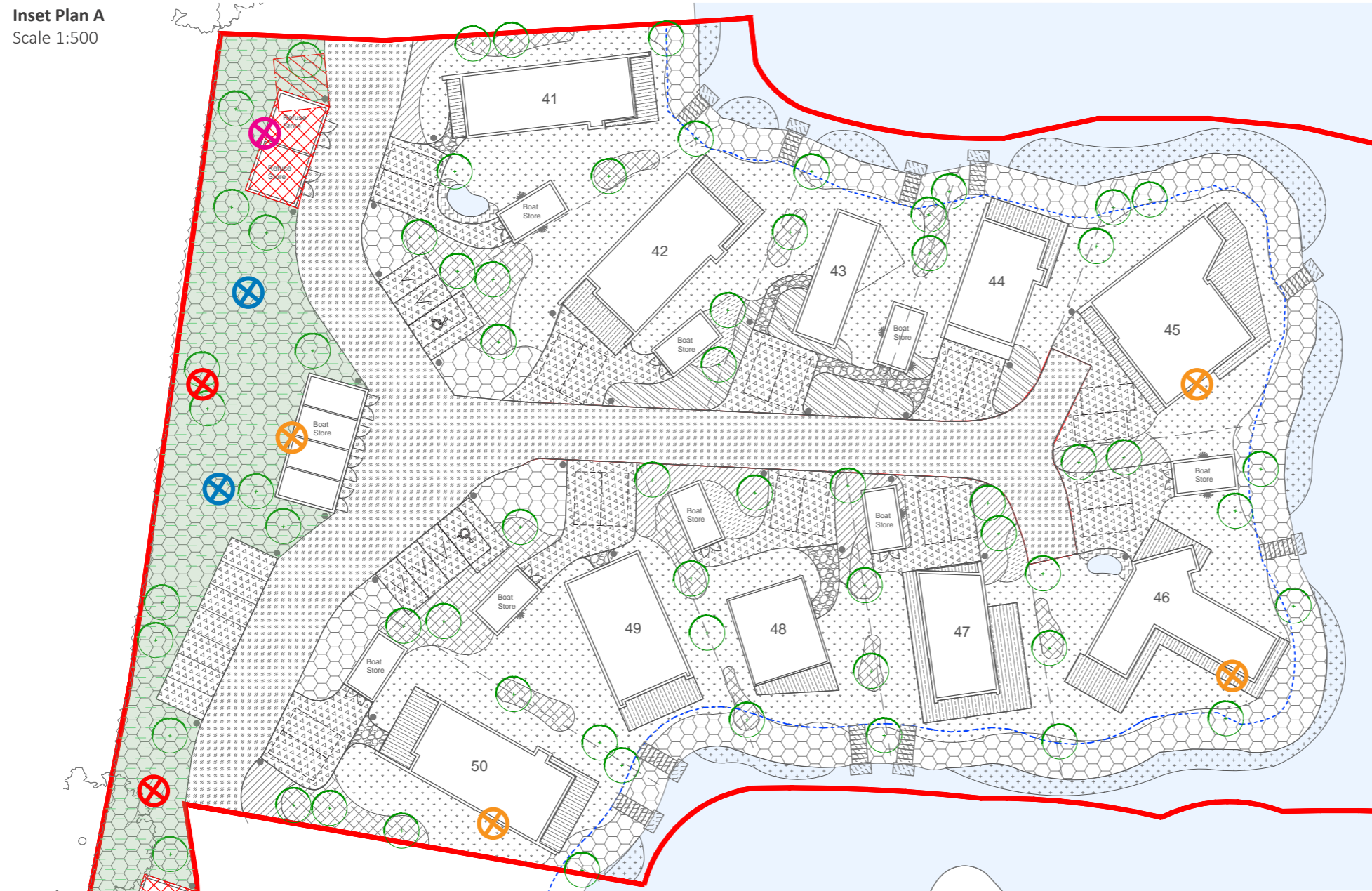
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**MINETY LAKE WEST**

**FIGURE 6.1**  
Softworks Landscape Plan






**Inset Plan A**  
Scale 1:500



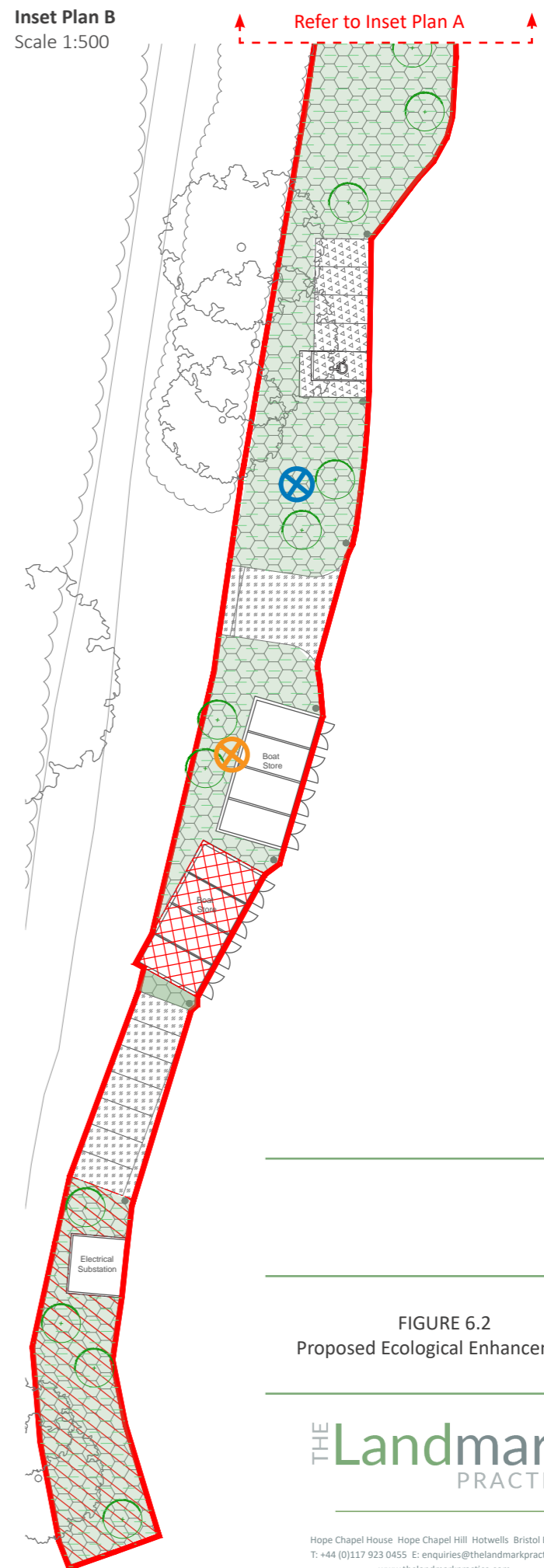
**Proposed ecological enhancements**

-  Bird box
-  Bat roost
-  Bat loft
-  Reptile hibernacula

**Ecological Zone**

-  Ecological Zone
-  Ecological Zone displaced for proposed additional boatstores and enlargement of refuse stores *Approximately 152m<sup>2</sup>*
-  Ecological Zone added to compensate for displacement *Approximately 215m<sup>2</sup>*

**Inset Plan B**  
Scale 1:500



**FIGURE 6.2**  
Proposed Ecological Enhancements

**THE Landmark**  
PRACTICE

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Drawn: JH Checked: AS Date: 25 Mar 20

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S:\PROJECTS\3050 - 3099\3091 - LME Minety Lake NW Updates\GRAPHICS (WORKING)\InDesign\ECOLOGICAL ENHANCEMENTS\091\_3183\_Ecological Enhancements