TIM MOYA ASSOCIATES

Preliminary Ecological Appraisal

Including:
Extended Phase 1 Habitat Assessment
Bat Scoping Assessment
Great Crested Newt HSI Survey

Noak Hill Fish Farm
259A Noak Hill Farm, Billericay
Essex
CM12 9UN

January 2023

221028-ED-01

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1 NON-TECHNICAL SUMMARY

1.1 This report assesses the ecological value of the proposed development site at Noak Hill Fish Farm. The proposed development involves the demolition of the existing buildings and construction of a new residential dwelling with associated landscaping and access

1.2 The site survey included an assessment of the habitats found within the site and its immediate surroundings and the likely impact of the proposed development on habitats of ecological value and protected and notable species.

1.3 This report is broadly considered valid for a duration of eighteen months, although some ecological factors may change within shorter timescales.

1.4 The site is dominated by buildings and bare ground habitats.

1.5 The site contains potentially suitable habitat for the following protected species; nesting birds, reptiles and roosting bats.

1.6 The proposed development is due to result in the loss of buildings, bare ground and ruderal habitats.

1.7 **Recommendations:**

- In order that no detrimental environmental effects occur to the adjacent River Crouch, an Environmental Management Plan should be prepared to ensure that all potential environmental risks are appropriately controlled throughout construction.
- If removal of small areas of ruderal vegetarian are required, to avoid harm to reptiles (if present) it is recommended that suitable habitats (e.g. nettle) should be strimmed carefully using precautionary methods. See report for details.
- Building B1 and B2 should be subject to nocturnal bat surveys on one occasion between May-August (inclusive). Automated bat detectors should also be deployed within the buildings for a minimum of 5 days during the summer.
- To avoid a detrimental impact on bats using the site, there should be no increased light spillage on to suitable habitats, particularly on the periphery of the site, where bats are most likely to forage and commute.
- To avoid destruction of active bird nests, it is recommended that building demolition and vegetation removal is only undertaken outside the bird nesting season. Building demolition and vegetation removal may only be undertaken during the nesting season if a careful check by a suitably experienced ecologist can confirm that no active bird nests are present.

- Care should be taken when removing ruderal vegetation to avoid harm to hedgehogs which may be present. Once vegetation has been removed to a height of 150-300 mm, it should be checked by a member of site staff to ensure that no hedgehogs are present
- Recommendations are included at the end of this report for measures to enhance the site for local biodiversity.

2 INTRODUCTION

Background

2.1 This report has been instructed by GNB Developments.

2.2 The proposed development involves the demolition of the existing buildings and construction of a new residential dwelling with associated landscaping and access.

Purpose of the report

2.3 This report assesses the ecological interest of the site and the potential impacts of the proposed development on biodiversity.

2.4 Ecological surveys are sequential in nature and any follow up, species-specific reports will supersede the information present in this report, even if both are submitted together.

2.5 TMA have been instructed to undertake a Preliminary Ecological Appraisal - a method of ecological assessment outlined in the CIEEM Guidelines for Preliminary Ecological Appraisal (2017)[1]. These guidelines state that the aims of the Preliminary Ecological Appraisal are to identify key ecological constraints associated with a project; identify any mitigation measures likely to be required; identify any additional surveys that may be required; and identify opportunities to deliver ecological enhancement.

2.6 This report aims to satisfy the requirements of the National Planning Policy Framework (MHCLG, 2021)[2], identifying ecological features or protected species within or near the site that could potentially be impacted by the proposed development and opportunities for incorporating biodiversity enhancements into the development proposals.

2.7 This report has been produced with reference to current guidelines for preliminary ecological appraisal (CIEEM, 2017) and with Biodiversity - Code of Practice for Planning and Development (BSI, 2013)[3].

2.8 To provide information to support the ecological assessment, a bat scoping survey and great crested newt (*Triturus cristatus*) (GCN) Habitat Suitability Index (HSI) assessment have also been undertaken.

Limitations

2.9 The site was accessed during December, a time when some plant species may not be evident. However, extensive stands of invasive species such as Japanese knotweed (*Fallopia japonica*) or giant hogweed (*Heracleum mantegazzianum*) would be

1 - CIEEM (2017). Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
2 - Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework.
3 - British Standards Institution (2013). BS42020 – Biodiversity – Code of practice for planning and development.

expected to be evident. Where further botanical or invasive species surveys are considered necessary, these have been recommended within this report.

2.10 The majority of the site was fully accessible at the time of the survey. A small area of vegetation located between the two buildings had limited access due to dense growth.

2.11 As the attributes of the site and its potential for protected, notable and invasive species may change over time, this report is broadly considered valid for a duration of **eighteen months**, after which time it is recommended that an update site assessment is undertaken. In some cases, protected or invasive species' use of a site may change over a shorter timescale, for instance the use of a badger sett by badgers, or the extent of invasive plant species, which may change month to month. In such cases, appropriate precautionary advice or recommendations for update surveys are given within this report. Although invasive plant species have been recorded if observed within the site, we cannot guarantee that all occurrences have been found.

Information supplied

2.12 This report has been prepared with reference to the following supplied documents/plans, showing the extent of the site boundary and the proposed development (at this stage). Please note the below-named plans may be superseded or updated without warranting an update of this report, if the changes are insignificant to the impact of the development on biodiversity:

- Proposed Site Arrangement, Mansfield Monk, September 2021 (ref.2708-SK01 rev. B)

Site location

2.13 The site is located in Noak Hill, Essex, between Basildon and Billericay. The surrounding area is dominated by sub-urban development to the north and west and arable fields to the south and east.

2.14 The central grid reference for the site is TQ 68484 91200. The surveyed site covers approximately 0.1 hectares.

3 RELEVANT LOCAL PLANNING POLICY

Basildon Borough Council – Draft Local Plan (January 2016)

3.1 **Policy NE1 Green Infrastructure Strategy**

3.2 The Council will work with partners to deliver projects which contribute towards the aims and objectives of the South Essex Green Grid Strategy and the Greater Thames Marshes Nature Improvement Area.

3.3 Elsewhere within the Borough, the Council will work with partners to deliver projects which protect, extend and enhance the network of green infrastructure and create new habitats, providing links for wildlife and people to the South Essex Green Grid and the Nature Improvement Area

3.4 In delivering green infrastructure projects, and when considering applications for development, the Council will work with partners and developers to:

3.5 Recognise the importance of Areas of Higher Landscape Value, Country Parks and Local Wildlife Sites as key features of the Borough's green infrastructure, and ensuring they are protected and enhanced where possible;

3.6 Secure a net increase in biodiversity across the Borough's area with a focus on priority habitats and priority species;

3.7 Encourage the preservation and enhancement of landscape and landscape features;

3.8 a) Secure the provision of green infrastructure alongside development which achieves a reduction in pollution to air, water and soil;

3.9 b) Secure strategic landscaping on all new major housing and employment development proposals, and secure new green infrastructure in all new development, where appropriate;

3.10 c) Develop and improve the urban environment through provision of local scale green infrastructure including footpaths, cycleways, green links, parks, gardens, allotments, trees and green roofs; and

3.11 d) Seek the provision of green infrastructure which is multi-function and incorporates measures that will help to reduce the extent of climate change and/or enable the Borough's communities to adapt better to a changing climate.

3.12 In securing green infrastructure provision, the Council will work with partners and the community, including specific user groups, in order to minimise conflict between human activities, including recreation, and sensitive ecological and heritage assets, and also between different types of human activity. The Council will seek to ensure that everyone can enjoy the Borough's green infrastructure in a sustainable way.

3.13 **Policy NE4 Local Wildlife Sites**

3.14 The Council seeks the conservation and enhancement of Local Wildlife Sites and will support proposals which ensure the active management and improvement of biodiversity interest at these sites.

3.15 Development proposals which would result in harm to a Local Wildlife Site will be considered against the requirements of policy NE 6.

3.16 **Policy NE5 Development Impacts of Ecology and Biodiversity**

3.17 Proposals which can demonstrate a resultant net gain in biodiversity will in principle be supported, subject to compliance with other relevant policies in this plan.

3.18 Proposals resulting in any adverse impacts to biodiversity within Ramsar sites, Special Protection Areas, potential Special Protection Areas, Special Areas of Conservation, Sites of Special Scientific Interest and Ancient Woodland will not normally be permitted.

3.19 Proposals which may result in adverse harm to other sites with local biodiversity interest, including those sites with protected species, priority species and/or priority habitats, will only be supported if they can meet the following requirements:

3.20 Firstly, it must be demonstrated that harm to biodiversity cannot be avoided through locating the development on an alternative site with less harmful impacts;

3.21 a) Where an alternative site is not available, the development proposal should seek to avoid adverse harm to biodiversity by virtue of the design and layout of the development. The Council must be satisfied that all reasonable opportunities to avoid harm to biodiversity have been taken;

3.22 b) Where it has not been possible to avoid all harm to biodiversity, as required by a) and b), the development proposal should seek to apply management and mitigation techniques which retain and enhance biodiversity on site. The Council must be satisfied that all reasonable opportunities to secure on-site management and mitigation have been taken

3.23 c) Where it is likely that harm to protected species, or BAP species is not fully addressed through a), b) and c), species translocation within the site, or to a suitable site nearby, in accordance with Natural England licences will be required to address the remaining harm to that species. The Council must be satisfied that the relocation site will provide a long-term suitable habitat for the species in question. A management plan must be put in place to manage the relocation site as a suitable habitat for a period of at least 20 years; then as a last resort, if the harm to biodiversity in terms of both quantity and quality have not been fully addressed through a), b), c) and d) off-site compensation which would result in a net gain in biodiversity will be required. A

compensation site must be identified which has the potential to be broadly equivalent to that habitat being lost, and a management plan prepared. Arrangements must be put in place to deliver that plan over a period of at least 20 years.

3.24 Proposals affecting ecologically sensitive sites and designated sites should be accompanied by an ecological assessment which should conform with guidance set out by the Chartered Institute of Ecology and Environmental Management (CIEEM) or an equivalent standard. Where insufficient information is provided, the Council will take a precautionary approach to the protection of ecological assets.

4 SURVEY METHODOLOGY

Data Searches

4.1 The government's MAGIC search tool was searched for statutory sites designated for nature conservation interest within 7 km of the site, and for records of European Protected Species licences within 2 km of the site.

4.2 Essex Field Club was consulted for records of non-statutory sites designated for nature conservation interest and for historic records of protected or notable species within 2 km of the site.

Site Survey

4.3 The survey was undertaken on 7th December by Brooke Waites of Tim Moya Associates, an experienced Senior Ecologist, licensed bat surveyor and Associate Member of the Chartered Institute for Ecology and Environmental Management (CIEEM) and Lynden Reed of Tim Moya Associates, an experienced ecologist and licensed bat surveyor. During the survey the weather conditions were not considered to pose any limitations to the survey.

4.4 The vegetation and habitat types within the site were noted during the survey in accordance with the categories specified by the JNCC[4]. Dominant plant species were recorded for each habitat present.

4.5 The site was inspected for evidence of and its potential to support protected or notable species[5] including amphibians, reptiles, bats, badgers, birds, dormice and water voles. Evidence of badgers was searched for throughout the site, including setts, footprints, feeding signs, hairs and droppings.

4.6 The site was searched for evidence of invasive plant species, such as Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*), giant hogweed (*Heracleum mantegazzianum*), horizontal/wall cotoneaster (*Cotoneaster horizontalis*) and floating pennywort (*Hydrocotyle ranunculoides)*.

GCN HSI Assessment

4.7 The great crested newt habitat suitability index (HSI) assessment was undertaken based on methodologies detailed in Oldham *et al*., 2000[6]. The HSI is a quantitative measure of the suitability of a pond to establish the likelihood of GCN being present. The assessment is based on ten factors including pond area, shade, terrestrial habitat and water quality. The resulting index for each pond is expressed as a figure between

4 - Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey. A technique for environmental audit.
5 - Especially those listed under The Conservation of Habitats and Species Regulations 2017, the Wildlife & Countryside Act 1981 (as amended), including those given extra protection under the Natural Environment and Rural Communities (NERC) Act 2006 and Countryside & Rights of Way (CRoW) Act 2000, and listed on the UK and local Biodiversity Action Plans.
6 - Oldham, R.S., Keeble, J., Swan, M.J.S. & Jeffcote, M. (2000). Evaluating the suitability of habitat for the Great crested Newt (Triturus cristatus). Herpetological Journal 10 (4), 143-155.

0 and 1, with scores below 0.5 indicating poor suitability for GCN and above 0.8 indicating excellent suitability.

4.8 All ponds within a 500 m radius of the proposed development, where access was possible, were inspected, unless they were considered to be sufficiently separated from the development site that the dispersal of GCN into the site was considered highly unlikely.

Bat Scoping Survey

4.9 The bat scoping survey was undertaken in accordance with BCT Guidance[7]. Both surveyors hold a Natural England licence to disturb bats whilst surveying. The buildings were inspected externally from all angles using binoculars and internally using a high-powered torch to inspect loft spaces (where present).

4.10 Evidence searched for included bat droppings, feeding remains, staining from urine or grease marks and potential access points into roosting cavities. Features indicating potential for bat roosts included gaps beneath roof tiles, weatherboarding and/or hanging tiles and missing mortar.

7 - Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

5 DESK STUDY RESULTS

Designated Sites

5.1 The site itself is not covered by any statutory or non-statutory nature conservation designations.

5.2 There are eleven statutory designations within 7 km of the proposed development and six non-statutory designations within 2 km of the proposed development as follows:

Table 1. Statutory designations of nature conservation interest

Closest statutory site:			
Site name	**Designation**	**Distance and direction from proposed works (km)**	**Description**
Mill Meadow	LNR	2.5 N	A 90 acre reserve contains fine examples of old grazing meadow on wet and dry soils, scrub and developing woodland and has a great diversity of wildlife including rare species.
Other statutory designations: Seven further SSSIs and three further LNRs are located between 2.9 km and 7.0 km from the proposed development site.			
Key: LNR - Local Nature Reserve SSSI - Site of Special Scientific Interest			

Table 2. Non-statutory designations of nature conservation interest

Closest non-statutory site:			
Site name	**Designation**	**Distance and direction from proposed works (km)**	**Description**
River Crouch at Noak Bridge	LWS	0.3 SW	The river supports a dense and varied emergent and bank side vegetation. The upper banks consist of rank grass. Water Voles are active on the river.
Five further LWSs are located between 1.1 km and 2.0 km from the proposed development site.			
Key: LWS - Local Wildlife Site			

Historic Species Records

5.3 Local Ecological Records Centre data searches return hundreds of species records. The table below summarises records of key protected species considered to be most sensitive to impact from proposed developments. Numerous additional notable species records were returned for the 2 km radius, which are considered unlikely to be impacted by the proposed development and are therefore not summarised below. For

instance, species for which no suitable habitat is present close to the site (see end of table).

Table 3. Existing protected species records

	Local Ecological Records Centre			**EPS Licences granted**
Species	**Number of records within 2km**	**Closest record to site (km) and orientation***	**Most recent record**	**No. of EPS licences granted within 2km**
Adder *(Vipera berus*)	2	0.6 S	2003	N/A
Badger *(Meles meles*)	10	0.9 Confidential	2017	N/A
Bat species *(Chiroptera*)	21	1 S	2014	0
Common Lizard *(Zootoca vivipara*)	5	0.6 S	2021	N/A
Grass Snake *(Natrix helvetica*)	4	1.3 N	2019	N/A
Great Crested Newt *(Triturus cristatus*)	25	1.2 SE	2018	5 EPS licences granted within 2km. The closest of which was 1.5 km SE and most recent in 2019.
Hedgehog *(Erinaceus europaeus*)	1	1.2 S	1995	N/A
Slow-worm *(Anguis fragilis*)	5	1.3 N	2021	N/A
No records were returned of the following key protected/notable species: Hazel Dormouse *(Muscardinus avellanarius*), Otter *(Lutra lutra*), Water Vole *(Arvicola amphibius*), White Clawed Crayfish *(Austropotamobius pallipes*)				
Records were returned of the following species amongst others but no suitable habitat is present close to the site: N/A				

* Where the distance of records is further than the search radius, this is due to lack of accuracy in the record's coordinates. The true location of the record may be inside the search radius.

5.4 Records of bats given in the table above include records of 6 bat species, including the following: common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), unknown pipistrelle species (*Pipistrellus* sp.), brown long-eared (*Plecotus auritus*), serotine (*Eptesicus serotinus*), Leisler's (*Nyctalus leisleri*) and unknown myotis species (*Myotis* sp.)

6 RESULTS OF HABITAT SURVEY

Habitats and Vegetation

6.1 A Phase 1 Habitat Plan can be found in Appendix A illustrating the habitats present. Photographs are included below.

Table 4. Habitats present within the site

Habitat type	Description	Dominant plant species	Overall biodiversity value*	Habitats of Principal Importance**	Additional Notes
Buildings and hard standing	The site includes two buildings in poor structural condition and areas of hardstanding which provide vehicle access.	None	Negligible	No	Negligible potential except for roosting bats and nesting birds. See report for details.
Hedges	An ornamental hedge is present along the south-western boundary of the site.	Cypress sp. *(Cupressus sp*.), Pyracantha *(Pyracantha sp*.)	Low	No	Limited ecological value, except for nesting birds.
Tall ruderal	The area to the north of the site is dominated by ruderal vegetation with patches of bare ground and rubble piles.	Nettle *(Common*) *(Urtica dioica*), Mugwort *(Artemisia vulgaris*), Bramble *(Rubus fruticosus agg*.)	Low	No	Nettle dominated with areas of bare ground. The area includes rubbish piles of wood and building materials.
Bare ground	Areas of the site, particularly to the north and west, include bare ground habitat.	None	Negligible	No	

*Overall biodiversity value of a habitat is guided by the criteria listed in section 4.6 of the Guidelines for Ecological Impact Assessment (CIEEM, 2018), which include habitats required by rare or uncommon animal or plant species, habitat connectivity and species-rich assemblages of plants.
** Habitats of principal importance included in Section 41 of the NERC Act.

Area of nettle and rubble to the north of the site.

Hedge along the western boundary of the site.

Protected/Notable Species Potential

6.2 The table below details the suitability of habitats within the site for key protected/notable species.

6.3 Species not detailed below are considered unlikely to be significantly impacted by the proposed works.

Table 5. Protected species potential

Species group	Strict Protection*	Species of Principal Importance**	General habitat requirements	Suitable habitat within site
Great crested newt	Yes	Yes	Breed in ponds and other waterbodies. Terrestrial habitat includes woodland and grassland.	Suitable habitats within the site are limited to a small area of ruderal habitat and rubble piles located in the northern part of the site. The surrounding area is dominated by hard standing and bare ground. Three ponds are present within 500 m of the site. See report for details. Given the limited area of suitable habitats within the site and poor suitability of the adjacent pond, it is considered unlikely great crested newts are present.
Reptiles	Yes	Yes - all reptiles	Long grass, scattered scrub, hedgerows, rubble and log piles.	Suitable habitats within the site are limited to a small area of ruderal habitat and rubble piles located in the northern part of the site. The surrounding area is dominated by hard standing and bare ground. Given the limited area of suitable habitats within the site, it is considered unlikely reptiles are present.
Bats	Yes	Yes - several species	Roost in buildings, tree cavities, bridges and caves.	No trees are present within the site boundary. Buildings B1 and B2 have been assessed as having low potential for roosting bats. See report for details.
Hazel dormouse	Yes	Yes	Hedgerows, dense scrub, deciduous woodland with connected canopy and good ground flora.	The hedge on site is considered unsuitable due to the lack of connectivity with off-site areas and small size of the hedge.
Water vole	Yes	Yes	Rivers, streams, wet ditches.	No suitable habitats.
Otter	Yes	Yes	Rivers and lakes	No suitable habitats.
White-clawed crayfish	Yes	Yes	Canals, streams, rivers, lakes, reservoirs and water-filled quarries	No suitable habitats.

Species group	Strict Protection*	Species of Principal Importance**	General habitat requirements	Suitable habitat within site
Badger	Yes	No	Woodland, dense scrub, meadows, field edges.	No evidence of badgers was found during the survey, such as setts, footprints, latrines, feeding evidence or hairs.
Hedgehog	No	Yes	Woodland, hedgerow, gardens, parks	Limited areas of suitable habitat. Hedgehogs are likely present in the wider landscape.
Other invertebrates	No	Various	Species-dependent. High invertebrate diversity is favoured in sites with a mosaic of habitats and diverse plant assemblage.	Ruderal vegetation offers a variety of plants as a feeding resource for invertebrates.
Birds (nesting)	Whilst Nesting	Various	Trees, shrubs, scrub, hedgerows, cavities within buildings, waterbodies, arable fields, bare/stony ground.	Buildings and the hedge within the site provide suitable habitat for nesting birds.
Invasive plant species	No	No	Species-dependent: Waste land, railway verges, riverbanks, waterbodies	No invasive non-native species were recorded during the survey.

7 RESULTS OF BAT SCOPING ASSESSMENT

Buildings

7.1 Building names and locations are shown on the Phase 1 Habitat Plan (Appendix A). Target Notes have been used to identify features such as potential bat access points. Full details of the Bat Scoping Survey findings are contained in Appendix B, including building descriptions and inspection findings.

7.2 Roof voids are not the only area of a building that may be used by roosting bats. Bats often roost underneath roof tiles, hanging tiles, wooden cladding, inside cavity walls and amongst brickwork. In these locations, evidence of a bat roost may be concealed.

7.3 All areas where bats may roost in all buildings were accessed internally and externally.

7.4 Building B1 and B2 were assessed as having **Low** potential for roosting bats, due to the presence of potential roost features including cavity walls, gaps between roof tiles and internal cavities.

Building B1.

Access points within roof materials on Building B1.

Building B2 exterior.

Trees

7.5 There were no trees present within the surveyed site.

Foraging and commuting habitat

7.6 The location of the site and the surrounding area is considered to be of moderate value for commuting and foraging bats. The site itself does not offer features likely to be used regularly by bats for feeding. However the pond to the north of the site and assoicated

tree lines may provide suitable foraging habitat for a range of bat species as such it is likely that commuting or foraging bats pass through the site occasionally.

8 RESULTS OF GCN HSI ASSESSMENT

8.1 Great crested newts breed within ponds but spend the majority of the year on land in habitats such as woodland, scrub and rough grassland. Newts may typically disperse up to 500 m from their breeding ponds. During the winter months, newts hibernate amongst habitats such as log piles, rubble and tree roots.

8.2 Three ponds were identified within 500 m of the proposed development using aerial photography, OS maps and ground-truthing. Full details of the Habitat Suitability Index (HSI) assessment for each pond are given in Appendix D.

8.3 All ponds identified were accessed closely for assessment.

8.4 Pond P1 and P2, located 430 m and less than 5 m respectively from the site boundary, were assessed as having **poor** suitability for great crested newts. Pond P3, located 400 m north, was assessed as having **good** suitability for great crested newts.

Pond P2

8.5 The habitat within the proposed development site is largely considered to be of low suitability for terrestrial great crested newts due to the absence of suitable sheltering habitats. Habitats present which may offer some suitable sheltering habitats include the following: ruderal vegetation and rubble piles. Although the site is broadly of low suitability for great crested newts, they may cross the site temporarily when dispersing between off-site habitats.

8.6 The proposed development site has no significant connections to any suitable ponds or terrestrial habitat. The immediate surrounding habitat is dominated by hardstanding or bare ground unsuitable for great crested newts. Hedgerows and ditches within the wider landscape are present but provide no direct links to the suitable habitat within

the site. The pond located immediately adjacent to the site boundary is generally considered unsuitable for great crested newts due to its depth, lack of aquatic vegetation and dense fish stocks.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 For any constraints identified, mitigation options should follow the Mitigation Hierarchy as set out in BS42020[8]. This seeks as a preference to avoid impacts then to mitigate unavoidable impacts, and, as a last resort, to compensate for unavoidable residual impacts that remain after avoidance and mitigation measures.

Overall Ecological Value

9.2 The proposed development site is considered to have broadly low ecological value due to the absence of notable areas of habitat, other than habitats found widely in the surrounding landscape, such tall ruderal, bare ground and hardstanding.

Designated Sites

Statutory Designated Sites

9.3 The proposed development site is located 2.5 km south of the nearest statutory site, known as Mill Meadow LNR. All other statutory sites are located over 2.9 km away.

9.4 The scale of the proposed works is such that there is unlikely to be a direct impact on these or any other statutory designated sites. The proposed development may lead to some level of increased recreational pressure on these sites, particularly when considered in combination with other developments in the local area. However, these sites are already managed as amenity resources for the use of the public. Therefore, the impact of any additional recreational users resulting from the development would be expected to be low.

Non-Statutory Designated Sites

9.5 The River Crouch at Noak Bridge Local Wildlife Site is located 0.3 km south-west of the proposed development site. While not part of the LoWS, part of the River Crouch is located immediately south of the site.

9.6 Due to the small scale nature of the development, it is unlikely there will be a detrimental impact on the river, however efforts to avoid pollution during the construction phase will be required.

9.7 Recommendation: In order that no detrimental environmental effects occur to the adjacent River Crouch, an Environmental Management Plan should be prepared to ensure that all potential environmental risks are appropriately controlled throughout construction.

8 - British Standards Institution (2013). BS42020 – Biodiversity – Code of practice for planning and development.

Habitats of Principal Importance

9.8 No habitats within or adjacent to the proposed development site are listed as Habitats of Principal Importance under Section 41 of the NERC Act[9].

Protected Species

9.9 The following species are protected against harm/destruction/disturbance by European or UK Law for details see Appendix E.

Great Crested Newts

9.10 Great crested newts are legally protected from killing, injury, capture and deliberate disturbance. Habitats used by great crested newts are also protected (see Appendix E for details).

9.11 Great crested newts have previously been recorded as close as 1.2 km from the proposed development site. The landscape surrounding the site includes a number of ponds within 500 m of the proposed development site. The next closest pond is located less than 10 m north-east (pond P2) which has been assessed as offering poor suitability for great crested newts due to the presence of fish and the lack of aquatic vegetation suitable for providing shelter and egg laying.

9.12 Habitats within the site are limited to a small area of ruderal vegetation. Given the small size of the habitat and limited suitability it is considered unlikely great crested newts are present.

9.13 Therefore, it is considered unlikely that the proposed development will impact great crested newt populations or individual great crested newts.

9.14 As such, no further surveys or mitigation are recommended regarding great crested newts.

Reptiles

9.15 All species of native reptiles are legally protected against killing or injury (see Appendix E for details).

9.16 Slow-worm, common lizard, grass snake and adder have all been previously recorded within 2 km of the site. The habitats within the site are generally considered unsuitable for reptiles. A small area of tall ruderal is present in the north-west of the site, however the area is generally considered too small to support a reptile population.

9.17 Where removal of small areas of ruderal are necessary, habitat manipulation techniques will be appropriate to minimise the risk of harm to reptiles, as follows:

9 - Natural Environment and Rural Communities Act 2006.

9.18 Recommendation: If removal of small areas of ruderal vegetation are required, to avoid harm to reptiles (if present) it is recommended that suitable habitats (e.g. nettle) should be strimmed carefully, using hand tools, in two phases:

- The habitat should be strimmed outwards toward the site boundary, to flush any reptile species into the adjacent habitats.
- The first pass should be cut to a height of no less than 150 millimetres. After the first strim, the area should be left for two days to allow any remaining animals to move into surrounding habitats.
- The second phase should be cut down to ground level under ecological supervision.
- Any sheltering places such as log piles or animals' burrows must be dismantled by hand under ecological supervision, to remove any reptiles present.
- This approach can only be undertaken between **March and October** inclusive (when temperatures are not below 10'C) when reptiles are active.

Roosting Bats - Buildings

9.19 All species of bat are legally protected from disturbance or harm and their roosts are protected from damage or destruction (see Appendix E for details).

9.20 Buildings B1 and B2 have been assessed as having low bat roosting potential due to the presence of a number of access points and roosting features.

9.21 The proposed development includes demolition of all buildings. Therefore, if the buildings are used by roosting bats, bat roost features would be destroyed and bats may be disturbed, injured or killed during demolition or dismantling works.

9.22 Recommendation: To ascertain whether the buildings are used by roosting bats, in accordance with BCT Survey Guidelines[10], it is recommended that Building B1 and B2 are subject to nocturnal emergence/re-entry surveys (also known as dusk/dawn or presence/absence). The buildings should be surveyed on 1 occasion. 5 observation points in total will be required to cover the potential access points identified on the building(s). The surveys should be undertaken between **May and August**, inclusive. In addition to the nocturnal surveys, a single automated bat detector should be installed in each building for a minimum of five days between May and August to monitor bat activity.

9.23 If the surveys confirm the use of any buildings by roosting bats, additional emergence/re-entry surveys may be required (three total).

9.24 Any proposed development works likely to disturb bats or damage/destroy bat roosts may only be undertaken once a Natural England Mitigation Licence has been obtained.

10 - Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

This would require a detailed bat mitigation strategy including the provision of alternative roosting features within the development site.

Roosting Bats - Trees

9.25 There are no trees present within the proposed development site.

Foraging and Commuting Bats

9.26 Due to the habitats present within the site and the local landscape, it is considered likely that foraging or commuting bats would use the site to a limited extent only. Nevertheless, bats are likely to cross the area occasionally. Areas adjacent to the site, particuarly the pond to the north-east and the river and assoicated tree lines to the south are likely to be utilised by forgaing and commuting bats.

9.27 The foraging and commuting behaviour of bats is known to be altered by artificial lighting and bats may avoid illuminated areas[11].

9.28 Recommendation: To avoid a detrimental impact on bats using the site, there should be no increased light spillage on to suitable habitats, particularly on the periphery of the site, where bats are most likely to forage and commute. Lighting should be restricted to the interior of the site and should be kept to a low level. The following measures should be implemented within the lighting scheme:

- Minimise light spill through careful aiming, positioning and selection of luminaires and column heights.
- LED luminaires should be used where possible due to their sharp cut off, lower intensity and dimming capacity.
- Lighting must have no upward spill.
- Warm white luminaires with peak >550nm. UV lighting should be avoided.
- Reduce the light intensity to the minimum required for safety and security;
- Where security lamps are used these should use a trigger to illuminate them (e.g. infra-red detector), and switch off after a short period, rather than remaining on all night.
- Further guidance is available in Bats and artificial lighting in the UK[12].
- In some cases a Lighting Impact Assessment may be required to demonstrate that lighting will not have a detrimental impact on bats.

Dormice

9.29 Dormice are legally protected from disturbance or harm and their breeding sites and resting places are protected from damage or destruction (see Appendix E for details).

11 - Institution of Lighting Professionals (2018). Bats and artificial lighting in the UK. Guidance Note 08/18.
12 - Institution of Lighting Professionals (2018). Bats and artificial lighting in the UK. Guidance Note 08/18.

9.30 No records of dormice within 2 km of the site have been returned by record centres.

9.31 The habitats within the site are considered unsuitable for dormice.

9.32 Therefore, dormice are considered unlikely to be present within the site.

9.33 As such, no further surveys or mitigation are recommended with regards to dormice.

Water Vole and Otter

9.34 Otters and water voles are legally protected from harm, capture and disturbance and their breeding sites and resting places are fully protected (see Appendix E for details).

9.35 No habitat suitable for water voles or otters is present within the site. The River Crouch, located to the south of the site is not due to be impacted.

9.36 Therefore, the proposed development is considered unlikely to impact these species.

9.37 As such, no further surveys or mitigation are recommended with regards to water vole or otter.

White-clawed Crayfish

9.38 White-clawed crayfish are legally protected from harm, capture and disturbance (see Appendix E for details).

9.39 No habitat suitable for white-clawed crayfish is present within or adjacent to the site.

9.40 Therefore, the proposed development is considered unlikely to impact this species.

9.41 As such, no further surveys or mitigation are recommended with regards to white-clawed crayfish.

Badger

9.42 Badgers are legally protected against killing, injury or disturbance and their setts are protected against interference (see Appendix E for details).

9.43 The habitats within the site are considered broadly unsuitable for badgers and no evidence of badgers was recorded during the survey.

9.44 Therefore, the proposed development is considered unlikely to impact badgers or their setts.

9.45 As such, no further surveys or mitigation are recommended with regards to badgers.

Invertebrates

9.46 Approximately 400 invertebrate species are listed as Species of Principle Importance' under Section 41 of the NERC Act (see Appendix E) and decision makers must have regard to the conservation of these species.

9.47 Although common invertebrates are likely to be found within the site, the habitats within the site are common and widespread, such as tall ruderal, non-native hedge and hard standing.

9.48 Therefore, it is considered unlikely that the proposed works will significantly impact important populations of invertebrates. The next section of this report includes measures to enhance the development for invertebrates.

Nesting Birds

9.49 All birds are protected against killing, injury or capture, and eggs and active nests are protected. Some bird species are also protected against disturbance (see Appendix E for details).

9.50 The site includes hedges and buildings which are suitable for nesting birds during the nesting season (typically March to August inclusive). Removal of suitable nesting habitats may result in the destruction of active bird nests, eggs or young.

9.51 Recommendation: To avoid destruction of active bird nests, it is recommended that building demolition and vegetation removal is only undertaken outside the bird nesting season. Building demolition and vegetation removal may only be undertaken during the nesting season if a careful check by a suitably experienced ecologist can confirm that no active bird nests are present. If bird nests are present within buildings or vegetation to be removed, they must be left in place and not disturbed until all the young have fledged and cease to return to the nest.

Other Species

Hedgehog

9.52 The site includes habitats suitable for hedgehogs to be present. Whilst not a strictly protected species, the hedgehog is listed as a Species of Principal Importance (see Appendix E) and decision makers must have regard to the conservation of their populations.

9.53 Recommendation: Care should be taken when removing ruderal vegetation to avoid harm to hedgehogs which may be present. Once vegetation has been removed to a height of 150-300 mm, it should be checked by a member of site staff to ensure that no hedgehogs are present. If any hedgehogs are present, they may be moved to suitable habitat nearby. The next section of this report includes measures to enhance the development for hedgehogs.

Invasive Species

Invasive plant species

9.54 No invasive non-native plant species were recorded during the survey.

10 BIODIVERSITY ENHANCEMENT OPPORTUNITIES

10.1 In accordance with the NPPF[13], recommended opportunities for biodiversity enhancement (above and beyond those required to mitigate for the identified impacts) are set out below. Any additional measures pending the results of the recommended bat surveys should be incorporated as necessary. The below recommendations may not all be feasible within the final development and alternative enhancements should also be considered. A detailed Ecological Mitigation and Enhancement scheme may be appropriate to confirm the details and locations of enhancements which are due to be included within the development.

Wildlife Boxes

Bird boxes (general)

10.2 Installation of bird boxes increases nesting opportunities for bird species. A variety of bird box designs are available, for installation on existing mature trees, on external building walls, or to be in-built into the structure of new buildings. Bird boxes should be installed at least 2 m in height facing north and east, thus avoiding strong sunlight and wet winds.

Swallow Nest Boxes

10.3 Providing nest bowls or boxes for swallows can increase the resilience of their populations during dry periods as they are still able to nest when no mud is available. Swallow nests boxes or bowls should be situated inside or outside a building with constant access for the birds. They can be placed in enclosed areas of buildings such as porches or outbuildings. Multiple bowls or boxes can be placed on the same building but should be at least 1 m apart. A minimum of 6 cm should be left above the nest cup.

House Sparrow Nest Boxes

10.4 The house sparrow (*Passer domesticus*) is an iconic species whose populations have faced steep declines in recent decades. Sparrow terraces' are available which can accommodate multiple nests and are designed to be incorporated into the fabric of a building as it is built. Boxes should ideally be installed between 2 and 5 m above ground, preferably avoiding areas that are exposed to strong sunlight or prevailing winds. Siting boxes close to vegetation is helpful for young birds taking their first flights.

13 - Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework.

Bat Boxes

10.5 The inclusion of bat boxes provides new roost sites for bats within the local area. A variety of bat box designs are available, for installation on existing mature trees, on external building walls, or to be in-built into the structure of new buildings. Bat boxes should be located in sheltered spots away from artificial lighting and placed at a height of at least 3 metres from the ground, ideally facing south.

Hedgehog Boxes/Corridors

10.6 To enhance the site for hedgehogs, it is recommended that hedgehog nest boxes/domes are installed in undisturbed locations within the site.

10.7 To allow hedgehogs to pass through the site, it is recommended that all garden fences include a gap of at least 13 cm x 13 cm at ground level.

Invertebrate Boxes

10.8 A wide variety of invertebrate boxes/bug houses are available for installation on trees or poles, to provide nesting and sheltering opportunities for solitary bees, lacewings and various other insects. Boxes should ideally be placed in sunny locations that are protected from wind and rain. Examples of good locations include walls, pergolas, gardens and balconies up to the third or fourth floor. Installing invertebrate boxes close to fruit trees can improve pollination of the trees.

Vegetation and Planting

Tree and Shrub Planting

10.9 Wherever possible, additional tree and shrub planting is recommended within the site which will increase feeding resources and connectivity for wildlife including bats, birds and invertebrates. Connected corridors of shrubbery within the site will have a larger impact than isolated patches.

10.10 Shrub planting should include a variety of species found on the Royal Horticultural Society's Plants for Pollinators' lists, such as lavender (*Lavandula* species), heather (*Calluna vulgaris*), common box (*Buxus sempervirens*), common hawthorn (*Crataegus monogyna*), bell heather (*Erica cinerea*), blackthorn (*Prunus spinosa*), knapweeds (*Centaurea* species), guelder rose (*Viburnum opulus*), barberry (*Berberis species*) and honeysuckle (*Lonicera peridymenum*).

10.11 Native tree species such as hazel (*Corylus avellana*), rowan (*Sorbus aucuparia*), crab apple (*Malus sylvestris* sens.str), elder (*Sambucus nigra*), field maple (*Acer campestre*), holly (*Ilex aquifolium*) and English oak (*Quercus robur*) can be used to provide known benefit to wildlife.

Grassland Planting

10.12 Wherever possible, areas of informal meadow' grassland should be included, seeded with a species-rich wildflower grassland mix to provide foraging opportunities, particularly for pollinating invertebrates. Areas of longer informal grassland also offer shelter for reptiles, amphibians and small mammals. Recommended grassland species are included in the RHS 'Plants for Pollinators' lists[14].

10.13 To encourage butterflies and bumblebees, the grassland can be designed to incorporate a mosaic of habitats including patches of bare ground, short open turf, tall grass, tussocks and plants in all stages of development. A varied topography which incorporates south facing slopes and sheltered areas is also recommended.

10.14 Grassland managed for invertebrates should be cut only once or twice per year, always allowing plants to set seed in the summer before cutting. If possible, some areas should remain uncut each year.

Additional Habitat Features

Log or Stone Piles

10.15 To enhance the site for invertebrates such as the stag beetle (*Lucanus cervus*), reptiles and amphibians, it is recommended that log piles, 2 m width/length and 1 m in height, are created in shaded and undisturbed locations, within the site.

10.16 Alternatively, piles of rocks in both sunny and shaded areas of the site can provide enhancement for a variety of species.

14 - Royal Horticultural Society (no date). Plants for Pollinators – Garden Plants. rhs.org.uk/plantsforpollinators

11 APPENDICES CONTENTS

APPENDIX A

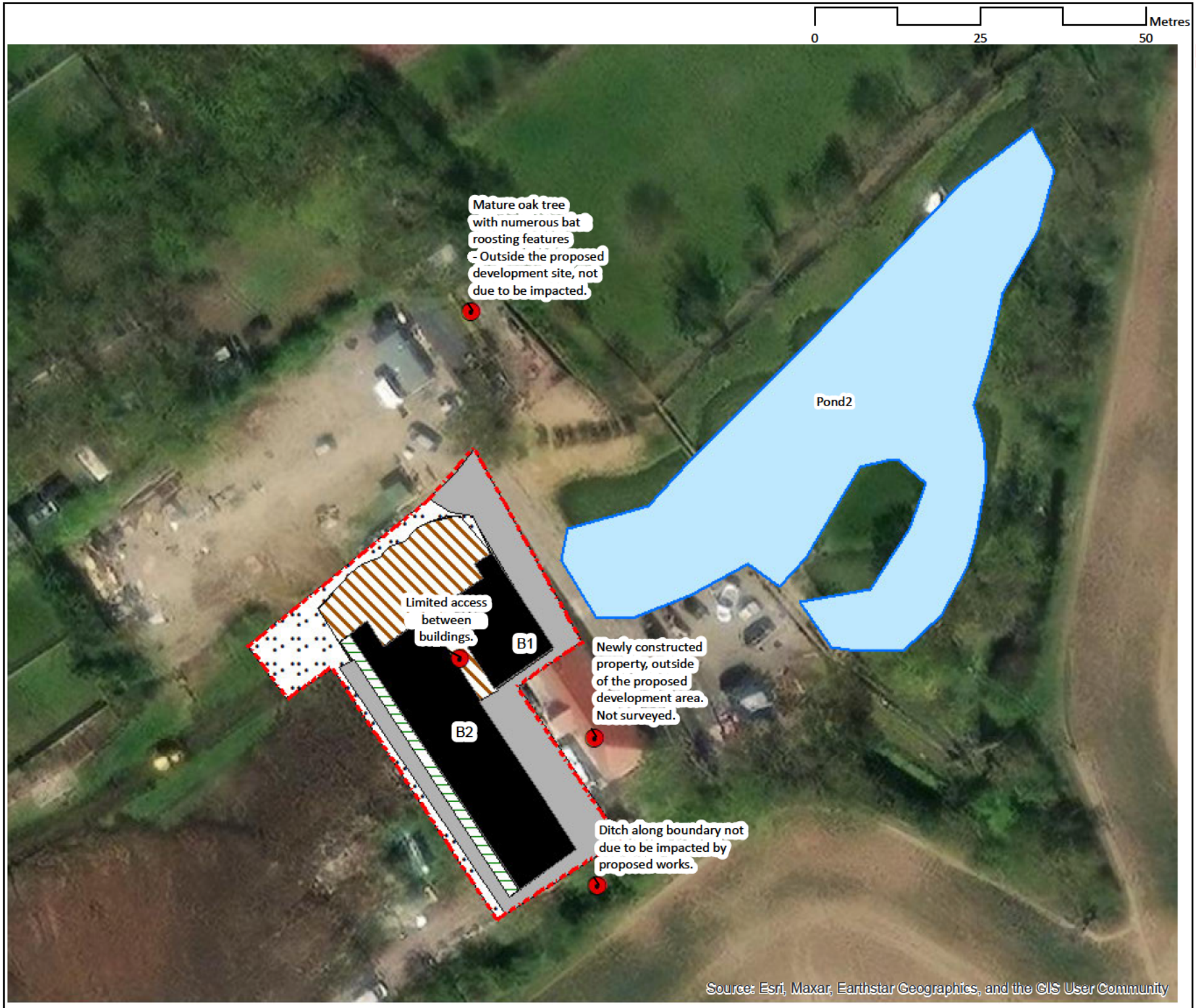
- 221028-EC-01 Habitat Plan

APPENDIX D

- 221028-EC-04 Pond plan
- 221028-SCH-01 HSI Assessment

APPENDIX A

- 221028-EC-01 Habitat Plan



Legend

NORTH

- Site Boundary
- Target Note
- Tall ruderal
- Intact hedge - species-poor
- Hard standing
- Bare ground
- Building
- Water Body

Title: Habitat Plan		
Client: GNB Developments		
Project: Noak Hill Fish Farm		
Date 27/01/2023	Drawn by JCF	Authorised BW
Drawing No 221028-EC-01	Rev -	Scale 1:750

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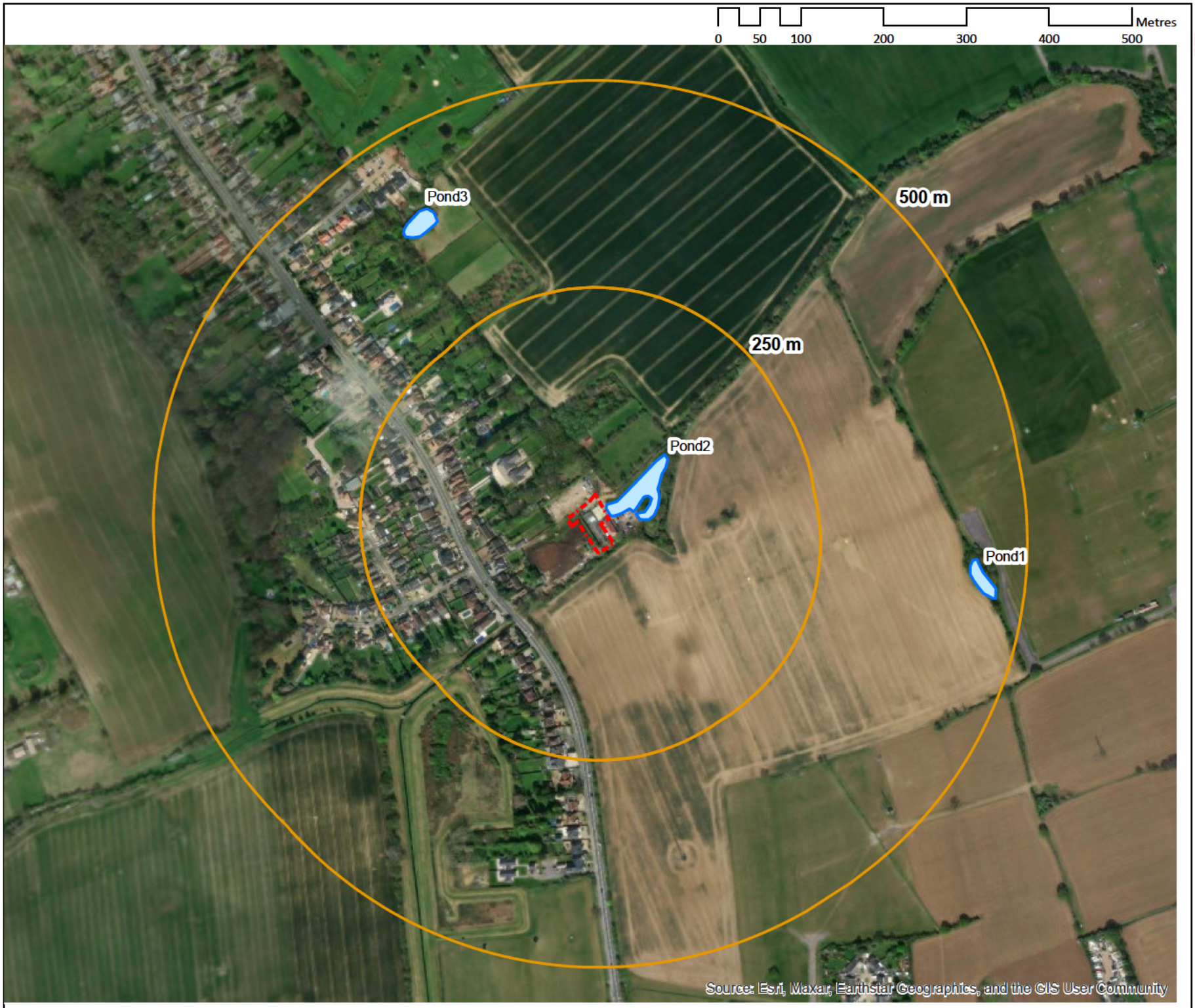
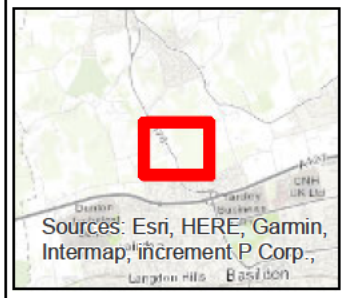
APPENDIX D

- 221028-EC-04 Pond plan
- 221028-SCH-01 HSI Assessment



Legend

- Site Boundary
- Water Body



Title: Pond Plan		
Client: GNB Developments		
Project: Noak Hill Fish Farm		
Date 27/01/2023	Drawn by JCF	Authorised BW
Drawing No 221028-EC-01	Rev -	Scale 1:6,000

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Great Crested Newt Habitat Suitability Index Report

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Ponds

(ID) Name/ description	Field Location	Pond area (m2)	Pond drying*	Water Quality*	Shade (% of bank)	Fowl	Fish	Pond in 1km2	Terrestrial Habitat	Macrophytes %	Grid Reference	*Distance from Site (m)	**HSI Score**	**Pond Suitability**
(1) Farmland pond surrounded by willow trees. Appears to regularly dry up due to presence of terrestrial vegeation.	Optimal	679.10	Annually	Poor	100	Absent	Absent	1.2	Moderate	0	TQ6894791133	420	**0.50**	**Poor**
(2) Large fish pond.	Optimal	2214.40	Never	Poor	20	Absent	Major	1.2	Moderate	5	TQ6852991244	3	**0.46**	**Poor**
(3) Pond in private land, viewed from public footpath.	Optimal	869.20	Rarely	Moderate	80	Minor	Possible	1.2	Good	30	TQ6826791563	400	**0.77**	**Good**

*Factor estimated based on observations at time of survey and any other information available

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