Preliminary Ecological Appraisal.

Site:
Green Pasture
The Street
Tivetshall St Mary
Norfolk
NR15 2BT

Final report: 15th December 2023.

Author: John Parden
Natural England Licence: Licence No's : 2015-14697-CLS-CLS (Bats)
2021-53785-CLS-CLS (GCN)

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1.0 Executive summary

John Parden (Licensed ecologist) of JP ecology was commissioned by Roberts Molloy (Instructing agent) to undertake a Preliminary Ecological Appraisal including a protected species and habitats survey at Green Pasture, The Street, Tivetshall St Mary. NR15 2BT
The survey is required for inclusion with a planning application for the construction of a new domestic dwelling on the site.
The site was surveyed by John Parden of JP ecology on 30th October 2023
The site is currently within the grounds and garden of an existing domestic residence.

The scoping survey determined that habitats within the site are entirely domestic garden with a simple structure offering cover to stored materials. The site is surrounded by a hedgerow.

Desktop survey included a search for designated sites of ecological interest and a data search for records of protected species on or within the immediate vicinity of the site.
There are no sites designated for their ecological interest within close proximity of the site, the SSSI risk Zone analysis returned no requirement to consult with Natural England.
There are two ponds shown on OS maps within 250m, they were assessed as being average and poor suitability for breeding GCN, one of which has previously been surveyed for GCN (2012) and found not to support a breeding population of the species.

The desktop survey identified that a part of the site is listed as BAP Priority Habitat, Traditional Orchard. The site was occupied by fruit trees which were not protected under TPO, most have recently been cleared, the site has four apple trees remaining. Under the NERC act 2006 there is an obligation for Local Authorities to give regard to priority habitats. It is proposed that the development offers an opportunity to restore an orchard of traditional species fruit trees, albeit across multiple settlements and along linear boundaries.

Nesting birds. No active birds nests were observed at the time of the survey however given that trees and shrubs will require removal they should be searched for nesting birds prior to their clearance.

No other rare or protected species would be affected by the proposed development.

Mitigation and enhancement.
General advice.

- An Ecological Clerk of Works (ECoW) should be appointed prior to the commencement of works on site and their contact details should be made available to the development contractors.
- All mitigation and enhancements should be implemented under the supervision of the ECoW and upon completion the client should be provided with a document recording any mitigation actions taken and demonstrating compliance with the BEP (attached in appendix 5). The document is to be provided to the client and held as proof of compliance should it be requested for any reason.
- Advice must be sought from an ecologist if any protected species are inadvertently disturbed.

Mitigation.

- Nesting birds –
  - Nesting birds should not be disturbed during the nesting season typically 1st March to 31st August (species dependant).
  - Should it be necessary to strip the site during the nesting season, specifically clearance of trees and shrubs, the site should be searched by a suitably qualified ecologist for nests and any active nests protected until the young have fledge.
- Bats
  - All external lighting should be sensitive to bats.
    - The building should not be floodlit.
    - The lighting of driveways and pathways should be at ground level or low level lighting.
    - All lighting should be downward facing and shrouded to prevent light spillage.
- Site clearance (generic).
  - Amphibians. The specifics of the clearance of the site with regard to Amphibians are as follows:
    - Any debris piles should be dismantled by hand and the materials kept in skips until moved off site or disposed of.
    - Any debris and materials arising from the proposed construction should be stored in skips and/or on pallets to prevent creating refuge sites for reptiles or amphibians.
    - Should conditions on site change and the vegetation become unmanaged. The clearance of ruderals and vegetation > 300mm in height should be done during spring / summer (Feb to October) when amphibians and reptiles are active, all vegetation should be cut down to 150mm above ground level and left for at least an hour before final clearance to allow any reptiles or amphibians that may be present to disperse or to be carefully relocated to hedgerows in the local vicinity. Once cleared the land should be maintained as bare ground or short mown grassland throughout the development process.
    - If a great crested newt is discovered at any stage of the development, work should cease immediately, and an ecologist should be contacted for further advice.
    - The section of hedgerow to be removed to create site entrances should be cut at the base and the stumps / roots left overnight before removal of the root system. This work should avoid the winter months when amphibians may be in hibernation. (Winter months are typically November to March. Note potential conflict with nesting bird legislation).
    - Any leaf litter or debris at the base of the hedgerow should be searched for amphibians prior to removal of the stumps and roots.
  - Small mammals including hedgehogs.
    - Any debris and materials arising from the proposed construction should be stored in skips and/or on pallets to prevent creating refuge sites for reptiles or amphibians.
    - Clearance of any debris or waste should be done sensitively with consideration to disturbance of hedgehogs.
    - Should conditions on site change and the vegetation become unmanaged. Vegetation above 300mm above ground level should not be cleared until temperatures are above 6C for at least 6 consecutive days to avoid disturbance of hibernating hedgehogs.
    - Any fences that might be erected should include a gap of 150mm long by 100mm high at some point in the base of each run of fencing to enable terrestrial vertebrates, including hedgehogs, to migrate through the plot and prevent entrapment. On long runs of fencing these should be located every 20m.

Precautionary mitigation, all terrestrial species.

- To promote best practice and avoid the risk of causing injury or harm to small mammals, amphibians and reptiles during the construction process the generic method statement attached in appendix 4 should be made available to all contractors.

Ecological Enhancement (Illustrate in Biodiversity Enhancement Plan, Appendix 5).

- Birds. - 2 x House sparrow terrace bird box and 1 x Schweglar 2FE built in bat box, to be mounted in appropriate locations on the buildings as specified and shown on the biodiversity enhancement plan (appendix 5).
- Hedgerow. A total of approximately 80 linear meters of indigenous species rich hedgerow to be planted along the boundaries as specified and shown in the biodiversity enhancement plan (appendix 5).
- Traditional orchard restoration. A total of 19 traditional variety apple trees to be planted across the multiple settlements and around the boundaries as indicated on the biodiversity enhancement plan (appendix 5).

Clients responsibility towards protected species.
The site owner has a responsibility to ensure that protected species or their resting places are not killed, injured or disturbed as a consequence of their actions.

Whilst the results of the survey are considered to be conclusive at the time that the survey was conducted, there is always a possibility that protected species might occupy the site between the period of the survey and the commencement of any works on the site. If any protected species are discovered during any construction works a qualified ecologist should be contacted for advice or assistance.

Contact details of suitably qualified and licenced ecologist:
John Parden, Natural England licenced ecologist (Licence no. 2016-20270-CLS-CLS, 2021-53785-CLS-CLS)
JP ecology – Office: 01379 586830 Mobile:07908 748079

If conditions within the development site / buildings or the development proposals are significantly altered prior to the planning application being submitted then further advice should be sought from an ecologist to ensure that the conclusions of the ecological survey remains valid.

Contents:

2.0: Contact details:

Client:

Mr & Mrs Pye
Green Pasture
The Street
Tivetshall St Mary
Norfolk
NR15 2BT

Ecological Surveyor:

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Natural England Bats (All species) Licence No. 2015-14697-CLS-CLS (Bats)
2021-53785-CLS-CLS (GCN)

3.0 Introduction:

3.1 Brief:

John Parden (Licensed ecologist) of JP ecology was commissioned by Roberts Molloy (Instructing agent) to undertake a Preliminary Ecological Appraisal included a habitats and protected species survey (All relevant protected species and habitats) in and around the gardens outbuildings and garage at Green Pastures, The Street, Tivetshall St Mary, Norfolk.

3.2 Site development proposals:

Site plans are attached in Appendix 1.

The site is subject to a planning application including:

- Erection of a four domestic dwelling.

For the purposes of the ecological survey it is assumed that:

- There will be no temporary ecological impacts outside of the defined development areas as shown in the site plans (appendix 1).
- All access points used for construction traffic and temporary hard standing areas used for the storage of building materials will be within the curtilage of the property as defined in the site plans.
- All excess excavated materials will be disposed of away from site.
- No ponds or watercourses will be lost or disturbed by the development works.
- Two new entrances will be created and used for site access.
- There will removal of boundary hedgerows to create a new entrances to facilitate the development.
- There will be removal of trees to facilitate the development.
- The existing boundary hedgerows will be retained.

3.3 Scope of the survey:

The survey includes:

- A desktop survey.
- A site scoping survey for all rare and protected species and habitats.

3.4 Survey objectives:

The survey aimed to establish:

- Whether protected species were present on the site or within the immediate vicinity of the site and would be impacted upon by the development.
- Whether the development will impact upon any protected habitats.
- Whether the development was likely to have any long-term impact upon the local biodiversity.

3.5 Survey methodology

The survey and methodologies employed were in general accordance with the principles described within the British Standards Institute BS42020 – Biodiversity code of practice for planning and development.

Desk top survey – Ecological information pertaining to the site has been compiled from various sources including, Magic Maps (Defra), GNC risk zone (Natural England), Suffolk Biological Information Service.

Habitats - Consideration was given to undertaking a Phase 1 Habitats Survey in accordance with JNCC 1993 methodologies. Given that the site is a simple complex of built environment and managed garden a simple illustrated description was considered to be appropriate.

Pond Survey – There are two ponds within 250m of the proposed development works. These were subject to a GCN Habitat Suitability Assessment in accordance with ARG UK Great Crested Newt Habitat Suitability Index survey methodology Advice Note 5 (May 2010).

Bat Survey – the bat scoping survey of the trees was conducted in accordance with the guidance described in 'Bat Survey Good Practice Guidelines 3rd edition' 2016.

Other species were surveyed by looking for tracks, droppings, feeding evidence and field signs.

4.0 Survey results.

4.1 Desktop Survey

Norfolk Biological Information Service and Defra Magic Maps were contacted to provide a data search for protected species, habitats and sites designated for their ecological interest within 2km radius of the development site.

Fig 1. Plan illustrating the local record search.

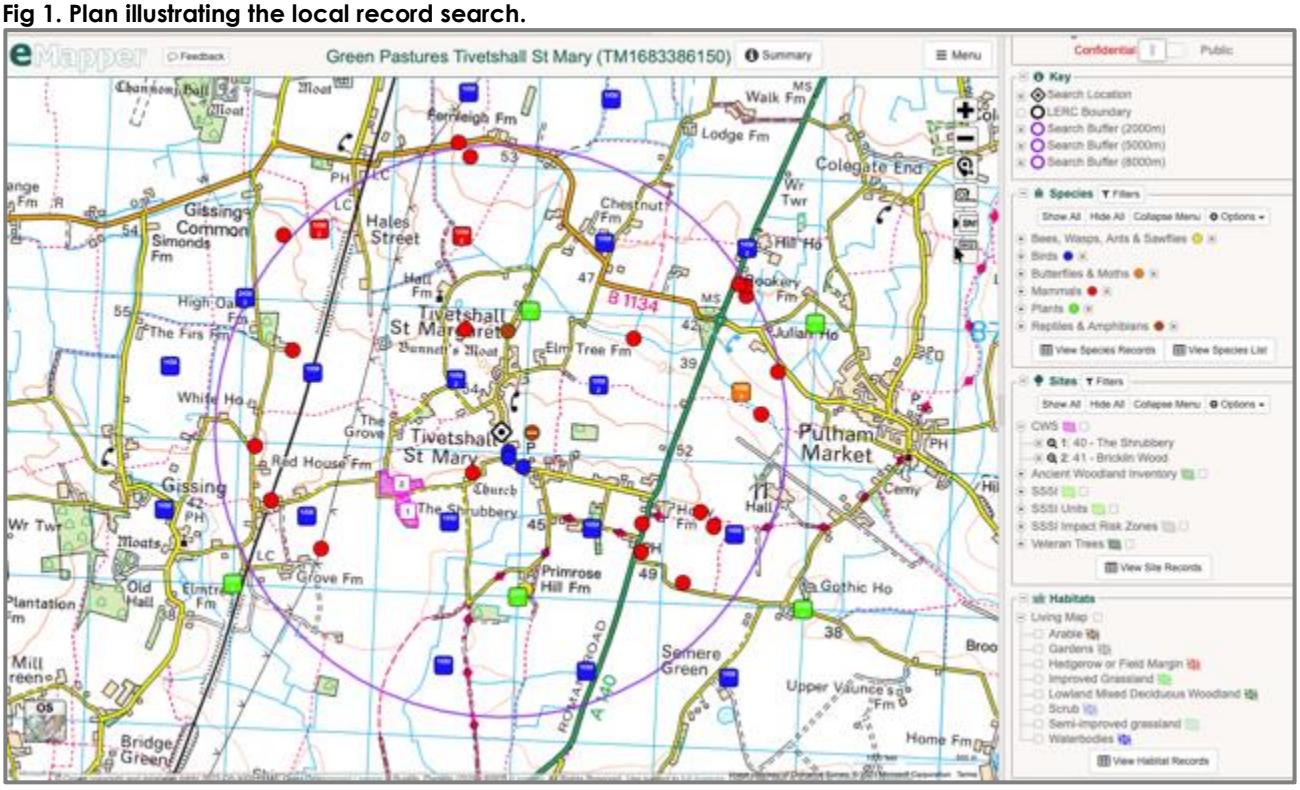
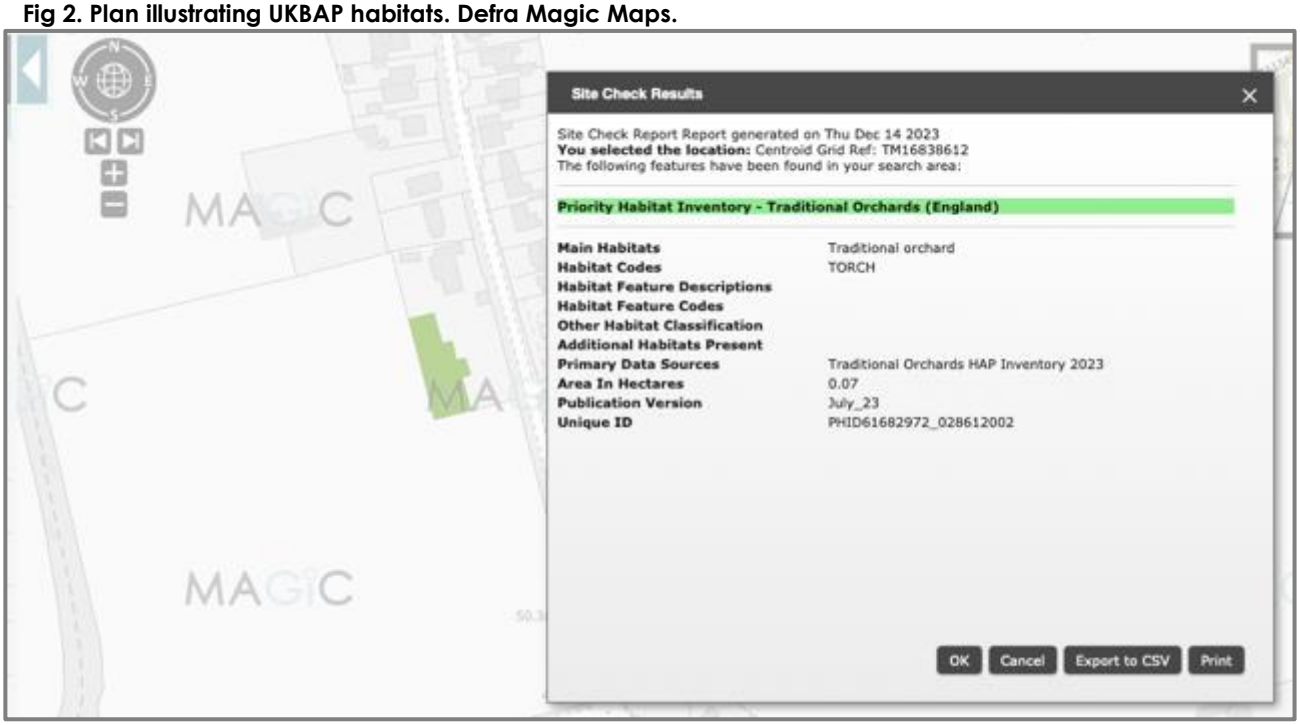


Fig 2. Plan illustrating UKBAP habitats. Defra Magic Maps.



Protected species and habitats:
There are no records of rare or protected species on the site.
The site is designated as BAP priority habitat, Traditional Orchard.
Of those species potentially relevant to the site;

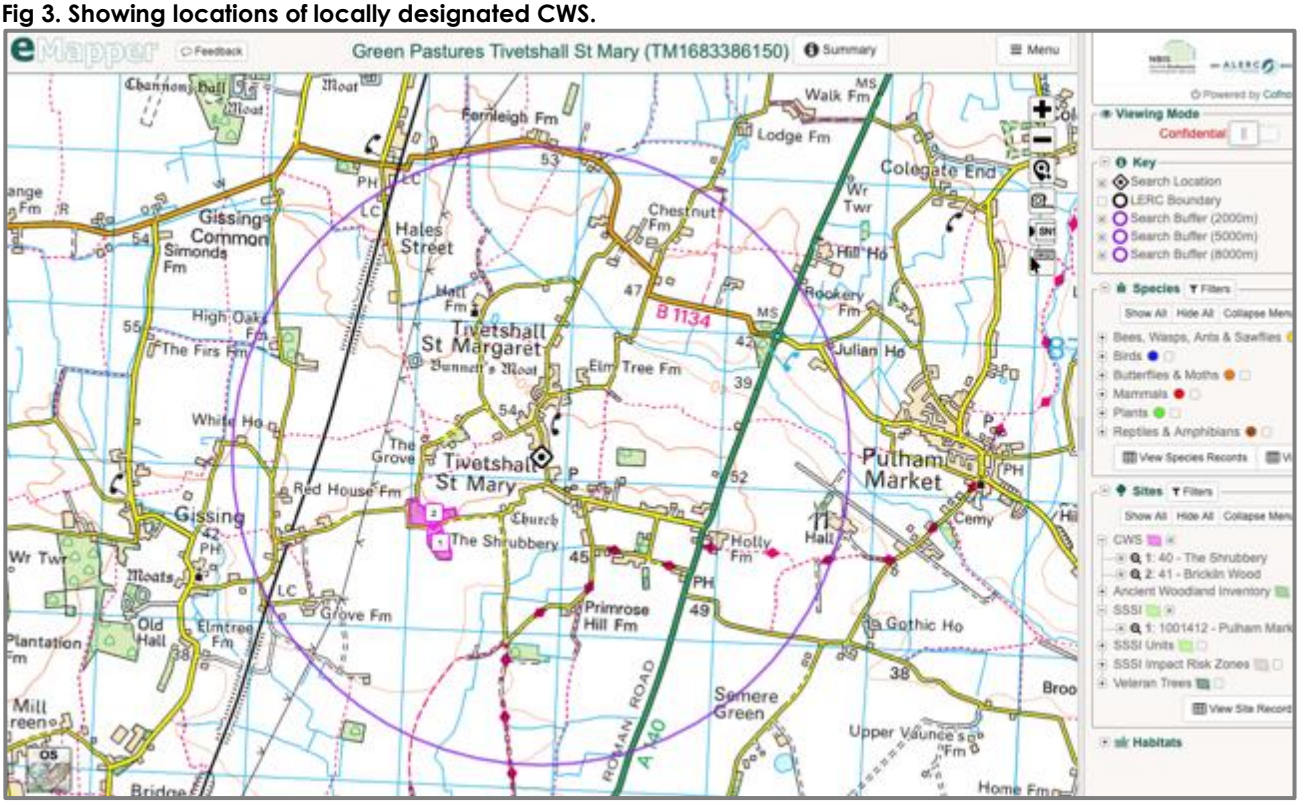
Sites designated for their ecological interest.
There are no sites locally or nationally designated for their ecological interest adjacent to or connected to the site by continuous ecological corridors.

Sites locally designated for their ecological interest.
There are two County Wildlife Sites locally designated for their ecological interest within a 2km radius. Neither are connected by continuous ecological corridors. They are adjacent to each other and both located approx. 0.8km to the south west of the proposed development site.

The sites locally designated for their ecological interest within 2km radius are:

- CWS40 The Shrubbery
- CWS41 Brickiln Wood

Fig 3. Showing locations of locally designated CWS.

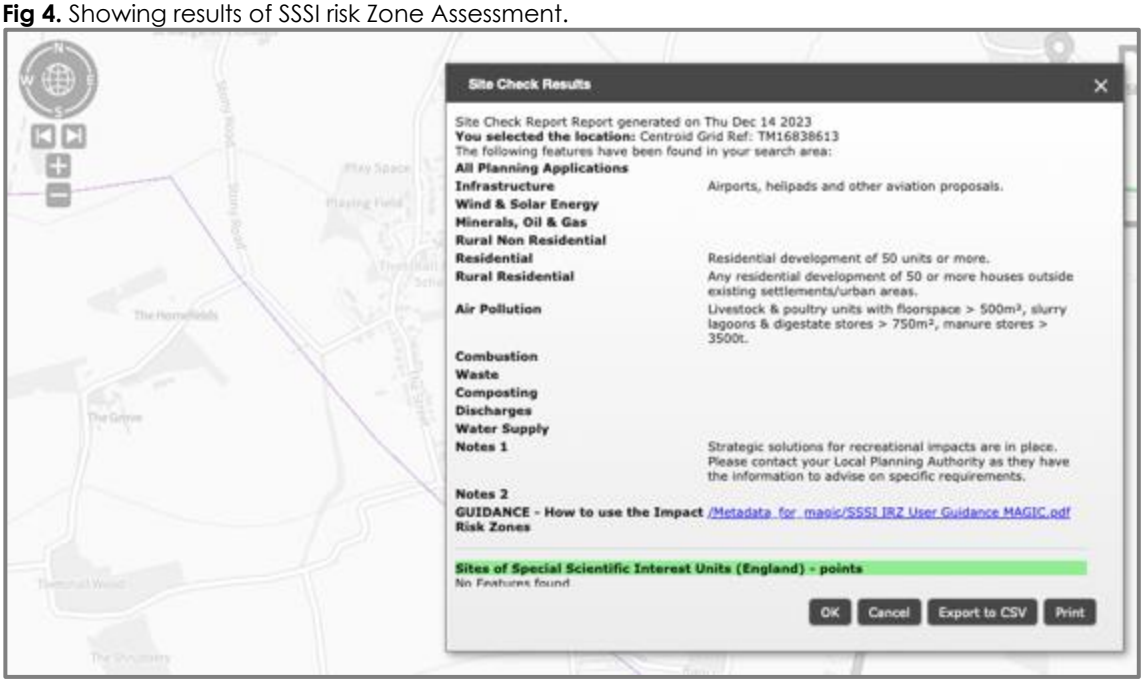


Sites of Special Scientific Interest.
There are no site Nationally designated for their ecological interest within 2km of the development site.
The nearest SSSI is;

- Pulham Market Big Wood SSSI. Located 5km to the north east.

SSSI Impact risk zone.
An SSSI Risk Zone Assessment was run to determine whether the development would require consultation with Natural England.
The results did not trigger any requirement for consultation with Natural England.

Fig 4. Showing results of SSSI risk Zone Assessment.



Pond and waterbodies:
A search area of 250m for ponds and 200m for permanent named watercourses was considered appropriate based upon:

- The development is classified as Minor, being for a four domestic residences and less than 0.5Ha.
- The site is maintained as managed domestic gardens and built environment.

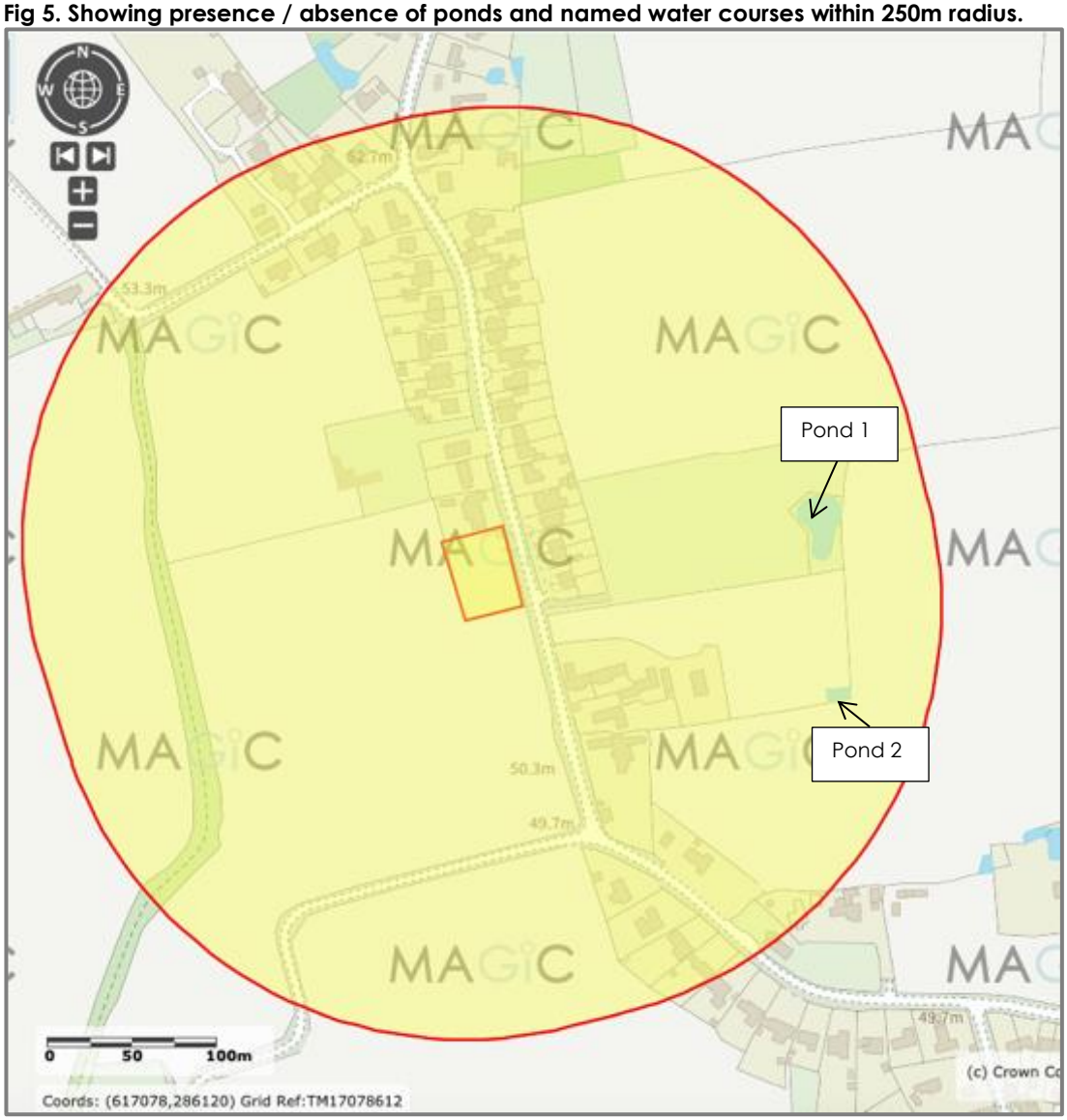
Ponds: There are two ponds shown on OS maps within 250m of the development.

The ponds are located at:

- Pond 1. Grid Ref: TM17038615 approx 175m to the east.
- Pond 2. Grid Ref: TM17058605 approx 180m to the south east

Watercourse: There are no named watercourses within 200m of the site.

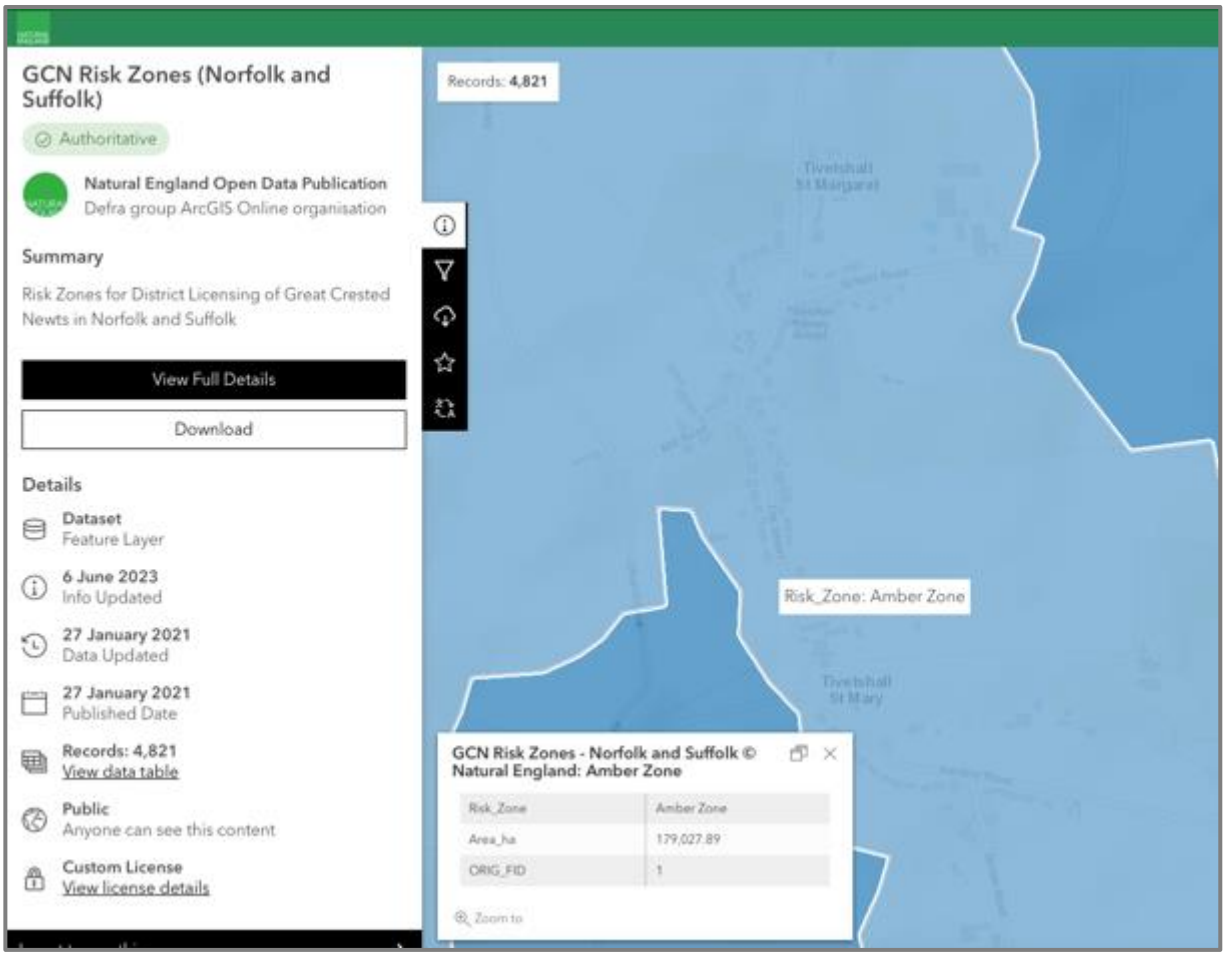
Fig 5. Showing presence / absence of ponds and named water courses within 250m radius.



Previous surveys of Ponds 1 & 2 to support recent planning applications.
A search of the South Norfolk Planning Portal was conducted for previous surveys of ponds 1 & 2.
A survey of pond 1 was conducted by Norfolk Wildlife Services in 2012 which identified no evidence of a population of GCN.

Fig 6. Showing GCN Risk Zone.
GCN Risk Zone.

The site is within an 'Amber' GCN risk zone.



BAP Habitat Traditional Orchard.

Given the site has been designated a BAP Habitat Traditional Orchard. Further research was conducted as to its historic status.

- OS maps of 1956 show the site to be agricultural land and part of a larger field extending to the east. There in no indicate of the presence of an orchard.
- The land was enclosed as garden by previous generations of the current site owner in 1975.
- Prior to being enclosed as garden the site was agricultural land, arable and pasture.
- The current site owner informed that the fruit trees were planted in the late 1970's and areal photographs suggest their numbers have fluctuated from around 15 to 18 trees. Ref Google Earth.
- Current status - The fruit trees were cleared in 2023 there are currently four fruit trees remaining on the site.

Fig 7. Showing Google Earth image dating to 1999 showing 16 trees on the site.

Tree protection orders.
Given the status of 'BAP priority habitat Traditional Orchard' a search was conducted for any legal protection of the trees on the site. No trees on or adjacent to the site are currently, or have previously been, protected by Tree Protection Orders (TPO's).

Fig 8 Showing location of TPO's in the vicinity of the development site Ref: South Norfolk and Broadland Planning Portal.

Definition of tradition orchards. (Ref.JNCC UK Biodiverity Action Plan Priority Habitat Descriptions. Traditional Orchards).

The definition of 'Traditional Orchard' as describes by JNCC introduces the habitat as '*A composite habitat (similar to wood-pasture and parkland), defined by their structure rather than vegetation type, which can include trees, scrub, grassland, ponds, walls, hedgerows and hedgerow trees. Traditional orchards can take several different distribution patterns including small and large patches, along linear boundaries , and trees dispersed among settlements*'.

The full definition is available at https://data.jncc.gov.uk/data/2829ce47-1ca5-41e7-bc1a-871c1cc0b3ae/UKBAP-BAPHabitats-56-TraditionalOrchards.pdf

Whilst the criterion for the designation of this site as Traditional Orchard is unknown it does not appear to satisfy the definition, being recently planted (post 1975) apple trees set within a domestic garden and without any similarity to wood-pasture or parkland.

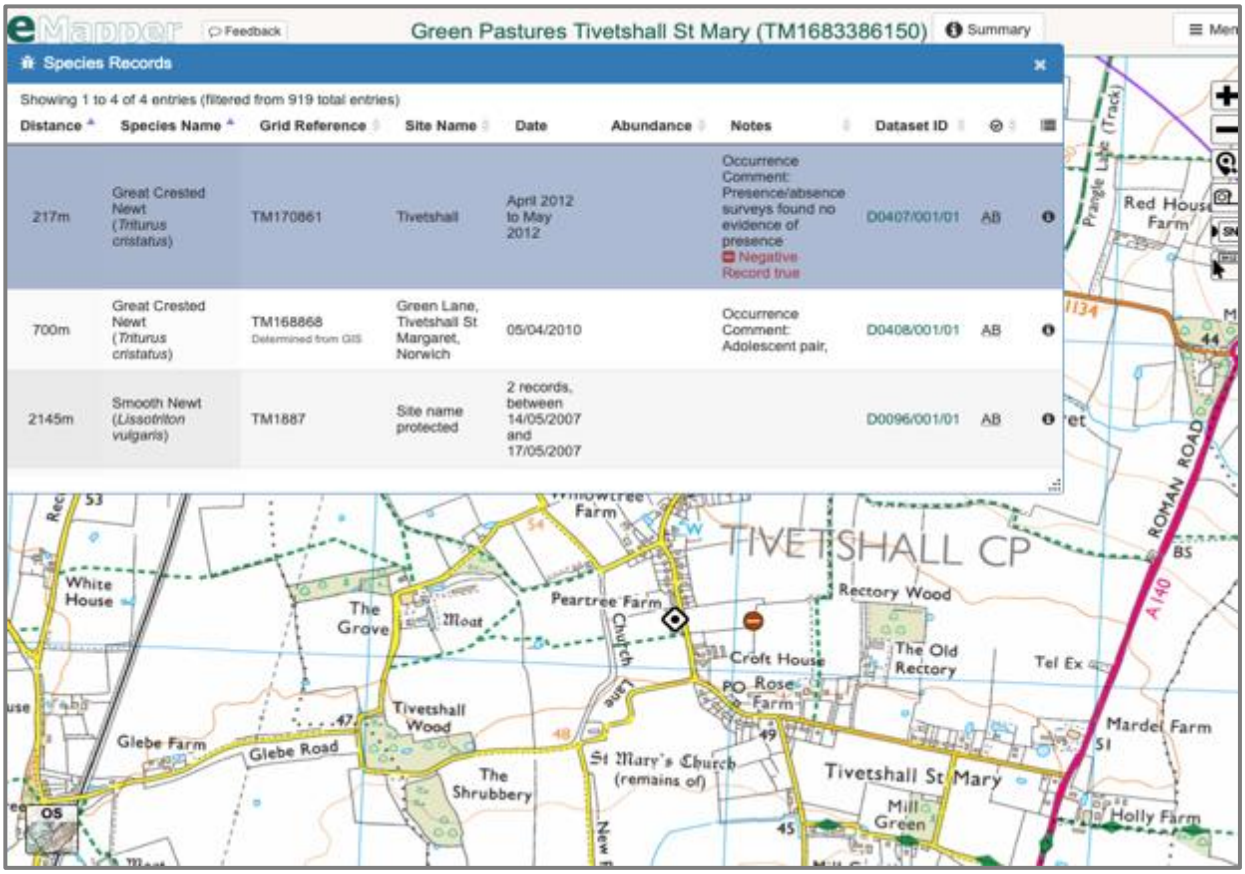
However - Given that the site has BAP habitat designation, enhancement proposals have been designed to recreate an apple orchard of similar size to that previously occupying the site, using traditional varieties of apple tree planted within domestic garden settings (as previous) and set within linear boundaries and across the multiple settlements on the site, which will create an orchard that partially complies with the definition of 'traditional orchard'.
(see section 5 below and Biodiversity Enhancement Plan in appendix 5)

Protected species.

The protected species that are considered to be of greatest potentially relevant to the site are:
- Amphibians & Reptiles including GCN.

The local record search returned
- One record of GCN 700m to the north of the site.
- One negative record for GCN within pond 1.
- No records of any other reptiles or amphibians within a 2km search area.

Fig 9. Illustration the local record search for amphibians and reptiles including GCN.



Note: The absence of records does not imply the absence of those species, however it does suggest the local area does not support a significant known population of those species.

4.2 Scoping Survey Results.

The site was surveyed by John Parden of JP ecology on 30th October 2023. The conditions on the day were suitable to conduct a conclusive survey.

4.2.1 General description of the site.

The site is located in a semi-rural setting within the village of Tivetshall St Mary, with built environment to the north and east and agricultural land to the south and west.

Surrounding habitats include:

- To the north – domestic residence.
- To the east – Public highway and domestic residence.
- To the south – Agricultural land, arable.
- To the west – Agricultural land, arable.

The site is currently part of a domestic residence.

4.2.2 Habitats. (also see Appendix 2 for photographs and illustrations)

Habitats within the defined development are entirely.

- Structures – A simple canopy structure / garden shed.
- Managed domestic grounds and gardens, primarily lawn with vegetable patch, conifers and fruit trees.
- The site is surrounded by indigenous species hedgerows on the west south and east boundaries.
- Areas of recently unmanaged ruderals and bramble.
- Ref. Traditional Orchard - The fruit trees have mostly been removed and there were four trees remaining at the time of survey.
- The site is surrounded on three sides by mono-species hedgerows, field maple and beech.
- There was one large and small number of young spruce trees, grown as Christmas trees for sale, present on site.

There are no natural or semi-natural habitats on the site.

The proposals include the removal of sections of hedgerow (approx. 10 linear meters) to create new entrances.

Impact assessment - Discussion and conclusion

The site is located within an semi-rural environment and has no natural or semi-nature habitats within its boundaries, being located within the curtilage and grounds & gardens of a domestic residence and subject to management by mowing. The orchard has been removed.

The proposals inclue the removal of 10 linear meters of hedge.

The proposed development will not result in the loss of any rare, natural or semi natural habitats.
The proposed development does offer the opportunity to re-establish an orchard of traditional variety fruit trees, albeit within boundaries features and across multiple properties.

4.2.3 Ponds and watercourse

4.2.3.1 Watercourse

There are no permanent or named watercourses within 200m.

4.2.3.2 Ponds including the likelihood of impacting upon Amphibians including Great crested newt (GCN)

There are two pond on or within 250m of the proposed development site.
No aquatic habitats will be lost or directly impacted by the development proposals.
The ponds were subject to a great crested newt habitat suitability assessment (see appendix 3) which determined.

- Pond 1. A field pond located on a field boundary approximately 175m from the proposed development and separated by domestic residence and a public highway (minor). The pond is permanent, never dries and is populated by fish and occasionally visited by wildfowl. It was classified as being 'below average' habitat suitability for GCN.
  The pond was surveyed in 2012 for GCN buy Norfolk Wildlife Services and found not to support a population of breeding GCN, but supporting a good population of fish.
- Pond 2. An small pond associated with a drainage ditch approximately 180m from the development site and separated by domestic residences and a public road (minor). Suggested that it dries frequently with evidence in the form of a patch of soft rushes growing within the pond, a species more typically associated with boggy ground than an aquatic species. The pond is occasionally visited by wildfowl and was supporting moorhen at the time of the survey. It was classified as being 'below average' habitat suitability for breeding GCN.

Impact assessment - Discussion and conclusions.
No aquatic habitats will be lost or directly impacted upon by the proposed development.

- There are ponds within 250m of the proposed development.
- The ponds scored 'below average' habitat suitability for GCN.
- Previous surveys of pond 1 (2012) found no evidence of GCN.
- Both ponds are separated from the development site by domestic residence and a minor public highway.
- Given the development site is managed domestic garden the majority of the site does not offer favourable terrestrial habitats for GCN.

There are areas of habitats on the site that could potentially offer a habitat suitable for terrestrial amphibians, these are limited to the hedge bottoms and areas of overgrown ruderals.

It is reasonable to suggest that the greatest risk to GCN will be causing injury or harm to individuals migrating through the site during the development process based upon:

- No aquatic habitats will be lost or impacted upon by the proposed development.
- The proposed development is within mainly managed domestic garden, which is not a favourable habitat for terrestrial amphibians including GCN.
- The absence of GCN records suggest the site is not within an area know to support a significant population of GCN.
- The site is within an 'Amber' GCN risk zone.
- The ponds within 250m scored below average habitat suitability for breeding GCN.
- Previous surveys of pond 1 returned a negative result for GCN.
- The only terrestrial habitats on the site that could potentially offer favourability for terrestrial GCN are the small section of hedgerow along the frontage that requires removal to create the new entrance and the areas of overgrown ruderals on the site.

It is proposed that a mitigation proposals for site clearance included in section 5 below, are sufficient to reduce the risk of causing injury or harm to terrestrial amphibians, including GCN, to 'negligible'.

4.2.4 Protected Species. Potential impacts.

4.2.4.1 Bats

Trees - There were four fruit trees, a young oak, and a small cluster of spruce trees (Christmas trees grown for sale) and a single large spruce tree on the site at the time of the survey. All trees are proposed to be removed to facilitate the development.
All trees were assessed as offering 'Negligible' bat roosting potential.
No further surveys are required to support the conclusions.

Structures. The site includes a simple canopy structure used to offer shelter to stored items and materials.
The structures was of simple timber construction with a curved corrugated metal roof.
The structures did not offer cavities or voids within its fabric that are favourable for roosting bats.

The building was classified as 'Negligible' bat roosting potential based upon:

- The structures was a simple canopy and offer no cavities or voids that could offer bat roosting opportunities.
- No bats or evidence of bats in the form of feeding remains, bat droppings, or urine splashes could be found within the structure.

In accordance with the current best practice guidelines, bat activity surveys are not required to support the findings and conclusions.

Impact assessment - Discussion and conclusions.
The survey results determined the buildings and trees on the site were not being used by roosting bats.
Given the development will have no impacts upon any roosting bats, any impacts will be restricted to foraging / commuting bats. It is recommended that external lighting is minimized and sensitive to bats.
Advice on lighting is offered in the mitigation proposals in section 5 below.

4.2.4.2 Nesting Birds.

No active birds nests were observed during the survey, however the site does include trees and shrubs including a sections of hedge to be removed.
Additionally birds will nest in the most unlikely of locations and as such nesting birds are always a consideration on all development sites.

Impact assessment - Discussion and conclusions.
Nesting birds will be a consideration within the trees and shrubs to be removed, and the possibility always exists that a nesting bird might be found during the construction process.
Nesting birds are legally protected and advice is offered in Mitigation and Enhancements below.

4.2.4.3 Other protected species.

The site does not offer suitable habitats or connectivity within the wider landscape to support other protected species such as Otter, water vole, hazel dormouse or larger mammals such as deer or badger.

Given the site is located within a semi-rural environment it does potentially offer the possibility that it might be visited and utilized by a range of terrestrial species such as hedgehog, fox.

Impact assessment - Discussion and conclusions.
Given the likelihood of the site being occasionally visited by terrestrial mammals of various species, mitigation and enhancements to minimise any potential impacts are included below in Mitigation and Enhancements.

4.2.5 Conclusions.

The desktop survey determined:

- There are no sites locally or nationally designated for their ecological significance adjacent to or connected to the site by continuous ecological corridors.
- The site does include an area designated as BAP priority habitat, traditional orchard. Fruit trees have recently been removed.
- The development proposals do not trigger the requirement to consult with Natural England for comment.
- There are two ponds shown on OS maps within 250m of the development site,
- There are no watercourses within 200m of the site.
- There are no records of rare or protected species or habitats on the site.

The Site survey determined.

- The site is set within the grounds of an domestic residence located in a semi-rural location in the village of Tivetshall St Mary.
- There are no natural or semi-natural habitats on the site. The habitats on site is entirely domestic garden, including vegetable patch and mown lawns, a simple structure. There are recently unmanaged areas within which ruderals have established. The site is surrounded by indigenous mono-species species hedgerows on three sides.
- The trees and structure on site offered negligible bat roosting opportunities.
- Any impacts on bats will be restricted to foraging / commuting bats. It is recommended that external lighting is minimized and sensitive to bats.
- The site will have no direct or indirect impact on any aquatic habitats.
- Ponds within 250m of the proposed development scored 'below average' habitat suitability for GCN.
- The development site offers only limited favourable to terrestrial amphibians or reptiles given the habitats are entirely managed domestic garden.
- The area of the site that could potentially offer favourable terrestrial habitat for amphibians are the hedge bottom and the recently unmanaged areas of the site, where ruderals have established.
- The site clearance mitigation proposals included in section 5 are considered sufficient to reduce to 'negligible' the risk of causing injury or harm to any amphibians migrating through the site during the construction process.
- Nesting birds will be a consideration, there are trees and a section of hedge that require removal and the possibility always exists that a nesting bird might be found during the construction process. Nesting birds are legally protected and advice is offered in Mitigation and Enhancements below.
- There are no habitats on the site that could potentially support any other protected species.
- Wildlife generally is always a consideration and consequently advice is offered in Enhancements and Mitigation to encourage Best Practice and minimise any potential impacts on terrestrial vertebrates.

5.0 Mitigation and Enhancements.

5.1 General advice.

- An Ecological Clerk of Works (ECoW) should be appointed prior to the commencement of works on site and their contact details should be made available to the development contractors.
- All mitigation and enhancements should be implemented under the supervision of the ECoW and upon completion the client should be provided with a document recording any mitigation actions taken and demonstrating compliance with the BEP (attached in appendix 5). The document is to be provided to the client and held as proof of compliance should it be requested for any reason.
- Advice must be sought from an ecologist if any protected species are inadvertently disturbed.

5.2 Mitigation.

- Nesting birds –
  - Nesting birds should not be disturbed during the nesting season typically 1st March to 31st August (species dependant).
  - Should it be necessary to strip the site during the nesting season, specifically clearance of trees and shrubs, the site should be searched by a suitably qualified ecologist for nests and any active nests protected until the young have fledge.
- Bats
  - All external lighting should be sensitive to bats.
  - The building should not be floodlit.
  - The lighting of driveways and pathways should be at ground level or low level lighting.
  - All lighting should be downward facing and shrouded to prevent light spillage.
- Site clearance (generic).

  Amphibians. The specifics of the clearance of the site with regard to Amphibians are as follows:
  - Any debris piles should be dismantled by hand and the materials kept in skips until moved off site or disposed of.
  - Any debris and materials arising from the proposed construction should be stored in skips and/or on pallets to prevent creating refuge sites for reptiles or amphibians.
  - Should conditions on site change and the vegetation become unmanaged. The clearance of ruderals and vegetation > 300mm in height should be done during spring / summer (Feb to October) when amphibians and reptiles are active, all vegetation should be cut down to 150mm above ground level and left for at least an hour before final clearance to allow any reptiles or amphibians that may be present to disperse or to be carefully relocated to hedgerows in the local vicinity. Once cleared the land should be maintained as bare ground or short mown grassland throughout the development process.
  - If a great crested newt is discovered at any stage of the development, work should cease immediately, and an ecologist should be contacted for further advice.
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  - Any leaf litter or debris at the base of the hedgerow should be searched for amphibians prior to removal of the stumps and roots.

  Small mammals including hedgehogs.
  - Any debris and materials arising from the proposed construction should be stored in skips and/or on pallets to prevent creating refuge sites for reptiles or amphibians.
  - Clearance of any debris or waste should be done sensitively with consideration to disturbance of hedgehogs.
  - Should conditions on site change and the vegetation become unmanaged. Vegetation above 300mm above ground level should not be cleared until temperatures are above 6C for at least 6 consecutive days to avoid disturbance of hibernating hedgehogs.
  - Any fences that might be erected should include a gap of 150mm long by 100mm high at some point in the base of each run of fencing to enable terrestrial vertebrates, including hedgehogs, to migrate through the plot and prevent entrapment. On long runs of fencing these should be located every 20m.

5.3 Precautionary mitigation, all terrestrial species.

To promote best practice and avoid the risk of causing injury or harm to small mammals, amphibians and reptiles during the construction process the generic method statement attached in appendix 4 should be made available to all contractors.

5.4 Ecological Enhancement (Illustrate in Biodiversity Enhancement Plan, Appendix 5).

- Birds. - 2 x House sparrow terrace bird box and 1 x Schweglar 2FE built in bat box, to be mounted in appropriate locations on the buildings as specified and shown on the biodiversity enhancement plan (appendix 5).
- Hedgerow. A total of approximately 80 linear meters of indigenous species rich hedgerow to be planted along the property boundaries as specified and shown in the biodiversity enhancement plan (appendix 5).
- Traditional orchard restoration. A total of 19 traditional variety apple trees to be planted across the multiple settlements and around the boundaries as indicated on the biodiversity enhancement plan (appendix 5).

5.5 Clients responsibility towards protected species.

The site owner has a responsibility to ensure that protected species or their resting places are not killed, injured or disturbed as a consequence of their actions.

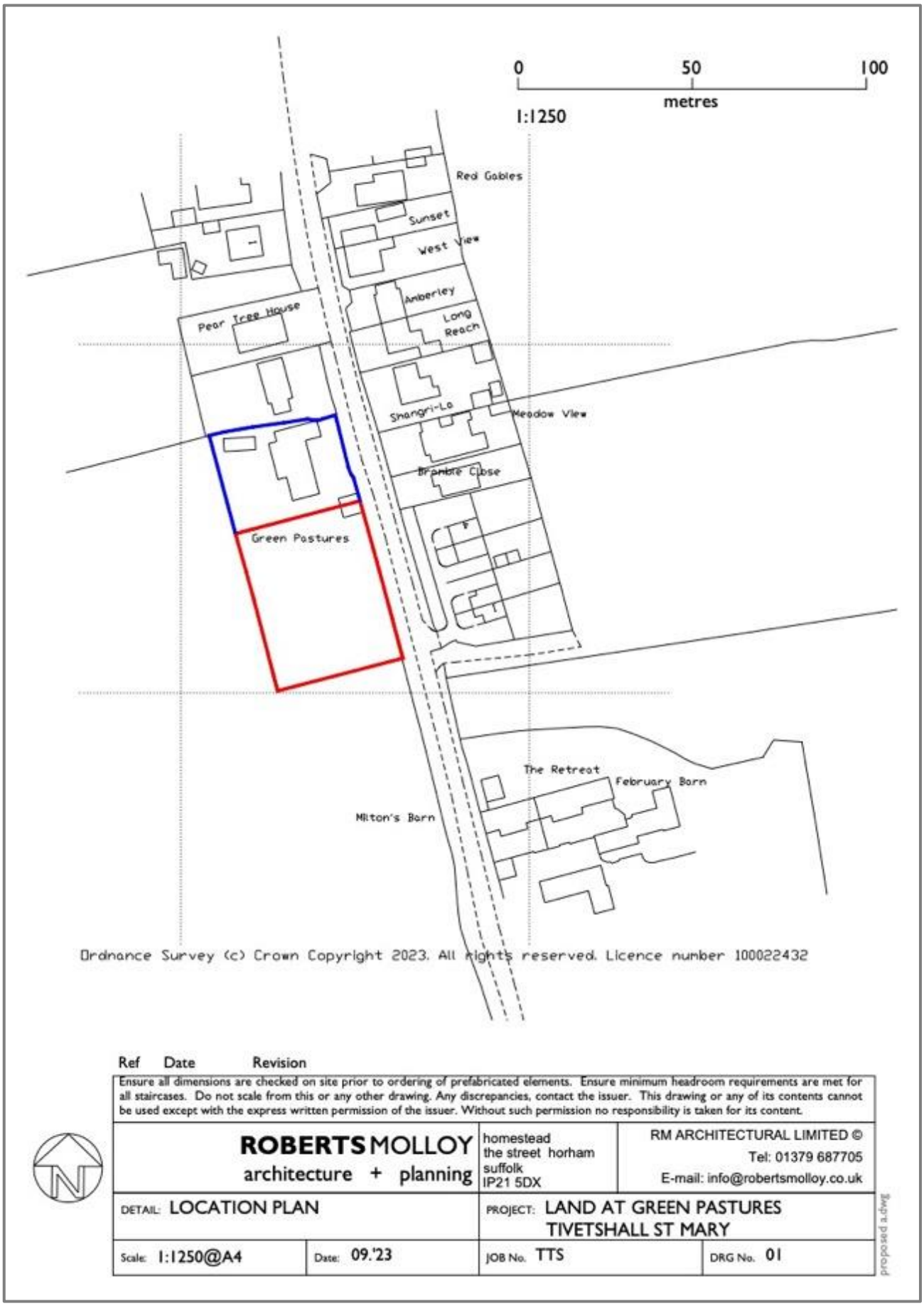
Whilst the results of the survey are considered to be conclusive at the time that the survey was conducted, there is always a possibility that protected species might occupy the site between the period of the survey and the commencement of any works on the site. If any protected species are discovered during any construction works a qualified ecologist should be contacted for advice or assistance.

Contact details of suitably qualified and licenced ecologist:
John Parden, Natural England licenced ecologist (Licence no. 2016-20270-CLS-CLS, 2021-53785-CLS-CLS)
JP ecology – Office: 01379 586830 Mobile:07908 748079

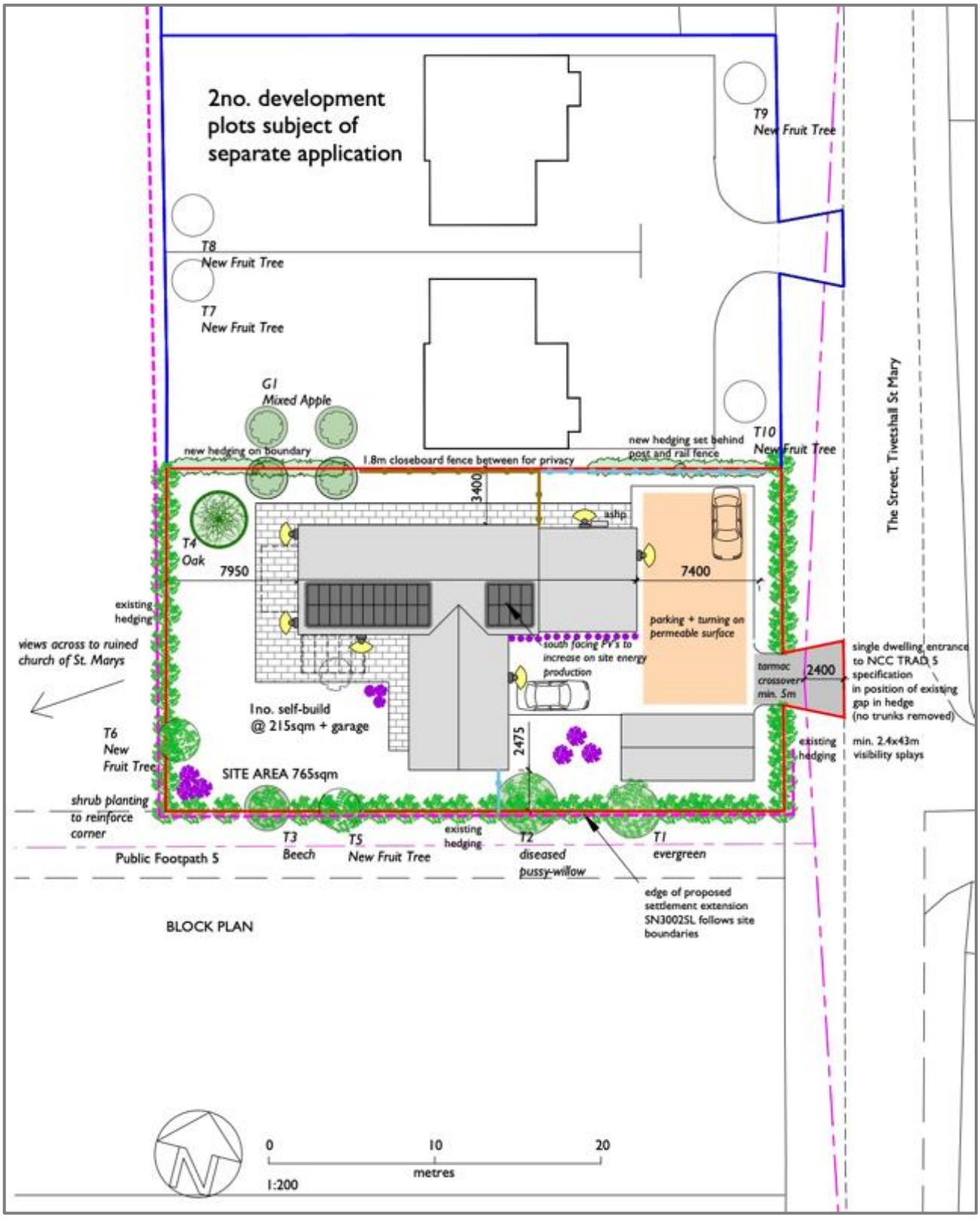
If conditions within the development site / buildings or the development proposals are significantly altered prior to the planning application being submitted then further advice should be sought from an ecologist to ensure that the conclusions of the ecological survey remains valid.

Appendix 1.
Site plans.

Plan 1. Site location plan.



Plan 2. Proposed block plan.



Appendix 2.

Illustration of habitats on the site.

Table 1. Illustrating habitats on the site.		
Photo number	**Image.**	**Notes.**
1		General image of the site looking towards the south west, showing the majority of the site managed as mown lawn. Also showing Spruce trees, remaining fruit trees and boundary hedgerows.
2		Image of fruit and vegetable patch, looking towards the western boundary.
3		Image of the beech hedge along the western boundary.

Table 1. Illustrating habitats on the site.		
Photo number	**Image.**	**Notes.**
4		Typical image of the remaining fruit trees, managed by pruning and without dead wood or rot holes. Also showing spruce trees Christmas trees, grown for sale.
5		Image of southern beech hedge boundary also showing the willow tree within the hedgerow that was subject to pruning at the time of the survey.
6		Image of the eastern roadside field maple boundary hedge.

Table 1. Illustrating habitats on the site.		
Photo number	**Image.**	**Notes.**
7		General image of area of the site left recently unmanaged and establish as ruderals.
8		Image of structure used to shelter stored items.

Fig 10. Illustration of habitats on the site, including ponds on neighbouring land.

Image of general site showing remaining fruit trees, lawn, and spruce trees.

Image of canopy structure

Image of vegetable patch

Image of beech hedge along western boundary

Image of patch of ruderals

Image of southern boundary hedge, beech with willow tree within, being pruned at the time of the survey.

Image of typical remaining fruit tree managed by pruning.

Image of hedgerow along roadside / frontage. Field maple mono-species.

Appendix 3.

Illustration of pond surveys within 250m radius of the site.
(See fig 5 section 4.1 above for locations)

Table 2. Illustrating ponds within 100m of the site.		
Photo number	**Image.**	**Notes.**
9	**Pond no 1** 	A field pond of approximately 625sq m, assumed to be a permanent feature with a good depth of water. The water was turbid at the time of the survey suggesting disturbance by wildfowl of fish. Disturbance of the water surface was observed at the time of the survey, assumed to be rising fish. Previous pond surveys (2012) for GCN have observed fish and no evidence of CGN.
10	**Pond no 2** 	A small boundary pond approximately 104 sq m. Local knowledge suggested that it is a shallow pond that dries on a regular basis. At the time of the survey there was a patch of Rush growing in the pond, more typically a species of boggy ground rather than an aquatic species and supporting the suggestion it is a shallow pond that dries frequently. Supports a small population of moorhen. The pond is part of a boundary drainage system, ditch, the water was turbid suggesting disturbance.

Table 3.
Great Crested Newt Habitat Suitability Index (HSI) Assessment.

		Score	
Factor		Pond 1	Pond 2
Location	SI1	1	1
Pond area	SI2	1	0.2
Permanence	SI3	0.9	0.1
Water quality	SI4	0.67	0.67
Shading	SI5	1.0	1.0
Waterfowl	SI6	0.67	0.67
Fish	SI7	0.01	1
Pond density	SI8	1	1
Terrestrial habitat	SI9	0.67	0.67
Macrophytes	SI10	0.4	0.3
Score		0.50	0.63
Pond suitability		**Below average**	**Below average**

Appendix 4.

Generic method statement to avoid harm to reptiles, amphibians and small mammals including hedgehogs and brown hare.

Timing:

(a) Restrict works to the winter period (when amphibians are rarely active above ground) if the site is close to aquatic habitats or Amphibians are relevant to the site.
(b) Keep duration of groundworks as short as possible.

Construction methods and special precautions:

(a) Backfill trenches and other excavations before nightfall, or leave a ramp to allow newts to easily exit.
(b) All open trenches, footings, and pipe runs should be covered with shuttering ply overnight and the edges sealed with damp sand.
(c) Raise stored materials (that might act as temporary resting places) off the ground, eg on pallets.
(c) For pipelines, use directional drilling to cross areas of core habitat and newt dispersal routes.
(d) All caustic materials (cement, lime plaster etc) should be mixed on tarpaulin and folded at night or mixed on the floor of a sealed building.
(c) No caustic material should be allowed to contaminate the adjacent ground or allowed to form run-off that may contaminate ponds or watercourses.
(d) All piles of rubble and spoil should be removed from site and not left during late summer / winter to form hibernacula for Amphibians and reptiles.
(e) All waste materials should be stored in skips resting on areas of shingle/bare or hard standing.
(f) Keep vegetation around the developed site should be kept short to discourage use by reptiles and amphibians.
(g) Fire sites should be in a designated area on shingle/bare ground and well away from the ponds/water bodies and should be burnt daily, they should always be checked for sheltering mammals eg. Hedgehogs.
(f) Avoid installing structures that act as barriers close to ponds, or include gaps at ground level where walls or fences are unavoidable to prevent entrapment of reptiles, amphibians or small mammals within the construction area.
(g) If any protected species (e.g. bats, great crested newts) are discovered during the redevelopment then work should stop immediately and advice sought from an ecological consultant.
(h) If in any doubt contact a Natural England Licenced ecologist:
John Parden of JP ecology 01379 586830

Appendix 5

Biodiversity Enhancement Plan.

General advice.

- An Ecological Clerk of Works (ECoW) should be appointed prior to the commencement of works on site and their contact details should be made available to the development contractors.
- All mitigation and enhancements should be implemented under the supervision of the ECoW and upon completion the client should be provided with a document recording any mitigation actions taken and demonstrating compliance with the BEP (attached in appendix 5). The document is to be provided to the client and held as proof of compliance should it be requested for any reason.
- Advice must be sought from an ecologist if any protected species are inadvertently disturbed.

Mitigation.

- Nesting birds –
  - Nesting birds should not be disturbed during the nesting season typically 1st March to 31st August (species dependant).
  - Should it be necessary to strip the site during the nesting season, specifically clearance of trees and shrubs, the site should be searched by a suitably qualified ecologist for nests and any active nests protected until the young have fledge.
- Bats
  - All external lighting should be sensitive to bats.
    - The building should not be floodlit.
    - The lighting of driveways and pathways should be at ground level or low level lighting.
    - All lighting should be downward facing and shrouded to prevent light spillage.
- Site clearance (generic).
  - Amphibians. The specifics of the clearance of the site with regard to Amphibians are as follows:
    - Any debris piles should be dismantled by hand and the materials kept in skips until moved off site or disposed of.
    - Any debris and materials arising from the proposed construction should be stored in skips and/or on pallets to prevent creating refuge sites for reptiles or amphibians.
    - Should conditions on site change and the vegetation become unmanaged. The clearance of ruderals and vegetation > 300mm in height should be done during spring / summer (Feb to October) when amphibians and reptiles are active, all vegetation should be cut down to 150mm above ground level and left for at least an hour before final clearance to allow any reptiles or amphibians that may be present to disperse or to be carefully relocated to hedgerows in the local vicinity. Once cleared the land should be maintained as bare ground or short mown grassland throughout the development process.
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Plan to illustrate Biodiversity Enhancements.

Illustration to show locations of bird and bat boxes.

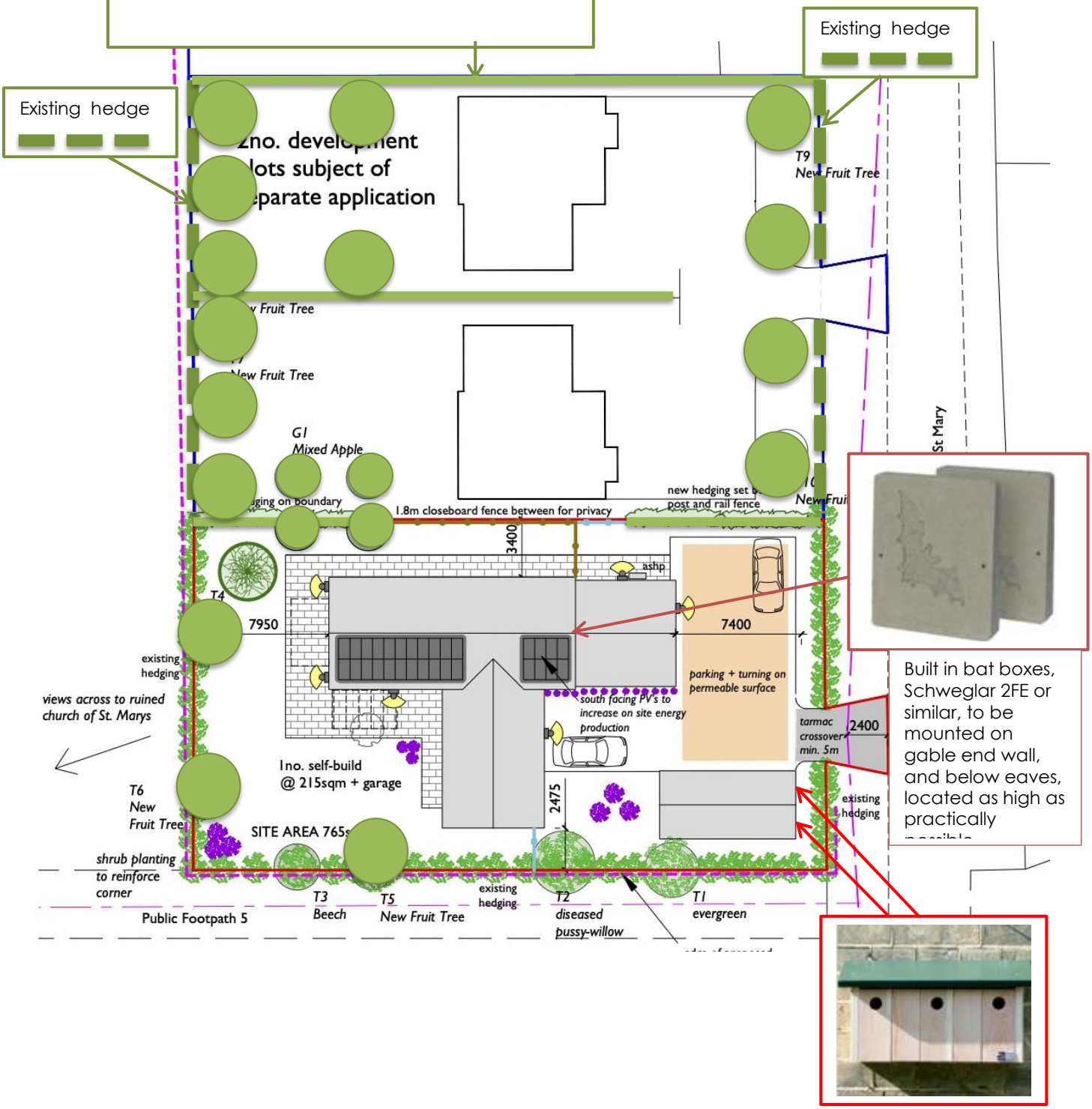
Double row mixed indigenous species hedgerow around the site perimeter indicated by green hedge line.

Length of hedgerow total approx. 20 linear meters.
Species mix.
30% Field Maple (*Acer campestre*)
30% Hawthorn (*Crataegus monogyna*)
10% Guelder Rose (*Vibernum opulus*)
10% Dog Rose (*Rosa canina*)
5% Wild Honeysuckle (*Lonicera periclymenum*) 5% Holly (*Illex aquifolium*)
10% Hazel (*Corylus avellana*)

Planting density 5 plants per liner meter double row.

19 new fruit trees to be planted.
To be traditional varieties.

Suggested varieties to include:
'Russett'
'Cox'
'James Grieve'
'Bramley'
'Orange Pippin'



Built in bat boxes, Schweglar 2FE or similar, to be mounted on gable end wall, and below eaves, located as high as practically