

Land to the North & East of Ware
Item 2 Survey and Assessment

Below is an Index of all Surveys and Reports that have been completed to date which have been jointly commissioned by Ptarmigan and Leach Homes. Attached to this Index is a copy of all executive summary's for each report. Further details please refer to the full reports which also form part of this submission.

Index

	Consultant	Discipline	Title	Date
1	CGMS Consulting	Archaeology	Heritage Constraints Desk-Based Assessment	Jul-14
2	RSK Environmental Ltd	Land Contamination	Preliminary Risk Assessment	Jul-14
3	AAe Environmental Consultants	Ecology	Ecological Constraints and Opportunities	May-14
4	PDI Utilities	Utilities Infrastructure	Utilities Feasibility Report	Jul-14
5	Transport Planning Associates	Highways & Transport	Strategic Accessibility Report	Jul-14
6	EFM Ltd	Education	Education Briefing Note	Jul-14
7	The Richards Partnership	Landscape & Visual Impact	Initial findings from the Landscape & Visual Appraisal	Apr-14
8	Indigo Planning Ltd	Retail	Retail Assessment	Jul-14
9	Ardent Consulting Engineers	Flood Risk & Drainage	Flood Risk & Drainage Appraisal	Jul-14

- Please note that due to the scale of the proposed development a full topographical survey has not been completed to date and OS data has been relied upon. Where required for the purposes of Highways & Transport assessment small areas have been surveyed for accuracy.
- Please also note that due to the scale of the proposed development a detailed tree survey has not been conducted. However, the Landscape and Visual Impact Assessment has considered the implication of existing and proposed trees and this will be considered in more detail in due course.



HERITAGE CONSTRAINTS DESK-BASED ASSESSMENT

**Land North-East of Ware
Hertfordshire**

V1.3

July 2014

Planning • Heritage
Specialist & Independent Advisors to the Property Industry

6.0 SUMMARY AND CONCLUSIONS

- 6.1 The study site is being considered for promotion within the East Hertfordshire Draft Local Plan. This desk based assessment has been undertaken to identify any archaeological and heritage constraints which may prevent or provide a constraint possible development.
- 6.2 The designated Registered Park and Garden area of Fanhams Hall, Grade II Listed, is contained within the site boundary and considered not to be suitable for development on heritage grounds.
- 6.3 The setting of the Registered Park and Garden of Fanhams Hall, and the eleven Listed Buildings contained within, is also considered to pose a constraint on development within the central area of the site. Development here would not be acceptable in line with national and local planning policy should any proposals effect or harm to the significance of these asset(s) through their setting.
- 6.4 A second Registered Park is partially contained within the western area of the site boundary. An area of Poles Park (known as the Nun's Triangle) was once connected to the main body of the RPG prior to the construction of the A10 Dual Carriageway. The bisection of the park and the isolation and condition of the Nun's Triangle may have diminished the significance of this area of the asset to a degree where development possibilities may be acceptable.
- 6.5 The site contains a number of Listed Buildings which are considered to be of regional/national importance. Although the presence of these buildings should not preclude the wider development of the site the buildings themselves and their setting are protected within national and local policy and would need further detailed assessment and consideration within the Masterplan.
- 6.6 The site has been identified to contain a number of undesignated heritage assets from the medieval and post-medieval period. These are not considered of a significance to preclude development.
- 6.7 The site is considered to have a theoretical archaeological potential to contain remains from the prehistoric, Roman and medieval period as well as for yet to be dated archaeological remains. Based on current evidence it is considered that any such remains would be of local significance and not preclude development.

- 6.8 Accordingly if the site were to be developed there is the potential for a negative effect on the historic environment; however, it is considered that suitable mitigation is available through the Local Plan and at the project level to address the potential significant negative effects, with only minor residual negative effects remaining.



Hubert C. Leach (Leach Homes)

Land to the North and East of Ware, Hertfordshire.

Preliminary Risk Assessment

Project no. 27134-01(01)

JULY 2014

RSK

6 CONCLUSIONS AND RECOMMENDATIONS

The Preliminary Risk Assessment has identified the potential for localised historical sources of ground contamination on site associated with general made ground deposits from localised development, including building construction and infilling of former gravel pits and drains that may not have been disclosed.

Potential off site contamination has also been identified within close proximity to the site associated with the infilling of a former gravel pit immediately adjacent to the east of the site.

The most significant risks associated with development of the site are considered to be:

- Direct Contact (including ingestion, inhalation and dermal contact of impacted ground) with future proposed site users (including residents, workers and maintenance personnel of the site);
- Chemical attack to concrete and foundations of future proposed buildings and structures on site;
- Chemical attack to plastic water supply pipes placed in the ground for future proposed buildings and structures on site;
- Localised ground gas migration to ingress into future proposed buildings and structures on site (where infilling of former gravel pits has been identified on site);

It is also considered that within localised areas where deposits of impacted made ground are present a small risk to proposed areas of soft landscaping within private gardens or communal areas may be present.

The preliminary findings suggest that the site is unlikely to be classified by the local authority as 'Contaminated Land' under the current contaminated land regime (Environmental Protection Act 1990: Part IIA).

Therefore, the overall environmental liability associated with the site and the risks associated with proposed development are considered to be 'low' and 'low to moderate' in areas of potential localised contamination.

It is recommended that an Intrusive Investigation be carried out to identify the geotechnical parameters and the possible presence, nature and extent of any contamination, particularly in areas of potential concern (i.e. in filled areas, existing structures). The preliminary investigation, which should comprise a series of shallow boreholes and mechanically excavated trial pits, local to the proposed sources of contamination and a basic suite of testing, should be conducted. This will clarify the geological/hydrogeological constraints on contamination migration and give a more detailed assessment of the potential environmental risks and liabilities with site development. The information will also enable an assessment of ground conditions for the design of foundations and associated works.

**Land to the North and East of Ware
Hertfordshire**

**Report for:
Ptarmigan Land Limited
& Leach Homes**

INTRODUCTION

Overview

AA Environmental Limited (AAe) has been commissioned to produce an Ecological Constraints & Opportunities Note for the site known as Land to the North and East of Ware. The aim of this document is to evaluate the ecological constraints on the site, which are summarised below and shown on the attached Constraints Plan (Figure 1), along with providing a range of ecological mitigation and enhancement measures.

This assessment has been based on a walk-over survey of the site and surrounding land, where access was possible (completed on Wednesday 23 April 2014) and a desk-top review of readily available baseline data (the Multi-agency website and National Biodiversity Network (NBN) Gateway). In addition, a review of Google Earth's satellite imagery (http://www.google.co.uk/intl/en_uk/earth/index.html) was completed to determine past land-uses of the site and surrounding land as well as the first edition OS maps to record any historic hedgerows that may be present (data provided by CgMS).

Site Description and Proposals

The site is divided into two parcels of land, located to the north and east of the town of Ware in Hertfordshire. The land to the north of Ware is centred at National Grid Reference: TL 360158 and is bordered by managed farmland to the north, south and east and by the A10 road to the west. The land to the east of Ware is centred at National Grid Reference: TL 373146 and is bordered by managed farmland to the north and east, the B1004 (Widbury Hill) to the south and the town of Ware to the west.

Both sites are dominated by managed farmland, comprising a series of arable fields, with some boundary hedgerows present. Some areas of woodland are also present on the eastern parcel of land. A review of the Google Earth imagery suggests that the land use has largely been unchanged since at least 2000. The proposals are to develop the site for residential use along with associated Infrastructure and Public Open Space (both formal and informal).

ENVIRONMENTAL INFORMATION

Desk-top

There are no statutory ecological designated sites on or directly adjacent to the site, according to the Multi-agency website, and there are no records of protected or notable species on the site, according to the NBN Gateway. The nearest ecological statutory designated site is Amwell Quarry, a Site of Special Scientific Interest (SSSI), which forms part of the Lee Valley Ramsar site and Special Protection Area (SPA), and is located approximately 660 m to the south of the site. There are two Local Wildlife Sites (LWSs). One is located adjacent to the site boundary, Fanhams Hall Meadow LWS, and the other, Wood Lane, Ware LWS part of which is located on the site. In addition, three areas of woodland present on the eastern parcel of land are designated as Deciduous Woodland, a UK Biodiversity Action Plan (BAP) Priority Habitat, and an area of Traditional Orchard (Ref. HERT0236), also a UKBAP Priority Habitat, is present adjacent to the southern boundary of the eastern parcel of land. There is also an area identified as a 'Conservation Walk', to allow public access and has been managed sympathetically for nature conservation purposes.

A number of hedgerows appear to still be present from the first OS maps (1880s) and, therefore, likely to be important under the Hedgerows Regulations 1997. However, this will need to be confirmed during subsequent visits.

Initial Ecological Walk-over Survey

The site is dominated by intensively farmed arable land, with boundary vegetation. Hedgerows formed the majority of the field boundaries, with small woodland areas present. There were a number of drainage ditches which will remain dry for long periods with a few more established watercourses, although these were restricted in size and overall ecological value. There were also a number of ponds recorded on the site and within adjacent habitat.

Species

Badger

Evidence of badgers, in the form of runs with badger hair found, was recorded on the site. Although no large setts were recorded during the Initial walk-over, it is important to note that not all of the site was covered and, as badgers are active, setts could still be found during subsequent visits. The site does provide foraging habitat for badgers.

Apart from the evidence of badgers recorded during the walk-over survey, there are no known records of badgers within 2 km of the site, according to the NBN Gateway.

Barn Owls

There are a number of buildings present within the site, particularly the farm buildings which could provide suitable roosting/nesting opportunities for Barn Owls. Further surveys of any buildings scheduled to be demolished will need to be completed to confirm presence/absence of any Barn Owls. In addition there are a number of mature and over-mature trees that could be used by Barn Owls and again further assessment would be required in order to confirm any roosts.

As the site is dominated by intensively farmed land and lacks wide field margins, therefore it does not provide ideal foraging habitat for Barn Owls. However, there are more unmanaged areas of open grassland that do provide some suitable foraging habitat.

There are records of Barn Owls within and to the north of Ware; however the information provided by the NBN Gateway was only available at a 2 km grid square resolution, therefore an accurate determination of the locations of the records could not be made.

Bats

There are a number of buildings present within the site, none of which were surveyed for evidence of bats. Depending upon the proposals further bat surveys on any buildings scheduled to be demolished will need to be completed to confirm presence/absence of any roosts. In addition there are a number of mature and over-mature trees that do have features, such as rot holes and split bark and limbs, that do provide roosting opportunities for bats and again further assessment would be required in order to confirm any roosts.

The majority of the site is quite exposed and dominated by large fields that are intensively farmed, consequently much of the site does not provide good sheltered foraging habitat ideal for bats. However, there are some areas of good foraging habitat in the form of grassland areas with more established boundary hedgerows and pockets of woodland. Therefore the majority of bat activity is likely to be concentrated in these areas.

There are no records of bats on the site itself, according to the NBN Gateway; however, there are records of common and soprano pipistrelle (*Pipistrellus pipistrellus* and *P. pygmaeus*), brown long-eared (*Plecotus auritus*), Daubenton's (*Myotis daubentonii*), Natterer's (*Myotis nattereri*) and whiskered (*Myotis mystacinus*) bats within and to the south of Ware.

Dormice

Limited habitat for dormice due to lack of ideal habitat such as established woodlands, interconnecting hedgerows and areas of dense scrub.

There are no known records of dormice within 2 km of the site, according to the NBN Gateway.

Herpetofauna (amphibians and reptiles)

There are a number of ponds present on the site and within adjacent land, which may support breeding populations of amphibians (shown on the attached plan). Although the terrestrial habitat is dominated by intensively farmed land and therefore does not provide ideal terrestrial habitat for either amphibians or reptiles, there are some areas of less intensively managed grasslands that do provide suitable habitat for herpetofauna.

There are no known records of great crested newts (*Triturus cristatus*) within 2 km of the site, according to the NBN Gateway. In addition, there are no known records of reptiles on the site itself; however, there is a record of a grass snake (*Natrix natrix*) directly adjacent to the site (NGR: 3614).

Water Voles

Although there are a series of drainage ditches along a number of the hedgerows, these remain dry for long periods and do not provide any habitat for water voles. There are only a few watercourses that have any running water that could provide suitable habitat, but during the initial survey no obvious signs of water vole were recorded. In addition, the watercourses were quite restricted in width with limited bankside vegetation and consequently do not provide ideal habitat for water voles.

There are no records of water voles on the site itself, according to the NBN Gateway; however, there is a record immediately to the south of the site (NGR: TL 3713).

Other Wildlife

Evidence of fox and deer were recorded, along with areas of giant hogweed (*Heracleum mantegazzianum*). Giant hogweed is an invasive non-native species listed on Schedule 9 of the *Wildlife and Countryside Act 1981 (as amended)*. In addition, a few common species of bird, either recorded on the site or flying overhead, including Blackbird (*Turdus merula*), Carrion Crow (*Corvus corone corone*), Magpie (*Pica pica*) and Wood Pigeon (*Columba palumbus*), were also recorded.

OPPORTUNITIES

Habitats

Retention and enhancement of existing woodlands and woodland belts with supplementary planting and sympathetic management.

Retention and enhancement of established hedgerows, where possible, and/or replacement (species-rich) hedgerows to compensate for those to be lost.

Retention and enhancement of the watercourses with an appropriate buffer zone provided as part of the development proposals (typically 8 m from top of bank).

A range of new habitats could be created as part of the overall landscape proposals, such as wildflower meadows, hedgerows, buffers for the woodland areas, swales and wildlife ponds (as part of SUDS).

Species

Badger

Retention of any badger setts found and create areas of replacement foraging habitat and provision of corridors to allow movement throughout the site and into the surrounding countryside. May involve badger underpasses with badger-proof fencing to prevent increased risk of RTAs.

Barn Owl

Retention and strengthening of existing hedgerows and any mature standards and/or replacement species-rich hedgerows provided. As part of the informal Public Open Space provision on site, create unmanaged

grassland areas, which will provide enhanced foraging habitat for a range of wildlife. Barn Owl boxes provided, if considered necessary. Introduction of a sensitive lighting scheme, with dark corridors provided.

Bats

Retention and strengthening of existing hedgerows and/or replacement species-rich hedgerows provided. A series of bat boxes could be installed on some of the established vegetation to be retained or incorporated into the new build to provide enhanced roosting opportunities. New planting could include species of known value for wildlife and the retention and enhancement of existing watercourses and provision of new waterbodies on the site would improve foraging opportunities. Introduction of a sensitive lighting scheme, with dark corridors provided.

Licence application and proportionate mitigation if any confirmed roosts are found and are to be lost to the proposals.

Breeding Birds

Retention and enhancement of existing woodlands, woodland belts and hedgerows and/or replacement species-rich hedgerows provided along with new habitats created as part of the overall landscape strategy. A series of bird boxes could be installed on some of the established vegetation to be retained or incorporated into the new build to provide enhanced nesting opportunities.

Herpetofauna (amphibians and reptiles)

Measures to enhance the site for herpetofauna could include: introduction of suitable waterbodies located adjacent to natural habitats, provision of rough grassland/wildflower type habitat, allowing scrub to establish and constructing of hibernacula.

Water Vole

Limited opportunities available due to the lack of connectivity to suitable habitat which would facilitate colonisation of the site. Retention and enhancement of the existing watercourses.

Giant Hogweed

Suitable management regime introduced to treat and eradicate the areas of giant hogweed.

Other wildlife

A range of further enhancement measures could be incorporated into the scheme, such as:

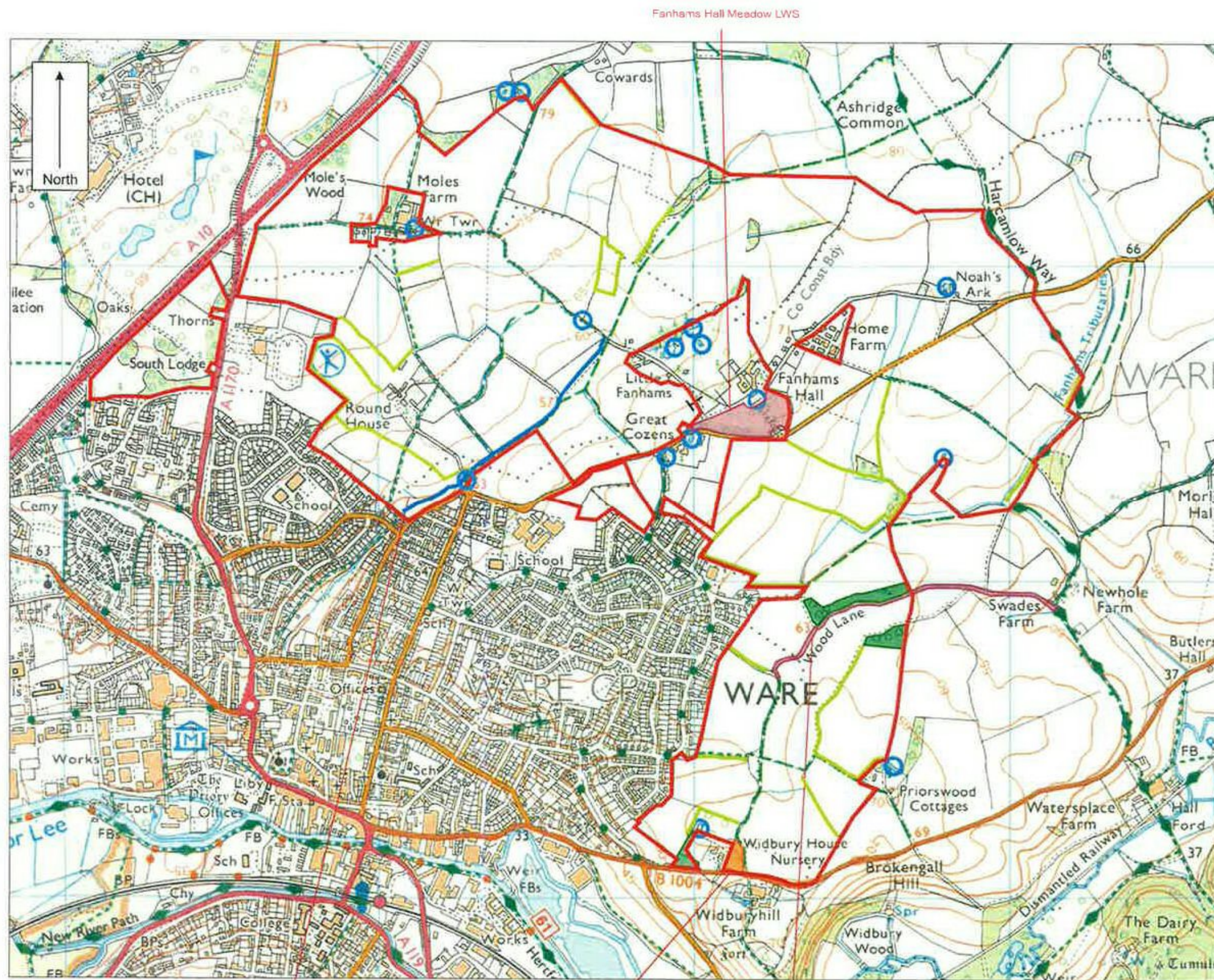
- production of flower-rich verges, headlands and beetle banks;
- roadside fencing, or wildlife tunnels; and
- structured landscape buffers.

Author:
Alan Beaumont
E alan.beaumont@aae-llp.com

Office:
AA Environmental Limited
Units 4-8
Cholswell Court
Shippon, Abingdon
OX13 6HX

Company Number: 8474322
info@aae-llp.com
T 01235 536042
F 01235 523849

CONSTRAINTS PLAN








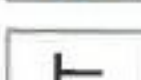


CSS Conservation Walk (Ref: 18/137/0001)


Traditional Orchard (Ref: HERT0236)

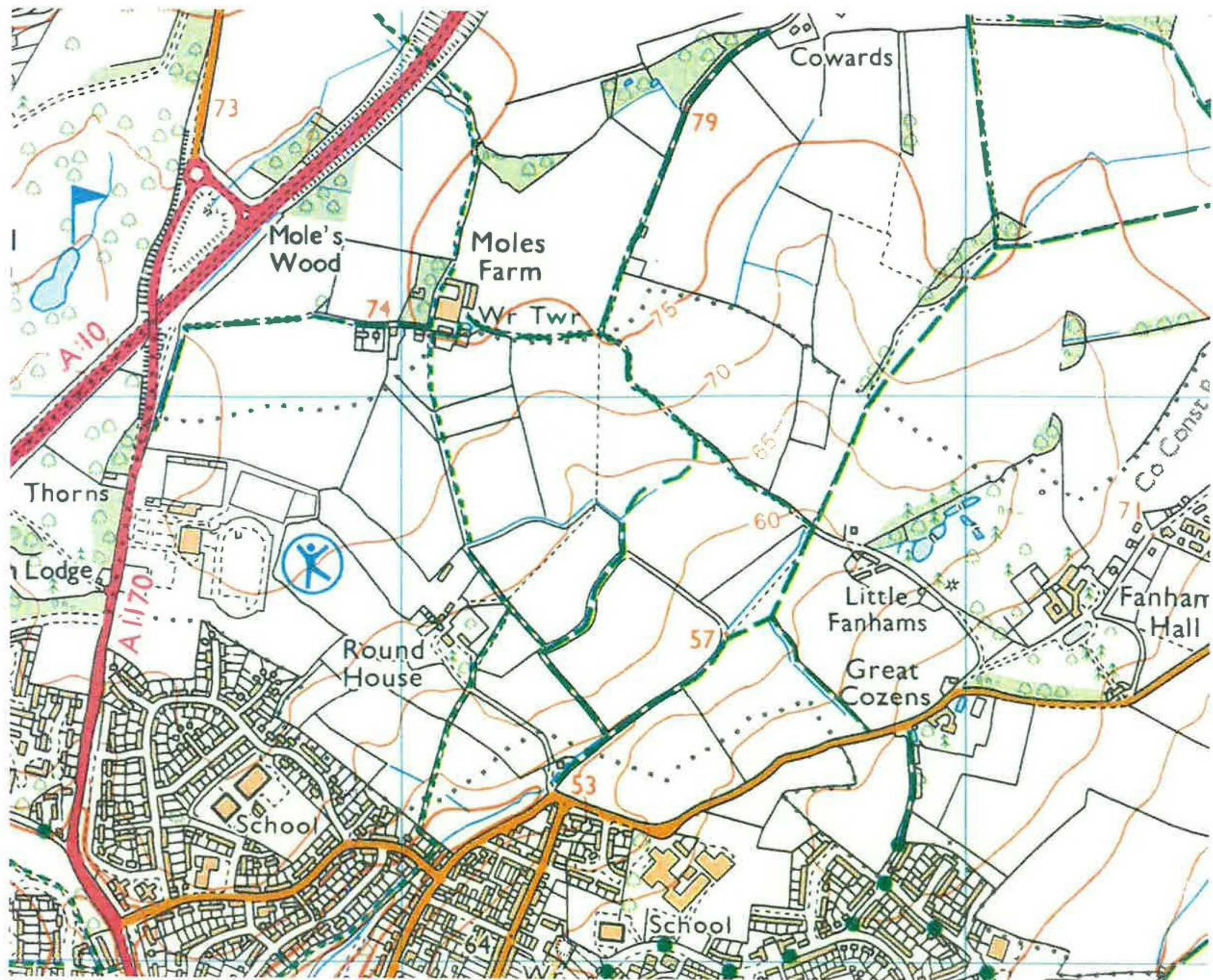
Wood Lane, Ware LWS

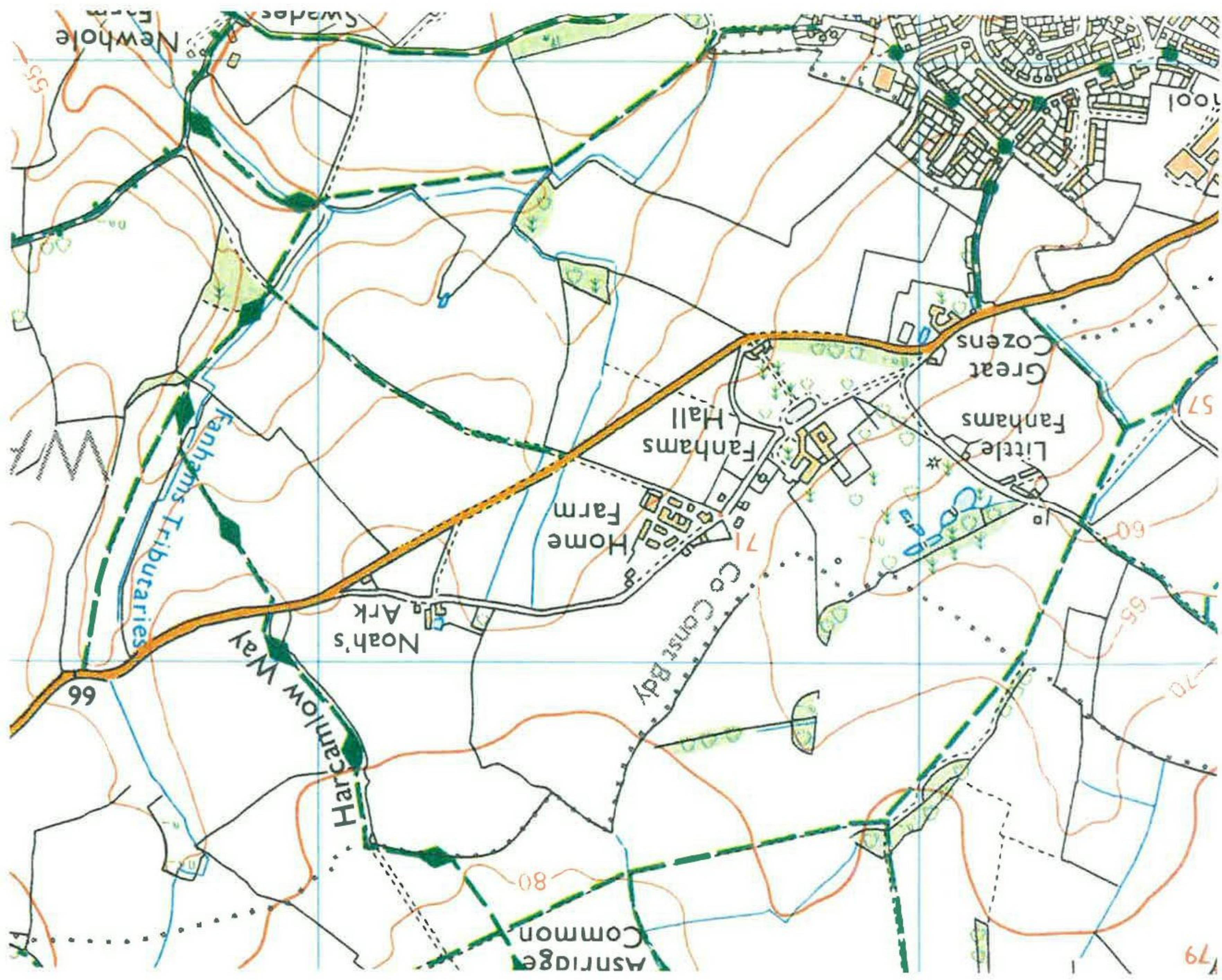
Scale (km)

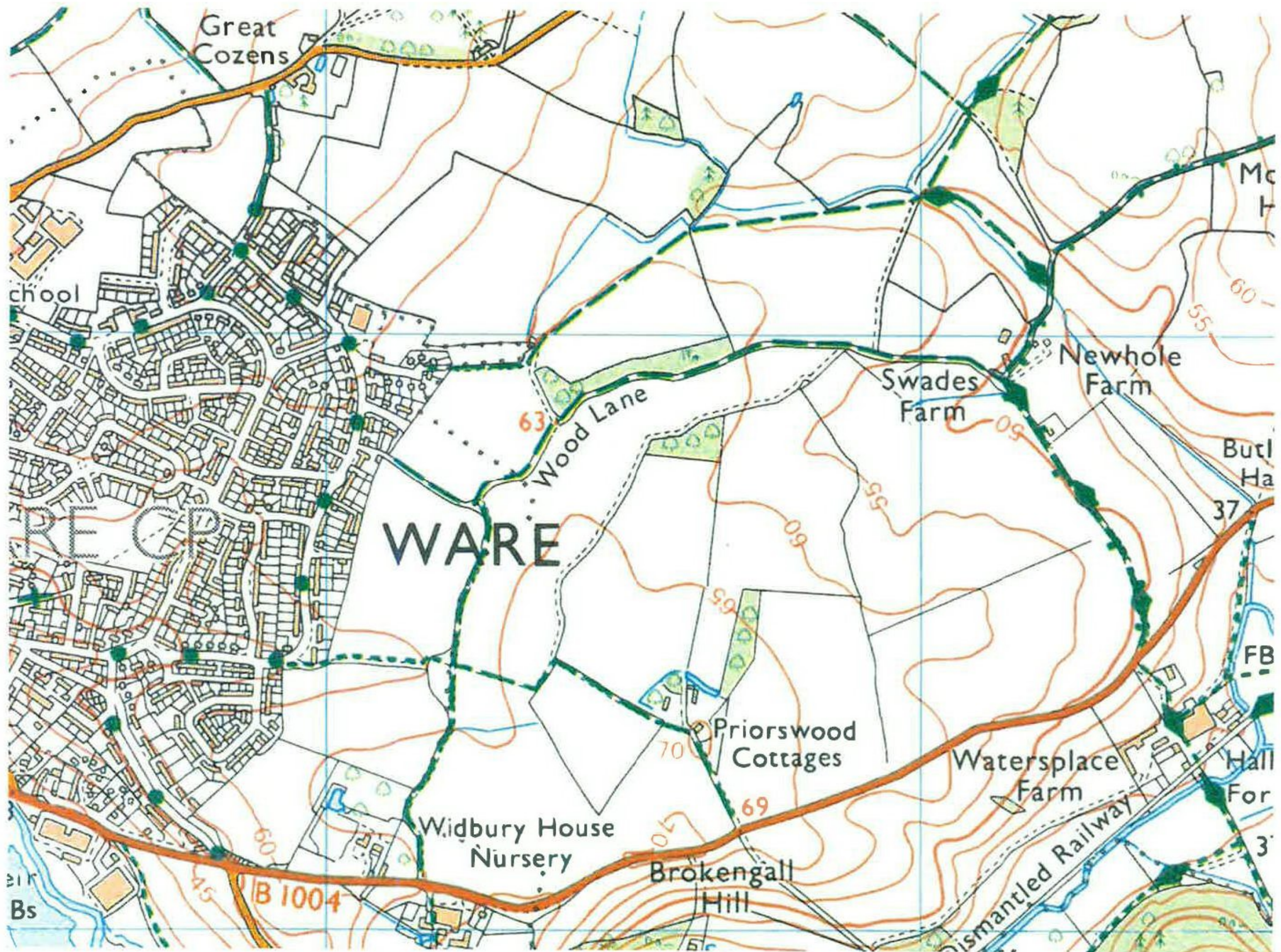
KEY

- | | |
|---|--|
|  | Site Boundary (Indicative) |
|  | Local Wildlife Site (LWS) |
|  | Deciduous Woodland UK BAP Habitat |
|  | Traditional Orchard UK BAP Habitat |
|  | Pond |
|  | Badger Run (confirmed with hair found) |
|  | Watercourse |
|  | Historic Hedgerow (TBC) |

Rev.	Details	Drawn	Date
		Chkd.	
PROJECT			
143155 Land to the North and East of Ware			
TITLE			
Constraints Plan			
 <div> <p>AA Environmental Ltd Units 4-6 Chobwell Court Shippon Abington Oxon OX13 6HX</p> <p>T 01235 536042 F 01235 523649 info@aae-to com www.aae-to com</p> </div>			
Scale	Date	July 2014	Org No.
As shown	Drawn	MB	Chkd.
		ARB	Figure 1
			Rev.









Utilities Infrastructure Specialists

Utilities Feasibility Report

Prepared for

Leach Homes Ltd and Ptarmigan Planning.

For a proposed development at

Land North and East of Ware, Hertfordshire.

PDI Project No: 14.331 Rev: C.

REVISIONS

Revisions from the last issue are indicated by bar marks on the right hand side of the affected paragraph.

Date:	Revision:
16-06-2014	c. Water section updated .

APPROVALS

Approved by:		Date:
Author		
Planning Manager		23-7-2014
Managing Director		23/7/14.

CONTENTS

Preamble	Page 3
Water	Page 5
Gas	Page 7
Electricity	Page 9
Telecoms	Page 11
Cable TV	Page 12
Street-lighting	Page 13
Oil Pipelines	Page 14
Cost Summary	Page 15
Appendices	Page 16

PREAMBLE

Purpose of this report:

This report has been compiled following instruction from Leach Homes Ltd and Ptarmigan Planning on 29th April 2014.

This report provides a summary of the existing utilities infrastructure within the vicinity of the proposed development, available capacity to supply the development, together with, estimated costs for anticipated reinforcement and/or diversionary works. Estimated costs are also provided for all new on-site utilities connections.

Reference.

When compiling this report reference has been made to the following documents:

- A1 - 1,5000 scale Combined Land Holding Plan.
- JTP – OS Base Plan Drawing No. 00849 SK01.
- East Herts Council, Draft District Plan-Preferred Options Consultation 2014.

Assumptions.

Given the preliminary nature of the information provided a number of assumptions have been made in terms of Land use. The development will comprise of 3000 mixed size dwellings, Secondary School, 2 no.Primary Schools, Employment Area, Health Centre, District Centre and Community Building.

Estimated Utility Demands:

Electric. - Diversified Demand 12 MVA

Gas. - Peak demand kwh. 41,337
 AQ Mwh. 43,404

Water. – Est Demand m3/day. 1,800
 Daily Peak demand L/S. 150

- Each plot and/or unit will have a separate service connection.
- The soil is not contaminated and it would not be necessary to use ductile iron water mains (subject to soil report).
- The local water company will guarantee 1 bar pressure only. Booster sets may be required depending on the number of storeys in each block, the costs for these have not been allowed for in our feasibility report.
- The depths and locations given by the utilities companies for existing mains are approximate only; where depth information is not available we have assumed existing mains and cables have been laid to typical NJUG specifications. Actual location and depth must be determined by hand dug trial holes.

- Access road construction depths will be no greater than 750mm.
- No allowance for electricity disconnection costs have been made as it is general practice for electricity companies to remove meters, de-energise and disconnect free of charge.
- Water supply pipes are the landowner's responsibility from the stopcock and may be removed as part of your site clearance/demolition works contract.
- BT will carry the cost of providing service to the site boundary, as is their normal practice.

Disclaimer:

The details contained within this feasibility report are based on current information provided by the client and by the relevant statutory undertakers; therefore PDI will accept no responsibility for errors, omissions, and/or discrepancies in this respect.

Furthermore, PDI will not accept responsibility in respect of differences between estimated costs mentioned within this report and eventual actual costs when they are obtained.

WATER

Off-site

Affinity Water records indicate the presence of the following strategic water mains outside the development boundary:

- 300mm water main from the south adjacent to the A10 Trunk road.
- 700mm water main, running East – West, to the North of the development site.

Affinity Water mains identified close to or within the development site boundary:

- 125mm. MDPE main running North - South along Ermine Street.
- 200mm ductile iron main along High Oak Road and Fanham Halls Road.
- 3 inch AC main from East of site, supplying Noahs Ark and the Fanhams Hall complex.
- AC mains, size not detailed on plans, along Cozens Road.
- 4 inch PVC main along Widbury Hill.

Diversions

Water diversions are anticipated to accommodate the proposed access roads to the individual land parcel/phases of the development. Allow a budget cost of £75,000 for these works

Reinforcement

Due to the size and proximity of the existing water mains to the North and West of the proposed development site, no major reinforcement works are anticipated as a result of the proposed development.

Affinity Water have confirmed that it will be possible to accommodate the initial phases of the development, closest to Ware, from existing capacity within the network.

However, it may be necessary to extend the existing water mains from the junction of the A10, along the proposed A10 – Widbury Hill Link Road in order to accommodate the remainder of the development site. Allow a budget figure of £276,000 for this work.

On-site

A budget sum of £924,000 should be allowed for installation of the onsite water main. We would recommend allowing a budget sum of £1,299,000 for connection of services.

Infrastructure Charges

A sum of £1,035,000 (based on current Affinity Water costs of £345 per plot, valid until 31st March 2015) should be allowed for infrastructure charges. This excludes sewerage infrastructure charges which would be payable with potable water infrastructure charges at the time of connection.

Summary

Therefore a budget total of **£3,609,000** should be allowed for new water mains for the development as a whole.

GAS

Off-site

National Grid Gas Networks records indicate the presence of the following strategic gas mains outside the development boundary:

- LHP high pressure gas pipeline within the North Western corner of the development site, adjacent to the A10 Trunk road.
- MP gas main crossing the A10 into Ware, close to the South Western boundary of the proposed development site.
- 90mm MP gas main, situated to the South of the development site, within Widbury Hill.

National Grid mains identified close to or within the development site boundary:

- 180 mm. LPPE main running North - South along Ermine Street.
- 180 mm LPPE main along High Oak Road and Fanham Halls Road.
- 90 mm LPPE, main along Fanham Hall Road supplying the Fanhams Hall complex.
- 90mm LP PE, along Cozens Road.

Diversions

Gas diversions are anticipated to accommodate the proposed access roads to the individual land parcel/phases of the development. Allow a budget cost of **£75,000** for these works

It is not anticipated that the HP Gas Pipeline will require diversion to facilitate construction of the new site. This pipeline is protected by a wayleave agreement and is a notifyable pipeline under the PADHI Planning Authority/HSE process. It is assumed that in order to avoid significant diversion costs to the developer the design layout would incorporate the pipeline in its present position. In this event National Grid may insist on the installation of a concrete protection slab in accordance with their document CE12 and SSW 22. Allow a budget of **£30,000** for this work.

Reinforcement

Due to the size and proximity of the existing MP gas network, in order to accommodate the full gas load required to supply 3000 units, reinforcement works are anticipated to the MP Gas main within Widbury Hill. allow **£87,700** for these works.

Our consultations with National Grid, dated 22nd May 2014 have confirmed the following connection points and the number of residential units that can be taken from their existing LP network, without reinforcement, as follows:

- 200 units from 180 PE main, Ermine Street.
- 240 units from 180mm main High Oak Rd/Fanhams Hall Road.
- 50 units from 180mm main Fanham Halls Road.
- 500 units from 90 mm PE main in Cozens Road.

On-site

Based on an estimated figure of £300 per plot, a budget sum of £900,000 should be allowed for installation of on site mains and services.

Summary

A budget total of £1,092,700 should be allowed for provision of gas for the development as a whole.

ELECTRICITY

Off-site:

UK Power Networks are the electric network operator for the area of the proposed site. The proposed development is located between their Ware Primary Sub-stn and Rye House Grid. Their Network records indicate the presence of the following strategic HV/LV mains cables outside the development boundary:

- OHV cables adjacent to A1170, eastern side of Ermine Street, crossing west into proposed development.
- Primary sub –station to the west of A10, HV cables adjacent to the A10 Trunk Road by the SW corner of the proposed 200 units development phase. Further OHV cables heading NE towards A1170 and the GPO Repeater Station.

UK Power Networks mains cables identified close to or within the development site boundary:

- LV mains cables running North - South along Ermine Street and crossing eastwards to Wodson Leisure centre.
- LV mains cables along High Oak Road, supplying Round House and Roundhouse Lodge.
- Existing HV within Fanham Halls Road crossing proposed development area, HV supply to sub-station Fanhams Hall and Hotel complex. HV crossing development site from south to Great Cozens sub – station, south of Fanhams Hall.
- HV supply to Noahs Ark.
- HV sub-station Kingsway East.
- HV sub-station rear of 176 Cozens Road, HV crossing north into Development site.
- HV sub-station side of 11 Barley Ponds Road, HV/LV crossing east into development site.
- HV and LV cables along Widbury Hill, to the south of the Development site.

Diversions

It is preferable to divert the sections of overhead cable that would impact upon construction of the various proposed site access. We anticipate that any overhead cables effected will be replaced with new underground mains laid within the proposed footpath of the new development phases.

A budget sum of £210,000 should be allowed for diversion of the electric cables.

It may be beneficial to check the land transfer documents to see if the overhead cables are in fact protected by a wayleave/easement agreement, or, the subject of a 'lift and shift' clause.

Reinforcement

Our initial discussions with UK Power Networks confirm that the proposed development site will need to be supplied from Ware Primary Sub station with reinforcement from their Rye House Primary sub station, and there is only limited spare capacity at these primaries. To provide the overall capacity of 12 MVA, UKPN have confirmed that they will need to carry out further upgrades to the primaries as follows:

- Install two new 33kv circuit breakers at Rye House Grid.

- Install two 33kv cables with associated pilot cables from the circuit breakers to Ware Primary, a route length of approximately 7.5km.
- Upgrade the 33/11kv transformers at Ware primary.
- Extend the 11kv switchboard at Ware Primary for your development.

UKPN advise allowing £6,000,000 for a proposed upgrade to these primary transformers to accommodate the proposed development.

On-site

Based on an estimated 3000 no. residential units, a budget sum of £2,750,000 should be allowed for the installation of a new electricity mains / services to serve the development. This figure includes for 1no. Boundary sub-station and 10no. on site distribution sub-stations.

Summary

A budget total of £8,960,000 should be allowed for provision of electricity for the development as a whole.

TELECOMS

Off-site

BT records indicate the presence of the following strategic O/H cables, poles and below ground duct and joint boxes outside the development boundary:

- OH cables crossing A1170 roundabout/Ermine Street, going north, adjacent to the A10 Trunk road.

BT mains cables and joint boxes identified close to or within the development site boundary:

- Duct and joint boxes running North - South along Ermine Street.
- Duct and joint boxes from A1170 into Moles Farm complex.
- OH cables from High Oak Road to south of Round House.
- OH cables supplying Noahs Ark and the Fanhams Hall complex.
- Duct and joint boxes along Cozens Road.
- Duct and joint boxes along Widbury Hill.

Diversions

The exact location of the BT poles and o/h cables is not clear, therefore we recommend allowing a budget sum of **£64,000** for diversion of the existing cables to facilitate construction of the proposed site access roads.

The location of telecoms cables, poles, chambers and cabinets should be considered when detailing the final location of the site access road, as unnecessary diversion works can be avoided.

Reinforcement

BT will provide telecoms service to the site boundary at their expense.

Any costs associated with off-site reinforcements will be borne by BT up to the value of **£3,400** per plot. If reinforcement costs exceed this amount, a cost may be incurred. Reinforcement costs are not anticipated to be required to serve this development.

On-site

All site materials will be supplied free of charge by BT.

A budget sum of **£83,000** should be allowed for the installation of on site BT ducting and the construction of new BT joint boxes.

Summary

Therefore a budget total of **£147,000** should be allowed for new telecoms infrastructure for the proposed development as a whole.

CABLE TV

Virgin Media records indicate the presence of the following strategic below ground duct and joint boxes outside the development boundary:

- Duct and cables along west side of Ermine Street, crossing south of A1170 roundabout to supply leisure centre.

Virgin Media Duct and joint boxes identified close to or within the development site boundary:

- Duct and joint boxes running North - South along Ermine Street.
- Duct and joint boxes along
- Duct and joint boxes along High Oak Road.
- Duct and joint boxes along Fanhams Hall Road.
- Duct and joint boxes along Cozens Road.
- Duct and joint boxes along Widbury Hill.

Off-site, diversions and reinforcement

It is preferable to divert the sections of cable duct that would impact upon construction of the various proposed site access roads. The exact location of joint boxes is not clear, therefore we recommend allowing a budget sum of **£64,000** for diversion of the existing cables to facilitate construction of the proposed site access roads.

The location of Virgin Media cables, chambers and cabinets should be considered when detailing the final location of the site access road, as unnecessary diversion works can be avoided.

On-site

No requirement for cable infrastructure has been identified at this time.

Summary

Therefore a budget total of **£64,000** should be allowed for new telecoms infrastructure for the proposed development as a whole.

STREET LIGHTING

Off-site, column-removal and/or relocation

No existing lighting columns are indicted within the proposed development area.

Proposed

No details of proposed lighting columns have been provided.

Should lighting columns be required, we would recommend a budget sum of £1000 per column and £800 per connection.

In instances where private lighting is required we assume this would be run off a landlord's supply or alternatively a metered feeder pillar.

Based on the site area we would recommend allowing a budget sum of £270,000.

Summary

A budget sum of £270,000 should be allowed for the installation of new street lighting columns.

OIL PIPELINES

No strategic oil pipelines have been identified as passing through the site.

Asset owners confirmed unaffected are:

BOC Limited (A Member of the Linde Group)
BP Exploration Purbeck Southampton Pipeline
BPA
Centrica Energy
ConocoPhillips (UK) Ltd
ConocoPhillips Ltd Humber Refinery
Coryton Energy Co Ltd (Gas Pipeline)
E-on UK Plc (Gas Pipelines Only)
Esso Petroleum Company Limited
FibreSpeed Limited
Geo Networks Limited
Government Pipelines & Storage System
INEOS Manufacturing (Scotland and TSEP)
Ineos Enterprises Limited
Mainline Pipelines Limited
Manchester Jetline Limited
Marchwood Power Ltd (Gas Pipeline)
NPower CHP Pipelines
National Grid Gas and Electricity Transmission
Oikos Storage Limited
Premier Transmission Ltd (SNIP)
SABIC UK Petrochemicals
Scottish Power Generation
Shell UK Ltd
Star Energy
Total UK (Finaline, Colnbrook & Colwick Pipelines)
Wingas Storage UK Ltd

COST Summary

	Off-Site Work	Cost (£'s)	On-Site Work	Cost (£'s)	Rebate (£'s)	Sub-Totals (£'s) by utility type
Water	Off-Site diversions Reinforcement	75,000.00 276,000.00	onsite mains installation service connections infrastr' charge	924,000 1,299,000 1,035,000		3,609,000
Gas	Diversions HP Protection slab MP reinforcement	75,000.00 30,000.00 87,700.00	Mains and services installation	900,000		1,092,700
Electricity	O/H diversion HV/Lvcable div' Primary Upgrade	210,000.00 6,000,000.00	Mains and services Installation/ Sub-station	2,750,000		8,960,000
Telecoms	Diversion	64,000.00	duct and joint boxes	83,000		147,000
Cable TV	Diversion	64,000.00				64,000
Street Lighting			Supply, Installation and Connections of columns	270,000		270,000
Sub-Totals (£'s) by Off-site/on-site		6,881,700		7,261,000	0	

Total (£'s) 14,142,700

Note: The above sums whether actual or estimated do not include VAT unless otherwise stated.

APPENDICES

Copies of material provided by you and/or the statutory undertakers that has been used in preparing this report are contained within the following sections:

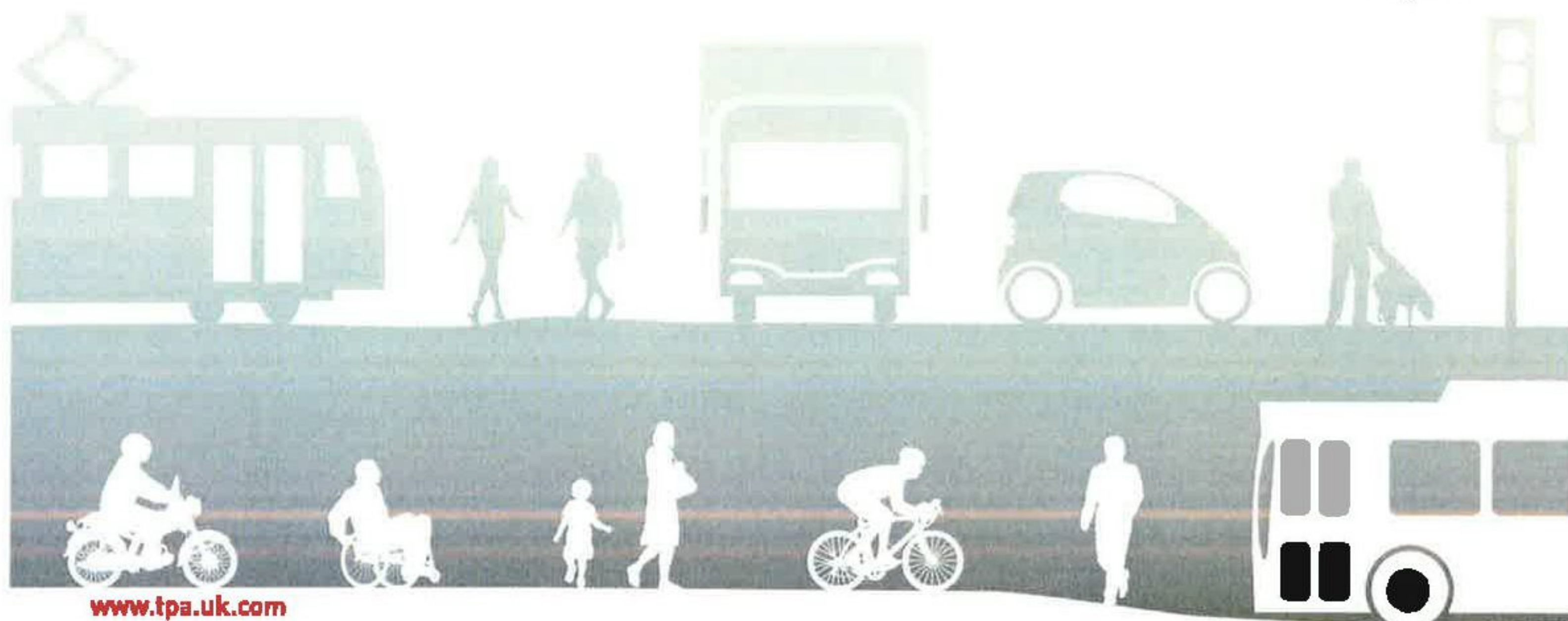
Customer > Site Location Plan	Reference > Received 29th April 2014
Cable TV > Virgin Media	SG127PX dated 13-5-14
Water > Affinity Water	Reference > 14.331-1:3600 dated 1-5-14
Gas > National Grid Records	Reference > TL3516, TL3715, TL3714, TL3815
Electricity > UK Power Network Records	Reference > 2014/2156731 dated 8/5/14
Telecoms > BT openreach Records	Reference > JHE015051 dated 30-4-14
Oil Pipelines > Linesearch Enquiry	Reference > LS-BUD 1965666, 1965836, 1965935 1965996, 1966082

A Report for
PTARMIGAN WARE LTD AND LEACH HOMES

In respect of
**Land north and east of Ware,
Hertfordshire**

Strategic Accessibility Report

July 2014



6 SUMMARY

- 6.1** This report has reviewed the transport implications associated with a prospective development on land north and east of Ware in Hertfordshire.
- 6.2** A review of the local highway network, existing linkages and public transport has indicated that improvement works are likely to be required.
- 6.3** A sustainable travel package will need to be developed to maximise opportunities for travel by non-car means and to limit the impact upon the local highway network. Residual vehicular trips will require mitigation and it is likely that this will focus upon junctions and links forming the principle route through the centre of Ware. There is limited scope to improve the capacity of junctions along this route and equally the principle of doing so should be considered.
- 6.4** By achieving the right balance of land uses within the development site, there is also significant scope to create an interconnected environment such that the need to commute is reduced and the sustainability of the development and surrounding areas is maximised.

Briefing Note

Land to the North and East of Ware,
Hertfordshire
For
Leach Homes
Ptarmigan Planning

25th July 2014

STEPHEN CLYNE
LCP (Dip SMS) Cert Ed MAE



Conclusions

1 At any scale of development provision for education can be made. From 1 – 300 homes, provision would be off-site via a financial contribution to HCC in accordance with the HCC Toolkit.

2 From 350 dwellings the provision of a small primary school becomes a possibility at current birth rates, (on the range between 0.5fe (105 places) for 350 homes, 1fe (210 places) for 500, to 1.5fe (315 places) for 750 to 2fe (420 places) for 1,000) on site and a contribution to HCC towards additional secondary school places.

3 Above 1,000 dwellings, either a large primary (3fe) or a second primary school becomes the consideration. Secondary school places provision may become progressively more complex through simply adding places to an existing school(s).

4 At 3,000 homes a new secondary school on site is appropriate. Various permutations of primary school can be considered. Whether 3 x 2fe or 2 x 3fe depends largely upon permeability of the development during the construction phase and the number of points at which development takes place.

Ware, Land to the Noth & East.

Initial Findings from the Landscape & Visual Appraisal.

The Site

- Landscape is largely a product of intensive late 20th century farming practices. Large fields (lots of old hedgerows removed) gives an open, expansive character.
- Public access is unusually high with a network of circulatory bridleways (smaller amounts of public footpaths) through the Study Site and out into the wider countryside. There are also numerous permissive routes and fields and coverts (linear woodlands).
- Landscape Features focused on hedgerows (some are noteworthy) but most significant features are the many attractive linear coverts. These woodlands are well used by Ware residents (children) There is also an old orchard and two lines of particularly attractive Horse Chestnut in southern part of the eastern parcel of land, adjacent to Wilbury House.
- Landscape Landmark Features include;
 - Pine Trees in Fanhams Hall
 - Redwoods in grounds of the Round House
 - Water Towers at Moles Farm and with Ware's urban edge
 - Linear Coverts.
- There are several listed properties and registered parks & gardens in the vicinity of the Study Site. Most notable is the garden at Fanhams Hall and Gatehouse entrance building. Gardens are currently introverted.
- Given the Site area it is surprising that water courses are limited to one incised field ditch which we suspect may be dry during the summer months.

Landscape Planning Context

- All of the Study Site is within the Green Belt. The East Herts Green Belt Assessment, undertaken by LUC, is helpful albeit we would note that it's brief, whilst considering areas that might be suitable for release/development, did this in a very limited manner and the study did not have the benefit of considering possible new landscape structure that might mitigate introduction of new development.
- In promoting a holistic masterplan for the significant urban extension we would suggest the Green Belt Assessment be re-visited and a study prepared which tests results with the benefit of a new landscape structure.
- As previously noted the setting of Fanhams Hall Gardens and Gatehouse will need to be considered in any emerging masterplan.
- We would suggest footpath/bridleway diversions are avoided if at all possible.
- The existing Landscape Character studies undertaken by the council are helpful but the scale of assessment is of limited value/relevance to the Study Site.
- The Council's Green Infrastructure Strategy has very little impact on the Study Site. However, we can see some benefit in any emerging Landscape Masterplan developing and improving links out of the Site – particularly onto the 'Valley Conservation Zone' to the east of Woods Lane and beyond.

Landscape Appraisal

- Generally an open predominantly expansive agriculture landscape which is the product of late 20th Century intensive arable farming practices. Many hedgerows indicated by field boundaries shown on historic maps (1880) are lost. Hedgerows tend to be focused on a small area of paddock/fields to the north of Ware in the vicinity of Round House.
- The landscape in the vicinity of Moles Farm is notable influenced by the noise of the nearby A10.
- A notable and attractive character of the landscape is the many coverts in and around the Study Site. Given the relatively flat nature of the landscape it is not clear why these linear blocks of woodland have remained. It may be that they were part of old estates or farms kept for combination of game and shoots/hunting. Muntjac Deer were seen on a number of occasions during our site work.

Ware, Land to the Noth & East

Visual Appraisal

- The Study Site's visual inter-relationship with Ware and the wider countryside is strongly influenced by the areas topography. Whilst the terrain appears flat, the topographical study shows how the town climbs up a gentle south facing slopes of the River Lea Valley. Of significance there are two other nearby valleys – the Rib Valley to the north and the Ash Valley to the east.
- The areas topography results on the northern part of the Study Site (Fanhams Valley) relating to Ware to the south, whilst the eastern part of the Study Site (north of Wood Lane) relates to the eastern part of Ware. Fanhams Hall and Fanhams Hall Road which are situated on a weak but visually important north-south ridge. This ridge effectively visually divides the Study Site and results in it acting as a fulcrum for the two areas.
- The many coverts within and around the Site are an attractive feature and play a strong role in the inter-visibility of the different parts of the Site and how the area relates within the wider landscape.
- We would suggest any Masterplan utilises these woodlands and provides new linear woodland areas to visually frame/contain development and hopefully provide a green structure and movement network.

Ware Urban Extension

Retail Assessment, New District Centre

7. Conclusions

- 7.1. This assessment examines the case for new retail floorspace to support an urban extension on land to the north and east of Ware in East Hertfordshire District.
- 7.2. The site is a greenfield and Greenbelt location. However, it is identified within emerging local policy documents as a Broad Location for Development, with an indicative capacity for some 3,000 new dwellings. As part of this housing development, significant new infrastructure will be required, including new retail provision to meet the shopping and service needs of the new community.
- 7.3. This retail assessment considers the scale of new retail floorspace, and in particular, new convenience floorspace, which can be supported by the new residential community. It is demonstrated that the new population could support a foodstore of some 2,300m² (gross) by itself. It has been demonstrated that convenience retail provision of this scale is of an appropriate size and scale for a new District Centre and a new District Centre in this location accords with emerging local policy expectations. Importantly, the new convenience floorspace would not rely on significant trade diversion from retail facilities elsewhere, including in Ware town centre, to support it.
- 7.4. The new resident population would also generate significant new comparison retail expenditure. District Centres do not typically comprise a significant comparison element, although it would be appropriate to include a comparison element (including within the new supermarket). The amount of expenditure generated by the new population will clearly be sufficient to support a modest provision at the new District Centre. However, importantly, the residual comparison expenditure is likely to be spent at other facilities within the District, including Ware, Hertford and Bishops Stortford town centres. This would have a positive impact on these centres.
- 7.5. A new District Centre of the size and scale identified is unlikely to have a significant adverse impact on Ware town centre, or other centres in the surrounding areas. This has been fully explained in Section 5. The new District Centre will be largely supported by the new community and will not need to divert significant trade from other stores to support it.
- 7.6. We do not consider that there is a requirement to undertake a sequential site assessment as the principle of needing to provide a new local centre is derived specifically from the need to support the new residential community on the land to the north and east of Ware.
- 7.7. Whilst the District Centre will be anchored by a new convenience store, it should be supported by a range of other services and facilities, to form a focus for the new development and be capable of meeting local people's day to day needs.
- 7.8. There are good planning reasons to ensure that facilities and services are provided in a convenient location for new residents. A new District Centre will ensure that an appropriate amount and range of facilities are provided in an easily accessible location for all new residents.
- 7.9. Overall, these findings indicate a clear case to support a new District Centre at the urban extension at the land to north and east of Ware. The proposed facilities are a key part of the supporting infrastructure necessary for a planned new community and are typical of the nature of facilities that are sought from a residential development of this scale. They will contribute materially towards effective place making and ensuring the overall development represents sustainable economic development.

HUBERT C. LEACH LTD & PTARMIGAN PLANNING

**PROPOSED RESIDENTIAL
DEVELOPMENT:
LAND TO NORTH & EAST OF WARE**



**FLOOD RISK & DRAINAGE APPRAISAL
REPORT REF. T810-01
PROJECT NO. T810
JULY 2014**

4.0 SUMMARY & RECOMMENDATIONS

- 4.1 The site is considered to be situated within a Flood Risk Zone 1 area at a low risk of flooding, and a residential scheme is therefore considered to be an appropriate form of development in this particular location.
- 4.2 A SuDS strategy which will comply with the requirements of the NPPF can be provided to accommodate the surface water run-off generated by the proposed development scheme.
- 4.3 Proposals will include the provision of a range of SuDS devices to accommodate the surplus volumes generated by a 1:100 year rainfall event (including an allowance for any potential climate change impact).
- 4.4 SuDS proposals will be provided in consultation with the relevant authorities (including SuDS Approval Body if in existence) to ensure the strategy complies with the necessary policy requirements.
- 4.5 Any future planning application will be accompanied by a site-specific Flood Risk Assessment to comply with the requirements of the NPPF.
- 4.6 Detailed discussions will be held with Thames Water regarding the disposal of the foul water flows.
- 4.7 No major diversion or protection works are anticipated to accommodate the development proposals.