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Ecological Appraisal

Project: Cleveland House, Clayton Road,
Pentre Broughton LL116BU

On behalf of: Castlemead Group Limited

Date: September 2015

N.B. The contents of this report contains information regarding protected species of a sensitive nature.

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Executive Summary

The content of this report details the findings of an Extended Phase 1 survey at Cleveland House, Clayton Road, Pentre, Broughton, LL116BU, undertaken to inform a planning application for the construction of 4 residential units and associated access arrangements. The site is centred on approximate Ordnance Survey Grid Reference SJ 298 540.

An Extended Phase 1 survey identified that the site supports a number of broad leaved trees predominately ash (*Fraxinus excelsior*) and sycamore (*Acer pseudoplatnaus*) which vary in their form and condition. With no recent formal management these trees form a closed canopy and much of the understorey is shaded. The site provides opportunities for nesting birds.

An assessment of the proposed layout identified that a number of mature trees require removal to implement the design. Any vegetation clearance will be timed to occur outside the bird breeding season (February–August) or prior to an inspection by a suitably qualified ecologist for nesting birds.

With the exception of nesting birds, no evidence of protected species were noted, the proposal has the opportunity to provide biodiversity enhancements through new tree/hedgerow planting around the site and incorporation of bird and bat boxes upon those mature trees to be retained on site.

Following the provisions detailed in **Section 3** and **4** of this report no adverse effects upon protected species or habitats of ecological merit are envisaged.

Section 1

Introduction

- 1.1 Pearce Environment Ltd were commissioned by Castlemead Group Limited to undertake an Extended Phase 1 survey at a parcel of land associated with Cleveland House, SY30UH (hereafter referred to as 'the site'). The site is centred on approximate Ordnance Survey Grid Reference (OSGR) SJ 298 540.
- 1.2 This report sets out the findings of a desk study, Phase 1 habitat survey and Preliminary Roost Assessment. The findings of this report have been used to inform a planning application construction of 4 detached residential dwellings and highway access arrangements.
- 1.3 The aims of this report are to:
- Determine the habitat types within and immediately adjacent to the application area;
 - Identify both habitats and species constraints pertinent to the development proposal.
 - Detail EPS licensing requirements, reasonable avoidance measures, mitigation and compensation measures where necessary; and
 - Identify opportunities for the proposed development to provide enhancements and add to the biodiversity resource within the site.

Section 2 Methodology

- 2.1 This section summarises the methodologies used during the ecological studies undertaken to inform the proposed development of the site, in line with the aims set out in **Section 1** of this report.

Desk Study

- 2.2 The desk study is an important part of the ecological assessment, it provides contextual information, such as the sites proximity to designated sites and known records of protected/notable species. This information is used to supplement the findings of the Detailed Phase 2 surveys and supports the recommendations and conclusions in **Section 3 & 4** of this report.

Table 2.1: Summary of resources and information requested during the desk study in September 2015.

Organisation/Resource	Information Assessed (search distance from site boundary)
North Wales Environmental Information Service (Cofnod)	• Statutory designations (1km) • Non-statutory designations (1km) • Protected/UK BAP species records (1km)
MAGIC website ¹	• International statutory designations (1km) • National statutory designations (1km)

- 2.3 The search areas described above and resources used are considered to be sufficient to assess the potential for the proposal to affect protected species and designations of conservation concern. All pertinent information obtained during the desk study is referenced within **Section 3** of this report.

¹ Multi-Agency Geographic Information for the Countryside website (www.magic.gov.uk/)

Extended Phase 1 Survey

- 2.4 This level of survey does not aim to provide a complete floral and faunal inventory present on site but to identify field signs of/habitats with the potential to support protected species, thereby determining the need for detailed Phase 2 survey(s).
- 2.5 The main habitat types and dominant plant species present per habitat type were identified and mapped in **Plan 1**, summarised in **Section 2** and illustrated using photographs included within this report.
- 2.6 The Extended Phase 1 survey of the site was undertaken on the 26th August 2015 in clear and dry conditions. This time of year is considered to be within the optimal period for undertaking a Extended Phase 1 survey. The survey was therefore not considered to have been limited by seasonal or climatic factors.
- 2.7 The survey was performed by Douglas Williams, an experienced ecologist/arboriculturalist who holds an MSc in Biological Recording, protected species licenses for both bats and great crested newts, and memberships with the Chartered Institute of Ecology and Environmental Management, and the Arboricultural Association.

Species Surveys

Bats

Bat Roosting Assessment: Trees

- 2.8 An assessment from the ground of all suitable trees located on or immediately adjacent to the site boundaries was undertaken by a Natural Resource Wales licenced bat worker to determine their potential to support roosting bats.
- 2.9 All trees examined were categorised in accordance with Table 8.4 of “*Bat Conservation Trust’s Good Practice Guidelines*²” based on the number and types of features known to be suitable to support roosting bats. These features include cracks and splits in limbs, cavities, woodpecker holes, loose bark and thick-stemmed ivy. Where appropriate these features were assessed using binoculars and/or endoscopes.

Great Crested Newts

- 2.10 A desk based study was undertaken using OS maps and online mapping resources to identify those waterbodies within 250m of the sites boundaries to identify potential breeding resources of notable amphibians such as great crested newt (*Triturus cristatus*).

² Hundt, L. (2012). *Bat Surveys: Good Practice Guidelines. 2nd Edition*. Bat Conservation Trust, London

- 2.11 A terrestrial search was undertaken during the Extended Phase 1 survey for herptiles seeking refuge beneath debris, including log piles and where present piles of brick/rubble.

Nesting birds

- 2.12 An assessment from the ground of all trees/ boundary vegetation located on or immediately adjacent to the site boundaries was undertaken by an experienced ecologist, to identify the presence of habitat/features suitable for nesting birds.

Badgers

- 2.13 A thorough site walkover was undertaken to determine the presence of badgers. The surveyor had unrestricted access to the entirety of the site. Field signs such as setts, scrapings produced during foraging behaviour, latrines, paths and prints were searched for. Where present, an assessment of excavations was made taking into account the shape of the entrance, quantity of spoil and presence of badger hair/claw marks.

Reptiles

- 2.14 A terrestrial search was undertaken during the Extended Phase 1 survey for reptiles basking and seeking refuge beneath debris, including log piles and brick/rubble where present.

Dormouse

- 2.15 A systematic nut search was undertaken over a 10m x 10m quadrat, nuts were collected to identify the presence of characteristically gnawed nuts by dormice including smooth round hole with no transverse tooth marks upon the cut edge of the hole. This was repeated 3 times to provide a degree of confidence of presence/absence³

³Bright, P.W., Mitchell, P. & Morris, P.A (1994). *Dormouse distribution: survey techniques, insular ecology and selection of sites for conservation*. Journal of Applied Ecology. 31:329-339

Results and Recommendations

3.1 The site is situated upon the north eastern periphery of the village of Brymbo approximately 3.5km north west of Wrexham. Situated between Green and Clayton Road, the topography of the site runs east to west down towards Green Road and forms an area of natural infill, bound to the north, south and west by residential development. The eastern boundary of the site meets pasture (beyond Clayton Road) reflective of the land use surrounding Brymbo.

LOCATION PLAN. SCALE 1:1250 DATE OCT. 07 DWG NO. CB-01.

LANE AT CLEVELAND HOUSE, CLAYTON ROAD, AND NO. 27 GREEN ROAD, PENTON BROUGHTON, WIRREHALL, LL11 6BU.

- 6

(*Symphoricarpos albus*) nettle (*Urtica dioica*), broad leaved dock (*Rumex obtusifolius*) and laurel (*prunus laurocerasus*).

Image 3.2 Main body of the site



- 3.5 A section of the hedgerow forming the northern portion of the site has been breached to facilitate access during the extension of Cleveland House. A small compartment of bare earth and spoil remains where machinery has entered into this area.

Image 3.3 Area of cleared earth into the site on the northern boundary



- 3.6 A small metal shed is located within the centre of the site and has become engulfed by tall ruderal species and young saplings of sycamore and hawthorn. This structure is the only man made structure on site.

Image 3.4 Mature Broadleaved trees and mixed woodland



Desk Study - Designated Sites/Habitats of Importance

Statutory Designations

- 3.7 A desk based study was undertaken to identify the presence of statutory designations which include;

International recognised statutory designations

- Special Protection Areas (SPAs)
- Special Areas of Conservation (SACs)
- Ramsar Sites.

National recognised statutory designations

- Sites of Special Scientific Interest (SSSIs)
- National Nature Reserves (NNRs),

Local level statutory designations

- Local Nature Reserves (LNRs)

3.8 The desk study identified did not identify any statutory sites of conservation concern within 1km of the site.

Habitats of Importance

3.9 An assessment of the surrounding habitats using OS maps and online mapping resources did not reveal the presence of any water bodies within 250m of the site illustrated in **Image 3.5** below.

Image 3.5 Desk based search for water bodies within 250m of the study area.



Desk Study – Species Records

- 3.10 During the course of the desk study a number of protected species records were obtained pertinent to the study located with the village Brymbo.
- 3.11 Such records include several accounts of great crested newt (*Triturus cristatus*) and a single record of common lizard (*Lacerta vivipara*), both located in excess of 630m south west of the site at Brymbo Steel Works mitigation Pool.
- 3.12 Notable mammal records include several badger (*Meles meles*) records recorded to tetrad level and a 5 records of bats,(4 of which are identified only as Chiroptera/Bat species) the most recent of which was recorded in 1997. This indicates a lack of recording activity within this area of these species.
- 3.13 No records of those of dormouse (*Muscardinus avellanarius*) or other protected species pertinent to the study were returned.

Preliminary Roost Assessment

- 3.14 An initial site visit was undertaken on the 26th August 2015 to assess the potential of those manmade structures on site and trees to support roosting bats. The only man made structure on site is a metal sheet shed completely enclosed by vegetation. An internal inspection by a licensed bat surveyor did not reveal any evidence of roosting bats. This structure is not deemed suitable for roosting bats due to the construction material and temperature regime of the structure.
- 3.15 Those trees on site vary in their condition, a number exhibit wounding on the main stems during historic movement of machinery through the site. No substantial crevices or cavities were identified suitable to support bats.

Image 3.6 Metal shed (Internal View)



- 3.16 T27 a mature goat willow (*Salix caprea*) (as identified in the tree constraint plan reproduced as **Appendix 3**) is heavily Ivy clad, this may obscure suitable features for roosting bats. It understood this tree will be retained as part of the proposal. In the event the removal of this tree is required, an aerial inspection for evidence of roosting bat(s) should be undertaken prior to any tree works. If bats or evidence of bats are discovered a European protected species licence will be sought from Natural Resources Wales prior to its removal.

Recommendations –

- 3.17 Those trees/structures on site proposed for removal are not considered suitable for roosting bats. On this basis further detailed surveys are not deemed necessary. Those mature trees on site and ruderal understorey are likely to support an array of invertebrate prey. Coupled with those dark corridors on site this area provides suitable foraging opportunities for bats.
- 3.18 All proposed new lighting will be directed away from any vegetated boundary features to retain dark corridors for commuting bats across the site. The foraging/commuting resource will thereby be protected by a sensitive lighting scheme, as per 'Bats and lighting in the UK, BCT, 2009'. Thus no further activity surveys are required.
- 3.19 All domestic external lighting will be of the Passive Infra-Red type, set on a short timer and orientated towards the ground.
- 3.20 It is proposed that new hedgerow planting is proposed to strengthen existing vegetative features and to add to the foraging resource on site. It is envisaged that new planting around the perimeter of the site could be included into the landscape proposal easily to define the curtilage of the site.
- 3.21 Enhancements are proposed through the incorporation of 4 integrated bat boxes i.e 2FR Schwegler bat boxes into the built form to provide long term roosting opportunities on site.

Dormouse

- 3.22 No evidence of dormice such as feeding remains or nests were identified during the survey, nor were any records returned during the desk study. North Wales is not known as a strong hold for this species reflected in the poor distribution of this species shown in the data sets held by the National Dormouse Monitoring Program.
- 3.23 The site is set within an area of natural residential infill and until relatively recently has been managed as part of the garden of Cleveland House. The tree group has increased in its stature and density during this time and ruderal species have become established forming a dense understorey. The site is not well connected to surrounding woodlands/hedgerow and immediately abuts residential development before leading

to pastoral fields. It is well documented that dormice live in low densities the national Dormouse Monitoring Program suggests an average of 1.75 and 2.5 adults per ha. The site is less than 0.5, further surveys are not deemed necessary on the basis;

- The site is not capable of supporting a population of dormice due to its size
- The site is not well connected to suitable resources to act as a temporary receptor for a metapopulations over a larger area.

Water Vole and Otter

- 3.24 No records of water vole (*Arvicola amphibius*) or otter (*Lutra lutra*) were retrieved during the course of the desk study, nor does site fall within close proximity of any water course which could be used by either species.

Badger

- 3.25 The site itself provides opportunities for badgers for sett creation and to forage within the tree group and disturbed earth. No evidence of badger were noted during the survey nor were there any setts or excavations noted immediately adjacent to the site boundaries.

Amphibians

- 3.26 A desk based assessment using OS maps, online mapping resources and search during the Extended Phase 1 survey did not identify the presence of any water bodies within 250m of the site illustrated in **Image 3.5**.
- 3.27 Due to the absence of suitable breeding resources within 250m from the site, species such as great crested newt are not deemed a constraint to development.

Reptiles

- 3.28 A single record of Common Lizard was identified in excess of 630m south west of the site. The site is largely considered unsuitable for reptiles given the shaded nature of the tree group, such that there are very few opportunities for basking reptiles on site. Furthermore the site is restricted in suitable habitats for such species in the wider landscape. Further surveys are not deemed necessary on the basis that the habitat suitability is negligible and connectivity to facilitate colonisation from neighbouring sites is minimal.

Birds

- 3.29 The tree group and it's understorey provides opportunities for a range of passerine species.

Legislation

- 3.30 All wild birds, their nests and eggs are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended), this makes it an offence to:
- i. Intentionally kill, injure or take any wild bird;
 - ii. Take, damage or destroy the nest of any wild bird while it is in use or being built;
 - iii. Take, damage or destroy the egg of any wild bird; or
 - iv. To have in one's possession, or control, any wild bird (dead or alive) or egg or any part of a wild bird or egg.
- 3.31 In addition, further protection is afforded to those wild bird species listed on Schedule 1, prohibiting any intentional or reckless disturbance to these species while it is nest building, or at a nest containing eggs or young, or to recklessly disturb the dependent young of such a bird.

Recommendations

- 3.32 It is understood that a number of early mature to mature trees will be removed as part of the development. Any vegetation clearance should be timed to occur outside the bird breeding season (February–August). In the event that vegetation removal is required within this time period then inspections for nests should be undertaken of any vegetation which is to be removed by a suitably qualified ecologist immediately prior to the start of any works.
- 3.33 Should any active nest be found, then a buffer zone of 5m should be created around the nest and maintained until all chicks have fledged before works can commence.

Recommendations

- 3.34 Enhancement of the site for nesting birds will be provided through the erection of 2x Schwegler 1MR Avian Nest Box upon the proposed residential dwellings.
- 3.35 In addition a significant proportion of new hedgerow planting of native hedgerow species is recommended to denote the curtilage of each residential unit. It is envisaged that these provisions will provide enhancements to the site as a commuting features/forging resource for both birds and bats.
- 3.36 It is recommended that new hedgerow planting will be provided by installing bare rooted stock of local provenance spaced approximately 30cm apart in two staggered rows to allow six whips per meter. Bare rooted stock will be installed using supportive canes and plastic spiral guards.

Image 3.7 Species composition of new hedgerow planting

Species	Composition
hawthorn (<i>Crateagus monogyna</i>)	70%,

hazel (<i>Corylus avellana</i>)	10%,
guelder rose (<i>Viburnum opulus</i>)	4%,
dog rose (<i>Rosa canina</i>)	3%,
field maple (<i>Acer campestre</i>)	3%,
blackthorn (<i>Prunus spinosa</i>)	2%,
crab apple (<i>Malus sylvestris</i>)	2%,
dogwood (<i>Cornus sanguine</i>)	2%,
holly (<i>Ilex aquifolium</i>)	2%,
spindle tree (<i>Euonymus europaeus</i>).	2%,

- 3.37 It is proposed the new planting of fruit/nut bearing trees are incorporated within the curtilage of the residential plot as part of a landscape planting scheme to further enhance foraging and nesting opportunities on site and increased species diversity of the tree stock.

Section 4

Conclusion

Summary of the Site's Ecological Significance

- 4.1 An assessment of the proposed site layout (**Appendix 1**) provided by Castlemead Group Limited identifies that the removal of a number of semi mature to mature trees and surface vegetation will be required to construct four residential units.
- 4.2 The site provides significant opportunities for nesting birds. The removal of any vegetation will be undertaken outside of the nesting period (Feb-August Incl) or immediately after any inspections for nests by a suitably qualified ecologist.
- 4.3 No evidence of other protected species such as dormice or species of bats were noted during the Extended Phase 1 survey.

Table 4.1: Summary of status of protected species on site with recommendations.

Group	Status on site	Additional survey requirements	Recommendations
Habitats	Largely over shaded tree group ground flora dominated by shade tolerant ruderal species.	No further surveys required.	No actions needed
Bats	Single structure on site, a steel framed shed not suitable for roosting bats. No trees on site were noted to support features suitable for roosting bats require removal.	No further surveys required.	Install 4x 2FR Schwegler bat boxes into the built form
Birds	Common bird species are likely to utilise broad leaved trees and undergrowth	No further surveys required	All de-vegetation/demolition of buildings to be undertaken outside of the nesting period (Feb-August Incl). Install 2x 1MR avian Nest Box upon mature trees and new planting, replacement tree and hedgerow planting
Badgers	No setts or field signs observed on site.	No further surveys required.	No actions needed.
Amphibians	No suitable aquatic resources within 250m of the site	No further surveys required	No actions needed.

Group	Status on site	Additional survey requirements	Recommendations
Reptiles	Over shaded nature of the site make those habitats unsuitable for basking reptiles	No further surveys required.	No actions needed.
Otter/Water vole	No suitable habitat on site	No further surveys required.	No action required
Dormouse	No evidence of nests or feeding remains. Size is not considered suitable for this species	No further surveys required.	No actions needed.

- 4.4 Subject to the implementation of those recommendations set out within **Section 3** of this report, no significant impacts upon protected/notable species present on site are considered likely to arise.
- 4.5 The proposal is not considered to contravene any planning policy or statutory legislation relating to protected species.
- 4.6 The findings of this report are valid for up to one year from the date of this report, Pearce Environment Ltd retain the right to re-publish data obtained and submit those species records produced during all ecological studies to the local recording centre.
- 4.7 Should the development proposals be altered significantly, such that changes to the working area and/or duration of the works arise, then a re-assessment of the likely impacts arising by a suitably experienced ecologist will be required.

Target Notes

TN1 – resent disturbance where machinery has beached northern hedgerow.

CLEVELAND HOUSE

PLOT 3

PLOT 2

PLOT 1

PLOT 4

PLOT 13

HOLLAND ROAD

GREEN ROAD

CLAYTON ROAD

TO HALCOG

TO WREXHAM

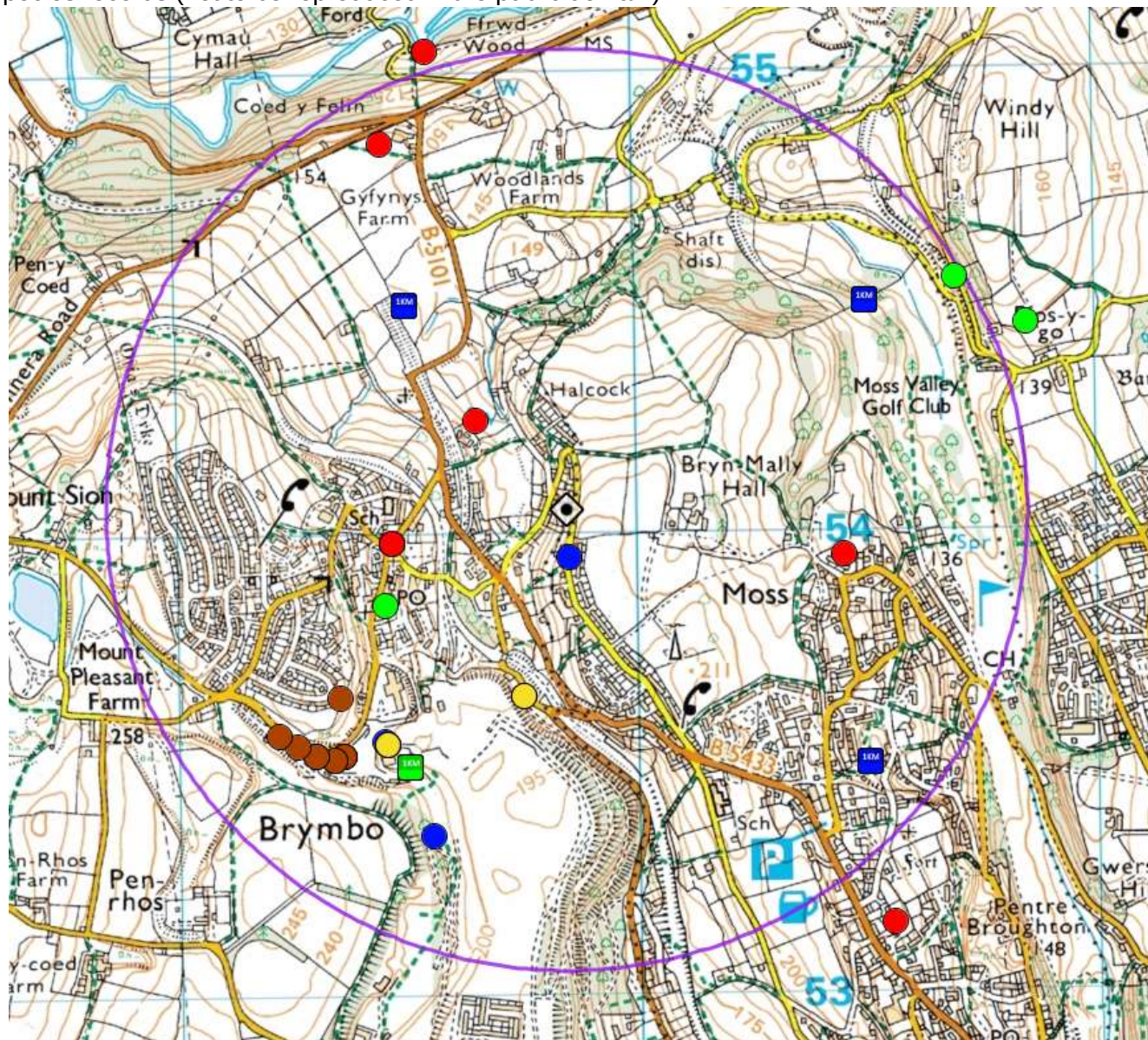
CASTLEMEAD HOMES LIMITED

SITE PLAN AS PROPOSED • SCALE 1:200

DATE : JUNE .08 • DWG.Nº: C.H.-06.REV.'F'

LAND AT : CLEVELAND HOUSE, CLAYTON ROAD, AND Nº 27 GREEN ROAD, PENTRE BROUGHTON, WREXHAM, LL11 6BU.

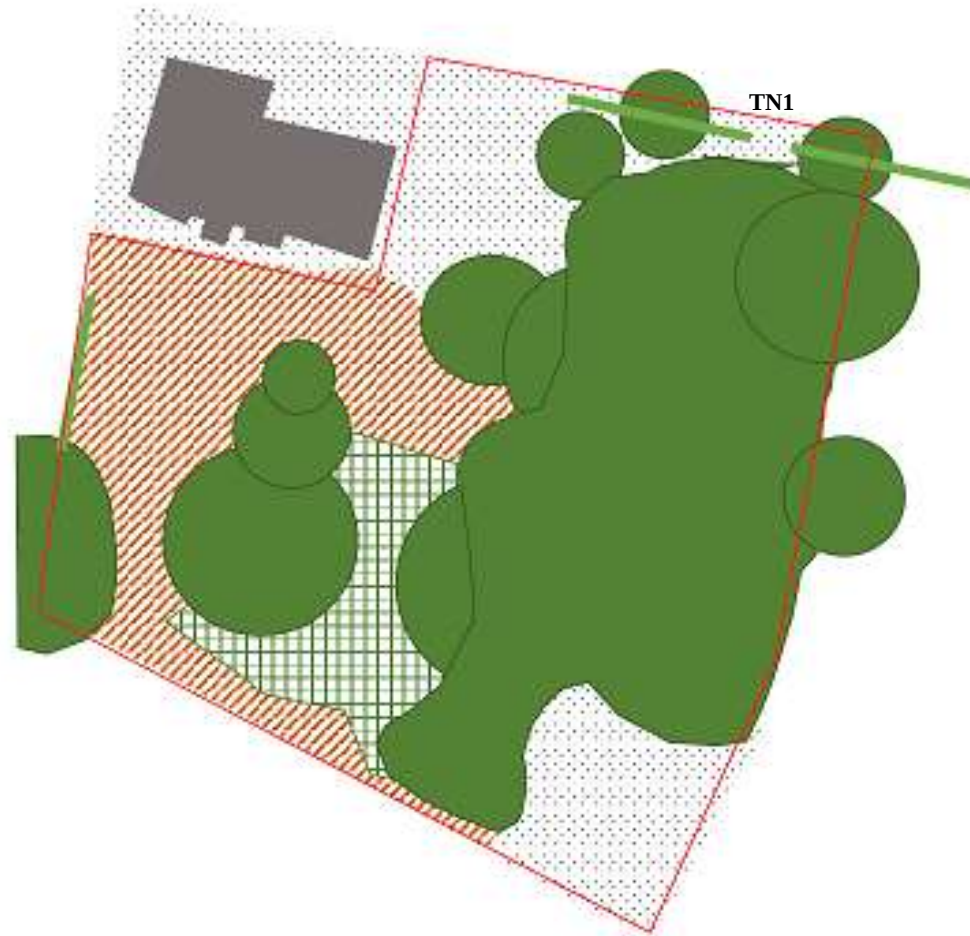
Appendix 2 Protected species records (not to be reproduced in the public domain)



Appendix 3 Tree constraints plan



Plan 1 Phase 1 Habitat Plan



This Plan has been prepared using the site location map provided by Castlemead Homes Ltd
This plan is indicative, locations of all features are approximate and not drawn to scale

Key

Hard standing	
Building	
Scrub	
Tall ruderal herbs	
Species Poor Hedgerow	
Broad leaved Trees	
Application Area	

Project Cleveland House, Clayton Road,
Pentre, Broughton

Title

Plan 1 : Phase 1 Habitat Plan

Client Castlemead Homes Ltd

Drawn by DW 16/09/2015

Version 01

PearceEnvironment LTD

