PHOTOGRAPHS

Photographs taken at Townsend Lane by Sorrel Kiamil on the 17/03/2016.

Photograph 1: First large oak, with no holes, small areas of lifting bark, and ivy covered.

Photograph 2: Second large oak, with no holes and ivy covered.

Photograph 3: Large oak, off site, large hole from possible fallen branch.

Photograph 4: Fallen oak and surrounding vegetation. Potential hibernacula.

Landscape Planning Limited
4 The Courtyards
Phoenix Square
Wyncolls Road
Colchester
Essex CO4 9PE

www.landscapeplanning.co.uk

BAT REPORT

Site:

Townsend Lane
Harpenden
Hertfordshire
AL5 2RH

Presented to:

Hill Residential Limited

By:
Landscape Planning Limited
4 The Courtyards
Wyncolls Road
Colchester
CO4 9PE

October 2016

CONTENTS

1.0 DISCLAIMERS

Field Survey

1.1 Field surveys are undertaken or supervised by a company Ecologist. In certain circumstances, full survey coverage may not be possible due to land permission requirements or health and safety restrictions. Where possible, visual assessment is undertaken and photographic evidence documented. If appropriate, full details of any constraints to surveying or special circumstances are given in the report.

Limitation and Seasonal Constraints

1.2 Owing to seasonal variances, weather conditions may sometimes be sub-optimal for surveying. Full details are given in the report.

Quality Assurance

1.3 The Ecologist delivering or supervising this report is bound by company policy and their own institute's Code of Professional Conduct when undertaking surveys on behalf of Landscape Planning Limited.

2.0 REPORT PROCEDURES

2.1 This Report has been prepared in accordance with Landscape Planning Limited's quality system procedures as follows:

Methodology

2.2 All habitats on site were recorded in accordance with methods based on those described in the Bat Workers' Manual (2004), English Nature's Bat Mitigation Guidelines (2004), and Bat Conservation Trust Bat Surveys Good Practice Guidelines (2016), including examination of the potential for any protected species or any interesting features.

Maps, Plans and Drawings

2.3 Maps, plans, and drawings have been delivered by the Planning Service Project Coordinator and where applicable have been cross checked against field data tables and annotated field plans.

Report and Findings

2.4 The report and findings have been prepared and/or quality checked by a Consultant prior to issue to the client.

Report Prepared by:	Report Checked by
Sorrel Kiamil BSc MSc	Adele Devonshire (BSc, MSc, MCIEEM)
Ecologist	Ecologist
For and on behalf of Landscape Planning Ltd	

3.0 PREFACE

3.1 Landscape Planning Limited was commissioned by Hill Residential Limited to undertake a bat assessment and produce a bat report, in order to provide information to support a development proposal for the parcel of land at Townsend Lane, Harpenden, Hertfordshire, AL5 2RH.

3.2 This site is the subject of a proposal for 41 new dwellings.

3.3 The site is predominantly arable field, the north and west boundary is intact hedgerow adjacent to Townsend road. The east was hedgerow, fences, and residential gardens and south was arable fields.

3.4 A Preliminary Ecological Appraisal (Landscape Planning, April 2016) identified the potential for foraging and commuting bats. A bat activity survey was therefore recommended to be undertaken on site to establish foraging activity and any potential roosts and to inform suitable lighting design and mitigation.

3.5 Bats are a European Protected Species and strictly protected; therefore, it is important to establish bat use of any building or tree that may be affected by development proposals in order that appropriate mitigation can be developed to safeguard any bat interest and prevent offences under the relevant legislation.

3.6 The brief was as follows:

- To undertake activity surveys to determine the importance of the site for bats;
- To identify and make recommendations for any further surveys or other work required in order to adequately develop a mitigation strategy for any bat commuting routes or potential roosts identified on site.

4.0 INTRODUCTION

4.1 The site is located at Townsend lane, Harpenden, Hertfordshire, AL5 2RH, and is situated at grid reference TL122144 and approximately 1.6 hectares in size.

4.2 The site is predominantly arable field and the northwest boundary is intact hedgerow adjacent to Townsend road. The east was hedgerow, fences, and residential gardens and south was arable fields. See figure 1 below.

Figure 1. Aerial image of surveyed site and surrounding areas (Source Google Maps ©)

4.3 This site is the subject of a proposed planning application for 41 new dwellings.

5.0 METHODOLOGY

Surveyor Information

5.1 Adele Devonshire BSc MSc MCIEEM and Sorrel Kiamil BSc MSc were the surveyors, both of whom are experienced bat surveyors.

Survey Limitations

5.2 There were no survey limitations for this site.

Pre-survey data search

5.3 A search was conducted for local bat records by contacting Herts Environmental Records Centre (HERC) on 22/03/2016.

Bat Surveys

5.4 The survey employed methods outlined in the Bat Workers' Manual (2004), English Nature's Bat Mitigation Guidelines (2004), and Bat Conservation Trust Bat Surveys Good Practice Guidelines (2016).

5.5 Surveys were undertaken following standard survey guidance. Equipment used included Pettersson D230 frequency division detectors with Edirol digital recorders. These were used in combination with surveyor observation to record bats on the site. Bat recordings were analysed using BatSound V4 software. Information recorded in the field included species, time of observation and activity type (e.g. emergence, foraging or bat pass with directional flight if observed).

5.6 The surveys were carried out between the 27/06/2016 and 24/10/2016 in suitable weather conditions. The dusk surveys commenced 15 minutes before sunset and continued for approximately two hours after sunset.

6.0 RESULTS

Biological Records

6.1 Fifty four records for bats were returned from the data search. Species include lesser noctule (*Nyctalus leisleri)*, natterers *(Myotis nattereri)*, pipistrelle species (*Pipistrellus),* common pipistrelle (*Pipistrellus pipistrellus)*, brown long-eared (*Plecotus auritus),* and unknown bat species (*Chiroptera).* The most common was pipistrelle species with twenty six returns. The location of the majority of records was not given, however the closest received was 520m from site, and was pipistrelle species.

Habitat Description

6.2 The site is predominantly arable field approximately 1.6 hectares in size. The northwest boundary is intact hedgerow adjacent to Townsend Lane, the dominant species are hazel (*Corylus avellana)* and blackthorn (*Prunus spinose)*. The east was hedgerow, fences, and residential gardens and to the south were arable fields.

Activity Survey

6.3 No bats were observed emerging from any trees on site during any of the surveys.

6.4 Bat activity during the surveys was generally low at Townsend Lane with common pipistrelle (*Pipistrellus pipistrellus)*, soprano pipistrelle (*Pipistrellus pygmaeus*), natterers (*Myotis nattereri)*, noctule (*Nyctalus noctula)* and serotine (*Eptesicus serotinus)* all being recorded.

6.5 Foraging activity was mostly recorded along the south and south-west hedgerow and tree lines (see map in appendix three and photographs in appendix 2).

Activity Survey 1:

Date	27th June 2016
Survey	Dusk survey
Weather Conditions	Dry, 80% cloud cover, Beaufort 1, 17℃
Summary of Results	Two common pipistrelles foraging along the southern boundary hedgerow between 21:50 and 21:58

	Two common pipistrelles foraging along the southern boundary hedgerow between 22:00 and 22:09 Two common pipistrelles foraging along the eastern boundary by the residential gardens between 22:11 and 22:18 Two common pipistrelles foraging along the south and west boundary by the between 22:31 and 10:36

Activity Survey 2:

Date	21th July 2016
Survey	Dusk survey
Weather Conditions	Light rain, 100% cloud cover, Beaufort 1, 20°c
Summary of Results	One common pipistrelle passed the southern boundary at 21:48 One common pipistrelle circled and passed the southwest boundary corner between 21:59 and 22:01 One soprano pipistrelle heard but not seen in the south east corner Noctule heard and not seen in the north west corner at 22:12

Activity survey 3:

Date	24th August 2016
Survey	Dusk survey
Weather Conditions	Light occasional rain, 70% cloud cover, Beaufort 1, 31°c
Summary of Results	Up to three common pipistrelles were observed foraging from 20:20 to 20:48 along the south and west boundaries One noctule was heard but not seen foraging at 21:00 along the north west corner

Activity survey 4:

Date	21th September 2016
Survey	Dusk survey
Weather Conditions	Dry, 0% cloud cover, Beaufort 1-2, 19°c
Summary of Results	Up to three common pipistrelle were observed constantly foraging along the north boundary hedgerow and the west hedgerow and tree boundary between 19:59 and 22:21 One natterer bat was heard passing but not seen at 22:48, it was assumed it was in the lane adjacent to the west boundary One serotine was observed passing along the northern hedgerow at 22:55

Activity survey 5:

Date	6th October 2016
Survey	Dusk survey
Weather Conditions	Dry, 75% cloud cover, Beaufort 2-3, 13°c
Summary of Results	No activity was recorded or observed

Activity survey 6:

Date	24th October 2016
Survey	Dusk survey
Weather Conditions	Light rain, 80% cloud cover, Beaufort 1-2 , 12°c
Summary of Results	One common pipistrelle was heard passing at 18:45 along the southern boundary hedgerow

Constraints

6.6 The results taken from bat detector recordings are biased towards bats that use louder echolocation calls; therefore, quiet species such as brown long-eared bats may be under recorded due to the limited recording range of the equipment. In order to compensate for this, surveyors were vigilant to ensure that any visual cues identifying the presence of this species were recorded.

7.0 CONCLUSIONS & RECOMMENDATIONS

Foraging and Commuting Bats

7.1 Bat foraging activity within the site was found to be low – moderate with common pipistrelle (*Pipistrellus pipistrellus)*, soprano pipistrelle (*Pipistrellus pygmaeus*), natterers (*Myotis nattereri)*, noctule (*Nyctalus noctula)* and serotine (*Eptesicus serotinus)* all being recorded.

7.2 Foraging and commuting activity was highest along the south and west hedgerows. Both October surveys had least bat activity.

Potential Impacts & Recommendations

7.3 Low activity was recorded along the northern boundary hedgerow and the eastern boundary where the residential gardens are. Most activity was observed along the south and west hedgerow boundaries with a maximum of 5 individuals observed during any of the surveys. The proposals are for 41 residential dwellings and associated gardens and roads. The proposal plans indicate that the south and west hedgerows and trees will remain intact. It is therefore considered unlikely the proposed works will affect the local population of bats to such an extent to have a negative impact on the distribution. Nonetheless, steps should be taken to reduce impacts to the local bat populations.

7.4 To minimise disturbance to foraging and commuting bats during clearance and construction works, it is recommended that lighting on the sites is kept to a minimum. Lights should be placed to avoid directly illuminating the tree line, especially in the south and west hedgerows where higher foraging activity was recorded. Any security or other external lighting should be operated on short timers, lighting should be directed using hoods and directional lighting, and light sensors should be sensitive to large moving objects only.

7.5 Bat boxes should be installed in suitable locations to enhance bat habitat and encourage bats to the area.

8.0 REFERENCES

Google Maps (2015) http://www.google.co.uk (Accessed 25th September 2016).

Mitchell-Jones, A.J & McLeish, A.P (2004) *The Bat Workers Manual* (3rd Ed.) JNCC, Peterborough.

Mitchell-Jones, A.J (2004) *Bat Mitigation Guidelines*, English Nature, Peterborough.

Bat Conservation Trust (2016). *Bat Surveys – Good Practice Guidelines*. Bat Conservation Trust, London.

Bat Conservation Trust (2009) *Bats and lighting in the UK, version 3.* Bat Conservation Trust, London.

BCT (2012) *Bats and Buildings*. Bat Conservation Trust, London.

Landscape Planning (2016) Preliminary Ecological Assessment 66734

Herts Environmental Records Centre (HERC) (2016), biological records, Townsend Lane.

APPENDIX 1

Legislation

Legislation

The Wildlife and Countryside Act 1981 (amended 2010), through inclusion on Schedule 5, protects bat species in Britain. They are also protected under the Conservation (Natural Habitats &c.) Regulations 1994 (amended 2012), and consequently receive stringent protection.

The Act and Regulations include provisions making it an offence to:

1. Intentionally or deliberately kill, injure or capture (take) bats.
2. Intentionally or recklessly damage or destroy bat roosts or disturb bats.

A bat roost is interpreted as 'any structure or place which is used for shelter or protection', whether or not the bats are present at the time.

European protected animal species and their breeding sites or resting places are protected by the Habitat Regulations. It is an offence for anyone to deliberately capture, injure or kill any such animal or to deliberately take or destroy their eggs. It is an offence to damage or destroy a breeding or resting place of a European Protected Species. It is an offence to possess a European Protected Species.

The threshold above which a person will commit the offence of deliberately disturbing a wild animal of a European protected species has been raised. A person will commit an offence only if they deliberately disturb such animals in a way as to be likely to significantly affect:

1. The ability of any significant groups of animals of that species to survive, breed, or rear or nurture their young, or
2. The local distribution of abundance of that species.

The existing offences, such as obstruction of a bat roost, low-level disturbance and sale, which cover European Protected Species under the Wildlife and Countryside Act (1981, as amended 2010), still apply.

Policy

The policies in the **National Planning Policy Framework** (NPPF) apply from the day of publication - 27 March 2012.

National Planning Policy Framework (NPPF)

The policies in Local Plans (and the London Plan) should not be considered out-of-date simply because they were adopted prior to the publication of the NPPF. However, the NPPF policies are material considerations which local planning authorities should take into account from the day of its publication. The NPPF must also be taken into account in the preparation of plans, which may need to be revised and which should be done as quickly as possible.

NPPF: Conserving and Enhancing the Natural Environment; Section 11; Paragraph 109.

The planning system should contribute to and enhance the natural and local environment by:

1. Protecting and enhancing valued landscapes, geological conservation interests and soils;
2. Recognising the wider benefits of ecosystem services;
3. Minimising impacts on biodiversity and proving net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
4. Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water, or noise pollution or land instability; and
5. Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Regardless of any planning policy or guideline, certain species are legally protected and any type of development that would injure, kill, ill-treat, intentionally damage or destroy any protected species or their place of shelter would be a criminal act.

Since August 2007, amendments to the Conservation (Natural Habitats &c.) Regulations 1994 have come into force. These amendments have consequences for the protected species licensing through Natural England.

Standing Advice

Natural England provide a flow chart which aims to guide the developer through the process when dealing with protected species.

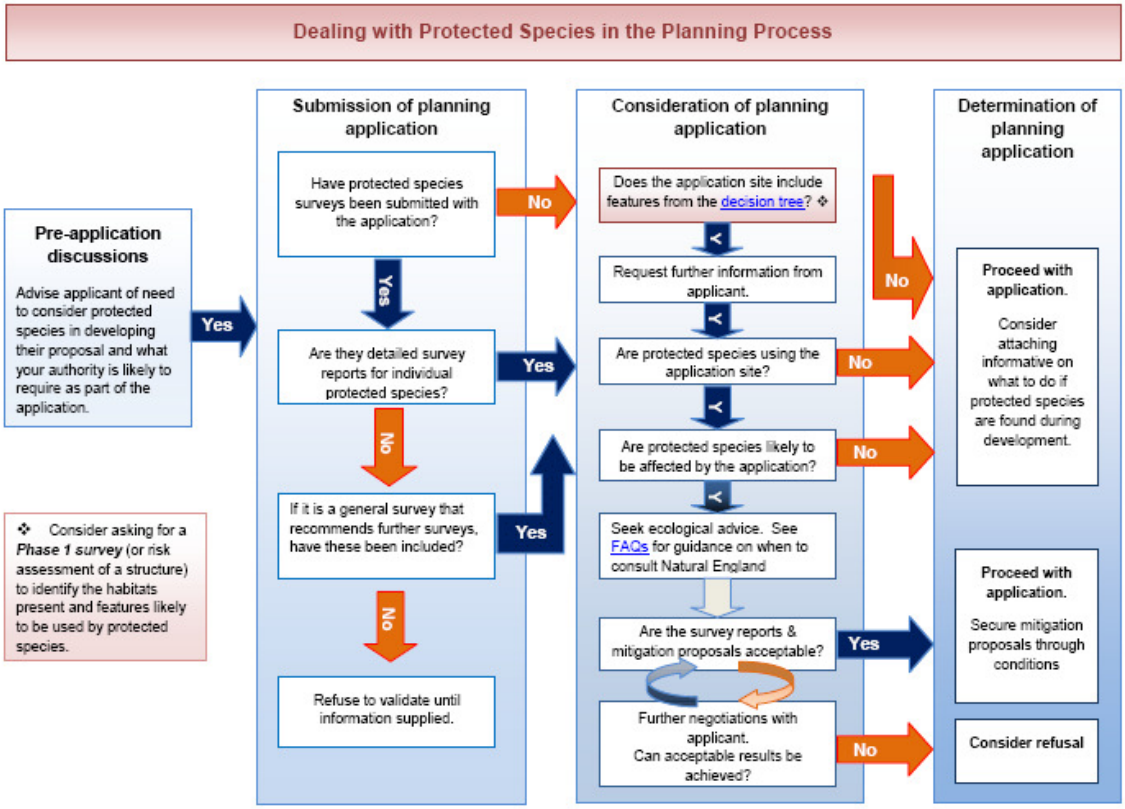


Figure 2. Natural England Standing Guidance Flow Chart www.naturalengland.org.uk

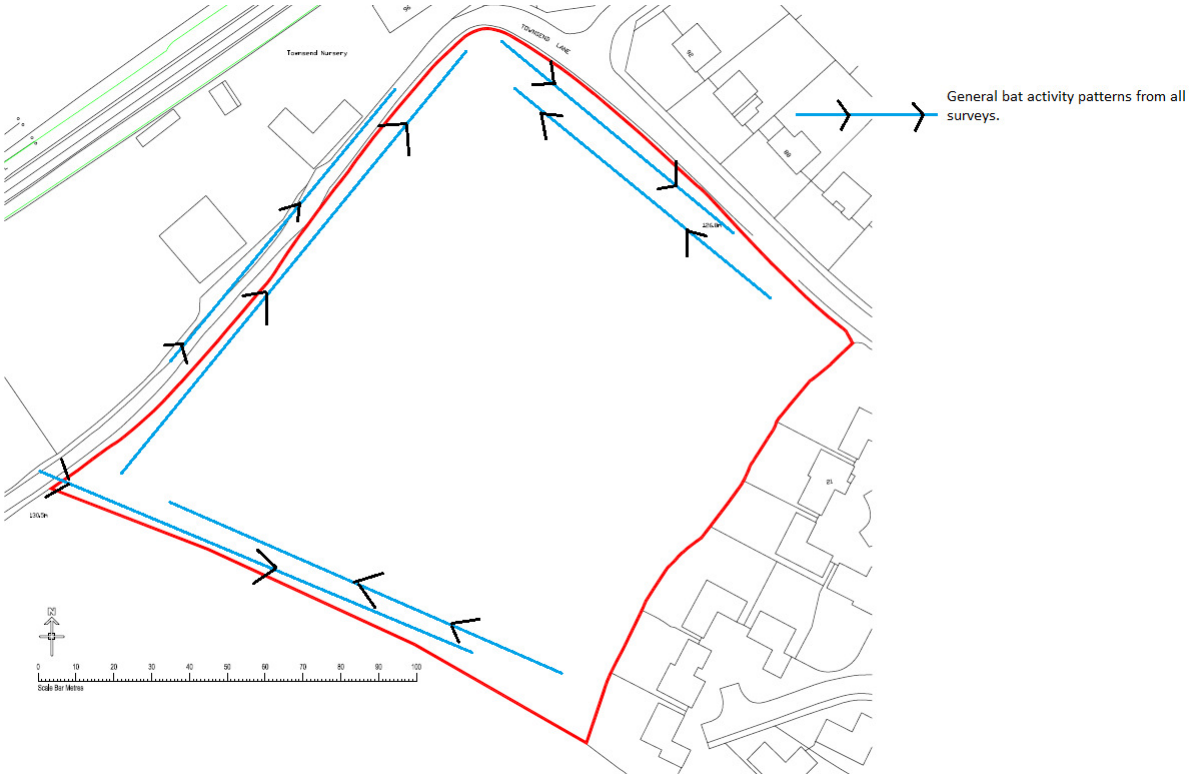
APPENDIX 2

Photographs

	
Photograph 1. West boundary hedgerow and trees. Bat activity was observed here.	**Photograph 2.** Southern hedgerow, bat activity was observed along this hedgerow.

APPENDIX 2

Map



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REPTILE SURVEY REPORT

Site:

Townsend Lane,
Harpenden,
Hertfordshire,
AL5 2RH

Presented to:

Hill Residential Ltd.

By:

Landscape Planning Limited
4 The Courtyards
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18 July 2016

Ref: 66734

CONTENTS

APPENDICES

1.0 DISCLAIMER AND LIMITATIONS

Field Surveys

1.1 Field surveys are undertaken or supervised by a company Ecologist. In certain circumstances, full survey coverage may not be possible due to land permission requirements or health and safety restrictions. Where possible, visual assessment is undertaken and photographic evidence documented. If appropriate, full details of any constraints to surveying or special circumstances are given in the report.

Limitations and Seasonal Constraints

1.2 Owing to seasonal variances and prevailing weather, conditions may sometimes be sub-optimal for surveying and this may delay or disrupt planned survey programmes. If applicable, full details are given in the report.

2.0 REPORT PROCEDURES

Quality Assurance

2.1 The Surveyor is bound by company Policy and their own institute's Code of Professional Conduct when undertaking surveys on behalf of Landscape Planning Limited.

Methodology

2.2 The methodologies used are in line with the Reptile Survey Methods (Foster & Gent, 1996), The JNCC Herpetofauna Worker's Manual (2003) and the Froglife Advice Sheet 10 (2003) Reptile Survey – An introduction to planning, conducting and interpreting surveys for snake and lizard conservation.

Maps, plans and drawings

2.3 Maps, plans and drawings have been delivered by the surveyor and where applicable have been cross checked against field data tables and annotated field plans.

Report and findings

2.4 The report and findings have been prepared and / or quality checked by a practice Consultant prior to issue to the client.

Report Prepared by:	Report checked by :
Adele Devonshire (BSc, MCIEEM)	Sorrel Kiamil (BSc, MSc)
Ecologist	Ecologist
For and on behalf of Landscape Planning Ltd	

3.0 PREFACE

3.1 Landscape Planning Limited (LPL) was commissioned by Hill Residential Ltd. to conduct an ecological assessment in relation to reptiles at Townsend Lane, Harpenden, Hertfordshire, AL5 2RH. This site is the subject of a proposed planning application for a residential development.

3.2 A previous Ecological Appraisal (Landscape Planning Ltd. Ref: 66734, March 2016) identified the site as providing limited suitable habitat for native reptiles, such as slow worm (*Anguis fragilis*) and common lizard (*Lacerta vivipara*), with hedgerows and tall grassland surrounding an arable field that would provide foraging and shelter opportunities and connectivity to other suitable habitats. Surveys have therefore been undertaken in order to determine the presence or likely absence of reptiles.

3.3 The identification of protected species is necessary in the proposed development of a site to comply with existing legislation and to allow any work that may otherwise be detrimental to reptiles to be appropriately scheduled.

3.4 The brief was as follows:

- To undertake a survey of the site for the presence of protected reptile species that might materially impact on the proposals.
- To identify and make recommendations for any further surveys or other work required in order to adequately develop a mitigation strategy for any reptiles on the site as appropriate.

4.0 SITE CONTEXT

4.1 The site is located off Townsend Lane on the edge of the town of Harpenden, Hertfordshire. The central grid reference for the site is TL122144. The site is approximately 1.6ha in extent.

4.2 The site is bounded by Townsend Lane and residential houses to the north east, residential housing to the south east, some properties to the north west and arable farmland to the south west. The site itself comprises an arable field of barley, bound by species poor intact hedgerows with tall grassland and ruderals alongside. The wider area is dominated by arable farmland, with the town of Hitchin to the east.

Figure 1. Site and surroundings. Source Google Maps ©

5.0 METHODOLOGY

Field Survey

5.1 Two approaches were taken. The first involved visual searching for basking animals, walking slowly, quietly and gently around the site and checking potential basking sites with close focus binoculars. Since reptiles have a well-known affinity for debris exposed or partly exposed to the sun, we also turned potential refuges in search of reptiles, returning the debris to position after checking. Visual searches were mainly made when basking behaviour would be frequent, and a number of ideal basking spots were checked, including pieces of wood, corrugated metal, large stones and bare ground.

5.2 The second method involved the use of purposely placed refugia – in this case, 0.5 x 0.5m pieces of roofing felt. Focusing surveying efforts in the tall ruderal and scrub habitats on site. A total of 30 refugia were placed throughout areas of potential reptile habitat on site (see refugia locations in Appendix 2).

5.3 A total of 7 visits were made to the site to check the refugia and conduct a visual search between 25/05/16 and 27/06/16, under suitable weather conditions. Survey visits were either made during the morning or late afternoon. The techniques are fully described in Foster & Gent (1996), Gent & Gibson (2003) and Froglife Advice Sheet 10 (2003).

Survey Limitations

5.4 There were no limitations to the survey.

6.0 RESULTS

Data Search

6.1 Hertfordshire Environmental Records Centre (HERC) was instructed on 18/05/2016 to undertake a data search to identify any protected or notable species within a 2km radius of the site.

6.2 The data search revealed that grass snake (*Natrix natrix*), slow worm (*Anguis fragilis*) and viviparous lizard (*Zootoca vivipara)* have all been recorded in the search area. The closest record identified was of a slow worm approximately 810m east of the proposal site in 2014 (Landscape Planning 2016).

Habitat Description

6.3 The majority of the site comprised arable farmland; however, the boundaries of the site comprised species poor intact hedgerow, dominated by hazel (*Corylus avellana*) and blackthorn (*Prunus spinosa).* Adjacent to the hedgerows was a strip of grassland and ruderal vegetation with species that included common cocksfoot (*Dactylis glomerata)*, false-oat grass (*Arrhenatherum elatius*), bent grass (*Agrostis sp*), dock (*Rumex obtuse)* and Yorkshire fog (*Holcus lanatus), cow parsley (Anthriscus sylvestris), hogweed (Hercleum sphondylium), bracken (Pteridium aquilinum) and nettles (Urtica dioica).*

6.4 There was also connectivity to suitable habitats in the wider environment, mainly to the west through interconnecting hedgerows.

Survey Results

6.5 The refugia were laid on 25/05/16 and then checked over 7 suitable days between 06/06/16 and the 27/06/16. Surveys were carried out on days with suitable weather conditions (i.e. no heavy rain, sunny spells, and when refugia were warm, but not hot). Generally, given the time of year, the survey visits were timed for early morning so that the temperature was conducive for undertaking reptile surveys. On days when the temperature was predicted to be warmer than the seasonal average, survey visit times were altered accordingly to be earlier in the morning / later in the afternoon to avoid overheated refugia.

6.6 All the artificial refuges and any features of potential reptile interest were checked during each site visit. **No reptiles were observed during any of the visits**.

6.7 The results of the surveys are provided in tabulated form below (Table 1). This table should be read in conjunction with the reptile survey plan (see Appendix 2) and site photographs (see Appendix 3).

Table 1: Summary of survey information, providing details including date, time of site visit, survey results and weather conditions as recorded at time of site visit. The reptile mats were laid on the 25/05/16; no reptiles were observed when the reptile mats were laid. The mats were collected during the final survey visit.

Visit	Date	Weather	Notes
1	06/06/2016 10:00	16°C, 0-1 Beaufort scale, 10% cloud cover, dry.	No reptiles found.
2	08/06/2016 10:30	16°C, 2 Beaufort scale, 20% cloud cover, dry.	No reptiles found
3	13/06/2016 09:30	15.5°C, 0-1 Beaufort scale, 100% cloud cover, hazy sunshine, rain previous 12hrs.	No reptiles found.
4	15/06/2016 09:45	16°C, 1-2 Beaufort scale, 50% cloud cover, sunny and dry.	No reptiles found.
5	22/06/2016 10:30	14.5°C, 0-1 Beaufort scale, 80% cloud cover, dry.	No reptiles found.
6	24/06/2016 10:45	16°C, 1-2 Beaufort scale, 60% cloud cover, sunny and dry.	No reptiles found.
7	27/06/2016 09:30	17°C 0-1 Beaufort scale, 20% cloud cover, sunny and dry.	No reptiles found.

7.0 CONCLUSIONS & RECOMMENDATIONS

7.1 A reptile survey was undertaken on 7 separate occasions between 25/05/16 and 27/06/16. The surveys involved checking artificial and natural refugia for reptiles, and surveys were timed for when temperatures and weather conditions were conducive to reptile movements.

7.2 No reptiles were found during the visits and it is therefore considered unlikely that any reptile population is present within the boundaries of the proposed development site. It is unlikely that any reptiles will be harmed or killed as a result of any development and no further surveys or mitigation for reptiles is required. In addition, no amphibians (i.e. great crested newts) were observed during any of the surveys.

7.3 It is recommended that contractors are briefed on the protocol to follow in the unlikely event that reptiles should be subsequently found during development work. Contractors should halt works and contact an ecologist for further advice.

7.4 It is recommended that enhancements for reptiles are incorporated into the landscape design of the proposed new development, such as log piles, grasses of varied sward length and plants to attract invertebrates.

REFERENCES

Foster, J. & Gent, T. (1996) *Reptile Survey Methods*. English Nature Science 27. English Nature, Peterborough.

Gent, T & Gibson, S (2003) *Herpetofauna Workers' Manual*. JNCC, Peterborough.

Froglife Advice Sheet 10 (2003): *Reptile Survey – An introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife.

Hertfordshire Environmental Records Centre (HERC) (2016) *Biological Data Request for Townsend Lane, Harpenden.*

Landscape Planning Group Ltd. (2016) *Preliminary Ecological Appraisal, Land Adjacent Townsend Lane, Harpenden Ref: 66734.*
Google Maps (2016) http://www.google.co.uk (Accessed 18/07/2016)

APPENDIX 1

Relevant Legislation

Legislation

All reptile species in the UK receive some legal protection through the Wildlife & Countryside Act 1981 (as amended). Certain species of reptiles are also included in Schedule 2 of the Conservation (Natural Habitats &c.) Regulations 1994 (commonly referred to as the Habitat Regulations), and as European Protected Species these species receive further stringent protection.

There are effectively two levels of protection for native reptiles in the UK:

Full Protection: The sand lizard (*Lacerta agilis)* and smooth snake (*Coronella austriaca)* are often referred to as 'Fully Protected'. All elements of Section 9 of the Wildlife & Countryside Act 1981 (as amended) apply, as does Regulation 39 of the Habitat Regulations 1994. The Act and Regulations include provision making it an offence to:

- Deliberately or intentionally kill, injure or take;
- Deliberately disturb;
- Deliberately take or destroy eggs;
- Damage or destroy a breeding site or resting place;
- Intentionally obstruct access to a place used for shelter; and
- Keep, transport, sell or exchange.

Protection against killing, injuring and sale etc. only: This applies to common lizard (*Lacerta vivipara)*, slow worm (*Anguis fragilis)*, grass snake (*Natrix natrix)* and adder (*Vipera berus)*. These species are only afforded protection under the Wildlife & Countryside Act 1981 (as amended). Part of sub-section 9(1) and all of sub-section 9(5) apply; these prohibit the intentional killing and injuring and trade. There is no protection for the refugia of these animals.

Both the Wildlife & Countryside Act 1981 (as amended) and the Habitat Regulations 1994 apply to all life stages of the protected species: eggs, juveniles and adults.

- Only the second level of protection is applicable to this site as sand lizard and smooth snake are rare species with restricted distributions and no suitable habitat for these species was present.

Planning Policy

The policies in the **National Planning Policy Framework (NPPF)** apply from the day of publication 27 March 2012. It sets out the out the Government's planning policies for England and replaces all previous PPGs/PPSs.

National Planning Policy Framework (NPPF)[4]

The policies in Local Plans (and the London Plan) should not be considered out of date simply because they were adopted prior to the publication of the NPPF. However, the NPPF policies are material considerations which local planning authorities should take into account from the day of its publication. The NPPF must also be taken into account in the preparation of plans.

NPPF: Conserving and Enhancing the Natural Environment; section 11; paragraph 109.

The planning system should contribute to and enhance the natural and local environment by:

- Protecting and enhancing valued landscapes, geological conservation interests, and soils;
- Recognising the wider benefits of ecosystem services;
- Minimising impacts on biodiversity and proving net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including establishing coherent ecological networks that are more resilient to current and future pressures;
- Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water, or noise pollution or land instability; and
- Remediating and mitigating despoiled, degraded, derelict, contaminated, and unstable land where appropriate.

Without this assessment, any potential developer would be unable to demonstrate due diligence in his responsibilities, with reference to both the legal protection and the possible information required in support of the planning application. Nonetheless, it would be unreasonable for an ecological assessment to have to survey every protected floral / faunal species.

Biodiversity

Following the production of Publicly Available Specification (PAS 2010) by the British Standard Institute (BSI), local governments now have clear guidelines by which to take action to ensure that they help halt the loss of biodiversity and contribute to sustainable development.

The Natural Environment and Rural Communities Act 2006 places a duty on public authorities to have regard for the purpose of conserving biodiversity. PAS 2010 aims to reduce the varied applications of this obligation, ensuring that all parties have a clearer understanding of information required at the planning stage.

Whilst the possible presence of a protected species is accompanied by legal obligations and will remain the first consideration of planning departments, the total biodiversity value of a site must now be considered.

APPENDIX 2

N

KEY

- Survey boundary
- Scattered scrub
- Broad-leaved tree
- A — Arable
- Species poor intact hedge
- Fence
- 1 — Reptile Mat Location

REVISIONS

No	Description	By	Date	Chkd

LANDSCAPE PLANNING LTD

ISSUE:
-

CLIENT:
Hill Residential Limited

LOCATION:
Townsend Lane, Harpenden, Hertfordshire

DRAWING TITLE:
Reptile Mat Location Plan

SCALE:	DATE:		
1:1250 @ A3	June 2016		
DRAWN BY:	CHKD BY:	DRAWING No:	REV:
TF	SK	66734-01	-

C:\Users\Thomas\Desktop\Work\Landscape Planning Ltd\2016-06-25\66734 Townsend Lane\66734-02 Reptile Mat Location Plan

APPENDIX 3

Site Photographs

Photograph 1.
View of western boundary**.**

Photograph 2.
View north and eastern boundary.

Photograph 3.
View of southern boundary.

Photograph 4.
View of eastern boundary.

Landscape Planning Limited
Unit 4, The Courtyards
Phoenix Square
Wyncolls Road
Colchester
CO4 9PE

www.landscapeplanning.co.uk

ARBORICULTURAL IMPACT ASSESSMENT

Site:

Townsend Lane,
Harpenden,
Hertfordshire,
AL5 2RH

By:

Landscape Planning Limited
4 The Courtyards
Wyncolls Road
Colchester
CO4 9PE

29 March 2016

Ref: 66734

CONTENTS

1.0 EXECUTIVE SUMMARY

1.1 The site currently consists of an arable field surrounded by hedgerow with occasional Oak standards. Along the eastern boundary are a number of Corsican Pines within the adjacent rear gardens.

1.2 The trees on the site are located along the boundaries, with mature trees of moderate quality and landscape value being present.

1.3 The development proposal is for the construction of 41 residential dwellings.

1.4 No trees will require removal to facilitate the development; however, parts of the hedgerow H1 will require removal in order to allow the access roads to be constructed. It is possible that the hedgerow is protected under the 1997 hedgerow regulations. This would require an additional detailed assessment. Any removal will in any case require written permission from the LPA. The remaining trees on site should be retained and protected, with minor tree works required.

1.5 A summary of the affected trees is detailed in the table below:

Impact	Reason	A	B	C	U
Trees to be removed	To facilitate the development or due to their condition (U cat)	/	/	H1 – 2 approx. 5m sections for access roads	/
Trees with RPA encroachment	To facilitate construction	/	T2, T11 and T13	/	/
Retained trees to be pruned	To address identified defects / facilitate construction	/	T2	/	/

Project Team Contacts List

Name	Company	Position	Tel. No.
Adele Devonshire	Landscape Planning Group Ltd	Consultant Arboriculturist & Ecologist	T: M:
Oliver Mealey	Hill Partnerships Ltd	Client	T:

2.0 REPORT PROCEDURES

2.1 This Report has been prepared in accordance with Landscape Planning Ltd.'s quality system procedures as follows:

Methodology relating to Arboricultural Impact Assessments

2.2 File creation, field survey, data capture procedures and report production follow the specific methodologies, technical approach and quality systems of Landscape Planning Ltd. The aim is to provide "fit for purpose" deliverables based on the client brief. Our approach broadly follows the guidance contained in "Trees in relation to Demolition, Design and Construction – Recommendations" (BS 5837:2012); however, the use of any terms or concepts contained therein does not imply Landscape Planning Ltd.'s acceptance of their accuracy or scientific validity and the use of any section or concept contained within the standard is on the principle of its advisory status as guidance.

Report and Findings

2.3 The Report and Findings have been quality checked prior to issue to the client.

Signed

Paul Allen **Dip Arb(RFS) MICFor MAE**
Principal Consultant
Landscape Planning Ltd

Dated: 31 March 2016

3.0 PREFACE

3.1 **The Scope of Survey and Reporting**

3.1.1 Landscape Planning Ltd has surveyed the key trees on and adjacent to the site and has provided guidance within this report on the measures necessary to ensure successful tree retention during any development, with recommendations for tree removal and / or tree works as necessary.

3.1.2 To visit the site and complete a survey of trees, shrubs, hedgerows and other vegetation that may materially be of interest relative to development proposals.

3.1.3 To assess the likely impacts of the development on the trees and make 'in principle' recommendations relating to tree removals, tree retention and tree protection during development.

3.1.4 To carry out an arboricultural impact assessment on the effect of the new development at the site, identifying the construction exclusion zones (CEZ) shown on the tree protection plan (TPP). This will also show the locations for tree protective fencing, any temporary ground protection required and identify 'No-Dig' zones for RPAs shown outside of CEZs.

3.1.5 To produce a tree constraints plan (TCP), showing the location of surveyed trees, their BS5837:2012 categorisation, the theoretical Root Protection Areas (RPAs) and any shading arcs required to be shown for those trees south of the development window.

3.1.6 To make any other observations or recommendations as required based on the survey.

4.0 PLANS AND REFERENCE DOCUMENTS

4.1 BS5837:2012 ‘Trees in relation to design, demolition and construction – recommendations’.

4.2 BS3998:2010 ‘Tree work – recommendations’.

4.3 NJUG 4 – National Joint Utilities Group “Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees. Volume 4, issue 2. London: NJUG 2007”.

4.4 Information from the St Albans City and District Council website.

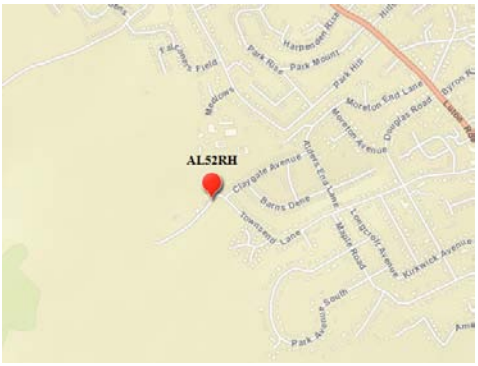
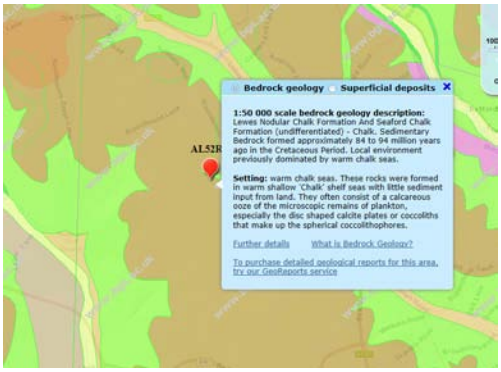
4.5 BGS Open Source Soil Data http://www.bgs.ac.uk/nercsoilportal/maps.html.

5.0 DESCRIPTION OF SITE GEOLOGY

5.1 The site consists of an arable field surrounded by hedgerow with occasional trees. Adjacent to the eastern boundary are the rear gardens of several residential houses, which contain a number of mature Corsican Pine trees.

5.2 The immediate and distant landscape character is rural village.

5.3 The topography is generally flat.

Site Location (OS)	**Site Location (BGS Soil)**
	
British Geology Survey (Online) – Soils Summary Lewes Nodular Chalk Formation And Seaford Chalk Formation (undifferentiated)	

5.4 The underlying site soil has been identified as chalk, which has similar qualities to clay, and great care should therefore be taken to ensure no compaction of the soils within the identified RPAs, as this soil type is less favourable to tree root growth / moisture movement and aeration.

5.5 All comments regarding soils should be verified with onsite geotechnical investigations and laboratory testing, with foundation depth and design undertaken by a structural engineer in accordance with the requirements of NHBC Chapter 4.2.

6.0 THE TREES

6.1 There were 23 Individual trees, 6 hedges and 2 groups surveyed onsite or immediately adjacent to the site boundary.

6.2 By BS 5837: 2012 Categorisation, the trees can be summarised as follows:

BS 5837 Cat	A	B	C	U
Specific Trees	/	T1-T3, T6, T7, T11, T13-T16, T19-T21 and T23	T4, T5, T8-T10, T12, T17, T18, T22, H1-H6, G1 and G2	/
Total Number	/	14	17	/

6.3 By group, there were 2 C category groups. There were no U category individual and group trees which were identified as in poor condition or dead / in decline with less than ten years useful life expectancy.

6.4 These trees locations and a summary of their visual contributions can be summarized as follows:

BS 5837 Cat	A	B	C
Northern Boundary Contributing to the street scene from Townsend Lane	/	T1	H1 and G1
Western Boundary Contributing to the street scene from Townsend Lane	/	T1-T3, T6 and T7	H1, H2 and G2
Internal contribution only	/	T11, T13-T16, T19-T21 and T23	T4, T5, T8-T10, T12, T17, T18, T22 and H3-H6
No visual contribution	/	/	/

6.5 The hedgerows identified on the site could potentially be classified as 'important' within the Hedgerow Regulations 1997. This will need to be subject to a further detailed assessment.

6.6 Our detailed check with the Local Planning Authority has confirmed that the following trees are subject to statutory protection:

	A	B	C	U
Tree Preservation Order	/	T11, T13-T16, T19-T21 and T23	T10, T12, T17, T18, T22, H5 and H6	/
Conservation Area	/	/	/	/
Planning Condition	/	/	/	/

6.7 These trees and hedges are along the eastern boundary of the site.

6.8 TPO Ref Number TPO1047 (A1) Confirmed: 15/03/1978. Type: Area – several Pine & outgrown hardwood hedge.

7.0 ARBORICULTURAL IMPACT ASSESSMENT

7.1 Tree Removals

7.1.1 No trees will require removal to facilitate the development; however, parts of the hedgerow H1 will require removal in order to allow the access roads to be constructed. It is likely that the hedgerow is covered under the hedgerow regulations and therefore removal will require permission from the LPA.

BS 5837 Cat	A	B	C
Tree to be removed	/	/	H1 – 2 approx. 5m sections for access roads

7.1.2 The works are of low landscape significance and can be adequately mitigated as part of the overall landscaping of the site.

7.1.3 Recommended tree works are detailed within the Tree Works Schedule at Appendix 5.

7.2 Root Protection Area (RPA) Incursions

7.2.1 The following incursions into the RPAs of trees to be retained have been identified:

BS 5837 Cat	A	B	C
RPA Incursion	/	T2, T11 and T13	

7.3 **Foundations**

7.3.1 The foundations of proposed houses will encroach into the RPA of trees T2 and T11, with a garage building encroaching minimally into the RPA of T13; therefore, a supervised dig will be required in these areas. Please refer to the Tree Protection Plan for further information.

7.3.2 To minimise the impact on the trees T2, T11 and T13, it is proposed that the foundation design in these areas will likely be piled, especially due to the potential impact of the underlying chalk soil.

7.3.3 In instances where soil conditions are known to be of a shrinkable clay and retained trees are present in proximity to buildings, there is a potential for future tree related subsidence to occur. On this site and in accordance with information from the BGS, soils in relation to the site are known to be chalk. The retained and removed trees therefore have the potential to constrain the foundation design for any adjacent new buildings within influencing distance. Final decisions as to the risks presented by retained / removed trees upon adjacent new buildings should be subject to detailed site geotechnical information being available and assessed by a structural engineer.

7.4 **Hard Surfaces**

7.4.1 The development requires the installation of new surfaces within the RPA of T2 only.

7.4.2 To minimise the disruption on the retained trees, it is proposed to install a 'reduced / no-dig' surface in the areas indicated on the Tree Protection Plan. These surfaces sit above ground level after surface vegetation removal and ensure no tree roots are severed during their installation.

7.4.3 Ideally, the profile of new surfaces within the RPAs of trees to be retained should be kept within the depth of profile for existing surfaces. Where existing profile depths are insufficient or there is no existing hard surface, the depth of sub-base to hard surfaces might be minimised by use of a 3D cellular confinement or plastic crate system, e.g. ProtectaWeb, details of which are included at Appendix 9.

7.4.4 Please refer to the Site Specific Method Statement, usually produced as a result of a tree related condition of planning approval, for full details on the proposed installation.

Figure 1. Installed 3D Webbing system around retained existing trees.

7.5 **Services**

7.5.1 The route of any services needs to be carefully considered so as to avoid unnecessary encroachment into retained trees' RPAs. These should, where possible, not encroach within the RPAs of retained trees, and currently the precise location of new excavations for services is not known. Where excavations slightly encroach into adjacent tree RPAs, their excavation should only be considered when supervised by the consultant arboriculturist from Landscape Planning Ltd and may need to be undertaken using an 'Airspade' / hand tool.

7.6 **Ground Levels**

7.6.1 No changes to existing ground levels are proposed within the RPAs of retained trees.

7.7 **Shading**

7.7.1 Shading issues have been identified with the proposal on the basis of the orientation of the tree resource relative to the proposal.

7.7.2 Trees to the south and west of the proposal have the capacity to cast shade on the development; this may be an issue with trees T11, T13, T14 and T19 to T21 along the south eastern boundary. The Tree Protection Plan details the appropriate shading arcs.

7.8 **Site Supervision / Monitoring**

7.8.1 Most damage to trees on development sites is caused inadvertently and, to ensure continued protection during development, a system of site monitoring is proposed.

7.8.2 Basic checks will ensure that protective fencing remains intact. Any unforeseen issues can also be identified and discussed before damage to the tree(s) occurs.

7.8.3 The number of proposed visits is driven by the scale of the proposal.

7.8.4 A more detailed explanation of what will be assessed during the proposed monitoring visits is contained in Appendix 6.

8.0 RECOMMENDATIONS

8.1 The preliminary tree works we have recommended are contained within the tree works schedule at Appendix 5.

8.2 That during the construction build phase, following current consultation with the arboriculturist from Landscape Planning Ltd, adequate provision is made for the protection of existing trees on site and the areas to be planted with new trees and shrubs.

8.3 That by liaison with the council tree officer, formal agreement should be sought regarding the tree pruning required and tree protection methods employed to protect retained trees. These will be via the production of a site specific method statement (SSMS) and will include:

- Tree protective fencing as shown on the tree protective plan.
- No ground excavations within tree RPAs, unless approved by the tree officer.
- Any anti-compaction measures taken.
- The specific location of services trenches to avoid excavations within RPAs where possible, or if necessary to be undertaken by hand dig only.
- Specific methods for construction of site access routes and new drainage ditches close to or within retained trees' RPAs.

8.4 That pre-commencement site meetings are arranged to discuss the recommendations in this and subsequent reports and method statements. Copies of all relevant arboricultural reports should be available on site.

8.5 That the SSMS is developed further with the contractor through the development process to include comments made by them and the client and design team, as well as council officers. A copy of the tree report, including the site specific method statements and tree protection plan, should be kept on site at all times.

8.6 That details of site inspection / supervision visits by the consultant arboriculturist are recorded and sent to the council tree officer, with copies retained by the site manager.

8.7 A detailed hedgerow inspection / survey may be required to formally assess the criteria of the boundary hedges, as to whether they are 'important' as defined within the 1997 Hedgerow Regulations.

9.0 CONCLUSIONS

9.1 The site is located within a rural landscape setting; the majority of the trees on site are of modest amenity value, most of which are 'B' category standard trees. The dominant individual tree species on this site is Oak, with Corsican Pine outside of the site boundary to the south east. The trees and hedgerows located along the eastern boundary are protected by a Tree Preservation Order. Some of the trees are in need of some basic crown pruning works due to their lack of recent management.

9.2 Three 'B' category individual trees (T2, T11 and T13) constrain the proposed layout for the new residential units. No trees were classed as 'U' category.

9.3 Ground protection measures within retained tree RPAs, including the use of 3D 'Reduced – Dig' cellular / crate confinement sub-base systems for the construction of the proposed driveway near T2 and the installation of tree protective fencing and temporary ground protection, will adequately protect their RPAs when accompanied by detailed methods and supervision by a consultant arboriculturist from Landscape Planning Ltd.

9.4 Sufficient development room will be available after protection measures are instigated as described within this report. Excavations within retained tree RPAs for construction operations such as service trenches, changes in levels, foundations excavations and removal of existing hard surfacing will be avoided where possible.

9.5 Overall, it is concluded that, subject to appropriate controls, the development can be implemented without undue impact on trees. These should be detailed within a Site Specific Arboricultural Method Statement that should be submitted to and agreed in writing by the Local Planning Authority prior to the commencement of the development, as a condition of any consent.

Adele Devonshire BSc, MSc, MCIEEM, Tech.Cert
Consultant Arboriculturist
Landscape Planning Group Ltd
31 March 2016

10.0 APPENDICES

APPENDIX 1 **Key to Tree Tables**

APPENDIX 2 **Tree Survey Tables**

APPENDIX 3 **Tree Constraints Plan**

APPENDIX 4 **Tree Protection Plan**

APPENDIX 5 **Tree Works Schedule**

APPENDIX 6 **Site Inspection & Monitoring schedule**

APPENDIX 7 **BS5837:2012 Tree Constraints & Protection Methods**

APPENDIX 8 **Tree Protection Fencing Specification**

APPENDIX 9 **Proprietary Information for 'Reduced-Dig' Sub-Base**

APPENDIX 10 **Photographs**

APPENDIX 11 **Report Caveats**

APPENDIX 1

KEY TO TREE TABLES

Key

BS 5837 Cat	Description
A	Those of high quality and value: in such a condition as to be able to make a substantial contribution (> 40 years)
B	Those trees of moderate quality and value: those in such a condition as to make a significant contribution (> 20 years)
C	Those trees of low quality and value: currently in adequate condition to remain until new planting could be established (> 10 years)
U	Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed regardless of development

Note: Sub categories are denoted in the tree survey data (A1, B1, C2 etc.). You are referred to the BS for further detail if required.

Tree No.	T (tree), G (group), H (hedge), W (woodland) + Ref No.
Species	Common Name
Ht (m)	Measured height in metres
DBH (m)	Diameter at 1.5m above ground level
Branch Spread	In m to cardinal points
Cr Ht Clearance (m)	Overall height of lowest branches from the ground level on side of proposed development
Life Stage	Young, Semi-Mature, Early-Mature, Mature, Over-Mature
General Observations	Observations on the condition of the tree(s)
Tree Work Specification	Proposed tree works in accordance with BS3998
BS Cat	See above
Life Exp	Estimated remaining contribution in years.
RPA Radius(m)	Radius of the trees Root Protection Area measured from the trunk to the edge of the RPA circle in metres
RPA (m2)	Overall Root Protection Area in m2
*	Indicates where tree data may have been estimated as tree was offsite / restricted access / dense vegetation hindering full inspection

Age Range	**YO**	Trees from seedling, up to Advanced Nursery Stock size (14/16cm girth)
	SM	More than 10 years post-establishments but capable of being moved using a large tree spade (up to 22/24cm diameter).
	EM	Early indictors of maturity in bark tissue, reproductive tissue, leaf and crown morphology may be present. (Notably, excurrent shoot growth, not readily transplantable and still likely to increase significantly in size).
	MA	Strong indicators of maturity in bark tissue, reproductive tissue, leaf and crown morphology will be present. Shoot growth decurrent. (Middle aged phase of growth when the tree has effectively reached up to 90% of its ultimate size for the species and location).
	FM	Bark tissue, reproductive tissue, leaf and crown morphology will all exhibit mature characteristics. Strongly decurrent shoot growth and reduced shoot extension. No specific signs of senescence. (A tree that has now achieved over 90% of its ultimate life for the species and location).
	OM	Trees in senescence. Although not directly in decline from disease, decay, root death, structural or stability. Problems are primarily resulting from old age. (Senescence is an age related category, i.e. a younger tree subject to disease and decay because of, for example, an impact injury would not be senescent. Characteristically, senescent trees are likely to be reducing in mass and becoming stag headed.

APPENDIX 2

TREE SURVEY TABLES

ARBORICULTURAL IMPACT ASSESSMENT
TREE SURVEY TABLES
Surveyor: AD
Date Surveyed: 17/03/2016

Site Name: Townsend Lane

LANDSCAPE PLANNING LTD

Tree No.	Species (English) Latin if any doubt	Age Range	Condition	Height (m)	Crown Radius (m)					Stem Diam @ 1.5m (mm)	BS RPR (m)	Comments (incl. Structural condition)	Recommendations	Remaining contribution (Yrs)
					N	S	E	W	AVG					
H1	Hazel (and some Holly)	EM	F	2	-	-	3	-		100	1.2	Recently trimmed.	Retain and protect.	10+
G1	Hazel	EM	F	5.8	9	-	5	-		100	100	Area of hedge that has been allowed to grow.	Retain and protect.	10+
T1	English Oak	M	F	12.9	7	7	7	7.5		900	10.8	Ivy covered and within hedge. Unable to fully inspect. Minor dead wood.	Remove major dead wood. Retain and protect.	20+
T2	English Oak	M	F	13.2	6	6	6	7.5		790	9.481	Ivy covered and within hedge. Unable to fully inspect. Minor dead wood.	Remove major dead wood. Retain and protect.	20+
H2	Holly (& some hazel)	EM	F	5	3	-	-	-		90	1.08	Recently trimmed.	Retain and protect.	10+
T3	English Oak	M	F	9.5	4.3	5	5	5		500	6	Within holly hedge, therefore unable to fully inspect. Moderate dead wood in crown.	Remove major dead wood. Retain and protect.	20+
H3	Blackthorn	Y	F	7.5	3	3.7				70	0.84	Young planted hedgerow.	Retain and protect.	10+
G2	Hazel & Field Maple	EM	F	7.5	3	3.7				200	2.4	Within hedgerow.	Retain and protect.	10+
T4	Cherry	Y	F	5	1	1	1	1		80	0.96	Within planted hedgerow. Good form & condition.	Retain and protect.	10+
T5	English Oak	Y	P-F	5	1	1	1	1		80	0.96	Damage on leading stem.	Formative prune damaged wood. Retain and protect.	10+
T6	English Oak (Off site)	M	F	12.5	6	6	6	4.9		900	10.8	Within hedge, unable to fully inspect. Moderate dead wood. Minor Ivy, small cavities on scaffold branches.	Retain and protect.	20+
T7	English Oak (Off site)	M	F-P	9.2	4	4.5	3.5	4.5		400	4.8	Within hedge, unable to fully inspect. Moderate dead wood. Minor Ivy, large cavities on main	Retain and protect.	20+

ARBORICULTURAL IMPACT ASSESSMENT
TREE SURVEY TABLES
Surveyor: AD
Date Surveyed: 17/03/2016

Site Name: Townsend Lane

LANDSCAPE PLANNING LTD

Tree No.	Species (English) Latin if any doubt	Age Range	Condition	Height (m)	Crown Radius (m)					Stem Diam @ 1.5m (mm)	BS RPR (m)	Comments (incl. Structural condition)	Recommendations	Remaining contribution (Yrs)
					N	S	E	W	AVG					
T8	Cherry	Y	F	6.5	1	1	1.5	1.5		110	1.32	Within hedgerow. Good form and condition.	Retain and protect.	10+
H4	Holly	M	F	2			3			100	1.2	Dense holly hedge, recently trimmed. Occasional elder.	Retain and protect.	10+
T9	Field Maple	EM	F	6	1	1	1	1		100	1.2	Within hedge, some cuts in main stem.	Retain and protect.	10+
T10	Elder	M	F	6	2	2	2	2		200	2.4	On corner, within boundary.	Retain and protect.	10+
T11	Corsican Pine (Off site)	M	F	15	5.5	5.5	5.5	5.5		900	10.8	Measurements estimated as in private garden.	Retain and protect.	20+
T12	Elder (Off site)	EM	F	5	2	2	2	2		200	2.4	Minor dead wood in upper crown.	Retain and protect.	10+
H5	Cypress hedge	EM	F	1.2	1					10	0.12	Trimmed into rectangular hedge.	Retain and protect.	10+
T13	Corsican Pine (Off site)	M	F	10.2	7	3	4	5		700	8.401	Stem leaning approximately 60 over site. Measurements estimated as in private garden.	Retain and protect.	20+
T14	Corsican Pine (Off site)	M	F	16	6	6	4.5	6.7		900	10.8	Leader stem has been pruned. Measurements estimated as in private garden.	Retain and protect.	20+
T15	Corsican Pine (Off site)	M	F	15	5	4.5	4	4		800	9.601	~2.5m off fence. Measurements estimated as in private garden.	Retain and protect.	20+
T16	Corsican Pine (Off site)	M	F	15	4.5	3	4	4		780	9.361	~2.5m off fence. Measurements estimated as in private garden.	Retain and protect.	20+
T17	Cherry (Off site)	M	P-F	6	2	2.5	2	2		350	4.2	~0.3m off fence. Measurements estimated as in private garden.	Retain and protect.	10+

ARBORICULTURAL IMPACT ASSESSMENT
TREE SURVEY TABLES
Surveyor: AD
Date Surveyed: 17/03/2016

Site Name: Townsend Lane

LANDSCAPE PLANNING LTD

Tree No.	Species (English) Latin if any doubt	Age Range	Condition	Height (m)	Crown Radius (m)					Stem Diam @ 1.5m (mm)	BS RPR (m)	Comments (incl. Structural condition)	Recommendations	Remaining contribution (Yrs)
					N	S	E	W	AVG					
H6	Dogwood & some Elder	EM	F	1.2	1					20	0.24	Forming boundary hedge.	Retain and protect.	10+
T18	Holly	EM	F	4.4	1	1	1	1		150	1.8	Within hedge, pruned.	Retain and protect.	10+
T19	Corsican Pine (Off site)	M	F	16.3	6	5	5	4		700	8.401	Measurements estimated as in private garden.	Retain and protect.	20+
T20	Corsican Pine (Off site)	M	F	16.5	5	5	5	5		700	8.401	Measurements estimated as in private garden.	Retain and protect.	20+
T21	Corsican Pine (Off site)	M	F	16	5.5	5	4.8	5		700	8.401	Twin stem with included union @ approx 8m. Measurements estimated as in private garden.	Retain and protect.	20+
T22	Ash	EM	F	11	7	6	5	5		450	5.4	Ivy covered. Much lichen. Within hedge.	Retain and protect.	10+
T23	Corsican Pine (Off site)	M	F	15	5	5	6	5		650	7.801	~2m off boundary hedge. Stem leaning ~60 to west. Measurements estimated as in private garden.	Retain and protect.	20+

APPENDIX 3

TREE CONSTRAINTS PLAN

T1
T2
H1
H2
T3
G1
H1
T22
T23
G2
T21
T20
T18
T19
H6
T17
T16
T6
T15
T7
T4
H5
T14
T5
T13
T12
T8
T9
T11
T10
Off-site Oak and
Horse Chestnut

N

KEY

'A' category trees

'B' category trees

'C' category trees

'U' category trees

RPA using the formula in accordance with BS5837:2012 Trees in relation to design, demolition and construction. Recommendations

REVISIONS

No	Description	By	Date	Chkd

LANDSCAPE PLANNING LTD

ISSUE:
-

CLIENT:
Hill Residential Limited

LOCATION:
Townsend Lane, Harpenden, Hertfordshire

DRAWING TITLE:
Tree Constraints Plan

SCALE: 1:1250 @ A3

DATE: March 2016

DRAWN BY: TF

CHKD BY: AD

DRAWING No: 66734-02

REV: -

C:\Users\Thomas\Desktop\Work\Landscape Planning Ltd\66734 Townsend Lane\66734-02 TreeConstraints

APPENDIX 4

TREE PROTECTION PLAN