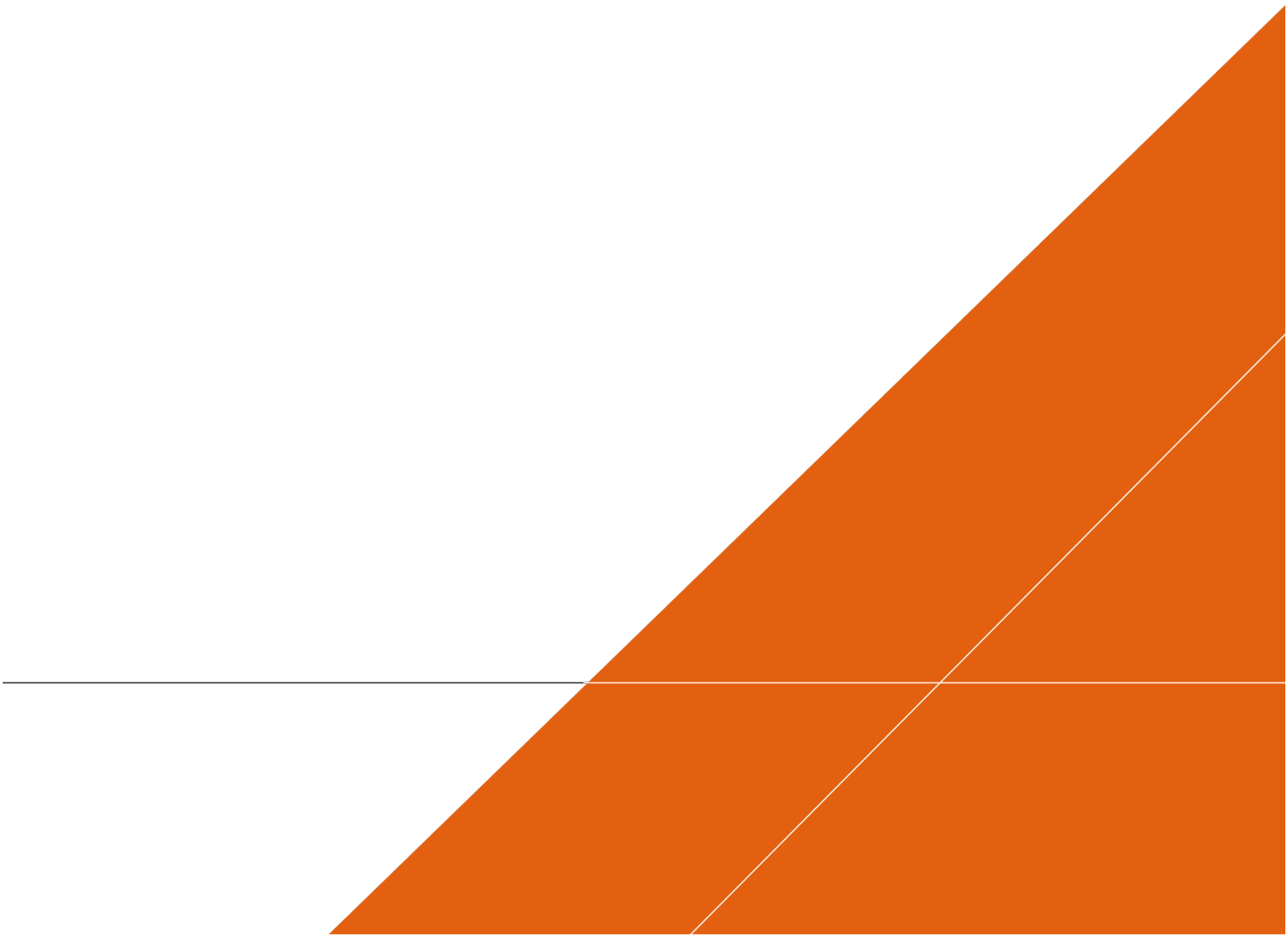
OTTERPOOL PARK
ENVIRONMENTAL STATEMENT

Appendix 7.11: Bat Survey Results Summary, Valuation and Impact Assessment – Update to include 2020 and 2021 Survey Data

MARCH 2022



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Executive summary

Arcadis Consulting (UK) Limited has been commissioned on behalf of Otterpool Park LLP to undertake surveys for bat species to inform an Environmental Impact Assessment (EIA) for the proposed new development and accompany an outline planning application. The proposed development is 'Otterpool Park', a garden settlement located within Folkestone, Kent. The development area has been identified as an 'area of search'; hereafter, the area of search is referred to as "the site". This report presents the results of bat surveys conducted between 2017 and 2021.

A valuation of the bats present within the site, and the value of the site to bats, roosting, foraging and commuting was made, utilising information from the surveys. The following surveys and assessments were undertaken:

- Bat activity transects (Presented in Otterpool Park ES Appendix 7.12)
- Bat building assessment (internal and external) and emergence / re-entry surveys (presented in Otterpool Park ES Appendix 7.13); and
- Bat static detector surveys (Presented in Otterpool Park ES Appendix 7.14).

Within this report, the results from these surveys were utilised to assess and value the bats within the site, and the value of the site for bats. In conclusion, the assemblage of bats on site was assessed as being of local value. The number of common and soprano pipistrelle bats recorded suggested that the site wide assemblage of these species is of county value.

When compared to similar sites, the activity recorded on the site would put it in the top 40% of activity levels for comparative sites, meaning the activity level was medium to high within the 'ecobat' assessment criteria. This is likely to be an overestimation (due to unavoidable survey bias), and the site is considered to have medium activity levels.

Within the OPA (outline planning application boundary), the bat roosts identified are predominantly of local value, with one maternity roost of brown long-eared bats being of county value.

The commuting and foraging habitats on site are largely assessed as being of local value, with some discreet areas being of higher, county value. This information is used to inform the masterplanning design, to ensure the retention and enhancement of these areas.

This report broadly outlines the mitigation approaches which may be employed to address the potential impacts to the usage of the site by bats identified in this report. Further details are presented within the bat mitigation strategy document and within the biodiversity section of the Otterpool Park ES (ES Appendix 7.18 and ES Chapter 7: Biodiversity). Overall, impacts to bats within the site are largely addressed through avoidance within the design of the project

1 Introduction

1.1 Overview

1.1.1 Arcadis Consulting (UK) Limited has been commissioned on behalf of Otterpool Park LLP to undertake surveys for bat species to inform an Environmental Impact Assessment (EIA) for the proposed new development and accompany an outline planning application. The proposed development is 'Otterpool Park', a garden settlement located within Folkestone, Kent. The development area has been identified as an 'area of search'; hereafter, the area of search is referred to as "the site". This report presents the results of bat surveys conducted between 2017 and 2021.

1.2 Site location and setting

1.2.1 The site is located within Folkestone, Kent within the administrative boundary of Folkestone and Hythe District Council (F&HDC) and spans a large area located immediately south of Junction 11 of the M20. The site is largely agricultural in nature with the majority of the site comprising arable and pasture fields, a disused horseracing course with an artificial lake ('Folkestone Racecourse Lake'), areas modified from historical use (airfields), existing historic settlements and relatively new industrial areas.

1.2.2 The M20 motorway, Channel Tunnel Rail Link and Westenhanger Station are located to the north of the site, beyond which lie the villages of Stanford and Postling within a largely rural setting including the Kent Downs Area of Outstanding Natural Beauty (AONB). This AONB extends to the east, beyond which lies the town of Hythe, and to the south where it includes Lympne village. The site also includes the settlements of Barrowhill, Sellindge, Westenhanger and Newingreen. Lympne Industrial Park and some areas of woodland are located immediately south of the site. In addition, East Stour River flows through the site in a north-east to west direction. The site is centred on Ordnance Survey Grid Reference TR 111 363.

1.2.3 An aerial image illustrating the site surveyed is presented in Image 1. Photographs of the site can be found in Appendix B - Photographs.

Image 1: Aerial imagery of the site

1.3 Proposed Development

1.3.1 The proposed Otterpool Park Area Development is located on approximately 589 ha of land within the wider study area as shown in Figure 1. The development proposals are to be submitted in outline for a new Garden settlement accommodating up to 8,500 homes (use class C2 and C3) and Use class E, F, B2, C1, Sui Generis, including use of retained buildings as identified, with related infrastructure, highways works, green and blue infrastructure, with access, appearance, landscaping, layout and scale matters to be reserved. A summary of the maximum floorspace areas for each land use type is provided in Chapter 4: The site and the proposed Development of the Environmental Statement (ES).

2 Methodology

2.1 Introduction

2.1.1 This report outlines the assessment of 'value' of bats within the site and undertakes an impact assessment of the proposed masterplan on bats. These valuations are considered at the site level.

2.1.2 There are no formally accepted guidelines for the evaluation of bats within Environmental Impact Assessment (EIA). The Bat Mitigation Guidelines (English Nature 2004) assigns a broad nature conservation value to roosts of different status but notes that these require regional interpretation. Wray (Wray *et al*. 2010) published a proposal for valuing bats in Ecological Impact Assessment EcIA (using a scoring system), but this has not been widely adopted. This is possibly because it over-values the roosts of common species, and because the valuation of commuting/foraging habitat includes an estimation of bat numbers which are both difficult to estimate and have low thresholds. As a result, a range of methodologies are used within this document to assess and value the bats within the site. The data collected (and presented within ES Appendices 7.12, 7.13 and 7.14) are used to assess the bat assemblage from the following parameters:

- The categorisation of each species present within the site (from common to rarest, using rarity within the area of the proposed Development);
- Based on the categorisation of the species, the value of each species population within the site (from local importance to national importance);
- The valuation of roosts within the site (in isolation and within each phase of the proposed Development);
- An assessment of the level of activity within the site compared to other comparable sites (using 'Ecobat' data – a programme that compares the site activity against other nearby sites);
- Valuation of the foraging habitats within the site, identified by phase of the proposed Development (from 'not important' to 'international importance'),
- Valuation of the commuting habitats within the site, identified by phase of the proposed Development (from 'not important' to 'international importance').

2.1.3 The 'Phases' referred to in this document are geographical areas of the site. The chronological order of the proposed Development is not currently known. The phases referred to are presented in Figure 1.

2.2 Categorisation of species present within the site

2.2.1 To categorise the species present within the site, the methodology provided within Wray (Wray et al. 2010) is utilised. This is based upon the rarity of each species within the site. Table 1 lists the three bandings of rarity utilised within the assessment.

Table 1: Categorisation of bat species and notes on their presence within the site.

Rarity within range	Species	Notes on presence on site
Rarest (population under 10,000)	Greater horseshoe (*Rhinolophus ferrumequinum*), Bechstein's (*Myotis bechsteinii*), alcathoe (*Myotis alcathoe*), greater mouse-eared (*Myotis myotis*), barbastelle (*Barbastella barbastellus*), grey long-eared (*Plecotus austriacus*).	Very low numbers of barbastelle were recorded on the site.
Rarer (population 10,000 – 100,000)	Lesser horseshoe (*Rhinolophus hipposideros*), whiskered (*Myotis mystacinus*), Brandt's (*Myotis brandtii*), Daubenton's (*Myotis daubentonii*),	Myotis bats, Leisler's, noctule, Nathusius' pipistrelle and serotine recorded on the site.

Rarity within range	Species	Notes on presence on site
	Natterer's (*Myotis nattereri*), Leisler's (*Nyctalus leisleri*), noctule (*Nyctalus noctula*), Nathusius' pipistrelle (*Pipistrellus nathusii*), serotine (*Eptesicus serotinus*).	
Common (population over 100,000)	Common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared (*Plecotus auritus*).	All of these species are present within the site

2.3 Valuation of roosts within the site

2.3.1 The valuation of roosts within the site was assessed using the system outlined within the bat mitigation guidelines (English Nature 2004). The bandings utilised are presented within Table 2

Table 2: Table showing the categorisation bandings of roosts within the site.

Geographic frame of reference	Roost types
District, Local or Parish	Feeding perches (common species) Individual bats (common species) Small numbers of non-breeding bats (common species) Mating sites (common species)
County	Maternity sites (common species) Small numbers of hibernating bats (common and rarer species) Feeding perches (rarer/rarest species) Individual bats (rarer/rarest species) Small numbers of non-breeding bats (rarer/rarest species)
Regional	Mating sites (rarer/rarest species) including well- used swarming sites Maternity sites (rarer species) Hibernation sites (rarest species) Significant hibernation sites for rarer/rarest species or all species assemblages
National/UK	Maternity sites (rarest species) Sites meeting Site of Special Scientific Importance (SSSI) guidelines
International	Special Area of Conservation (SAC) sites

3 Assessment of activity levels of the site overall

3.1 Introduction

3.1.1 In order to enable different areas of the site to be analysed for relative activity levels, it was necessary to allocate the level of activity recorded to broad activity bands. There is no formally accepted methodology for this, as bat surveying methods, environmental factors and equipment used can have a significant impact upon the results. As a result, two methods were assessed for determining the activity levels on site, these were compared to determine which would give a result that was sufficiently nuanced for the project objectives and was broadly in line with the results of the other surveys on site and the observations from the ecologists in the field. The two assessment methodologies utilised are referred to as the 'within site' and the 'between sites' using the Ecobat tool (EcoBat 2021).

Within site

3.1.2 The within site assessment involved reviewing the calculated activity levels and banding the results in to low, medium and high. This would give a relative activity level within the site, using only the data collected from within the site.

3.1.3 When the data was assessed, the detector locations were split into three broad groups, low, medium and high activity areas. These have been split as follows:

- low activity 7.5 passes per hour average or less
- medium activity greater than 7.5 to 15 passes per hour;
- high activity greater than 15 passes per hour.

3.1.4 This split was based upon professional judgement after review of the data, in the absence of any published guidance.

Between sites

3.1.5 A full description of this methodology is outlined in the bat (static) detector survey report (ES Appendix 7.14). This methodology allows an overall comparison of the activity levels within the site against comparable sites surveyed within 200km using the Ecobat method (Ecobat 2021). This data will be used as a guide only as there are a few limitations of the Ecobat methodology, namely:

- It is not possible to determine the sample size of the data to which the site data is being compared;
- Methodologies between the site data collection and other comparative data collection cannot be compared;
- Averaging the site activity may conceal variations within the site.

3.1.6 Within this methodology, the activity is banded from low to high. The details of the bandings utilised in the Ecobat method (taken from the Ecobat website, Ecobat 2021) are presented in Table 3 below.

Table 3: Ecobat activity level bandings

Activity Level	Percentile
Low activity.	0-20th percentiles
Low to moderate activity	21st-40th percentiles
Moderate activity	41st-60th percentiles
Moderate to high activity	61st-80th percentiles

Activity Level	Percentile
High activity	81st-100th percentiles.

3.2 Species valuation

3.2.1 The valuation of the species within the site was based upon a bespoke assessment amended from 'Valuing Bats in Ecological Impact Assessment' (Wray et al. 2010). Where a parameter is unknown and a professional assessment cannot be made, a precautionary assessment is applied (i.e. a 'medium' assessment). The species assessment utilises the following data on a species to provide a combined valuation figure at a geographical scale:

- The species conservation status;
- The species status in the UK
- The species status within the site including:
  - The population in the site;
  - The breeding status within the site,
  - The hibernation status within the site; and
  - The species use of habitats within the site.

3.2.2 These parameters are outlined within Table 4 below.

Table 4: Methodology for determining the 'value' of the bats of each species within the site.

Score	Published data		Information derived from project data (plus local desk-study information) supported by professional judgement based on known species ecological traits			
	Conservation status*	Status UK*	Site status (from surveys)	Breeding roosts (maternity)	Hibernation	Foraging/ commuting
High (3)	+ Habs. Dir. Annex II	Rarest	Population apparently centred on the site (for at least part of the year); 50+ individuals rarest/rarer species	Maternity colony of rarest/rarer species on site.	Majority of individuals likely to hibernate within / on site.	High reliance on site habitats (i.e. site likely to support and maintain the species)
Medium (2)	+ NERC Act	'Rarer'	Fewer than 50 rarest/rarer species; 50+ more common species. Note these are very broad estimates.	Maternity colony of more common species within the site	Hibernation within the Otterpool site probable.	Moderate reliance on habitats present within the site (i.e. site likely to support rather than maintain the species)
Low (1)	EPS only	Common / widespread	Present in lower numbers than above (in low or very low numbers).	No evidence of maternity roost within the site. Maternity roosts known to be present adjacent to the site.	Majority of individuals are likely to hibernate outside the site	Low reliance on habitats present within the site (i.e. species not likely to be reliant upon the site for support and maintenance)

* Habs. Dir. Annex II – Listed on Annexe 2 of the Habitats Directive

NERC Act – listed on S41 of the NERC Act

EPS only – A European Protected Species

3.2.3 The geographic context of importance is a sum of the scores applied to individual factors. The boundaries between categories are based on professional judgement; other interpretations may be equally valid. The combined scores are utilised to provide an overall geographical valuation, as shown within Table 5.

Table 5: Using the scoring system to value the species of bats within the site according to geographical importance.

Site / less than local importance	Local	County	National
A score of 0-6	A score of 6 -10 This matrix does not allow for finer definitions of 'Local' importance (district, borough, site) for which professional judgement is required.	A score of 11 to 14	A score of 15+ International if species is qualifying feature of a SAC

*Local valuation is not used by Wray et al but has been based on professional judgement

3.3 Categorisation of Foraging Habitats

3.3.1 In order to provide a valuation of the foraging habitats within each phase of the site, the following parameters are graded:

- The species present utilising the foraging resource;
- The number of bats utilising each resource;
- The number of roosts nearby; and
- The characteristics of the foraging habitats present.

3.3.2 The valuation of each of these criteria is presented below in Table 6. For each category, the highest criteria that applies is utilised to provide a combined score for the area. The methodology and criteria for the valuation of this score into a geographical frame of reference is provided in Table 7.

Table 6: Categorisation of foraging habitats (score for each category in brackets)

Species	Number of bats	Roosts/potential roosts nearby	Foraging habitat characteristics
Common (2)	Individual bats (5)	None (1)	Industrial or other site without established vegetation (1)
-	-	Small number (3)	Surburban areas or intensive arable land (2)
Rarer (5)	Small number of bats (10)	Moderate number/Not known (4)	Isolated woodland patches, less intensive arable and/or small towns and villages (3)
-	-	Large number of roosts, or close to a SSSI for the species (5)	Larger or connected woodland blocks, mixed agriculture, and small villages/hamlets (4)
Rarest (20)	Large number of bats (20)	Close to or within a SAC for the species (20)	Mosaic of pasture, woodlands and wetland areas (5)

Table 7: Scoring system for foraging bats to provide a geographical scale

Geographical scale	Score
International	>50
National	41 - 50
Regional	31 - 40
County	21 - 30
District, local or parish	11 - 20
Not important	1 - 10

3.4 Categorisation of commuting habitats

3.4.1 In order to value each phase of the proposed Development (these are geographical phases of the proposed Development) for its value to commuting bats, the following criteria are assessed:

- The 'rarity' of the species utilising the commuting features in the phase;
- The number of bats utilising the commuting feature;
- The number of nearby roosts present; and
- The habitats through which the bats are commuting.

3.4.2 The valuation of each of these criteria is presented below in Table 8. For each category, the highest score for the criteria that applies is utilised to provide a combined score for the phase. The methodology and criteria for the valuation of this score into a geographical frame of reference is provided in

3.4.3 Table 9.

Table 8: Valuing commuting routes

Species	Number of bats	Roosts/potential roosts nearby	Commuting habitat characteristics
Common (2)	Individual bats (5)	None (1)	Commuting through / around industrial or other site without established vegetation (1)
-	-	Small number (3)	Commuting through / around suburban areas or intensive arable land (2)
Rarer (5)	Small number of bats (10)	Moderate number/Not known (4)	Commuting through / around isolated woodland patches, less intensive arable and/or small towns and villages (3)
-	-	Large number of roosts, or close to a SSSI for the species (5)	Commuting through / around larger or connected woodland blocks, mixed agriculture, and small villages/hamlets (4)
Rarest (20)	Large number of bats (20)	Close to or within a SAC for the species (20)	Commuting through / around a mosaic of pasture, woodlands and wetland areas (5)

Table 9: Scoring system for commuting bats to provide a geographical scale

Geographic scale	Score
International	>50
National	41 - 50
Regional	31 - 40
County	21 - 30
District, local or parish	11 - 20
Not important	1 - 10

3.5 Impact assessment methodology

3.5.1 Within this ES appendix, the potential impacts to bats are identified. As stated in the CIEEM guidelines (CIEEM 2018), the impact characterisation process involves identifying and characterising impacts and their effects. This includes identifying the potential impact characteristics including:

- If the impact is positive or negative;
- The extent of the impact;
- The magnitude of the impact;
- The duration of the impact;
- Frequency and timing of the impact; and
- The reversibility of the impact.

3.5.2 These categories, along with the geographical context of the ecological feature (as shown in Table 5, Table 7 and

3.5.3 Table 9) are utilised to determine the ‘character’ of the impact.

3.5.4 Within this ES Appendix, potential impacts within each development phase are identified. This information is utilised to inform the mitigation required, which is presented in ES Appendix 7.18. Within the ES, these two appendices are utilised to determine if the overall potential impact of the proposed development is ‘significant’ or ‘not significant’.

4 Results

4.1 Introduction

4.1.1 This section of the report outlines the results of the valuations conducted upon the bat species, assemblage and commuting and foraging resources present within the site and each phase of the development. Within this section, valuations are subdivided according to the development 'phase', which is utilised to subdivide the development proposed within the OPA boundary. These phases are presented in **Figure 1**.

4.2 Within site activity

4.2.1 The activity levels suggest that certain areas (and habitats) the most valuable areas are the following:

- The corridor along the East Stour River (ESR) tributary in the south east of the site,
- The area around the Folkestone Racecourse Lake (FRL) (although activity levels were lower in 2021 than recorded in 2017),
- An area around the racecourse buildings although the activity here was almost all pipistrelle bats;
- An area around Park Wood in the west of the site.
- Harringe Brooks Woods and adjacent to Sandling Park Wood and a small woodland nearby the Link Park industrial area
- Along a ditch between Harringe Brooks Woods and the East Stour River,
- An area to the east of Barrowhill village.

4.2.2 The lowest levels of activity were recorded in locations within or on the periphery of (but not located within a connected hedgerow) intensively managed arable fields. This was expected, but the activity at these locations was notably low.

4.3 Between sites activity 2017 and 2021

Between site activity assessment 2017

4.3.1 Overall, the average percentile activity for the site, as assessed by Ecobat was 63, meaning the site is in approximately in the top 40% of activity levels for comparative sites, meaning the activity level was medium – high within the Ecobat assessment criteria. However, this needs to be assessed carefully as variations in surveying methodologies can create a skew in the results. Firstly, the static position points within the Otterpool Park site were selected to cover notable habitat types (i.e. the best habitats) and therefore are likely to have picked out heterogeneous habitats, which are likely to have a higher level of bat activity than randomly selected survey quadrants within the area.

4.3.2 As a result, it is assessed that the Ecobat assessment may overvalue the activity levels within the site, which was backed up by professional judgement of the activity levels on the site. Therefore, for the assessment an overall activity level of 'medium' was determined, which is within the range of activity outlined by Ecobat but takes into consideration the limitations identified.

Between site activity assessment 2021

4.3.3 The 2021 assessment conducted using Ecobat allowed the between site activity to be assessed for each species / group, where as in 2017 an overall activity was assessed using pipistrelle bats as an indicator species. As in 2017, the activity of 'pipistrellus' was in the top 40% for pipistrellus genus, c.90th percentile (where a species definition could not be confirmed) and 80th percentile for common pipistrelle and 60th percentile for soprano pipistrelle. Overall, these results suggest there is no significant change between the 2017 and 2021 assessment, with

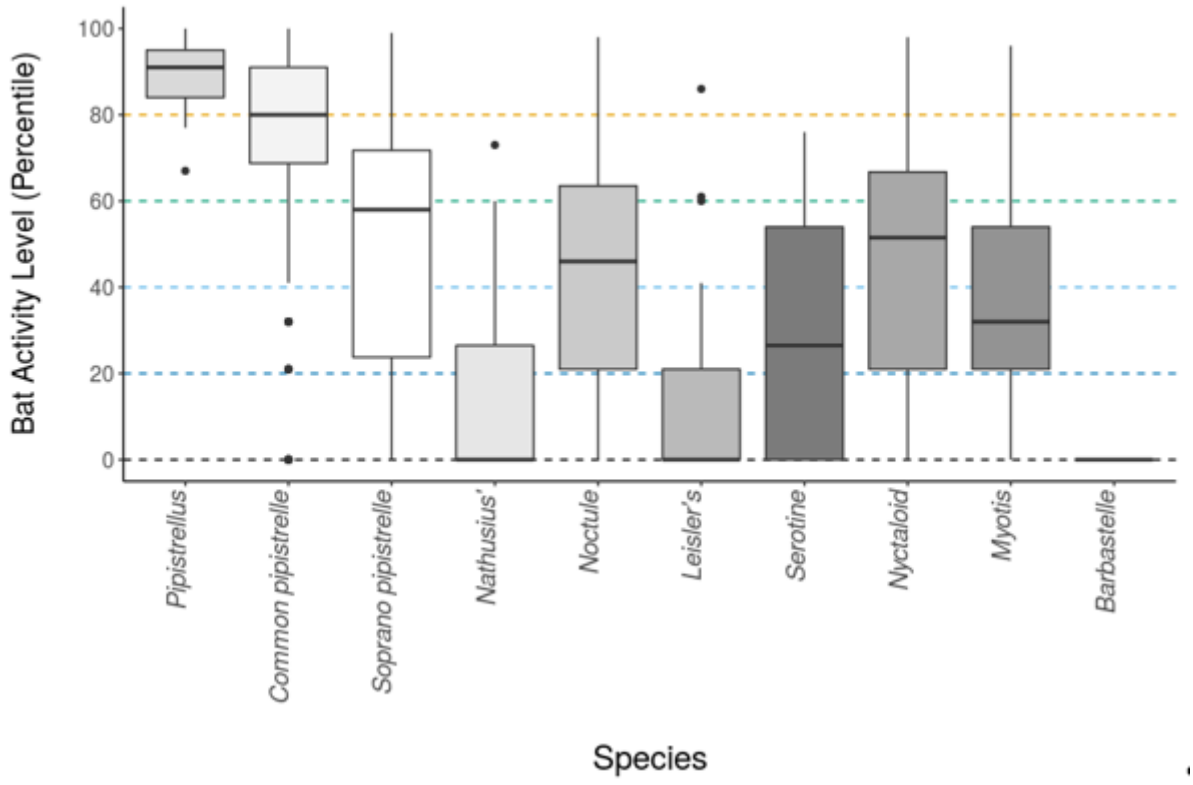
the site overall being in the same 'top 40%' percentile for overall common and soprano pipistrelle activity.

4.3.4 For the other species, the activity levels were notably lower than comparable sites in the 100km area. This is particularly true of barbastelle, where only one record of this species has been returned over the 2017 – 2021 survey period. This species was in the bottom 5% percentile. Low activity levels were also recorded of Leisler's and Nathusius' pipistrelle, with activity in the bottom 20% percentile.

4.3.5 Myotis, Nyctaloid (big bat) and noctule were all within the 40 – 60th percentile, this means that these species occurred with an activity comparable to the median site in the local area (within 100km).

4.3.6 Myotis bats and serotine were in the 20 – 40th percentile, suggesting that the activity levels of these species are below the levels on other sites in the local area.

Image 2: Excerpt from Ecobat showing the 2021 percentiles for the species recorded



Between site activity assessment 2021

4.3.7 No notable change in the 'between site' activity assessment was identified between the 2017 and 2021 results. The 2021 results allow a more comprehensive assessment of the activity, particularly in relation to individual species.

4.3.8 Overall, the average percentile activity for the site using the Ecobat tool was in approximately the top 40% of activity levels for comparative sites, meaning the activity level was medium – high criteria. However, this needs to be assessed carefully as variations in survey methodologies can create a skew in the results. The static position points within the site were selected to cover the most suitable habitat, which are likely to have a higher level of bat activity than randomly selected survey quadrants within the area.

4.3.9 The Ecobat assessment may therefore over value the activity levels within the site, (confirmed by surveyor judgement of the activity levels on the site). For the assessment an overall activity level of 'medium - high' will be utilised, however in interpreting the results it should be acknowledge that this may overvalue activity within the site.

4.4 Site wide assessment of species values

Introduction

4.4.1 This section outlines the results of an assessment of the value of the species present within the site. The valuations are based on the methodology and criteria presented in Table 4. The results of the assessment for each of the species present within the site is presented in Table 10.

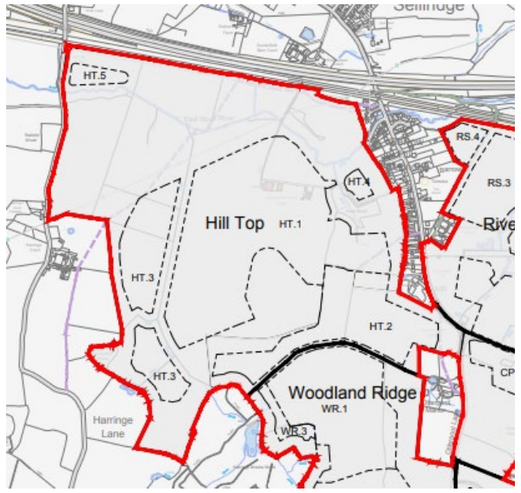
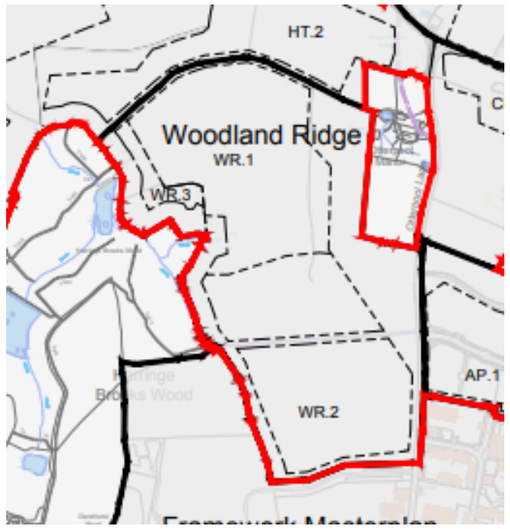
4.4.2 Overall, ten species were confirmed to use the site. This is a higher number of species than returned by the desk study, but most (by quite some way) of the bat calls recorded (both within the building, static and activity transects surveys) were common species, with only a few calls of rarer species. Therefore, overall the assemblage of species within the site is identified as being of Local value only.

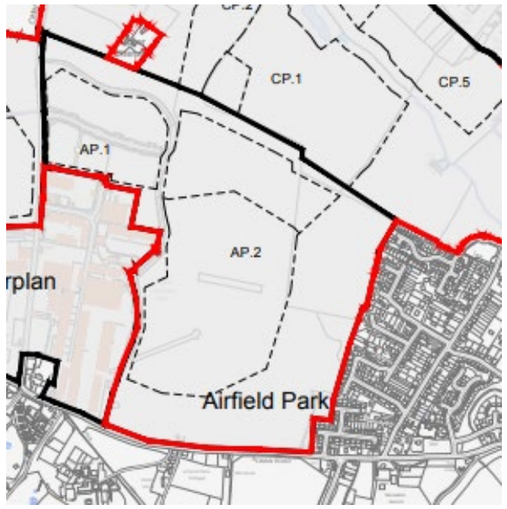
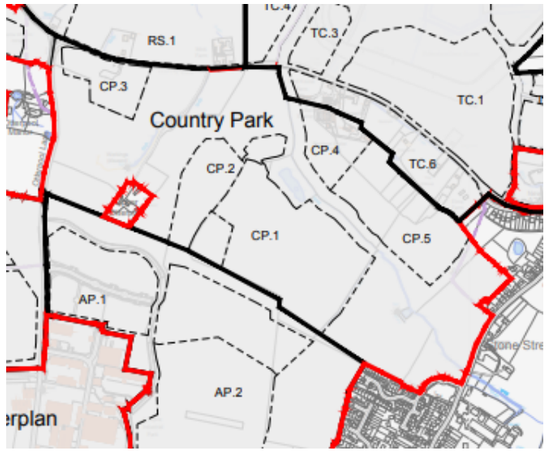
Table 10: Assessment of the value of species present within the site

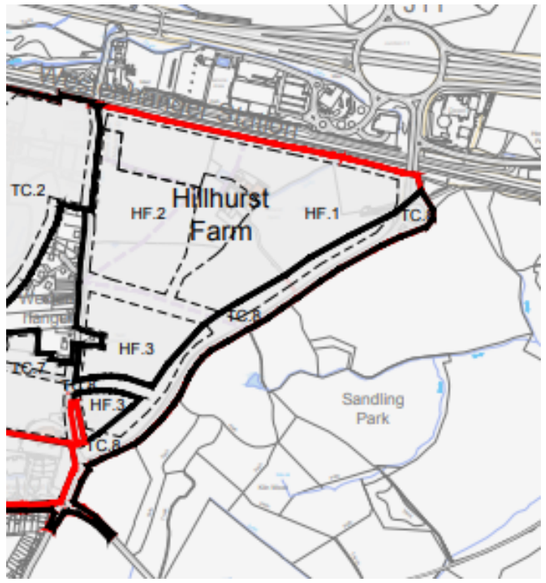
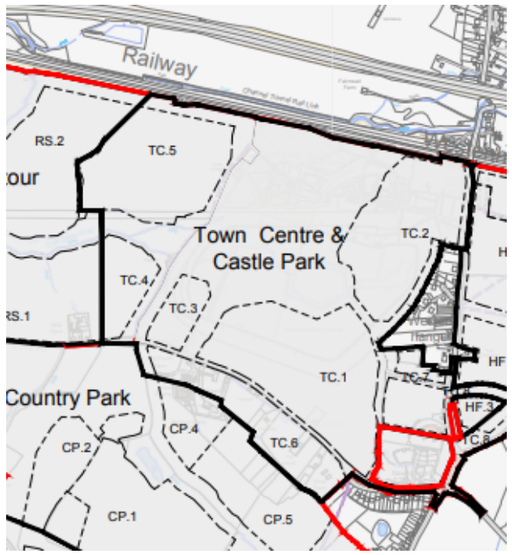
Common name	Status of species					Survey assessment					
	Scientific name	Section 41 species (score combined)		Distribution	Status score (total)	Status within Site	Breeding roosts within site	Hibernation within site	Use of habitats within site	Overall score	Notes
Barbastelle	*Barbastellus barbastellus*	Y (1)	Y (1)	Rarest bat (3)	5	Low numbers (1)	No evidence considering numbers (1)	Unlikely (1)	Low reliance (1)	9 (Local)	Very low numbers of calls recorded.
Serotine	*Eptesicus serotinus*	N	N (1)	South of England and South Wales 'rarer' bat (2)	3	Low numbers of passes. Widespread in surrounding area (1)	Unlikely considering number of passes within site (1)	Unknown – limited hibernation opportunities within the site but a precautionary assessment of (2) made	Likely to have a low reliance on the habitats on site considering the number of passes recorded (1)	7 (Local)	N/A
Daubenton's Bat	*Myotis daubentonii*	N	N (1)	Widespread in Britain 'rarer' bat (2)	3	Low numbers of passes, all focussed around a few features. Widespread in surrounding area. Less than 50 bats likely to be within the Otterpool site. (1)	Unlikely considering number of passes within site and quality of surrounding habitat (1)	Unknown – limited hibernation opportunities within the site but a precautionary assessment of (2) made	Distinct areas of the site are important for this species, but these are not extensive or widespread and are retained within the development (1)	8 (Local)	All areas identified as being key for this species retained within the masterplan
Natterers' Bat	*Myotis nattereri*	N	N (1)	Throughout British Isles 'rarer' bat (2)	3	Overall, myotis bats had a limited distribution across the site and a very low number of calls were recorded (1)	Unlikely considering number of passes within site and quality of surrounding habitat (1)	Unknown – limited hibernation opportunities within the site but a precautionary assessment of (2) made	Distinct areas of the site are important for this species, but these are not extensive or widespread and are retained within the development (1)	8 (Local)	All areas identified as being key for this species retained within the masterplan
'Myotis Bat'	*Myotis spp.*	N/A	N (1)	N/A All 'rarer' bats (2)	3	Overall, myotis bats had a limited distribution across the site and a very low number of calls were recorded (1)	Unlikely considering number of passes within site and quality of surrounding habitat (1)	Unknown – limited hibernation opportunities within the site but a precautionary assessment of (2) made	Distinct areas of the site are important for this species, but these are not extensive or widespread and are retained within the development (1)	8 (Local)	All areas identified as being key for this species group are retained within the masterplan
Leisler's Bat	*Nyctalus leisleri*	N	N (1)	Rare but occurs throughout Britain 'rarer' bat (2)	3	Overall, Leisler's bats had a limited distribution across the site and a very low number of calls were recorded (1)	Considering the low number of calls detected, this species is unlikely to be breeding within the site (1)	Unknown – limited hibernation opportunities within the site but a precautionary assessment of (2) made	Likely to have a low reliance on the habitats on site considering the number of passes recorded (1).	8 (Local)	N/A
Big bats	*N/A*	N/A	Y (some species) (2)	All 'rarer' bats (2)	4	Overall, big bats had a limited distribution across the site and a very low number of calls were recorded 66 passes on activity transects (1)	Unlikely to be a breeding roost considering the low number of passes, although tree surveys (which would be most likely to identify a noctule breeding roost were not conducted. A precautionary assessment of a noctule breeding roost within the area around the castle is possible, a precautionary assessment of (2) is made.	Unknown – limited hibernation opportunities within the site but a precautionary assessment of (2) made	Likely to have a low reliance on the habitats on site considering the number of passes recorded (1)	10 (Local)	(highest score for species utilised in assessment)

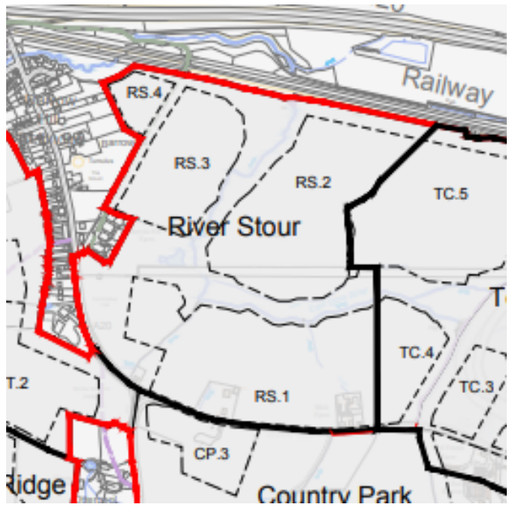
Common name	Status of species					Survey assessment					
	Scientific name	Section 41 species (score combined)		Distribution	Status score (total)	Status within Site	Breeding roosts within site	Hibernation within site	Use of habitats within site	Overall score	Notes
Noctule	*Nyctalus noctule*	N	Y (2)	England, Wales and Southwest Scotland 'rarer' bat (2)	4	Low numbers of passes, all focussed around a few features. Widespread in surrounding area. Less than 50 bats likely to be within the Otterpool site. (1)	Unlikely to be a breeding roost considering the low number of passes, although tree surveys (which would be most likely to identify a noctule breeding roost were not conducted. A precautionary assessment of a noctule breeding roost within the area around the castle is possible, a precautionary assessment of (2) is made.	Unknown – widespread hibernation opportunities within the site but a precautionary assessment of (2) made	Likely to have a low reliance on the habitats on site considering the number of passes recorded.(1)	10 (Local)	N/A
Nathusius' Pipistrelle	*Pipistrellus nathusii*	N	N (1)	Widely recorded but sparse. 'rarer' bat (2)	3	Scattered passes at very low densities. Site is unlikely to be important for this species (1).	Ver unlikely to be a breeding roost on site (1)	Very unlikely to be a hibernation roost on site (1)	Likely to have a low reliance on the habitats on site considering the number of passes recorded. (1)	7 (Local)	N/A
Common Pipistrelle	*Pipistrellus pipistrellus*	N	Y (2)	Widely distributed – range extends further north than soprano pipistrelle Common species (1)	3	More than 50 bats likely to be associated with the site (2)	None identified, but adjacent confirmed maternity roost (2)	Unknown – limited hibernation opportunities within the site but a precautionary assessment of (2) made	Moderate reliance on the habitats on site assessed (2)	11 (County)	Key areas for this species retained within masterplan.
Soprano Pipistrelle	*Pipistrellus pygmaeus*	Y	Y (2)	Widely distributed in the UK with the exception of the far north of Scotland. Common species (1)	3	More than 50 bats likely to be associated with the site (2)	None identified, but adjacent confirmed maternity roost (2)	Unknown – limited hibernation opportunities within the site but a precautionary assessment of (2) made	Moderate reliance on the habitats on site assessed (2)	11 (County)	Key areas for this species retained within masterplan.
Brown Long-eared Bat	*Plecotus auritus*	Y	Y (2)	Throughout the UK, Ireland and the Isle of Man. Common species (1)	3	Present in low numbers (very low number of passes detected (1)	One maternity roost identified (2)	Unknown – limited hibernation opportunities within the site but a precautionary assessment of (2) made	Moderate reliance likely (2)	10 (Local)	N/A

Table 11: Results of valuation assessments per area

Phase	Phasing location	Roost summary	Roost value	Foraging summary	Foraging value	Commuting summary	Commuting value	Summary value
Hill Top		No roosts confirmed. Static surveys suggest roosts in Harringe Brooks Woods An unknown bat roost was identified from the desk study in the adjacent village (Barrowhill, Sellindge), outside the OPA to the east	N/A	Multiple foraging areas within this phase. One area is located to the west of Barrowhill, Sellindge, and another is located around Park Wood and the East Stour River corridor. Rarer species recorded foraging in this area include Natterer's bats and Nathusius' pipistrelle.	The East Stour River (ESR) / ESR tributary areas and the rest of this area (arable land) will be assessed separately with bat activity being significantly different to the arable area with sparse hedgerows present within the rest of the phase. **The East Stour River (ESR) and ESR tributary areas:** Some 'rarer' bats recorded (5), Small number of bats (10), small number of roosts (3), larger or connected woodland blocks, mixed agriculture, (4). **TOTAL 22 points County** **Rest of phase:** Small number of rarer bats (5), Individual bats recorded (5), moderate number of roosts nearby (4), arable (3) **TOTAL 17 points Local**	Commuting all along the tributary to the East Stour River corridor. Some 'rarer' species recorded. Also a north-south commuting route between the East Stour River corridor and Harringe Brooks Wood to the south.	Some 'rarer' bats recorded commuting around the tributary to the East Stour (5), Small number of bats (10), Moderate number/Not known number of roosts (4), larger or connected woodland blocks, mixed agriculture, (4). **TOTAL 23 points County**	The valuation of this phase to bats is a maximum of county value (predominantly the area along the tributary to the East Stour). The rest of this phase is considered to be of local value. Notably low activity was recorded within the arable fields within this area.
Woodland Ridge		No roosts confirmed within this phase, but adjacent roosts within Otterpool Manor (pipistrelle roosts, type unknown). Potential for roosts within adjacent Harringe Brooks Wood and some of the trees within the site.	N/A None recorded	Important foraging areas identified within this area were mainly located along the periphery of the woodland. A foraging area was also identified along and around a hedgerow that runs north to south.	The area around the woodland and the rest of the phase will be assessed separately as the bat activity varied greatly between these areas **Area around edge of woodland**: Some 'rarer' bats recorded around the periphery of the woodland (5), small number of bats (10), moderate number/Not known number of roosts (4), larger or connected woodland blocks, mixed agriculture, (4). **TOTAL 23 points County** Rest of phase: small number of rarer bats present (5), individual bats recorded (5), moderate number of roosts nearby (4), intensive arable land / suburban habitat (2). **TOTAL 16 points Local**	Two commuting routes identified within this area, along a hedgerow from Harringe Brooks Wood to the north-east, and a north-south hedgerow within the centre of the phase. Both used by common species.	Valuation: Used by common species (2), individual bats (5), small number of nearby roosts (3), larger or connected woodland blocks, mixed agriculture (4). **TOTAL: 14 points Local**	**Local** **Woodland County**

Phase	Phasing location	Roost summary	Roost value	Foraging summary	Foraging value	Commuting summary	Commuting value	Summary value
Airfield Park		No bat roosts confirmed. The desk study identified a maternity roost of pipistrelles in Lympne Village to the east (outside the OPA).	N/A.	Only two notable foraging areas were recorded, one in the south east, adjacent to Lympne village. This area is likely to support bats within the off-site maternity roost for common pipistrelle bats in Lympne Village in the east.	Common species regularly recorded (2), individual bats (5), small number of roosts (3), less intensive arable land (3). **TOTAL 13 points Local**	No particular commuting routes were recorded only common pipistrelle bats were found to be regularly using this area.	Common species (2), individual bats (5), small number of roosts (3), less intensive arable land (3). **TOTAL 13 points Local**	**Local**
Country Park		Common (summer) pipistrelle roosts confirmed. A brown long-eared (maternity) roost was also located within structure 7j. Statics provided evidence of roosts in the trees along the East Stour tributary. The desk study identified a maternity roost of pipistrelles in Lympne Village to the south of this parcel (outside the OPA). N.B. not all of the structures within this phase were possible to access. Other roosts may be present.	Local (soprano roosts) County (brown log-eared maternity roost)	N.B. not all areas of this phase were surveyed due to access restrictions. Foraging all along the tributary to the East Stour River corridor. Some ‘rarer’ species recorded.	The area along the East Stour River (ESR) tributary and the rest of the phase will be assessed separately being significantly different to the grassland / arable habitat with trees present within the rest of the Phase. **Main area**: Small number of rarer bats (5), Individual bats recorded (5), moderate number of roosts nearby (4), arable land (3) **TOTAL 17 points Local** **Along the ESR tributary:** some ‘rarer’ bats recorded around the tributary to the East Stour (5), small number of bats (10), moderate number/Not known number of roosts (4), larger or connected woodland blocks, mixed agriculture, (4). **TOTAL 23 points County**	Commuting all along the tributary to the East Stour River corridor. Some ‘rarer’ species recorded.	Some ‘rarer’ bats recorded commuting around the tributary to the East Stour (5), small number of bats (10), moderate number/Not known number of roosts (4), larger or connected woodland blocks, mixed agriculture, (4). **TOTAL 23 points County**	**Main area - Local** **Tributary of the East Stour River - County**

Phase	Phasing location	Roost summary	Roost value	Foraging summary	Foraging value	Commuting summary	Commuting value	Summary value
Hillhurst Farm		One summer roost of common pipistrelle confirmed within the buildings of Hilhurst Farm during surveys. 2021 statics suggest roosts in adjacent Sandling Park woodland.	Local	Very low level of foraging recorded during the activity surveys in the main area of the site, higher activity along the edge of Sandling Park. .	Common species only (2), individual bats (5), small number of roosts (3), intensive arable land (2). **TOTAL 12 points Local**	One commuting route for common species (only common and soprano pipistrelle bats)	Used by common species (2), individual bats (5), small number of nearby roosts (3), larger or connected woodland blocks, mixed agriculture (4). **TOTAL: 14 points Local**	**Local**
Town Centre & Castle Park		Multiple small (summer) roosts identified within this area, all within the racecourse buildings. One summer common pipistrelle roost was observed within structure 8e(b) in the south of the phase. All roosts were common species. Westenhanger Castle supports roosts of myotis bats, brown long eared bats, serotine and pipistrelles.	**Local**	Static detector positions 3 and 4 were located within the phase. Both with 'high' levels of foraging activity. Detector 4 activity level high, the majority common and soprano pipistrelle bats, likely attributable to the roosts found in the nearby buildings (within the houses within the Racecourse). The species assemblage recorded here was not particularly varied, recording very low pass rates of the 'rarer' species (less than 1 pass per hour). The transect surveys recorded predominantly common and soprano pipistrelle foraging within the Phase, with records of noctule, myotis bats and Daubenton's bats. Detector 3, activity level high, likely attributable to this location's high-quality foraging habitat. A more diverse species assemblage was recorded within this area, with particularly high pass rates of Myotis bats (over 2.5 passes per hour), identified within the vicinity of the FRL, and a particularly high proportion of 'rarer' bats (15.3%).	The FRL area will be assessed separately being significantly different to the grassland habitat with scattered buildings and trees present within the rest of the Phase. **Area Around FRL and Castle (retained):** Some rarer bats (myotis) (5), Small number of bats (10), Small number of roosts (3), isolated woodland patches, less intensive agriculture (3) **TOTAL 21 points County** **Rest of Phase 1A:** Small number of rarer bats (5), Individual bats recorded (5), moderate number of roosts nearby (4), intensive arable land / suburban (2) **TOTAL 16 points Local**	The transect through this area largely followed potential commuting routes. A commuting route from Woodland within Sandling Park in the east of the site was identified and a commuting route along the north of the site, behind the castle following the river and woodland along the north of the site.	A commuting route was identified between the areas in the east of the site and FRL. This primarily utilised by common pipistrelle. Commuting valuation Used by common species (2), individual bats (5) small number of nearby roosts (3), Less intensive arable habitat (3) **TOTAL 13 points Local**	**Local** **FRL and Castle area County for foraging and roosting**

Phase	Phasing location	Roost summary	Roost value	Foraging summary	Foraging value	Commuting summary	Commuting value	Summary value
River Stour		No bat roosts confirmed. An unknown bat roost was identified from the desk study in the adjacent village (Barrowhill, Sellindge), outside the OPA to the west.	N/A	Across the majority of this area, low levels of foraging were recorded, but foraging and commuting was recorded by Static detector 6. One area to the south of the phase, adjacent to a hedgerow / ditch had some bat foraging, predominantly common pipistrelle, with soprano pipistrelle, noctule and brow long-eared also recorded.	Within this area, bat activity along the ESR notably different to other areas, therefore this phase is assessed as two areas. In this area: some 'rarer' bats recorded (5), individual bats (5), small number of roosts (3), intensive arable land (2). **TOTAL 15 points Local**	Across the majority of this area, low levels of commuting were recorded. One area to the south of the phase, along a hedgerow / ditch had some bat foraging, predominantly common pipistrelle, with soprano pipistrelle, noctule and brow long-eared also recorded commuting, crossing the A20 to the south.	Some 'rarer' bats recorded (5), individual bats (5), small number of roosts (3), intensive arable land (2). **TOTAL 15 points Local**	**Local** **The East Stour River - County**

5 Impact Assessment

5.1 Introduction

5.1.1 This section of the report outlines the potential impact assessment for bats. This potential impact assessment has been categorised according to the geographical Phases of the development. This assessment is conducted 'in the absence of any mitigation'. Full details of the impact assessment with mitigation incorporated are presented in Chapter 7 of the ES.

5.1.2 In order to assess the potential impacts to bats, information on the layout of the development and structures to be removed have been utilised. Details of the buildings proposed to be removed to facilitate the development are presented in Figure 2. Table 12 below outlines the roosts identified to date and the proposed demolition status for each structure. The potential demolition status for each structure has the potential to be:

- Building proposed to be demolished;
- Building to be retained; or
- Building demolition / retention to be determined at Tier 2 / 3

Table 12: Roosts identified within the site and proposed demolition status.

Area	Cluster	Building	Demolished / Retained / To be determined at Tier 2 / Tier 3	Species	Roost type	Confirmed or Probable	Valuation	Notes
1	1A	1c	Demolished	Common pipistrelle (two roosts)	Summer roost, low numbers of bats, common species	Probable and Confirmed	District, Local or Parish	
		1b	Demolished	Common pipistrelle / pipistrelle species (recorded on multiple occasions, 2x bats)		Confirmed and Probable		
	1B	1h	Demolished	Common pipistrelle and Pipistrelle species (2 roosts)		Probable and Confirmed		
		1f(a)	Demolished	Soprano pipistrelle		Possible		Not counted – subsequent surveys and inspections found no Potential Roost Features.
	1C	1l	Demolished	Pipistrelle species		Confirmed		Bat not echolocating

Area	Cluster	Building	Demolished / Retained / To be determined at Tier 2 / Tier 3	Species	Roost type	Confirmed or Probable	Valuation	Notes
2	2A	2f	Building demolition / retention to be determined at Tier 2 / 3	Brown long-eared bat (DNA Sample)		Confirmed (DNA Sample)		2020 DNA Sample
		2h	Retained	Soprano pipistrelle and Unknown (likely soprano pipistrelle) Common pipistrelle (DNA sample) brown long-eared (DNA sample) Natterer's bat roost (DNA sample)		Confirmed (x5)		2020 DNA Sample identified multiple species roosts within this structure
	2B	2a	Retained	Common pipistrelle, brown long-eared and serotine (DNA sample)		Confirmed (x3)		2021 DNA Sample identified multiple species roosts within this structure
3	3A	3b / 3c	Retained	Common pipistrelle (recorded on 2 occasions)		Confirmed		Likely to be the same roost recorded twice - counted as one roost.
7	7A	7a	Building demolition / retention to be determined at Tier 2 / 3	Common pipistrelle		Possible		
		7c(c)	Building demolition / retention to be	Common pipistrelle		Possible		

Area	Cluster	Building	Demolished / Retained / To be determined at Tier 2 / Tier 3	Species	Roost type	Confirmed or Probable	Valuation	Notes
			determined at Tier 2 / 3					
		7e(d)	Demolished	Soprano pipistrelle		Probable		
	7C	7j	Building demolition / retention to be determined at Tier 2 / 3	Common pipistrelle		Probable		
			Building demolition / retention to be determined at Tier 2 / 3	Common pipistrelle		Confirmed		
			Building demolition / retention to be determined at Tier 2 / 3	Long-eared Bat Species	Maternity roost	Confirmed	County	Recorded on two occasions
8	8B	8e(b)	Building demolition / retention to be determined at Tier 2 / 3	Common pipistrelle	Summer roost (unlikely to be present)	Possible	District, Local or Parish	Considered unlikely once a detailed building inspection could be conducted.
12	12A	12a	N/A Outside of site redline	Common pipistrelle (three potential emergences, one probable, two possible)	Summer roost, low numbers of bats, common species	Probable, possible		One roost recorded.
		12c	N/A Outside of site redline	Common pipistrelle / pipistrelle species		Possible		
		Tree adjacent to 12a	N/A Outside of site redline	Soprano pipistrelle (tree roosts)		Probable		

In summary, of the roosts identified to date, roosts are present in six structures to be demolished. All of these roosts are pipistrelle species and all were low numbers of bats and likely summer roosts. A summary of the status of the roosts within buildings to be demolished is presented in Table 13. A further 5 buildings that supported roosts will be identified for demolition / retention at Tier 2 / 3 of the planning process. These roosts were in structures 2f, 7a, 7c(c), 7j and 8e(b) and were low numbers of pipistrelles, with the exception of buildings 2f and 7j (which supported brown long eared bat roosts, with building 7j supporting a maternity roost).

Table 13: Summary of the roosts within structures that are proposed to be demolished

Building	Demolished / Retained / To be determined at Tier 2 / Tier 3	Species	Roost type	Confirmed or Probable	Valuation	Notes
1c	Demolished	Common pipistrelle (two roosts)	Summer roost, low numbers of bats, common species	Probable and Confirmed	District, Local or Parish	
1b	Demolished	Common pipistrelle / pipistrelle species (recorded on multiple occasions, 2x bats)		Confirmed and Probable		
1h	Demolished	Common pipistrelle and Pipistrelle species (2 roosts)		Probable and Confirmed		
1f(a)	Demolished	Soprano pipistrelle		Possible		Not counted – subsequent surveys and inspections found no Potential Roost Features.
1l	Demolished	Pipistrelle species		Confirmed		Bat not echolocating
7e(d)	Demolished	Soprano pipistrelle		Probable		

Table 14 below utilises the information in the tables above to provide a description of the potential impact of the development of each indicative phase (from Figure 1).

Table 14: Details of potential impacts to bats and resources of value to bats within each Phase of the development, in the absence of mitigation.

Phase	Roosting	Foraging	Commuting	Assemblage
Town Centre and Castle Park	Multiple roosts of local value within this area are likely to be directly impacted by removal of buildings (however all of these are small pipistrelle roosts) There is potential for indirect impacts to the roosts identified within the retained Westenhanger Castle buildings There is potential for indirect impacts to local roosts within the off-site areas of Little Greys Cottage and Twin Chimneys (if roosts confirmed to be present). There is potential for impacts to tree roosts, but most trees within this phase are retained*.	The development in this area could result in the loss of area of local foraging value or the reduction in value of areas of County value (FRL).	The development could result in the severance / reduction in value of commuting routes of local value.	Could result in impacts to an assemblage of bats of peak county value. (Common and soprano pipistrelle bats County All other species – Local)
Hilhurst Farm	Pipistrelle roosts of local value identified to date will be retained. There is potential for impacts to tree roosts, but most trees within this phase are retained*.	There is potential for the loss of a foraging area of up to local value.	The development could result in the severance / reduction in value of commuting routes of local value only.	
Country Park	The development in this area will involve direct impacts (removal) of structures which are confirmed to support roosts of local value. However, many structures in this area could not be fully assessed (no access). The maternity roost of brown-long eared bats is of county value, the status of this building (demolished r retained) is to be determined at Tier 2 of the planning process. There is potential for impacts to tree roosts, but most trees within this phase are retained*. There is the potential for indirect impacts to roosts of local value within the off-site area of upper Otterpool (house and barns and one likely tree roost).	There is potential for the loss of a foraging area of up to County value, but most of this area is of local value.	The development could result in the severance / reduction in value of commuting routes of county value	
Hill Top	No roosts were identified within this area. There is potential for impacts to tree roosts, but most trees within this phase are retained*.	There is potential for the loss of a foraging area of up to County value, however the majority of this area is of local value.	The development could result in the severance / reduction in value of	

Phase	Roosting	Foraging	Commuting	Assemblage
			commuting routes of county value	
Woodland Ridge	No roosts were identified within this area. There is potential for impacts to tree roosts, but most trees within this phase are retained*. There is potential for indirect impacts to roosts within the off-site area of Otterpool Manor.	The development in this area could result in the loss of area of local foraging value or the reduction in value of areas of County value (the area around Harringe Brooks Wood).	The development could result in the severance / reduction in value of commuting routes of local value.	
River Stour	No roosts were identified. There is potential for impacts to tree roosts, but most trees within this phase are retained*. There is a low potential for indirect impacts to unknown roosts within Barrowhill, Sellindge to the west.	There is potential for the loss of a foraging area of up to local value.	The development could result in the severance / reduction in value of commuting routes of local value.	
Airfield Park	No roosts were identified within this area and there are no structures present within this phase. There is potential for impacts to tree roosts, but most trees within this phase are retained*. There is potential for indirect impacts to an off-site maternity roost of brown long—eared bats within Lympne village outside of the OPA to the east.	There is potential for the loss of a foraging area of up to local value.	The development could result in the severance / reduction in value of commuting routes of local value.	

* Evidence from the transect surveys suggests that Local or Less than Local value roosts area likely to be within trees not yet surveyed.

6 Discussion

6.1.1 Activity levels of bats varied based on location and habitat. This information has been used to inform the masterplan design to avoid, reduce and mitigate impacts to bats.

6.1.2 The following assessment was made from the desk study and bat surveys conducted in 2017 - 2021:

- Within the site, the assemblage of species recorded was assessed as being of Local value.
- Between sites, the Otterpool site was considered to have a ”medium - high” activity level compared to local sites, as assessed by the Ecobat tool.
- The individual species recorded within the site were assessed as being of Local value, but due to the large number of common and soprano pipistrelle bats recorded the site was assessed as being of County value for those species.
- The roosts recorded within the OPA were assessed as being of predominantly local value, with one confirmed roost of county value (a brown long-eared bat maternity roost). Other roosts are likely to be present that have not been identified.
- The commuting and foraging areas were assessed as largely being of Local value, areas around the East Stour River corridor, the Folkestone Racecourse Lake and Harringe Brook Wood were assessed as being of County value.

6.1.3 This information is utilised to perform an assessment of the potential impacts of the development, which will in turn inform the impact assessment (presented in Chapter 7 of the ES).

7 Mitigation recommendations and further work

7.1 Introduction

7.1.1 This section of the report provides an overview of the mitigation relating to bats. A full scope of the mitigation proposed is presented in the Targeted Species Mitigation Strategy (ES Appendix 7.18). This mitigation, once applied, is utilised to determine if any compensation is required and if the subsequent impact is significant or not significant.

7.1.2 This section of the report broadly outlines the mitigation approaches which may be employed to address the potential impacts to the usage of the site by bats identified in this report. Further details are presented within the bat mitigation strategy document and within the biodiversity section of the ES (ES Appendix 7.18 and ES Chapter 7: Biodiversity). Overall, impacts to bats within the site are largely addressed through avoidance within the design of the project.

7.2 Design mitigation

7.2.1 Detailed bat mitigation for the proposed development will be formalised within the associated Bat Mitigation Strategy (ES 7.18). In summary, the following will be incorporated within the masterplan and proposed development in order to ensure that the conservation status of bats in and around the Otterpool site is maintained.

- Retention of key areas for bats, protected by suitably sized and designed buffer;
- Creation of dark corridors within the development, that are designed to ensure that bats can continue to use the area for commuting and foraging. These will be designed to limit light spill into these areas and maximise continuity of these dark areas;
- A lighting design across the entire site which limits light spill onto retained habitats and specifies that all artificial lighting must be directional and low light spill;
- Retention and enhancement of connectivity and foraging areas, especially the core important foraging areas;
- Specification for creation of bat roosting features including bat barns and installation of tree roost boxes and roost boxes within newly created structures;
- Where roads etc. cross commuting corridors, planting / underpasses / bridges designed to ensure that bats can continue to traverse these features;
- Design of water features and Sustainable Drainage Systems (SuDS) to create valuable feeding habitats for bats;
- Prescriptions for the provision of bat boxes within the developed parcels and within retained / created habitats.

7.3 Additional mitigation

7.3.1 During the build out of the development, the following will be required to ensure that impacts to bats are identified and can be adequately mitigated.

Construction mitigation

General

7.3.2 During the construction phase of the development, a range of measures will need to be implemented to ensure that impacts to bats are minimised. These measures would be specified within a Code of Construction Practice (CoCP) and would include (but not be limited to)

- Prescriptions for the provision of tool box talks for on-site contractors and staff, informing them of the legal protection afforded to bats;
- Prescriptions for site lighting to minimise the impacts and disturbance to bats (duration of works and construction lighting specifications);
- Buffers and offsets from sensitive areas for bats, to be fenced and protected appropriately.

- Appropriate measures are put in place to control dust and other emissions that could affect air quality.
- Site compounds, storage facilities and staff facilities are suitably bunded and located in places that would not have an adverse effect on the environment; in particular, the CoCP would ensure that retained trees are protected.
- In advance of site clearance, protective fencing is installed to protect retained and/or ecologically sensitive habitats (woodlands, mature trees and hedgerows) and their associated buffer phases to ensure that they are not subject to accidental damage (to be determined on a phase by phase basis).
- Haul routes, storage compounds and staff facilities would be located away from retained habitats to minimise disturbance to the species they support.
- An Ecological Clerk of Works is in place to oversee site clearance, in particular any works that have the potential to disturb notable receptors. They would also ensure that the mitigation measures proposed adhere to best practice guidelines and take account of any changes in legislation that may have occurred.
- The Ecological Clerk of Works would ensure that hedgerow translocation is undertaken in accordance with an agreed method statement. They would also ensure that the retained and translocated hedgerows are monitored to ensure that they are managed appropriately.

7.3.3 An ecological clerk of works would be employed to ensure that the ecological protection measures outlined in the CoCP are adhered to. They would also undertake regular monitoring to ensure that the protection measures remain in place for the time that they are required.

7.3.4 The Ecological Clerk of Works would report to the Site Manager and/or Environmental Clerk of Works to ensure that remedial actions are undertaken in a timely manner.

Roost mitigation and licensing

7.3.5 During demolition and tree removal on the site, there will be a need to safeguard roosting bats within structures and trees to be removed. This will need to be informed by up-to-date roost surveys conducted for each Reserved Matters Application. Disturbance or removal of any roosts is likely to require a licence form the statutory Authority (currently Natural England) and may specify:

- Dedicated mitigation;
- Specific timings for works;
- Displacement and exclusion of bats from structures;
- Supervision by a licensed ecologist of demolition works.
- Suitable alternative roosting provision will also be likely to be required, which may include bat barns and houses and / or bat boxes.

7.3.6 Details of licences that may be required are specified within Chapter 7: Biodiversity of the ES.

Operational Mitigation

Safeguarding habitats

7.3.7 In order to minimise the potential for operational impacts to the bat populations within the site, measures will be implemented to minimise these impacts. These are likely to include:

- Installation of new roosting opportunities including bat houses/barns and tree/structure mounted boxes (both as an enhancement within the new development and as mitigation for roost loss, where appropriate) will be conducted. This is outlined within the Bat Mitigation Strategy (ES Appendix 7.18) but will be specified in detail at the reserved matters stage of the planning process.
- Implementation of a suitable lighting strategy, ensuring that dark corridors and areas important for foraging bats are kept dark; and

- Features being installed to limit access by humans in areas where disturbance may adversely impact bats. This could include fences or carefully designed SuDS features.

Maintenance and monitoring

7.3.8 Maintenance and monitoring will be required of any retained or created habitats. An outline of the desired outcomes for the monitoring and maintenance is provided within a site Biodiversity Action Plan (BAP) (ES Appendix 7.20). As each land parcel is brought forward for development, detailed strategies will be required for creation, management and maintenance of the habitats created will be required (this is beyond the remit of this document).

7.3.9 A broad outline of the locations of proposed habitat creation is provided within the mitigation strategies (ES Appendix 7.18).

Design parameters for built parcels

7.3.10 The value of the built parcels for bats will be maximised.

7.3.11 Native planting, including scrub and trees, will provide habitats and food sources for foraging and commuting bats. In addition, bat boxes may be strategically placed to target specific species, and a minimum number of bat boxes per a certain number of built structures and trees should be installed, to be determined separately.

7.3.12 Within the built parcels, parameters will be set (dependent upon the proposed density of the parcels buildings) for the Green Infrastructure (GI) which will be of value for bats. This will include:

- Parameters for the area of green roofs within built parcels;
- Parameters for the number of trees and street trees within built parcels;
- A dedicated lighting strategy will be required to minimise light spill; and
- Parameters for the number of additional bat roosts (i.e. bat boxes and features).

8 Further survey work

8.1.1 The surveys undertaken to date, when combined with the data from other bat surveys referred to within this document, are considered sufficient to inform the EIA (at Tier 1), allow for masterplan design and to inform outline planning. However, due to the details of the proposed development and the requirement for an extended build out, subsequent surveys are likely to be required to inform the detailed design of the development (at Tier 2 and 3). These surveys will inform detailed planning and construction mitigation. This section of the report outlines the survey work likely to be required as the development progresses. The following surveys are likely to be required during the buildout:

- Further 'Preliminary Roost Assessment' (PRA) surveys of structures, as access to previously inaccessible areas is obtained;
- Further, and more detailed PRA and subsequent emergence / re-entry surveys to identify roosts to safeguard individual roosts (of structures to be removed, once this is known). These should be phased to be conducted as each reserved matters application proceeds to planning and be designed to ensure that sufficient data can be collected to allow a licence to be obtained (determined by the current best practice and licence guidelines at the time of the development);
- Assessment of the roosting potential of trees, especially those identified within these surveys as likely to support bat roosts; once the details of tree impacts and removal is known. These should be phased as each reserved matters application proceeds to planning.
- The assessments above are likely to prompt the requirement for emergence / re-entry surveys to be completed on trees within the development area.
- Throughout the development buildout and subsequent to buildout completion, monitoring of the bat usage of the site will need to be conducted, to determine any changes in the usage of the site by the recorded assemblage of bats.

9 Conclusions

9.1.1 A valuation of the bats present within the site, and the value of the site to bats, roosting, foraging and commuting was made. This information was used to inform the masterplanning design, to ensure the retention and enhancement of the areas of greatest value to bats.

9.1.2 In conclusion, the assemblage of bats on site was assessed as being of largely local value. However, the number of common and soprano pipistrelles recorded suggested that the site wide assemblage of these species is of up to county value. This is a holistic assessment that includes the activity and roosting presence within the site. The site includes a number of small pipistrelle roosts and is adjacent to a known maternity roost of this species (within Lympne village).

9.1.3 When compared to sites within 200km, the activity recorded on the site would be considered to be within the top 40% of activity levels for comparative sites, indicating the activity level was medium to high within the Ecobat tool.

9.1.4 The confirmed roosts recorded within the OPA were assessed as being of predominantly local value, with one roost of county value (a brown long-eared bat maternity roost) being of county value.

9.1.5 The commuting and foraging habitats on site are largely assessed as being of local value, with areas around the East Stour River corridor and tributaries to the East Stour River, the Folkestone Racecourse Lake and Harringe Brook Wood surrounds were assessed as being of county value.

9.1.6 This report broadly outlines the mitigation approaches which may be employed to address the potential impacts to the usage of the site by bats identified in this report. Further details are presented within the bat mitigation strategy document and within the Chapter 7: Biodiversity and ES Appendix 7.18. Overall, impacts to bats within the site are largely addressed through avoidance within the design of the project

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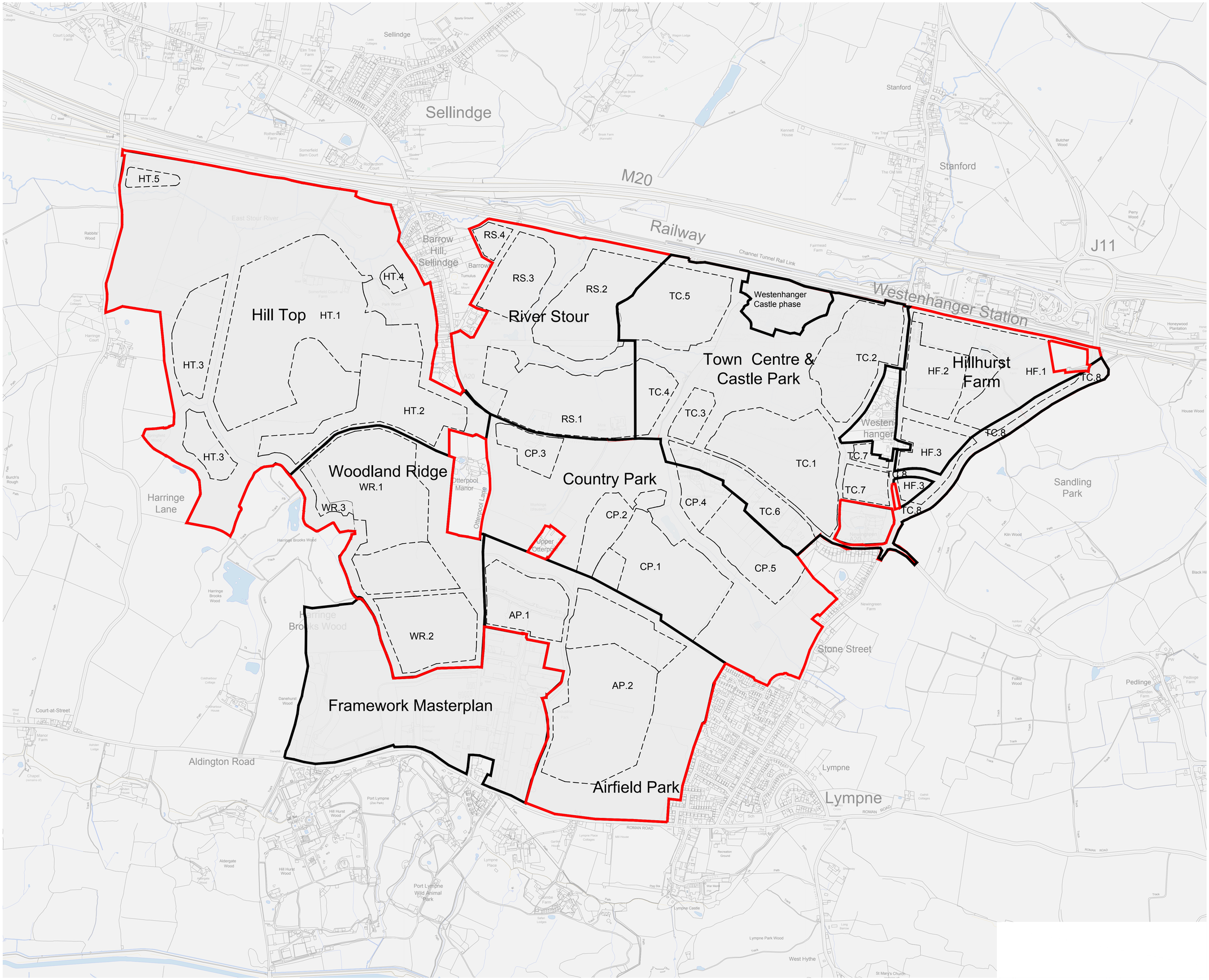
Figure 1: Indicative Phases referred to in this report



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Client:
Otterpool Park LLP

Masterplanner:
FARRELLS

Project:
Otterpool Park

Drawing:
Indicative Phases

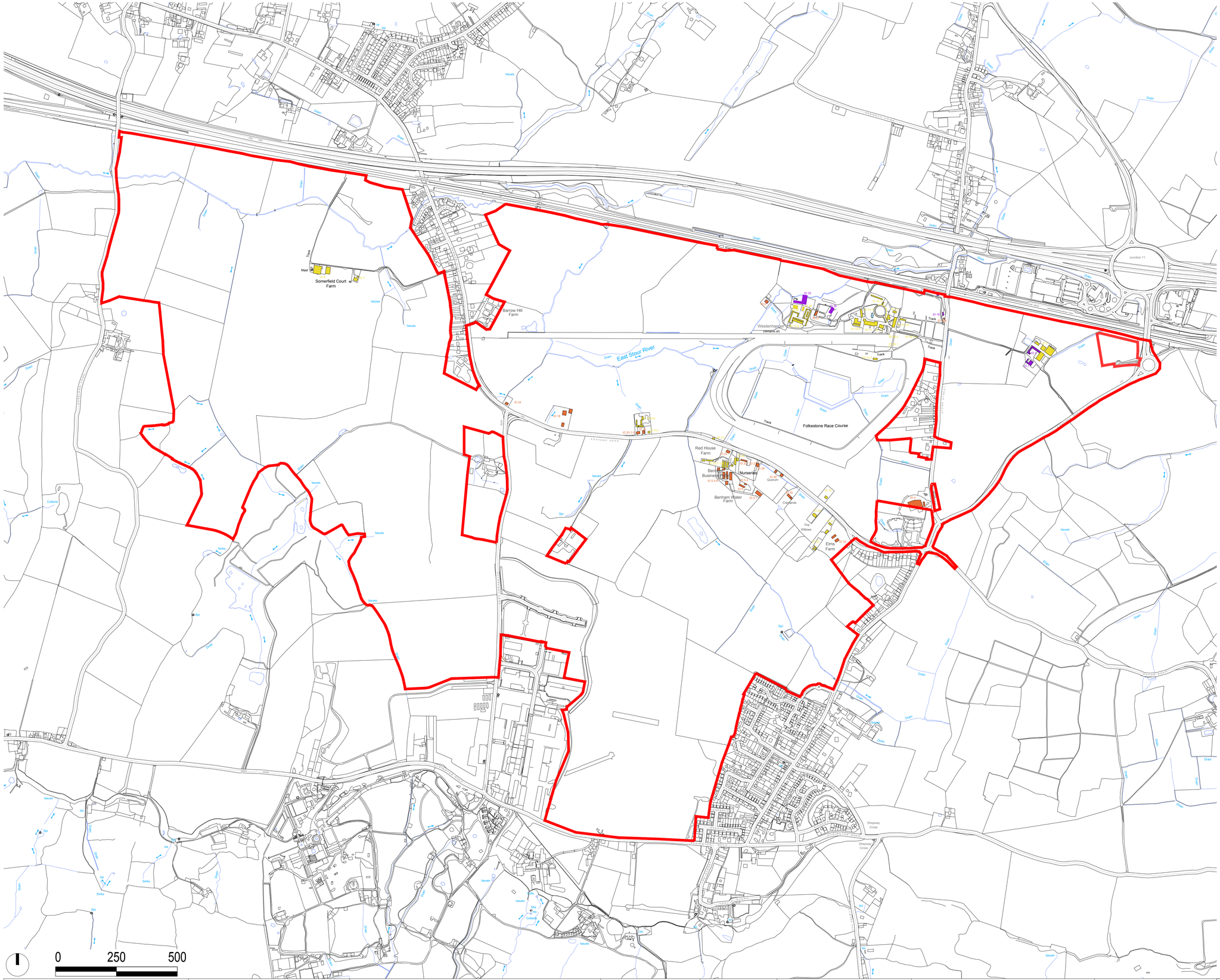
Scale:
1:7,500 @ A1, 1:15,000 @A3

Status:
In Support

Drawing Number:
OPM(P)4004_rev YY

Figure 2: Buildings proposed to be removed to facilitate the development

ALL DIMENSIONS, LEVELS, COORDINATES, SETTING OUT, TO BE CHECKED ON SITE AND ANY DISCREPANCY REPORTED IMMEDIATELY TO THE ARCHTECT AND PROJECT MANAGER.



ID	Building name/address
1	Hillhurst Farm
2	Hillhurst Farm outbuildings
3	Hillhurst Farm sheds
4	Single storey sheds on Stone Street
5	Single storey sheds at Benham Business Park
6	Benham Water Farm
7	Somerfield Court Farm
8	Single storey sheds at Somerfield Court Farm
9	Farm Cottage
10	Rose Cottage
11	Racecourse buildings - grandstand
12	Racecourse buildings - grandstand
13	Racecourse Paddock Cottages
14	Racecourse buildings - stables
15	Killymoon
16	Tollgate Cottage
16A	Tollgate Cottage garage
17	Westenhanger Station
18	Airport Service Station
19	The White House, Ashford Road
20	Whiteways, Ashford Road
21	Boleh, Ashford Road
22	Red House Farm
23	Red House Farm outbuildings
24	The Bungalow, Ashford Road
25	Cydonia, Ashford Road
26	Cob Tree Cottage, Ashford Road
27	2 Franks Villas, Ashford Road
28	Quorum (Ivy Cottage), Ashford Road
29	Craylands, Ashford Road
30	The Willows, Ashford Road
31	Elm Acres, Ashford Road
32	Land at the rear of Elm Acres
33	Elms Farm, Newingreen
34	1 & 2 Barrow Hill Farm Cottage
35	Westenhanger Castle Barn
36	Westenhanger Castle House
37	Westenhanger Castle Outbuilding (WC)
38	Westenhanger Castle Outbuilding 1
39	Westenhanger Castle Outbuilding 2
40	Racecourse viewing boxes and stewards shelter

ID n — Existing buildings within application red line boundary to be demolished. ID number refers to Appendix 3 of Development specification

ID n — Existing buildings within application red line boundary to be retained. ID number refers to Appendix 3 of Development specification

ID n — Existing buildings – demolition/retention to be determined at Tier 2. ID number refers to Appendix 3 of Development specification.

Application Red Line

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CLIENT	REVISIONS	STATUS	SCALE	PROJECT	DRAWING NAME	DRAWING NUMBER
OTTERPOOL PARK LLP	first issue:16-08-18 rev A: 24-08-18 rev B: 06-09-18 rev C: 19-09-18 rev D: 24-09-18 rev E: 16-10-18 rev F: 23-10-18 rev G: 30-11-18 rev H: 07-12-19 rev J: 11-02-19 rev K: 24-07-19 rev L: 25-10-19 rev M: 03-03-20 rev N: 10-08-20 rev P: 22-09-21 rev R: 01-11-21 rev S: 08-11-21 rev T: 09-02-22 rev U: 18-02-22 rev YY: 09-03-22	IN SUPPORT	1:7,500 @ A1 1:10,000 @ A3	OTTERPOOL PARK	APPLICATION RED LINE BOUNDARY EXISTING BUILDINGS TO BE DEMOLISHED & RETAINED	OPM(P)1018_YY

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