Technical Note

PROJECT:	LD10361/0007
SUBJECT:	Ancient Woodland Assessment – Appendix 7.8
DATE:	11th October 2023
PREPARED BY:	Liam Podbury – Principal Heritage Consultant Lorraine Palmer – Associate Director (Ecology) Tim Palmer – Technical Director (Ecology)
REVIEWED BY:	Tim Palmer – Technical Director (Ecology).

EXECUTIVE SUMMARY

Wardell Armstrong was commissioned by Sterling Capitol Ltd and Strata Sterling Barnsley West Ltd to conduct an ancient woodland assessment of Craven and Hermit Wood (collectively referred to as Craven Wood). The assessment includes cartographic analysis of historic mapping, field survey for archaeological features and a botanical assessment. The assessment is required in association with the Barnsley West hybrid planning application, which lies adjacent to the woodland.

The purpose of the assessment is to consider whether or not the woodland is likely to be ancient and hence is subject to the planning provisions in the NPPF relating to 'irreplaceable habitats' and secondly to assess impacts on the woodland arising from the revised Barnsley West mixed use development proposals.

Cartographic evidence dating to between 1577 to 1667 – although not of sufficient detail to specifically locate Craven Wood – consistently depicts the site as within a landscape of woodland. It is reasonably likely that that Craven Wood is a remnant of the much larger expanse of woodland depicted to the west of Barnsley. Subsequent cartographic sources dating to between 1821 and 1966. On the basis of the cartographic evidence outlined above, in addition to the circumstantial toponymic and documentary evidence, it is reasonable to infer that Craven Wood has been continuously wooded since c.1600 AD.

The botanical survey of the woodland flora identified 15 species of known ancient woodland indicator species. This also supports the likely presence of historically established woodland at Craven Wood.

1 INTRODUCTION

1.1 Terms of reference

1.1.1 Wardell Armstrong LLP was commissioned by Strata Sterling Barnsley West Ltd to conduct an ancient woodland assessment in relation to the proposed Barnsley West development. The updated proposed development comprises a mixed-use development to provide up to 1,560 new homes and up to 43 hectares of employment land for Use Class E/B2/B8. In addition, the proposals will provide:

- Part of the Link Road between M1, Junction 37 and the A635, Barugh Green Road (The section from Higham Lane to Barugh Green Road)
- A new primary school
- Small local shops and community facilities
- Strategic areas of greenspace and wildlife corridors

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1.2 Historic Landscape Assessment

1.2.1 Wardell Armstrong LLP is asked to undertake a historic landscape assessment of Craven Wood (NGR SE 31985 07287) to examine and whether it has ancient woodland status; has the land been continuously wooded since at least 1600AD.

1.2.2 The established onset date for ancientness of 1600AD was chosen because woodland planting was rare before this date and more common thereafter; and maps after this date become increasingly helpful and detailed. The primary source for evidence of ancientness is cartographic.

1.3 Botanical Assessment

1.3.1 To support the historical landscape assessment a site visit was undertaken on May 3rd 2023 to compile a comprehensive list of the woodland ground flora and to identify if ancient woodland indicators for Barnsley, South Yorkshire region are present within

Craven wood. The frequency of occurrence of woodland flora was noted according to the DAFOR[1] system.

1.3.2 The survey was carried out by an experienced WA ecologist whom is a full member of CIEEM. The ecologist has completed numerous ecological habitat surveys and botanical surveys within the past 20 years.

1.3.3 Vascular plant names follow 'New Flora of the British Isles' (Stace 2019) with vernacular names as provided in the Botanical Society of the British Isles website (BSBI, 2013) .All other flora and fauna names following the National Biodiversity Network (NBN) Atlas (NBN Atlas Partnership, 2021). The common and scientific name of species/taxa is provided (if available) when first mentioned in the text, with only the vernacular name referred to thereafter.

[1] D = dominant, A = abundant, F = frequent, O = occasional, R = Rare

2 CARTOGRAPHIC EVIDENCE

2.1 Introduction

2.1.1 The following technical note reproduced a compilation of maps that depict Craven Wood. These maps fall into two categories: maps produced by a variety of cartographers, which span the period 1577 to 1771; and official sources like the Ordnance Survey Maps and estate plans, which span the period 1821 to 1966.

2.1.2 The earliest available cartographic evidence pertinent to the ancient woodland dates to 1577 (Fig.1), thirteen years prior to the onset date for ancientness. Whilst the accuracy and resolution of this map are not sufficient to be able precisely to identify the exact location of Craven Wood at this time it is the case that the generality of the relevant area was noted by Christopher Saxton as being wooded at the time of his survey. Several seventeenth century cartographic sources likewise depict the historic landscape to the west of Barnsley. John Speed's 1610 map, surveyed approximately ten years after the onset date for ancientness, more clearly depicts the area in which the site was situated as having been wooded (Fig.2). Successive seventeenth century maps – which date to 1645 (Fig.3), 1646 (Fig.4) and 1667 (Fig.5) – likewise show an extensively wooded landscape to the west of Barnsley, within which Craven Wood is situated. The subsequent cartographic source is that produced by Washburton in 1720 (Fig.6). The approximate area in which Craven Wood is situated lies on the edge of a depicted area of woodland, which likely also includes sizable ancient woodlands at Hugset Wood and Silkstone Fall. The proceeding source, Jeffery's 1771 map of Yorkshire, depicts the landscape in slightly more detail (Fig.7); however, the cartographic evidence is somewhat indefinite. The shallow valley associated with the woodland is hatched and an area of woodland is depicted to the immediate west, a portion of which appears to have included Craven Wood. Although this may be due to the relative lack of detail, and the depicted hatching, the map does not depict the area of woodland in the form that is shown in proceeding maps. It must be noted, however, that whilst the nature of maps like this one is such that details of small woodlands are routinely omitted, they do depict larger areas of woodland coverage; indeed, the depicted woodland may also include nearby Velvet Wood.

2.1.3 Craven Wood is continuously depicted on all of the 'official maps' dating to 1821 and 1949 (Fig.8-13), though clearly covered a much wider area – the Ordnance Survey map dating to 1955 has been viewed but is not reproduced here. The 1966 Ordnance Survey Plan (Fig.14), however, depicts that much of the wider woodland was lost

during extensive opencast mining in the area. The cartographic source nevertheless depicts that much of Craven Wood, the element of the woodland that survives today, was retained within the valley of the stream. Later cartographic sources also note an area named Red Brook Plantation in the north. This area likely represents replantation and extension in the northern portion of the woods and the south-eastern arm of the woodland, as evidenced by changes between 1821 (Fig.8) and 1828 (Fig.9).

Fig.1: Christopher Saxton's 1577 map of Yorkshire (approximate location of site highlighted).

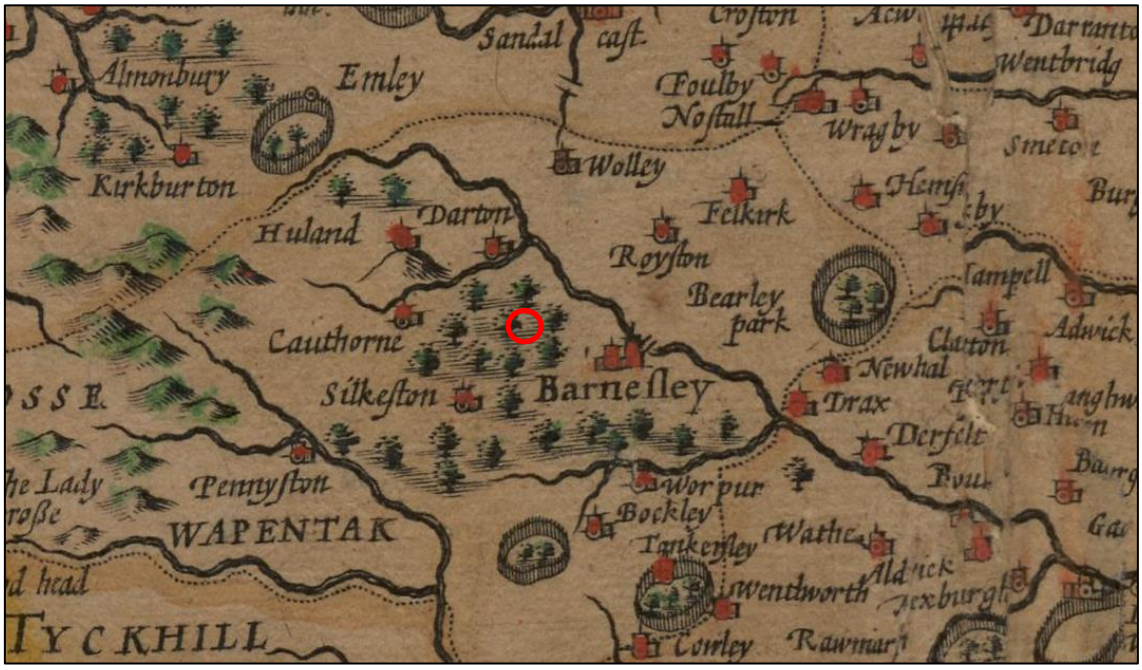


Fig.2: John Speed's 1610 map of Yorkshire (approximate location of site highlighted).

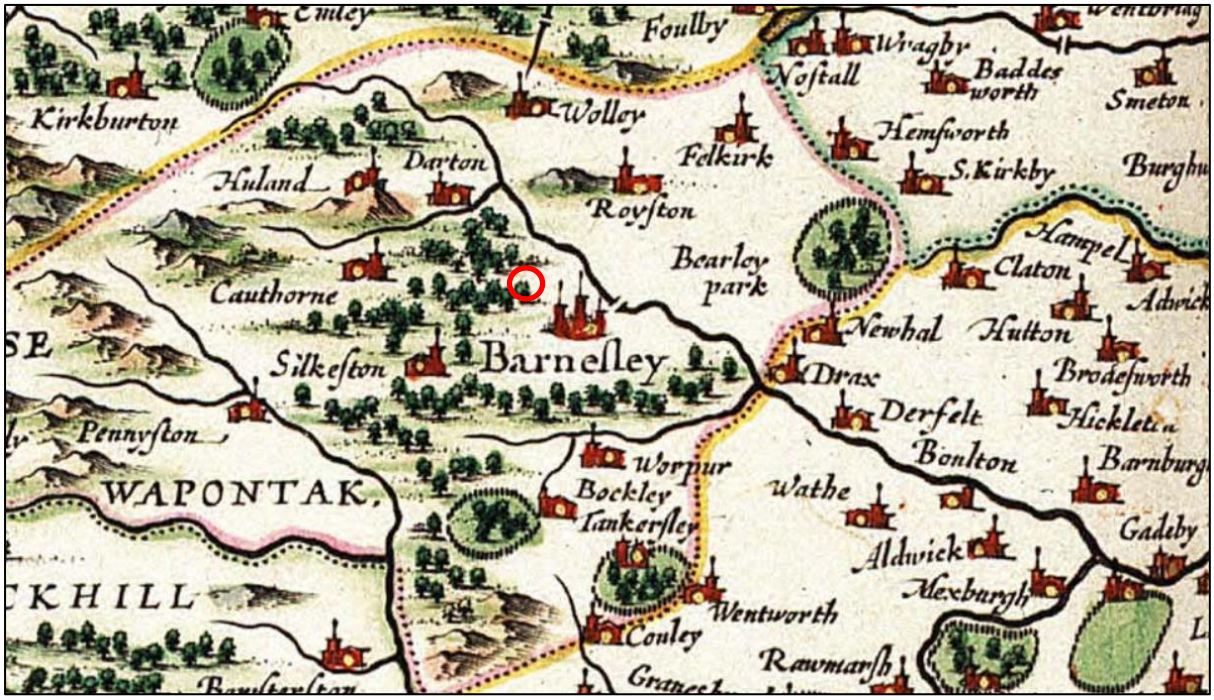


Fig.3: John Blaeu's 1645 map of Yorkshire (approximate location of site highlighted).

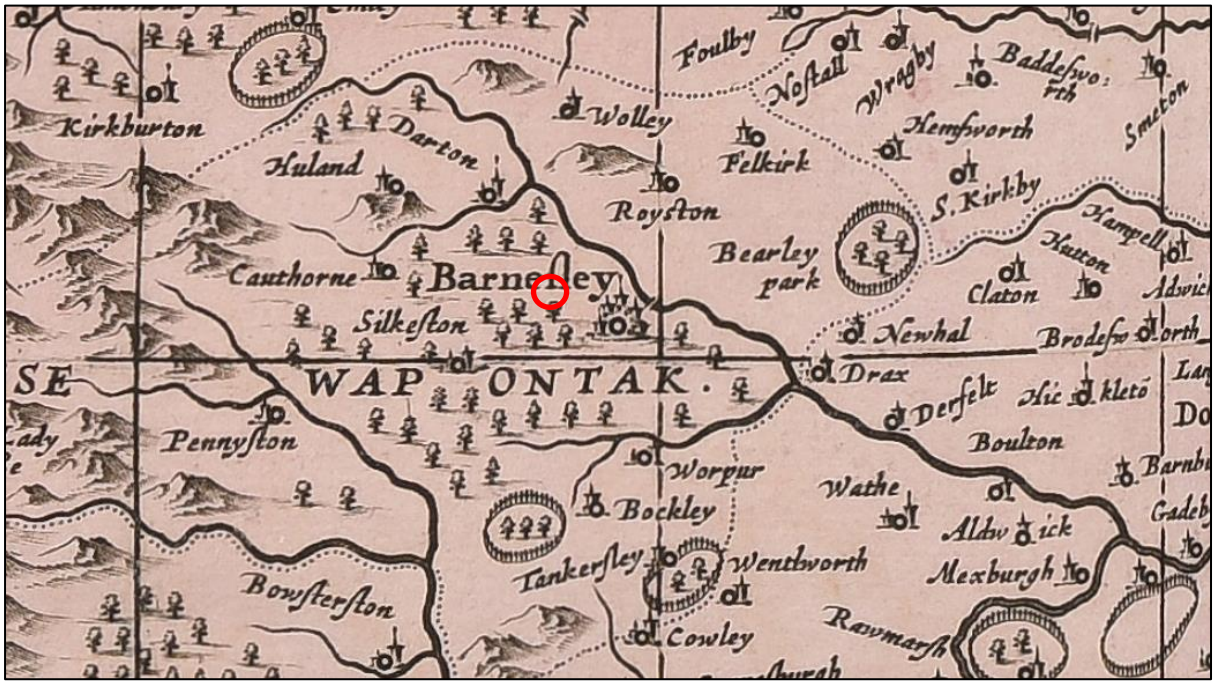


Fig.4: Jan Jansson's 1646 map of Yorkshire (approximate location of site highlighted).

Fig.5: John Blaeu's 1667 map of Yorkshire

Fig.6: John Washburton's 1720 map of Yorkshire

Fig.7: Thomas Jeffrey's 1771 map of Yorkshire

Fig.8: Plan of Red Brook Farm 1821

Fig.9: The 1828 Bargh Estate Map

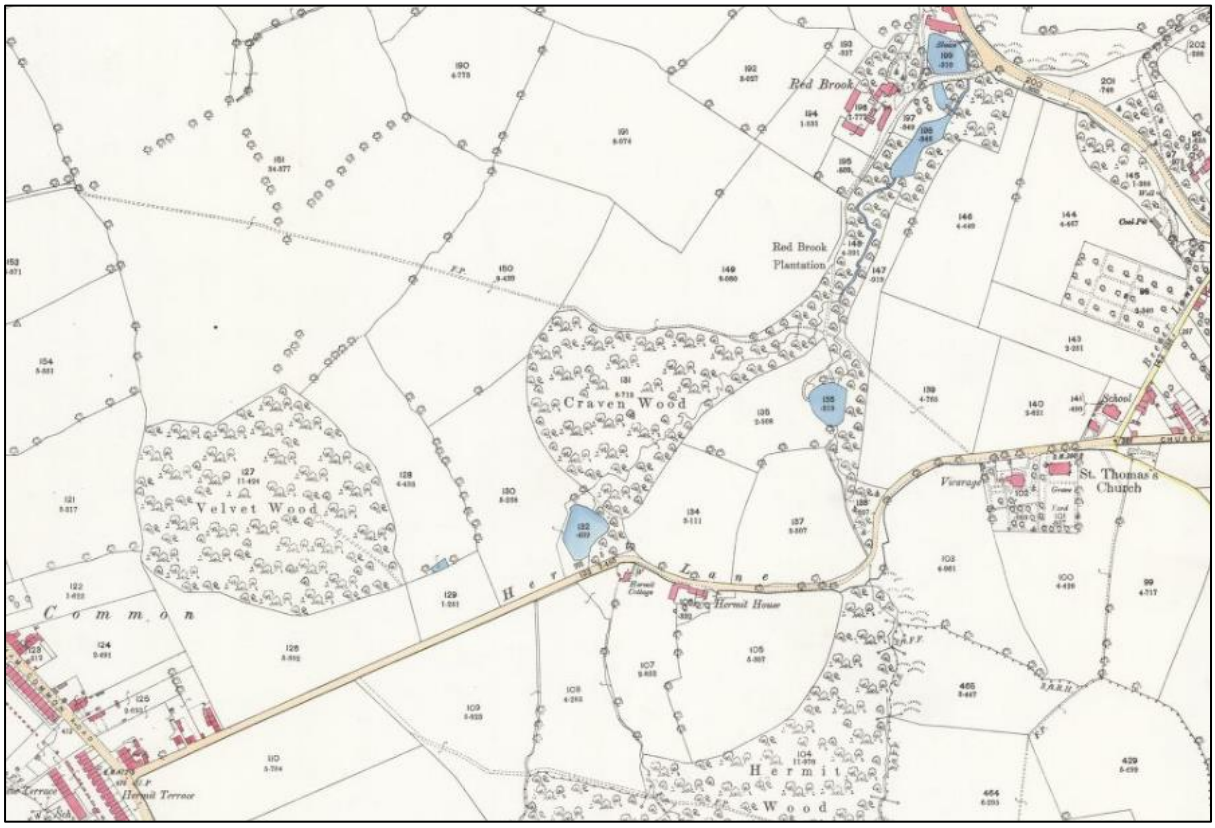


Fig.10: Ordnance Survey Plan 1893 (Yorkshire CCLXXIV.6)

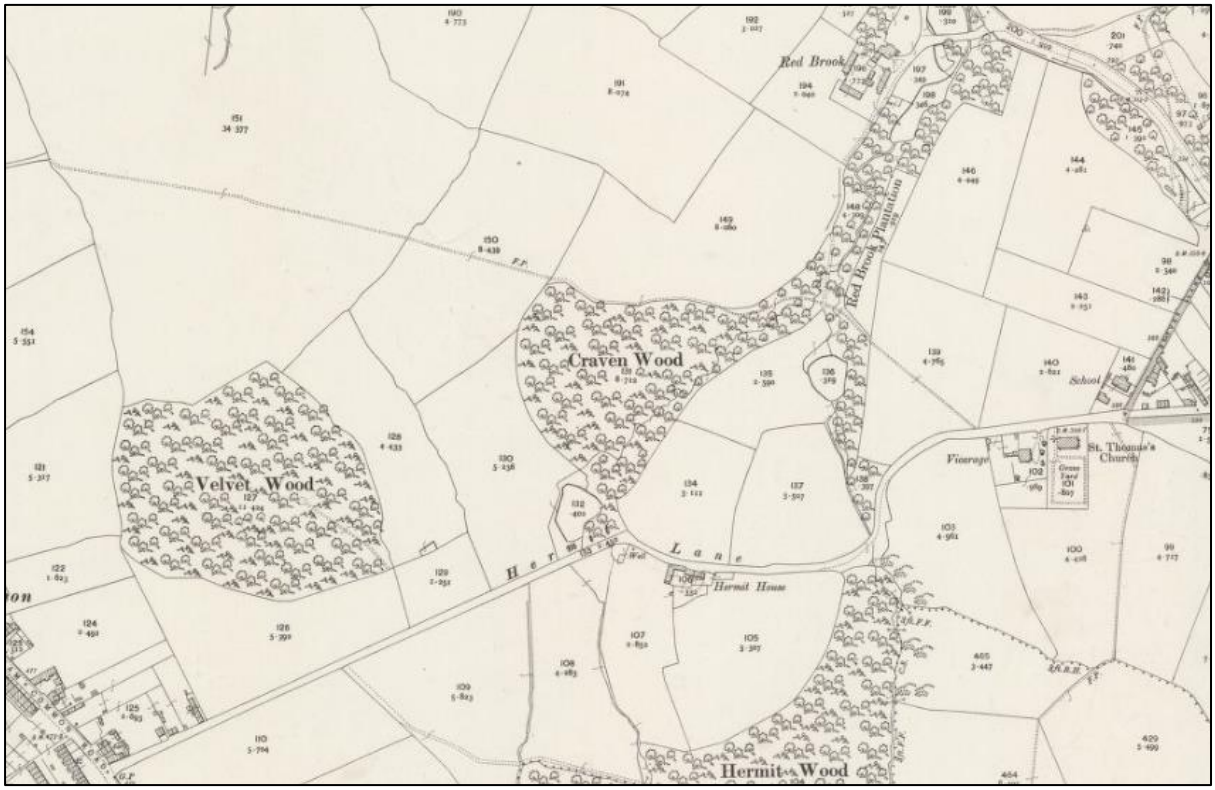


Fig.11: Ordnance Survey Plan 1906 (Yorkshire CCLXXIV.6)

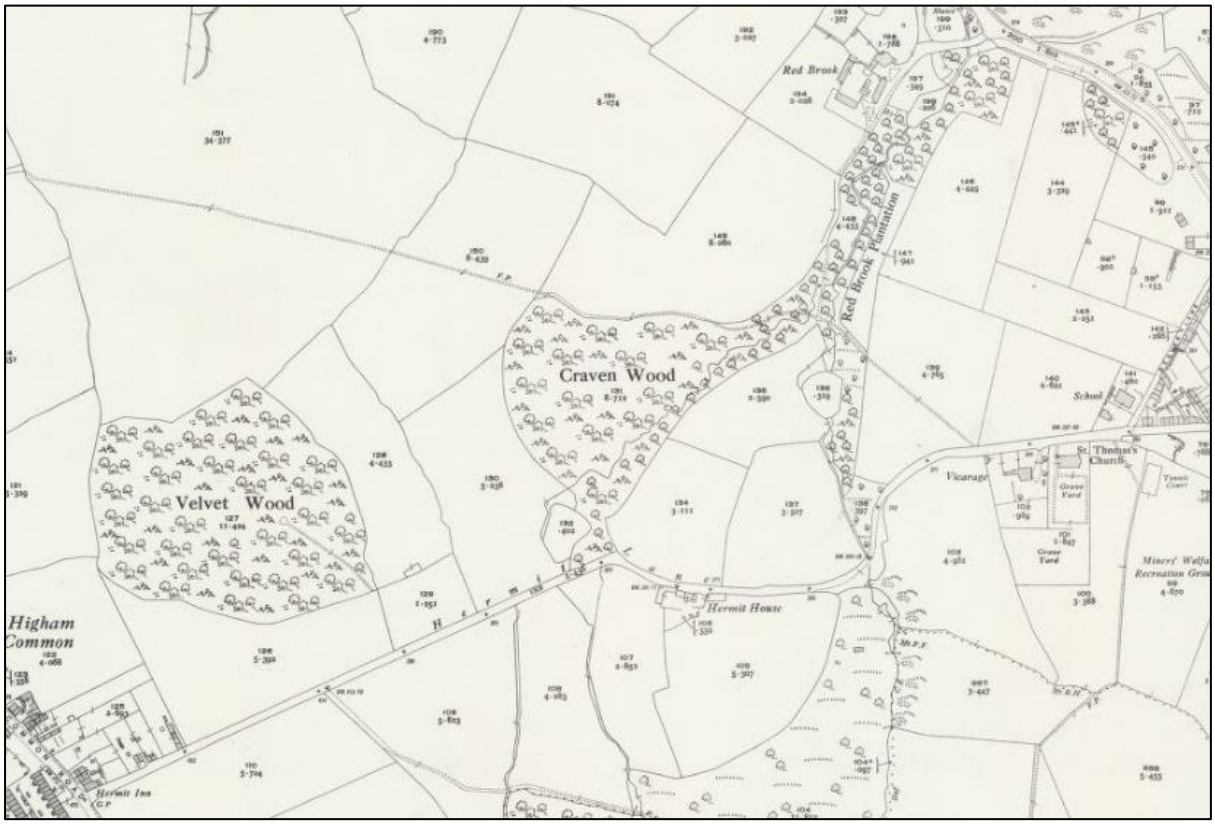


Fig.12: Ordnance Survey Plan 1931 (Yorkshire CCLXXIV.6)

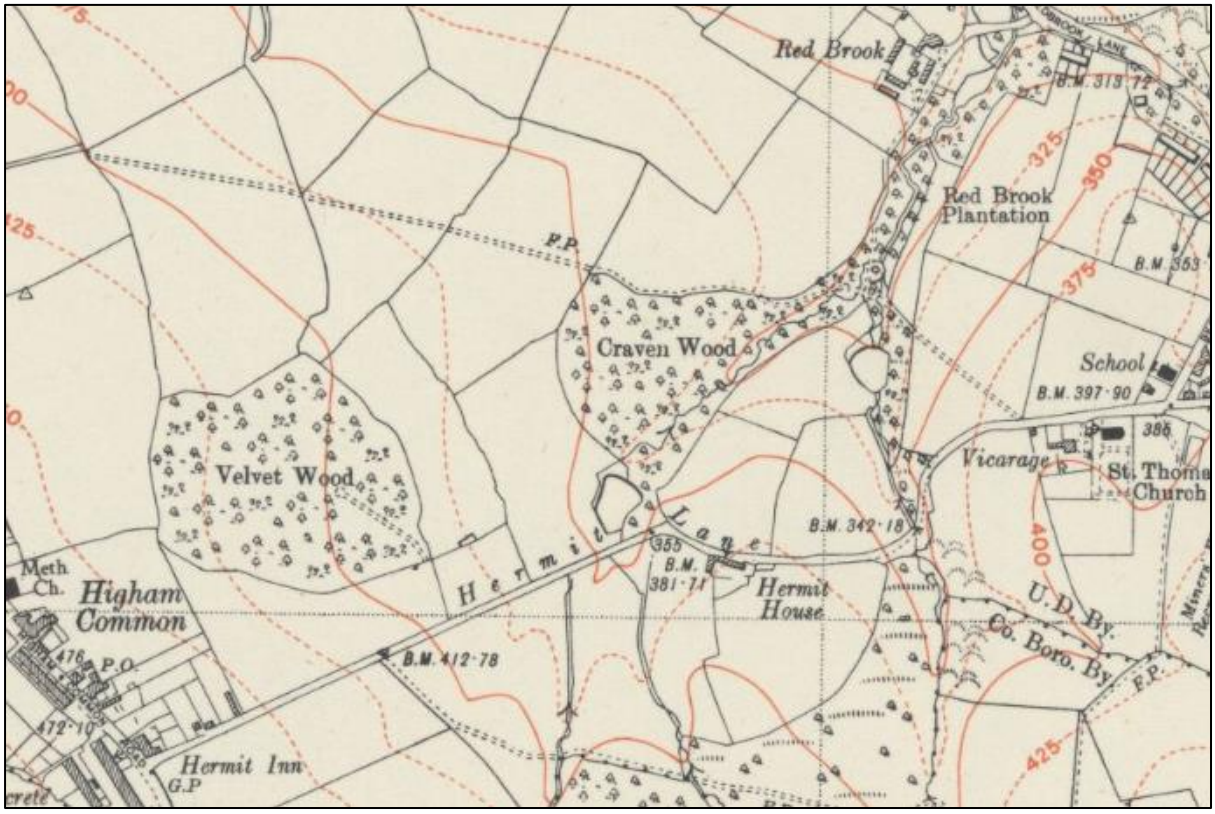


Fig.13: Ordnance Survey Plan 1949 (Yorkshire CCLXXIV.NW)

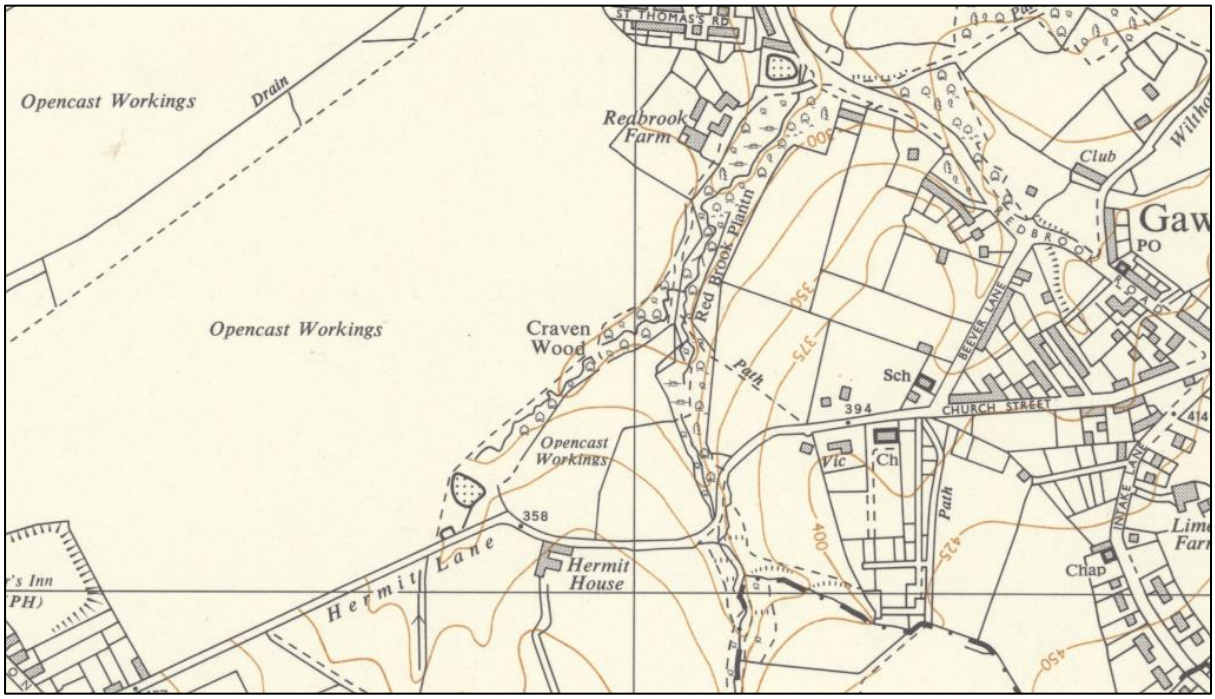


Fig.14: Ordnance Survey Plan 1966 (SE30NW)

3 ARCHAEOLOGICAL EVIDENCE

3.1 LiDAR Survey

3.1.1 The locality of the site has been subject to an airborne LiDAR survey (LiDAR DTM 50cm-1m), a method which can be helpful in identifying former land use within a landscape. No features indicative of an ancient woodland are identifiable from the LiDAR survey data (Fig.15); however, the extent of truncation caused by opencast mining would have entirely truncated evidence for such in the wider area. Extensive evidence for bell pits are however visible in the area of Hugset Wood; an ancient woodland *c.*1.45km to the west.

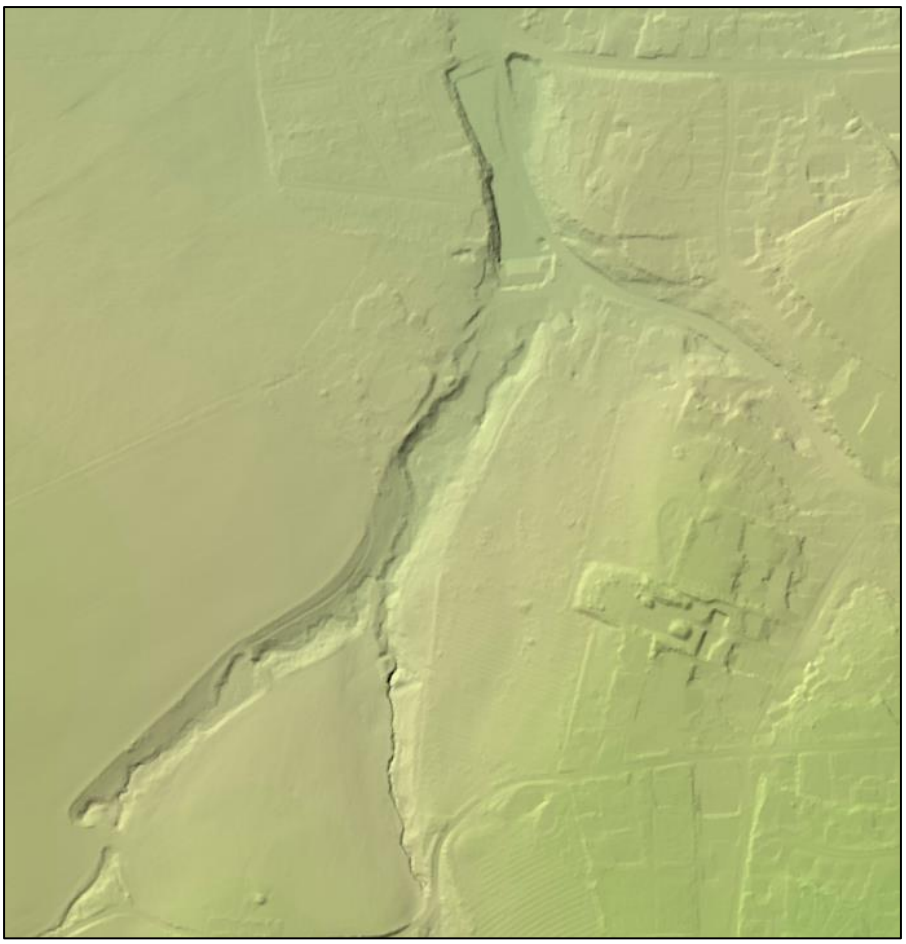


Fig.15: LiDAR DTM 50cm-1m data for Craven Wood

3.2 Site Visit

3.2.1 A site visit was conducted at Craven Wood on the 18th April 2023 with the intention of seeking archaeological remains indicative of ancient woodland status. A particular archaeological feature which can attest to the likely century of origin for a woodland

is a woodbank. An earthen bank is discernible along the northern edge of the surviving woodland (Plate 1); this feature, which is visible on the LiDAR data survey shown above, is not archaeological and demarks the edge of the opencast mining to the immediate north of the woodland. No woodbank of medieval or post-medieval origins was identified during the site visit. This absence is not entirely unexpected as remnant woodlands are often found to have no surviving woodbank (or other identified man-made enclosure). Furthermore, it is plausible that the shallow valley of the watercourse flowing through the surviving section of Craven Wood formed a boundary to the woodland, as an alternative to a woodbank earthwork boundary; this is unlikely, however, as the watercourse is far too small to have functioned as a barrier to animals (a primary function of medieval woodbanks).

3.2.2 The Historic Landscape Characterisation unit within which Craven Wood is situated (HLC6782) is described as an area of medieval to modern assarts. The Barnsley character zone descriptions in the *South Yorkshire Historic Environment Characterisation Project*[2]**,** defines assarts as woodland cleared for cultivation and notes that areas of ancient woodland often survive in these areas upon steeper slopes and valleys, like that within which Craven Wood is situated.

Plate 1: The modern earthen bank bordering the site to the north.

[2] Marchant, T., Ratcliffe, D., Lines, A. and Saich, D. *South Yorkshire Historic Environment Characterisation*. South Yorkshire Archaeology Service.

3.3 Toponymy and Documentary Records

3.3.1 Place names are often used as indicators as to the historic land use within a landscape. While Barnsley is known to translate as Beorn's wood/clearing, the nearest historic settlement to Craven Wood is Gawber, derives from the Old English elements *galga*, a gallows, and *beorg* meaning a hill. The name Craven Wood is also significant. In his study of Barnsley, Jackson (1858: 57-82) attempts to record donations made to the monks of Pontefract from lands surrounding Barnsley[3]. A particularly notable ancient charter, found to date to the reign of Henry II during the twelfth century, was produced on behalf of *Richard de Craven*. It noted that *"Charter of Richard de Craven, whereby he, and Matilda his wife, quit claimed to the Prior and Convent of Pontefract all right and claim which they had in the woods of Barnsley, with all the oaks standing and growing throughout the whole territory of Barnsley, both on their land and that of their tenants… so that they and their heirs should have no more claim or demand on the aforesaid woods and oaks*." While the eponymous name does not necessarily mean that the woodlands mentioned in the charter represent Craven Wood, it is plausible. Much of the land in the area surrounding the site was under monastic ownership; indeed, land within nearby Barugh belonged to Monks Bretton Priory and the monks of St Laurence of Rivesby is recorded in chartularies. In closer proximity, *c.*115m to south of Craven Wood, 'Hermit House' is indicative of a monastic connection; 'Hermit Lane' may also be a medieval route at its eastern end – the western end probably established when the common was enclosed[4].

4 BOTANICAL EVIDENCE

4.1.1 Craven Wood is located to the east of the site with a parcel of the woodland located to the north of Hermit Lane CW1) and a second parcel located to the south of Hermit Lane (CW2) Refer to drawing number LD10361/019. Both sections are connected however, not all of the woodland is located within the application site. A connecting arm of woodland is located outside the woodland boundary and follows the stream (Redbrook) to Craven Wood located within the south of the site (CW2).

[3] Jackson, R. (1858) *The History of the Town and Township of Barnsley in Yorkshire*. Bell and Daldy: London.
[4] Bonnor, J (2018) *Barnsley West, Barnsley, South Yorkshire: Desk-Based Heritage Assessment.* Prospect Archaeology

4.1.2 The area of woodland to the north lines the steep valley sides of Redbrook Stream. The stream meanders along the valley bottom and supports almost flat embankments with areas of bare earth.

4.1.3 The woodland canopy comprises frequent sessile oak *Quercus petrea* and sycamore *Acer pseudoplatanus* with occasional alder *Alnus glutinosa*, silver birch *Betula pendula* and rarely occurring whitebeam *Sorbus aria* . The understory is more varied with hazel *Corylus avellena*, wild cherry *Prunus avium*, dog rose *Rosa canina*, holly *Ilex aquifolium*, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*.

4.1.4 The ground flora comprises abundant wild garlic *Allium ursinum* with frequent creeping soft grass *Holcus mollis*, annual meadow grass *Poa annua*, lesser celandine *Ranunculus ficaria*, dog's mercury *Mercurialis perennis,* bluebell *Hyacythoidies non-scripta,* wood avens *Geum urbanum* and occasional wood anemone *Anemone nemorosa*, broadleaved dock *Rumex obtusifolius* , bramble *Rubus fructicosus* , barren strawberry *Potentilla sterilis*, herb robert *Geranium robertum*, field wood-rush *Luzula campestre*. Wood sedge *Carex sylvatica* and wood speedwell *Veronica montana* are also rarely present. A full species list is provided as Appendix 1.

4.1.5 The area of woodland to the south (CW2) is also located on the steep banks of the stream corridor. Here the stream embankments are steep almost vertical in places with woodland habitat on upper banks.

4.1.6 The canopy in this area supports sessile oak and sycamore with hawthorn, elder *Sambucus nigra*, wild current sp *Ribes* sp and rose sp *Rosa* sp. The ground flora in this area is sparsely vegetated with frequent annual meadow-grass *Poa annua* and common chickweed *Stellaria media* occasional ivy *Hedra helix*, bluebell, common nettle, creeping buttercup *Ranunculus repens,* wood avens, foxglove *Digitalis purpurea* and Yorkshire-fog *Holcus lanatus*.

4.1.7 The woodland floor is open to the commercial pony farm for grazing. Evidence of poaching and horse droppings is present along the embankments. Vegetation is heavily grazed with flora decimated in places.

4.1.8 Following a review of the flora recorded within Craven Wood (CW1 and CW2) and the Ancient Woodland Indicators for Barnsley listed within the Biodiversity Action Plan for Barnsley[5] a total of fourteen ancient woodland indicators were recorded. This

[5] http://www.barnsleybiodiversity.org.uk/ancientwoodland.html

includes woodland canopy and understory species. A full species list for Craven Wood is provided in Appendix 1 with species identified as indicator species given in bold.

4.1.9 A good range of ancient woodland indicators may indicate an Ancient Woodland. These plants are found because Ancient Woodland, known to have been in existence since 1600, has developed distinctive soils, fungi, and plant communities over the centuries.

5 CONCLUSIONS

5.1.1 Cartographic evidence dating to between 1577 to 1667 – although not of sufficient detail to specifically locate Craven Wood – consistently depict site as within a landscape of woodland. It is reasonably likely that that Craven Wood is a remnant of the much larger expanse of woodland depicted to the west of Barnsley. Such remnant woodlands often survive in valleys. Notably, several isolated and potentially similarly remnant woodlands are also depicted nearby on nineteenth century cartographic sources (e.g. Velvet Wood, Hermit Wood, and Drury Wood), it is also reasonable to infer that such woodlands, where remnants survive, are also ancient in origin.

5.1.2 Cartographic sources dating to between 1821 and 1949, which are of much greater detail, depict Craven Wood as being continuously wooded. The 1966 Ordnance Survey plan shows that, while much of Craven Wood was lost during opencast mining activity in the area, the element of the woodland that survives today within the valley of the stream remained wooded.

5.1.3 The presence of 15 ancient woodland indicators for the Barnsley area supports the view that Craven Wood is a remnant of ancient woodland. On the basis of the evidence outlined above it is reasonable to infer that Craven Wood has been continuously wooded since *c.*1600 AD.

6 ANCIENT WOODLAND IMPACT ASSESSMENT

6.1 Introduction

6.1.1 The National Planning Policy Framework (NPPF) (paragraph 175c1) states:

"When determining planning applications, local planning authorities should apply the following principles:

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and……." Footnote 58 states:

"For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat."

6.1.2 The NPPF defines ancient woodland as:

"*Ancient woodland: An area that has been wooded continuously since at least 1600 AD. It includes Ancient Semi-Natural Woodland and Plantations on Ancient Woodland Sites (PAWS)"*

6.1.3 Natural England and the Forestry Commission's 'Standing Advice'[6] for planning authorities states that:

"*ancient semi-natural woodland mainly made up of trees and shrubs native to the site, usually arising from natural regeneration.*

plantations on ancient woodland sites - replanted with conifer or broadleaved trees that retain ancient woodland features, such as undisturbed soil, ground flora and fungi"

6.2 Buffer Zones

6.2.1 In addition to the above assessment, an assessment of indirect effects via proximity factors is provided within Drawing LD10361/033 Ancient Woodland Buffer Assessment. This considers the presence of built development, and drainage features within three buffer zones defined from the edge of the ancient woodland in term of

[6] https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions

the proportion of the total buffer area taken up by each of the proposed land use elements. Table 1 (below) summarises the results.

Table 1: *Analysis of Incursion within Buffer Zone areas by Development*

Buffer range	Total Buffer Area (ha)	Percentage occupation (all land use types)	Percentage occupation hard surface (roads, built form etc)	Percentage occupation SUDs and drainage features
15m buffer area	2.97	0.03	0.00	0.03
20m area	0.95	16.01	9.48	6.53
25m area	0.95	44.58	25.47	19.11

6.2.2 It can be seen that a very minor incursion into the 15m buffer area will result from the very edge of an engineered batter to one of the proposed SUDs ponds (0.03%). This will not result in any harm to the ancient woodland as no root protection areas will be impacted and the SUDs feature will add a diversity of wetland habitat in the vicinity of the woodland.

6.2.3 There may be minor and short term construction impacts to the faunal species supported by the woodland including bats and birds through physical machinery movements and construction related noise.

6.2.4 The adoption of standard industry good practice anti-pollution measures will ensure that there is no incidental pollution of the woodland and these will be considered in detail via a Construction Environmental Management Plan (CEMP). In addition, an Ecological Clerk of Works (ECoW) will be present through the initial phases of habitat clearance to ensure that the CEMP procedures are adequately enforced.

6.3 Direct Impacts to the Ancient Woodland

6.3.1 Direct effects of development can cause the loss or deterioration of ancient woodland by the following pathways:

- damaging or destroying all or part of them (including their soils, ground flora or fungi)
- damaging roots and understorey (all the vegetation under the taller trees)
- damaging or compacting soil

- increasing levels of air and light pollution, noise and vibration
- changing the water table or drainage
- damaging archaeological features or heritage assets
- changing the woodland ecosystem by removing the woodland edge or thinning trees - causing greater wind damage and soil loss

6.3.2 Each of these is considered in turn below.

Direct loss of habitat and tree/root damage/soil compaction

6.3.3 There will be no development within the ancient woodland area, hence no direct habitat loss will occur. A number of existing footpaths through the woodland will be formalised by the use of bark mulch (or similar) to prevent further erosion/gullying of ancient woodland soil profiles and to deter the formation of desire line paths and trampling of vegetation elsewhere in the woodland.

6.3.4 This process will be non intrusive and will be undertaken using hand tools, with no machinery ingress into the woodland. There will be no loss or damage of trees/tree roots or ground flora, an no compaction of soil. It is considered that the intention/purpose of formalising the existing footpath network will be beneficial to the ancient woodland and will result in a reduction in deviation from existing paths by pedestrians.

Increasing Levels of Air and Light Pollution, Noise and Vibration

6.3.5 The reversion of Hermit Lane from its current status as a well used local road, to a bridleway which is closed to motor vehicles, will result in a net reduction in nitrogen and ammonia deposition from vehicle exhausts, in the vicinity of the road, including the ancient woodland which abuts it. Furthermore the proposed new link road sits >200m from the ancient woodland and as such nitrogen and ammonia deposition are scoped out in the air quality impact assessment (ES Chapter 13).

6.3.6 Dust impacts to the woodland are relevant during construction phase. This impact will be temporary and reversible but will be adverse in the absence of mitigation as parts of the woodland lie within 50m of the construction areas and hence there may be deposition of dust on vegetation foliage, leading to a reduction in photosynthetic performance and hence negative impacts to tree and plant health. Mitigation will include standard dust suppression measures to be included in a CEMP and assured by the presence of a site ECoW. These will include the following measures:

- Revegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place;
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery;
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever possible;
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the Site where reasonably practicable);
- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of Site. This may require the sweeper being continuously in use; and
- Ensure vehicles entering and leaving the Site are covered to prevent escape of materials during transport.

6.3.7 Taking the above mitigation into account, dust deposition impacts are considered to be neutral.

6.3.8 Light pollution during the operational phase of the development will largely be controlled by the buffer zone. It is therefore envisaged that artificial light levels along the woodland edge, and certainly in the central parts of the woodland will not be elevated significantly over baseline levels. Lighting from vehicle headlights using the proposed local road network will be controlled by the planting of scrub around the adjacent margins of the woodland, which upon maturity will serve to filter out bright lighting from the woodland interior. It is acknowledged that there may be a minor adverse effect on faunal species caused by disturbance from vehicle headlights, in the short term until scrub plantings mature.

6.3.9 A full lighting assessment will be undertaken to sample vertical and horizontal lightspill and a lighting design will be generated to ensure there is no significant adverse effect on bats as a result of operational lightspill from fixed lighting installations such as

streetlights. Construction phase lightspill will be controlled by ensuring that temporary work lighting is orientated away from the woodland, and included in CEMP measures to be enforced by an ECoW.

6.3.10 Noise impacts will also be controlled by the buffer zone which according to the analysis above will ensure that only 25.5% and 9.5% of the buffer area includes developed land (i.e. roads and housing) within 25m and 20m of the woodland edge respectively. During construction, there will be a minor adverse impact to faunal receptors, although this is temporary and reversable. There are unlikely to be significant impacts through vibration and no faunal receptors such as badgers (setts) which may be especially sensitive to this have been identified on Site or within the woodland.

Drainage

6.3.11 The balancing ponds which lie to the west of the woodland will attenuate drainage into the woodland and discharge into the stream within the wood at greenfield run off rates. The stream itself is unlikely to be affected by the scheme as drainage of flows will be maintained, furthermore there are limited tree species which are dependant on high water table within the woodland itself, such as alder *Alnus gluitinosa* or willow *Salix* sp and an absence of wet woodland.

Damaging Archaeological Features or Heritage Assets

6.3.12 The archaeological assessment reported in section 1 above confirms that no features indicative of an ancient woodland are identifiable from the LiDAR survey data (Fig.15), this includes bell pits and other early mining related industrial evidence, as well as charcoal hearths and boundary walls. Furthermore, as the woodland will be avoided by the proposals, there will be no damage to such features.

Changing the Woodland Ecosystem by Removing the woodland edge or Thinning Trees

6.3.13 There are no proposals to remove any woodland edge or to thin any trees within the ancient woodland, hence this impact can be scoped out.

6.4 Indirect Impacts to the Ancient Woodland

6.4.1 Indirect effects of development can also cause the loss or deterioration of ancient woodland, ancient and veteran trees in a number of ways. A list of potential effects is provided in the Standing Advice, each of which is considered in turn below.

Breaking up or Destroying Working Connections Between Woodlands, - affecting protected species, such as bats or wood-decay insects

6.4.2 Craven Wood is relatively isolated already and hence its value in the baseline/no development scenario has established without direct linkages to other significant blocks of woodland. The proposed development will not result in any further isolation of the woodland and the degree of habitat connectivity which exists to the north of the woodland towards the Dearne Valley will remain intact.

Reducing the Amount of Semi-Natural Habitats next to Ancient Woodland that provide Important dispersal and feeding Habitat for Woodland Species

6.4.3 The intensively grazed grasslands to the west of the woodland are species poor and do not support diverse invertebrate or other faunal assemblages. This is largely the result of pony and sheep grazing in the fields to the south of Hermit Lane and intensive silage production in the fields to the north of Hermit Lane. Hence the loss of the dominant habitats across the site to the built development are unlikely to significantly influence the faunal assemblages present within the woodland. It is postulated that the hedgerow habitats, which will be retained and enhanced by the proposals to a high degree and the retention of woodland and grassland habitats at Redbrook Pastures Local Wildlife Site (LWS) to the east of Craven Wood are important in the maintenance of fauna within Craven Wood itself.

Reducing the Resilience of the Woodland or Trees and Making them more Vulnerable to change

6.4.4 Assuming that dust impacts are successfully mitigated by the CEMP requirements, there will be no adverse effects which are deleterious to the health of the trees within the woodland. Currently, there is a network of eroded footpaths, desire lines and trampling effects due to the lack of footpath management within the woodland. The proposals to formalise the footpath network and to resurface the paths (with a bark based medium) will likely improve tree health by reducing the use of desire line paths and hence reducing soil erosion and root compaction. Given that the woodland extent will not be impacted it is considered unlikely that the development proposals will result in any reduction in ongoing resilience.

Increasing Damaging Activities such as Fly-Tipping and the Impact of Domestic Pets

6.4.5 The buffer zone which will be established will largely protect the core ancient woodland area from fly tipping, which may occur through the tipping of garden waste

over fences. This impact is difficult to control and some deterioration of the buffer zone may occur as a result. Given the lack of vehicular access to the woodland, fly tipping which is not currently apparent is not anticipated to significantly increase following the development of the Barnsley West site.

6.4.6 Impacts from domestic pets, in particular the predation of passerine birds and small mammals from domestic cats is difficult to control, although it is anticipated that the majority of 'kills' will be from populations of small mammals enhanced by the establishment of scrub/tall margin ecotone at the edges of the woodland rather than the core populations within the woodland interior. It should also be noted that because of the proximity of the woodland to existing residential development at Pogmoor and Redbrook, a degree of cat predation will already exist within the baseline. Nevertheless, a minor adverse impact is anticipated.

Tree Management that could cause Habitat Deterioration Changing the Landscape Character of the Area

6.4.7 The woodland will not be subject to significant management operations as it is already established with many trees being mature, hence the management objectives will be set to maintain the existing character of the woodlands. This may include some limited thinning of non native tree species if appropriate, including sycamore *Acer pseudoplatanus*, especially where these occur along the woodland margin and hence selected thinning could result in an increased linear edge (a scalloped margin). Such measures are not anticipated to result in any change to the landscape character of the area.

6.4.8 In terms of thinning requirements for health and safety reasons, it is anticipated that this will be undertaken subject to regular monitoring checks however this be restricted to the removal of deadwood in the immediate vicinity of the footpath network. All deadwood arisings will be stacked within the woodland to ensure that the saproxylic resource is retained.

6.5 Summary and Conclusions

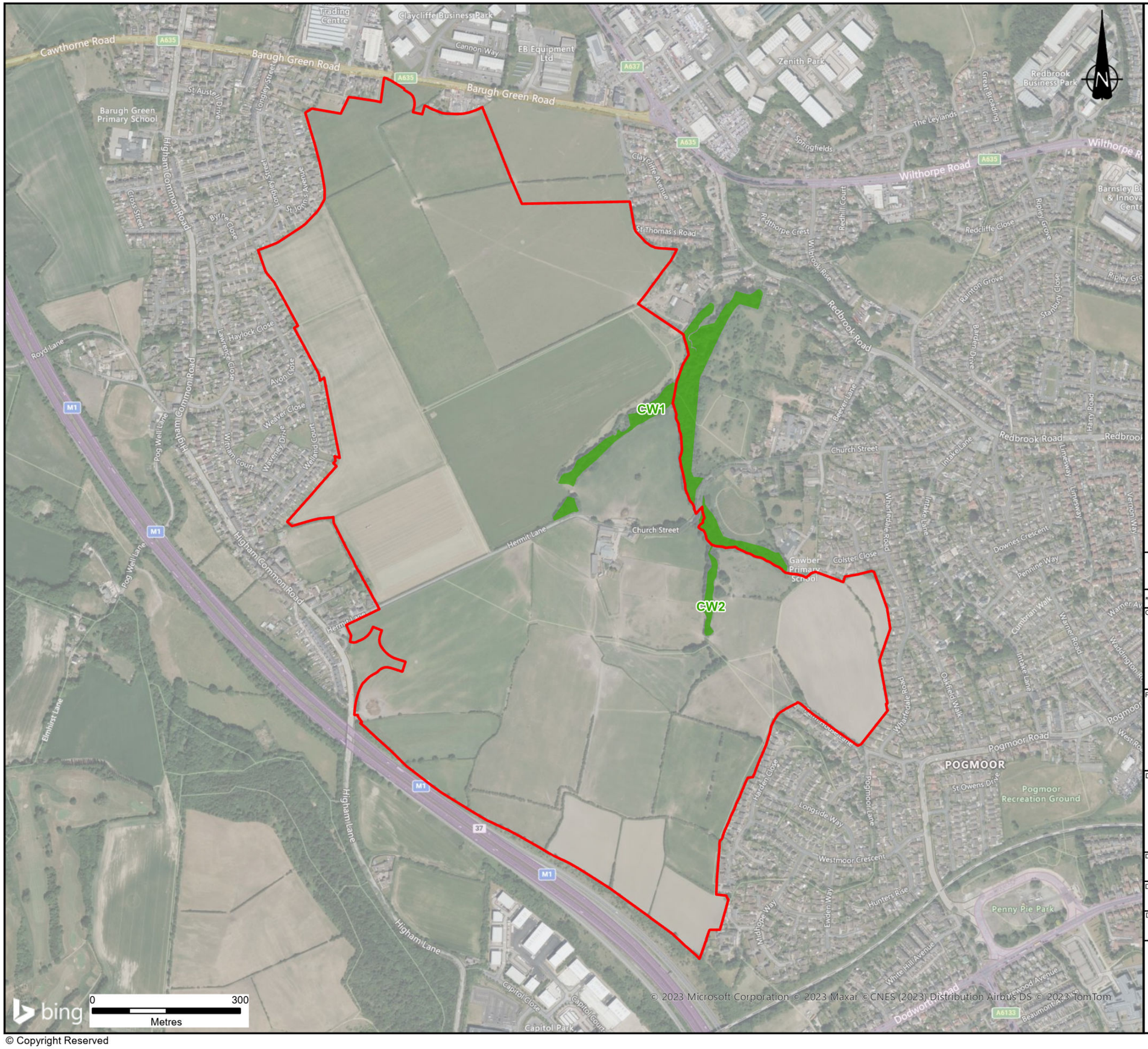
6.5.1 In summary the assessment concludes that overall there will be no major adverse effects to Craven Wood arising from the development of Barnsley West which are likely to be considered to be significant, i.e. there will be no impacts which to the structure and function of the ancient woodland, its conservation status or the status of the of habitats and species it supports. Minor adverse effects which cannot be

completely controlled by mitigation measures are restricted to cat predation, fly tipping of garden waste from nearby gardens, and potential disturbance to fauna from vehicle headlights.

Appendix 1 – Species list for Craven wood

Craven Wood Species List - 2023			
Common Names	**Scientific Names**	**Craven Wood Area 1**	**Craven Wood Area 2**
	Trees and Shrubs		
Sessile Oak	***Quercus petraea***	•	•
Sycamore	*Acer pseudoplatanus*	•	•
Hawthorn	*Crataegus monogyna*	•	•
Blackthorn	*Prunus spinosa*		•
Elder	*Sambucus nigra*	•	•
Alder	*Alnus glutinosa*	•	
Silver Birch	*Betula pendula*	•	
whitebeam	*Sorbus aria*	•	
Holly	***Ilex aquifolium***	•	
Hazel	*Corylus avellana*	•	
field rose	*Rosa sp*	•	•
Wild cherry	***Prunus avium***	•	
Dog rose	*Rosa canina*	•	•
Wych elm	*Ulmus glabra*		•
	Plants and Grasses		
Annual meadow-grass	*Poa annua*		•
Barren strawberry	*Potentilla sterilis*	•	
Bluebell	***Hyacinthoides non-scripta***	•	•
Bramble	*Rubus fruticosus*	•	•
Broadleaved dock	*Rumex obtusifolius*	•	
Cleavers	*Gallium aparine*	•	
Cock's-foot	*Dactylis glomerata*		•
Common chickweed	*Stellaria media*		•
Common nettle	*Urtica dioica*		•
Creeping buttercup	*Ranunculus repens*		•
Creeping soft-grass	*Holcus mollis*	•	
Current sp	*Ribes sp*	•	
Dog's mercury	***Mercurialis perennis***	•	
Foxglove	*Digitalis purpurea*		•
Garlic mustard	*Alliaria petiolata*	•	
Greater stitchwort	***Stellaria holostea***	•	•
Ground elder	*Aegopodium podagraria*		•
Herb Robert	*Geranium roberatum*	•	

Ivy	*Hedra helix*	•	•
Lesser celendine	*Ranunculus ficaria*	•	•
Lord's and ladies	*Arum maculatum*	•	•
Pendulous sedge	***Carex Pendula***	•	
wild garlic	***Allium ursinum***	•	•
Willowherb sp	*Epilobium sp*	•	•
Wood anemone	***Anemone nemorosa***	•	
Wood avens	*Geum urbanum*	•	•
Wood dock	*Rumex sanguineus*	•	
Wood mellick	***Melica uniflora***		•
Wood millet	***Milium effusum***	•	
Wood rush	*Luzula campestris*	•	•
Wood Sedge	***Carex sylvatica***	•	
Wood sorrel	***Oxalis acetosella***	•	
Wood speedwell	***Veronica montana***	•	
Yellow archangle	***Lamium galeobdolon***	•	



KEY

Site Boundary

Ancient Woodland

Notes:

Boundaries are indicative.

Aerial imagery shown for context purposes only.

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REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D

CLIENT

STRATA STERLING BARNSLEY WEST LTD

PROJECT

BARNSLEY WEST

DRAWING TITLE

ANCIENT WOODLAND

DRG No.		REV
LD10361/019		A
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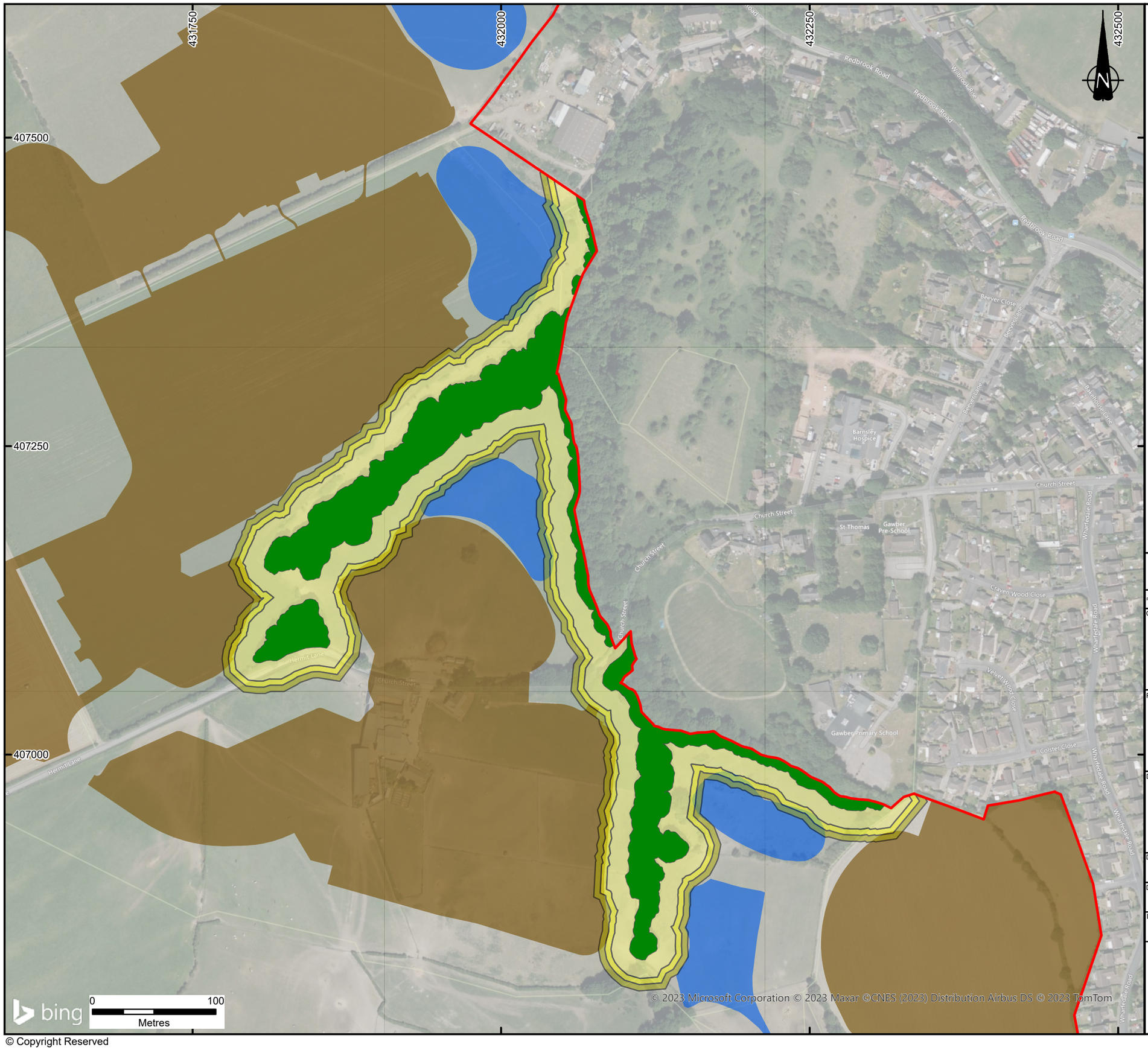
DRAWN BY	CHECKED BY	APPROVED BY
GER	AD	TP

wardell armstrong



KEY

- Site Boundary
- Ancient Woodland
- 15 m Buffer
- 20 m Buffer
- 25 m Buffer

Parameter Plan

- Drainage Infrastructure
- Residential

Notes:

Boundaries are indicative. Aerial imagery shown for context purposes only.

Parameter plan information obtained from Barnsley West Masterplan - 1052 - Parameter Plan

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D

CLIENT

STRATA STERLING BARNSLEY WEST LTD

PROJECT

BARNSLEY WEST

DRAWING TITLE

ANCIENT WOODLAND BUFFER ASSESSMENT

DRG No.		REV
LD10361/033		A
DRG SIZE	SCALE	DATE
A3	1:3,000	12/10/2023
DRAWN BY	CHECKED BY	APPROVED BY
SRW	TP	TP

wardell armstrong