



**Arboricultural Impact Assessment (AIA)  
Chapter, for the ES, for proposals for  
Pallinghurst Woods, Loxwood,  
West Sussex.**

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## 1. INTRODUCTION

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- 1.1.1 Landvision South East Ltd was commissioned by Pro-Treat Limited, the agent, to produce an Arboricultural Impact Assessment of the woods on and surrounding the proposed Loxwood Clay Pits development site, and the woods surrounding the proposed access route to the site from the northern Layby on Loxwood Road, north to the clay extraction site, on Land at Pallinghurst Woods, Loxwood, West Sussex.
- 1.1.2 This report has been produced as a chapter in the Environmental Statement (ES) which will accompany the planning application. It provides the detail of the distribution and value of tree cover within the development site and land adjacent to the proposed access route in the wider site. The findings of the AIA report have been used to aid the design and to avoid or minimise any potential adverse effects on valuable tree and hedge features.
- 1.1.3 The potential direct impacts of individual components of the proposed development on trees and hedges are considered in this Arboricultural Impact Assessment chapter. Direct arboricultural impacts are defined as instances in which tree removal, or lopping parts of the tree is deemed to be necessary in order for the proposed development to go ahead. Indirect effects, such as the potential effects on views or landscape character, or effects on ecology and nature conservation, are considered within other chapters of the ES.
- 1.1.4 The Tree survey was carried out by Owen Allpress BSc (Hons) in the Arboricultural Survey dated June 23rd and June 24th 2020 and July 7th and July 8th, 2020. The assessment method is based on British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction Recommendations.

## 2. THE PROPOSED DEVELOPMENT

### 2.1 THE SITE

- 2.1.1 The proposals are for phased clay extraction pits and for installation of a construction materials recycling facility (CMRF) plant, with increased lorry use of an existing woodland extraction access route and widening of the route for two laybys for passing lorries, and a hard standing area for parking for a depot, on Land at Pallinghurst Woods, Loxwood, West Sussex.

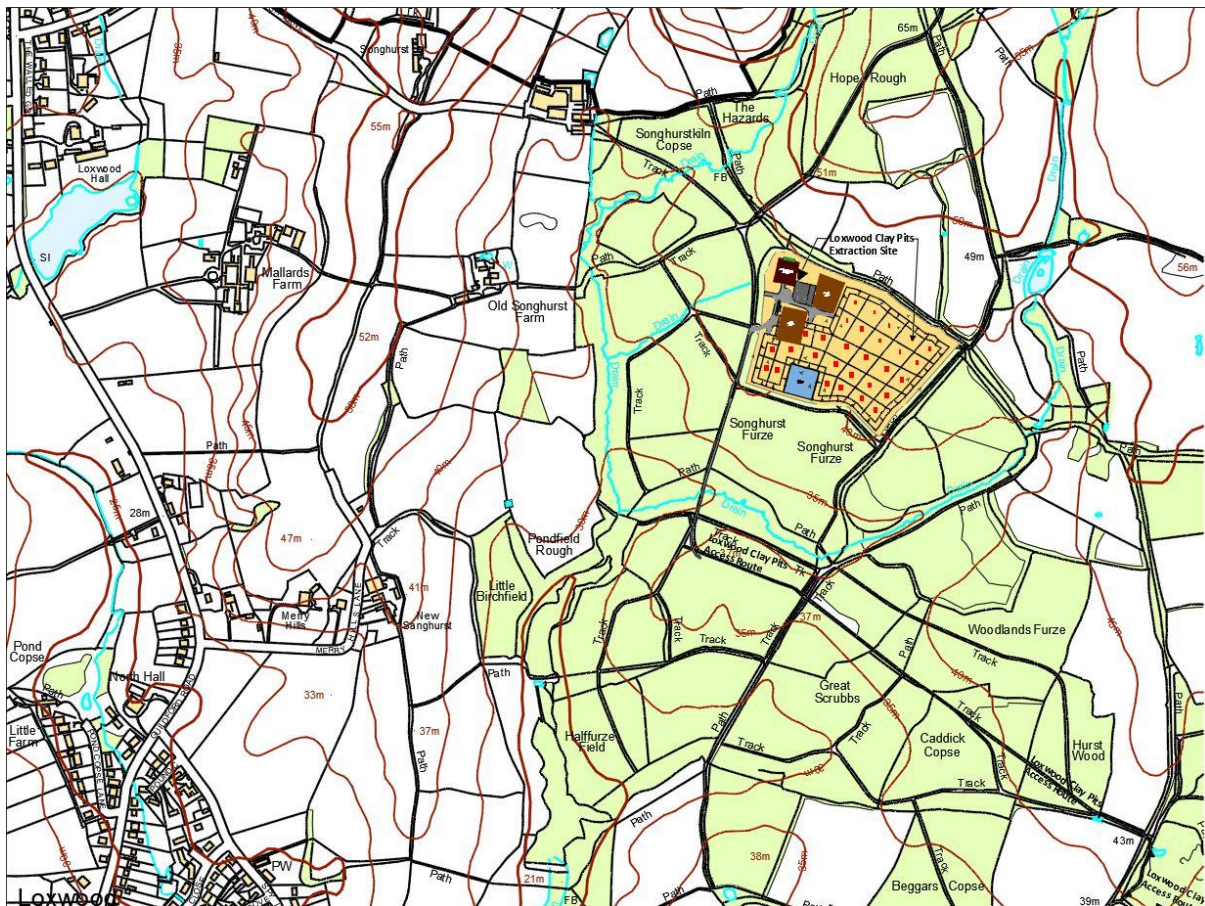


Figure 1 Location of Proposed Development

2.1.2 Pallinghurst Woods are the woods surrounding Loxwood Clay Pits development site that are controlled by a major shareholder in Loxwood Clay Pits Ltd. The site is located at National Grid Reference, TQ 05090 32831 in a rural, well wooded Low Weald clay vale landscape setting, within the Low Weald Hills, on land to the north of Loxwood Road. The site comprises an area of 8 hectares of woodland, 6 hectares of which would be progressively excavated for clay, then backfilled and restored. The process of excavation, backfilling and restoration would be an ongoing one, over a period of 31 years, the development site for clay extraction, being excavated then infilled and restored. There would be a final period of 2 years of restoration works.

2.1.3 This development would consist of the following principal elements:

- The Felling and removal of trees on the clay pit extraction area.
- Installation of a CMRF, or Construction Materials Recycling Facility Plant building in the north-west of the site. Permanent access roads from forestry track to CMRF building.
- Areas for stockpiling of soils and overburden in the West of the site.
- Construction of a Weybridge, a Site Office and Staff Welfare Facilities.
- Installation of a Traffic Management System.
- Carpark use on existing hard standing near old Clay pit site and brickworks ruins, to north of layby and site access off Loxwood Road.
- Improvements to access road linking the site to Loxwood Road.
- Installation of SUDs/drainage lagoon on site.
- Felling of trees to widen access track to create two laybys.
- Felling of trees and hedgerow removal to create visibility splays for HGVs to and from Loxwood Road access.
- Protection of trees to be retained.
- Restoration of the woodland to be in a phased way.
- Management of the new woodland to conserve it as a woodland.

- 2.1.4 To manage the assessment and presentation of the arboricultural information, the above principal elements will be considered. For details of the proposed woodland restoration see also Landvision Plans (2021).
- 2.1.5 In total, 73 individual trees and 24 groups of trees, and 1 woodland group were identified. The arboricultural information is recorded in the Appendix. Songhurst and Bulhams Wood-FLA Contract Number 27153 case Number 29061 gives permission under Section 10 of the Forestry Act (1967) as amended for felling of trees specified for felling as shown on the maps in the English Woodland Grant Scheme contract bearing the same number as the licence. Trees detailed for felling in that contract are under the heading felling.

## 2.2 TREE VALUE CATEGORISATION

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- 2.2.1 BS: 5837:2012 sets out a system of tree evaluation which is a recognised and consistent approach in the arboricultural industry for making informed judgements on development opportunity and constraint.
- 2.2.2 Under BS 5837:2012, the categorisation process allows a weighting to be given to each tree in respect of arboricultural, cultural, ecological and/or landscape value (refer to Table 1 below). BS 5837:2012 is not a rigid or prescriptive system but a tool to inform decisions about tree retention and protection. The attribution of a “high value” to a tree does not necessitate its protection, nor does attribution of a “low value” classification necessarily mean that a tree should not be properly considered, safeguarded adequately, protected and retained, during the development process.
- 2.2.3 BS 5837:2012 recognises that there are many additional factors that will ultimately determine the proposed development design layout. Information in the chapter is not meant to be interpreted rigidly and is instead presented in order to allow an informed judgement on tree constraint and opportunity.
- 2.2.4 The data fields used to collect the information are as set out below;
- Ref Number T= Individual Tree, G=Group of Trees (Primary Species Listed), W= Woodland (Primary Species Listed).
  - Species.
  - Estimated height of Tree (for groups and woodland, the height of the tallest tree within the group was recorded).

- Stem diameter at 1.5m (for groups and woodland, the DBH (Diameter at Breast Height) of the largest mature trees within the group was recorded).
- Crown radius (for groups and woodlands, the edge of the crown of the group was mapped and the area recorded).
- Maturity (Young/Middle-aged/Mature).
- Condition (Good/Fair/Poor/Veteran).
- Estimated Clearance forestry access track.
- Condition Summary.
- Preliminary Management Action.
- Value categorisation (A, B, C, or U).

The extent of the tree survey is guided by what could reasonably be surveyed. This defines the limits of the survey as being individual trees and groups along the edges of the access track, which were mostly native species. Areas where it is anticipated that there will be little or no impacts on trees were omitted. Tree Value Categorisation, Table 1.

**Table 1. Tree Value Categorisation**

<b>Category A</b>	Trees of high value including those that are particularly good examples of their species and/or those that have visual importance or significant conservation or other value
<b>Category B</b>	Trees of moderate value including those that do not qualify as Category A due to impaired condition and/or those that collectively have higher value than they would as individuals; also trees with material conservation or other value
<b>Category C</b>	Trees of low value including those with very limited merit or impaired condition; trees offering transient or temporary landscape benefits
<b>Category U</b>	Trees with irremediable defects and anticipated early loss due to collapse; dead trees or those in immediate decline and those with infectious pathogens that threaten other trees



### **3. POLICY, LEGISLATION AND DESIGNATIONS.**

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#### **3.1 PLANNING POLICY**

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- 3.1.1 National Planning Policy Framework (published February 2019). Paragraph 175 – “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.”

#### **3.2 NATIONAL PLANNING PRACTICE GUIDANCE (PUBLISHED MARCH 2014).**

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- 3.2.1 This guidance supports the implementation and interpretation of the National Planning Policy Framework (NPPF). This section outlines the Forestry Commission’s role as a non-statutory consultee on “development proposals that contain or are likely to affect Ancient Semi-natural Woodlands or Plantations on Ancient Woodland Sites (PAWS) (as defined and recorded in Natural England’s Ancient Woodland Inventory), including proposals where any part of the development site is within 500 m of an Ancient Semi-natural Woodland or Ancient Replanted Woodland, and where the development would involve erecting new buildings, or extending the footprint of existing buildings. ”
- 3.2.2 It also notes that Ancient Woodland is an irreplaceable habitat, and that in planning decisions, Plantations on Ancient Woodland Sites (PAWS) should be treated equally in terms of the protection afforded to Ancient Semi-natural Woodland in the National Planning Policy Framework. It highlights the Ancient Woodland Inventory as one way to find out if the woodland is ancient.

#### **3.3 THE UK FORESTRY STANDARD (4TH EDITION PUBLISHED AUGUST 2017).**

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- 3.3.1 Page 23: “Areas of woodland are material considerations in the planning process and may be protected by local authority area plans.”
- 3.3.2 Keepers of Time – a Statement of Policy for England’s Ancient and Native Woodland (June 2005). Page 10. “The existing area of ancient woodland should be maintained and there should be a net increase in the area of native woodland.”
- 3.3.3 Natural Environment White Paper “The Natural Choice” (published June 2011). Paragraph 2.53 – This has a “renewed commitment to conserving and restoring ancient woodlands”.

- 3.3.4 Paragraph 2.56 – “The government is committed to providing appropriate protection to ancient woodlands and (to) more restoration of Plantations on Ancient Woodland Sites (PAWS).”
- 3.3.5 Standing Advice for Ancient Woodland and Veteran Trees (first published October 2014, revised November 2017). This advice, jointly issued by Natural England and the Forestry Commission, is a material consideration for planning decisions across England. It explains the definition of ancient woodland, as well as its importance, and identifies the policies that are relevant to it.
- 3.3.6 The Standing Advice refers to an Assessment Guide. This guide sets out a series of questions to help planners to assess the impact of the proposed development on the ancient woodland. Summaries and some case decisions are also available that demonstrate how certain previous planning decisions have taken planning policy into account when considering the impact of proposed development on ancient woodland.

### **3.4 BIODIVERSITY 2020: A STRATEGY FOR ENGLAND’S WILDLIFE AND ECOSYSTEM SERVICES (PUBLISHED AUGUST 2011).**

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- 3.4.1 Paragraph 2.16 – affirms further commitments to protect ancient woodland and to continue the restoration of Plantations on Ancient Woodland Sites (PAWS).
- 3.4.2 The importance and designation of ancient and native woodland;

### **3.5 ANCIENT SEMI-NATURAL WOODLAND (ASNW).**

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- 3.5.1 Woodland composed of mainly native trees and shrubs derived from natural seed fall or coppice rather than from planting, and known to be continuously present on the site since at least AD 1600. Ancient woodland sites are shown on the Natural England’s Inventory of Ancient Woodland.

### **3.6 PLANTATIONS ON ANCIENT WOODLAND SITES (PAWS).**

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- 3.6.1 Woodlands derived from past planting, but on sites known to be continuously wooded in one form or another since at least A.D. 1600. They can be replanted with conifers and broadleaved trees and can retain ancient woodland features, such as undisturbed soil, ground flora and fungi. Very old PAWS composed of native species can have characteristics of ASNW. Ancient Woodland sites (including PAWS) are shown on Natural England's Inventory of Ancient Woodland.

### **3.7 OTHER SEMI-NATURAL WOODLAND (OSNW).**

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- 3.7.1 Woodland which has arisen since A.D. 1600, is derived from natural seed fall or planting and consist of at least 80% locally derived trees and shrubs (i.e., species historically found in England that would arise naturally on the site). Sometimes known as "recent semi-natural woodland".
- 3.7.2 Other Semi-Natural Woodlands (OSNW) may have developed considerable ecological value, especially if they have been established on cultivated land or (have) been present for many decades. (*Source; Forestry Commission 2 of 2 – 2546072.pdf*).

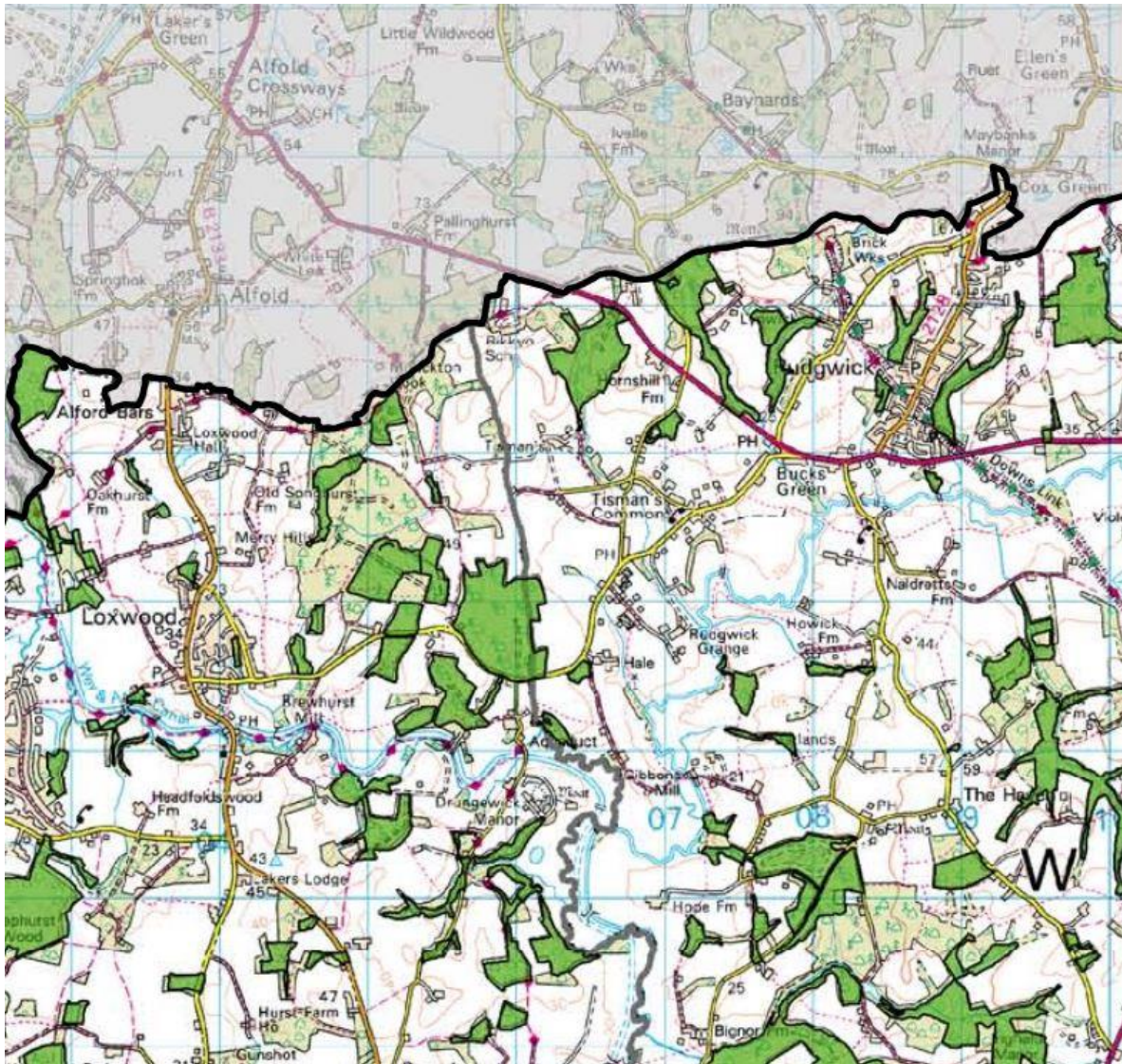


Figure 2. Map extract of the ASNW from Ancient Woodland taken from "A revision of the Ancient Woodland Inventory for West Sussex."

### 3.8 ANCIENT WOODLAND, ANCIENT TREES AND VETERAN TREES: PROTECTING THEM FROM DEVELOPMENT. (FORESTRY COMMISSION AND NATURAL ENGLAND PUBLISHED 13 OCTOBER 2014, UPDATED 5 NOVEMBER 2018.)

3.8.1 Ancient woodland takes hundreds of years to establish and is defined as an irreplaceable habitat. It's important for its:

- Wildlife (which include rare and threatened species).
- Soils.
- Recreational value.
- Cultural, historical and landscape value.

- 3.8.2 “Wooded continuously “does not mean that there’s been a continuous tree cover across the whole site. Not all trees in the woodland have to be old. Open space, both temporary and permanent, is an important component of ancient woodlands.
- 3.8.3 Ancient trees- Attributes can include an ancient tree’s great age, size, condition, biodiversity value, as a result of significant wood decay and the habitat created from the ageing process, as well as an ancient tree’s cultural and heritage value. Very few trees of any species become ancient.
- 3.8.4 Veteran trees- All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it may have decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value.
- 3.8.5 When making planning decisions, the following should be considered;
- 3.8.6 Conserving and enhancing biodiversity.
- 3.8.7 Reducing the level of impact of the proposed development on ancient woodland and ancient and veteran trees.
- 3.8.8 Avoid impacts, reduce (“mitigate”) impacts, and compensate as a last resort.
- The LPA and developer should identify ways to avoid negative effects on ancient woodland or ancient and veteran trees.
  - This could include redesigning the scheme.
  - “If the LPA decides to grant planning permission that results in unavoidable loss or deterioration, (the LPA) should use planning conditions or obligations to make sure the developer;
  - Avoids damage, mitigates against damage, compensates for loss or damage (use as a last resort).
  - Ancient woodland, ancient trees and veteran trees are irreplaceable. Consequently (the LPA) should not consider proposed compensation measures as part of (their) assessment of the merits of the development proposal.”

### 3.8.9 Existing condition of an ancient woodland.

- A woodland in poor condition can be improved with good management and development proposals should enhance the condition of an existing ancient woodland, where appropriate. Where a proposal involves the loss of ancient woodland, (the LPA) should not take into account the existing condition of the ancient woodland when (the LPA) assess(es) the merits of the development proposal. Its existing condition is not a reason to give permission for development.

### 3.8.10 Mitigation measures.

These could include;

- Improving the condition of the woodland.
- Putting up screening barriers to protect woodland or ancient and veteran trees from dust and pollution.
- Noise or light reduction measures.
- Protecting ancient or veteran trees by designing open space around them.
- Identifying and protecting trees that could become ancient and veteran trees in the future.
- Rerouting footpaths.
- Removing invasive species.
- Buffer Zones.

## 3.9 BUFFER ZONES.

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3.9.1 A buffer zone's purpose is to protect ancient woodland and individual ancient or veteran trees including ancient hedge banks and hedgerows. The size and type of the buffer zone should vary depending on the scale, type and impact of the development.

3.9.2 Ancient woodland should have a buffer zone of at least 15 metres to avoid root damage. Where assessment shows other impacts are likely beyond this distance, it is likely that a larger buffer zone will be required. (For example, development that brings a significant increase in traffic through lorry movements is likely to cause air pollution that will affect ancient wood and biodiversity.) A buffer zone around an ancient or veteran tree should be at least 15 times the diameter of the tree. The buffer zone should be 5 m from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter.

- Where possible a buffer zone should;
- Contribute to wider ecological networks.
- Be part of the green infrastructure of the area.
- It should consist of semi-natural habitats such as;

- Woodland
- A mix of scrub, grassland, heathland, and wetland planting.
- Buffer zones should (be planted) with local provenance species and appropriate native species. Invasive species, and non-native species should be managed and their excluded from re-planting and re- seeding regimes.
- The LPA should consider if access is appropriate, and that it can allow access to previously publicly accessible areas in buffer zones, where the Habitat will not be harmed by trampling.

### 3.10 SUDS.

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- 3.10.1 Avoid Sustainable Drainage schemes unless;
- 3.10.2 They respect root protection areas of the trees, and any change to the water table does not adversely affect ancient woodland or ancient or veteran trees.
- 3.10.3 Compensation measures.
- 3.10.4 As a last resort; these measures can only partially compensate for loss of trees or damage to trees. The compensation measures should also be appropriate for the site and for the scale and nature of the impacts on it.
- 3.10.5 These include long -term Woodland Management Plans for new woodland and ancient woodland. There is a Woodland Management Plan already in place for Pallinghurst Woods including the site and the wider site.
- 3.10.6 For details of compensation measures which include trees please see [www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences](http://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences))
- 3.10.7 (Source; Standing Advice on Ancient Woodland and Veteran trees, by Forestry Commission and Natural England.)
- 3.10.8 Forestry Commission England have produced an Assessment Guide; helping to assess the impact of planning development proposals on ancient woodland and veteran trees. Please see Appendix for Table.

### **3.11 ODPM CIRCULAR 06/2005: BIODIVERSITY AND GEOLOGICAL CONSERVATION**

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- 3.11.1 This Circular provides administrative guidance on the application of the law relating to planning and nature conservation as it applies in England.
- 3.11.2 Section E: The protection of trees and woodland via the creation of a Tree Preservation Order are considered in the Conservation of Habitats and Species Outside Designated Sites.

### **3.12 THE TOWN AND COUNTRY PLANNING ACT 1990**

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- 3.12.1 Provides legislative protection to trees in the form of Tree Preservation Orders (TPO) and Conservation Area (CA) designations. It is a criminal offence to wilfully destroy or damage a tree covered by a TPO without obtaining prior consent or within a CA without giving sufficient notification.

### **3.13 THE TOWN AND COUNTRY PLANNING (TREE PRESERVATION) (ENGLAND) REGULATIONS 2012**

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- 3.13.1 Replaces all existing legislation on the subject of TPOs and includes a number of important changes to TPO procedure.

### **3.14 TREE PRESERVATION ORDERS**

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- 3.14.1 Local authorities have the right to create tree preservation orders (TPO) to protect the amenity value conferred to a location by a tree or group of trees. A TPO protects trees from lopping, topping, felling, uprooting or wilful damage. Works to TPO protected trees must only be undertaken with written consent of the local authority, either through development consent or specific TPO application.

### **3.15 FELLING LICENCE**

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- 3.15.1 If more than 5 cubic metres (m<sup>3</sup>) of timber is removed within a Calendar quarter from a woodland then there is a requirement, under the Forestry Acts 1967 and 1979 to obtain a felling licence from the Forestry Commission.
- 3.15.2 A felling licence is not required for felling to immediately facilitate a development authorised by a planning permission.



- 3.15.3 The clearance of areas to allow for development and infrastructure may therefore be authorised by planning permission. Pre-emptive or enabling works undertaken prior to obtaining planning permission may require a felling licence.
- 3.15.4 A felling licence may also be required as part of any subsequent woodland management works that may be enforced as a condition of planning or as part of ongoing improvements to the development setting.
- 3.15.5 A felling licence is not required for felling to immediately facilitate a development authorised by a planning permission.
- 3.15.6 Other general exemptions that remove the need for a felling licence include but not limited to:
- where the trees to be felled are less than 80mm dbh (diameter at breast height) or 150mm dbh for coppice or under-wood, or 100mm dbh for thinnings.
  - where the felling of a tree is required to abate a foreseeable nuisance, hazard or danger.
  - where trees are to be felled as part of a dedication scheme, (for example, Woodland Grant Scheme (WGS) or English Woodland Grant Scheme (EWGS)), or as permitted by planning permission.
  - tree pruning works.
- 3.15.7 Under the English Woodland Grant Scheme for Songhurst and Bulhams Wood Contract no 27153, there is an agreed Felling Licence. Other woodlands around the site are also covered by Felling Licences agreed with the Forestry Commission, and these woodlands are also within the Woodland Grant Scheme (WGS).

### 3.16 ANCIENT WOODLAND WITHIN 200M OF SITE.

Woodland Name	Area (ha)	Classification	Woodland Type	Notes
Pephurst wood	2.78	ARW	Mixed Broadleaf	Near entrance
Hurst wood	5.57	ARW/ASNW	Mixed	Located along forestry track
Caddick copse	10.03	ANSW	Mixed Broadleaf	Located along forestry track
Songhurst kiln copse	6.36	ARW	Mixed Broadleaf	Part adjacent to site
Hope Rough	5.10	ARW/ASNW	Mixed	To north of site

Table 2. Ancient Woodland Located within 200m of the site

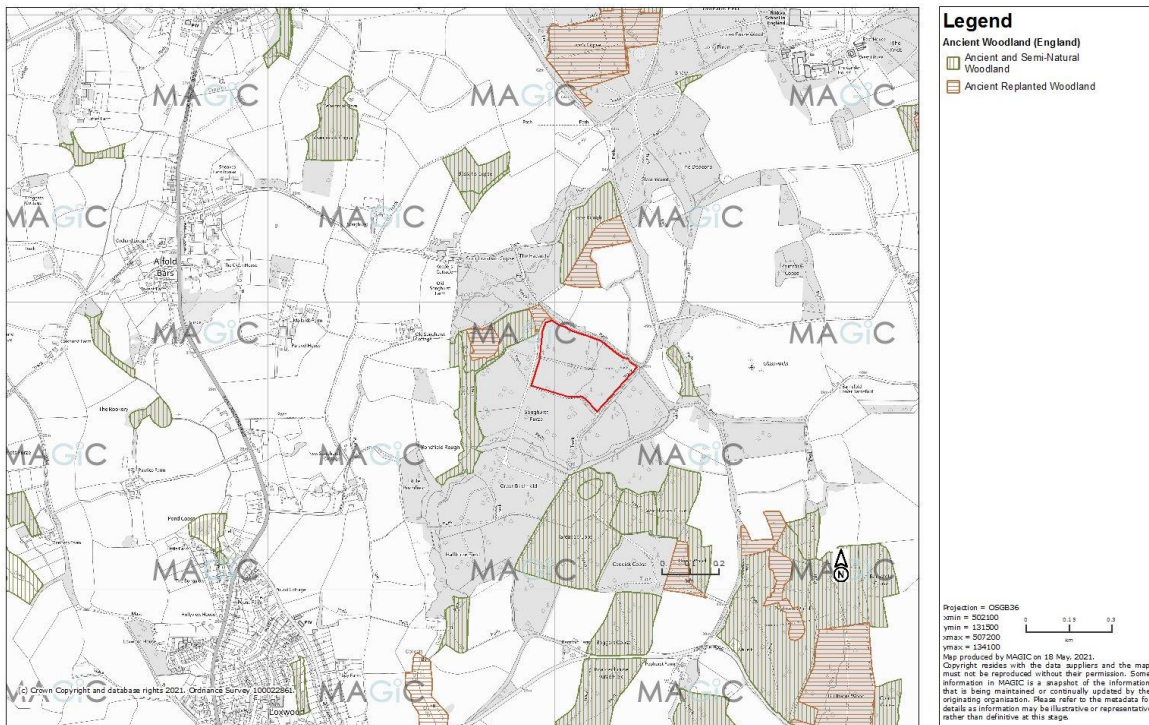


Figure 3. Map showing Ancient woodland

### 3.17 PROTECTED SPECIES

- 3.17.1 Ancient woodland and veteran trees, as well as deciduous woodland can be important for some protected species, including for reptiles, amphibians, Hazel Dormice and bats.
- 3.17.2 These Protected species such as bats may use trees and woodland for roosting and foraging purposes. If protected species are present, then additional assessments of light pollution and noise may be required, especially for bats. Many species live partly in woodland and also use adjacent semi natural habitats for foraging and breeding purposes. Will the development result in a change in or reduction in habitats which are in or adjoining the woodland, including ancient woodland? For assessing potential impacts of the proposals on protected species, ecological surveys have been carried out for the client.
- 3.17.3 The issue of protected species is dealt with in the ecology section of the environmental statement. For those findings, please see the ecology chapter and the respective associated findings in the ecology reports. See also the Appendix in this AIA.

## 4. TREE POPULATION

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### 4.1 THE TREES

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- 4.1.1 There is a total number of 73 individual trees, 24 Groups of trees, and 1 Woodland block. A summary of the tree survey is in the relevant section.
- 4.1.2 The proposed development can be split into 2 parts, the 1st is the access track from Loxwood Road to the site of the clay extraction. The 2nd part of the development will be the site including the clay pit extraction activities, and the associated Weybridge, the Recycling of Construction Materials building (CMRF), and the staff welfare buildings and associated site activities.

### 4.2 PALLINGHURST WOODS AND THE ACCESS TRACK

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- 4.2.1 Pallinghurst Woods are located in a relatively flat to gently sloping typical clay vale landscape within the Low Weald Hills Local Landscape Character Area LW4, in the National Landscape Character Area 121, The Low Weald.
- 4.2.2 The access track extends approximately 1 Km from the entrance to the access track from Loxwood Road layby, north-westwards, westwards and northwards to site. The proposed development makes use of the existing access track which is currently used in forestry and farming operations in and around the area of Pallinghurst Woods. The current use of the access track means that it has the overhead clearance needed for forestry extraction operations for much of the length of the proposed access route for the application site.
- 4.2.3 There are a few individual trees which will need crown lifting; these trees are all identified in the Summary of the Tree Survey and Tree Report by Owen Allpress. For details see that respective Tree Report. They are also discussed in the following paragraphs.
- 4.2.4 The proposals for the clay extraction pit application are for 42 lorry movements for the site per day, comprising 21 lorry movements in and 21 out from the site. The lorries will carry the extracted clay from the site and they will transport construction materials in to the CMRF plant on the site.
- 4.2.5 From the present entrance at the car layby to the north of the northern edge of Loxwood road, to where the access track crosses the Bridleway

- 4.2.6 The entrance onto the access track at Loxwood Road BW 3240, this is shown on drawing reference: 1967 – 02 – P2., From T5 to T10. This area of woodland (Pephurst Wood) is disturbed due to it having been previously used for clay pit extraction in the past, then having been since infilled. Pephurst Wood is an Ancient Semi Natural Woodland. The area of the ASNW of Pephurst Wood is 17.74 ha.
- 4.2.7 This portion of the access track is a metalled road and in places the access track is wide enough for 2 lorries to pass each other. T8 and T9 have both been identified as trees which will need work due to the increased use of the forestry track. Both of these trees are English Oak (*Quercus robur*), and these two trees have been awarded a B1 BS: 5837 categories. T8 needs dead wood to be removed from above the forestry track. This is a safety issue, and the work should happen regardless of any development going ahead. This is because this access track is used at present by the general public, despite these visitors not having any right to access the track.
- 4.2.8 It is recommended that some additional native hedge and forestry tree planting should take place between the forestry access and the bridleway to the west of the access track. This is to assist with separating the footpath users from the lorries. For details see Landscape Plan for entrance by Landvision (2021).
- 4.2.9 After the access track crosses the Bridleway BW 3240, there is a short section of track which crosses a pasture, of meadow grassland; on either side of the access track, the meadow has grazing cattle. There is a hedge on both sides of the track and just one tree, T10, an English Oak (*Quercus robur*), which will be unaffected by the development. This section also has Footpath 795 which runs along the same route.
- 4.2.10 From tree T11, an English Oak (*Quercus robur*), onwards, there is woodland on both sides of the access track. Hurst Wood is to the North and Beggars Copse is to the South of the access track. There is an old hedge bank to the north of the access track. The woods are varied in age and in species, with Beggars Copse having some evergreen planting of non-native coniferous species and some coppice with standards.
- 4.2.11 A passing place would be created in this area on the southside of the access track. The passing place would be 10m long with 5m tappers giving a total length of 20m, with the total width of the road at the passing place being 7.5m. The access track will not need widening overall, just where there are three new passing places. This includes the passing place to the south west of the entrance of the site along the existing access track.

- 4.2.12 Along this east-west section there is also to be a proposed change in verge management. This is to encourage the Wood White butterfly (*Leptidea sinapis*). It is also proposed to increase the depth of the verge to 6m, from the centre of the existing access track. A cutting regime to create a mosaic of ideal habitats for the Wood White will entail rotational cutting back of vegetation, every 3-5 years in sections.
- 4.2.13 It is also proposed to fell the conifers on the south side of the access track to create a sunnier and warmer micro climate to encourage the Wood White butterfly. This woodland management along with sowing of wildflower species which its caterpillar uses as food plants, such as Meadow Vetchling (*Lathyrus pratensis*), Bitter-vetch (*L. linifolius*), Tufted Vetch (*Vicia cracca*), Common Bird's-foot-trefoil (*Lotus corniculatus*) and Greater Bird's-foot-trefoil (*L. pedunculatus*), will be beneficial for other invertebrates as well as the Wood White. The larger native trees along this section will be protected and retained.
- 4.2.14 By contrast, Hurst Wood has fewer evergreen coniferous species planted. The area is secondary woodland and it is covered by a felling licence and the woodland is currently managed under the Woodland Grant Scheme (WGS). This allows for clear felling of blocks 17b and 17a. Therefore, any increase in use of the established access track will have a lot less impact than the clear felling and restocking of the woodland, which is the agreed felling under the currently operating Woodland Management Plan agreement with the Forestry Commission.
- 4.2.15 The woodland composition changes with distance westwards, from secondary disturbed woodland of mostly Birch (*Betula pendula*, *Betula pubescens*) to plantations of coniferous woodland, to newly restocked woodland, with a mixture of broadleaved species. Further to the west, there is a dip down in the access track which passes over a bridge, towards the ghyll woodland valley and stream, which is outside of the southern edge of the site. With increasing distance, the track bends to the north, and there is some ancient semi natural woodland to the west of the access track (this ancient woodland is outside of the site). There is a mixture of different woodland types in the HLC for the site and the surrounding woodland crossed by the access track (see Appendix for map extracts).

## 5. ARBORICULTURAL IMPACT ALONG ACCESS TRACK.

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### 5.1 POTENTIAL IMPACT

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- 5.1.1 This section describes the potential impact on trees, from each of the 2 development sections; the site and the proposed access route across the wider site. The method used to find the relationship between the proposed development and the existing trees was that the construction plans were overlaid with the tree survey data.
- 5.1.2 Additionally, future tree growth and the effects this could have on operational clearances and the effects that this may have on the soil extraction site have also been considered. The access route track is presently used for forestry operation, changes to increased levels of use along the Access route track will have some direct effects. These are as follows;
- Making passing places for lorries; this will entail losing some of the verge of the route and the ditch with a loss of its associated wild flora and natural habitats. There is also the potential for some removal of trees within or close to the access route, as well as the removal of scrub vegetation including young and natural regeneration trees.
  - The need for pruning of trees to allow for the access route widening, and the need for the removal or pruning of trees to create and maintain visibility splays will be virtually removed due to the widening of the verges for the Wood White Butterfly.

- 5.1.3 There is also the potential for damage to the root systems of retained trees, this would be by compaction caused by HGVs, heavy vehicles. Design and mitigation will be proposed to conserve the trees as part of the rural wooded landscape character. Passing places will be designed to have a minimal effect on individual trees and woodland. This can be achieved by using information from BS3857:2012 Root Protection Areas (RPA), as well as by locating passing places where there will be the least impact on trees' RPAs. Also, there will need to be adequate protection for tree roots, woodland soils and flora. Where tree loss occurs, then mitigation planting of trees will be required. Maintenance of operational height clearance for lorries, will need to be put in place. This is also the case for extraction of timber, which will currently use heavy machines and large lorries. There are already height restriction "Goal Posts" in situ at the entrance, and just after the crossing of the access route over the fields of pasture.
- 5.1.4 The surface material of the present woodland extraction route, for the majority of the existing route, is a hoggin type of material at present. It is likely that this surface may have to be improved. The present single-track roadway is for extraction machinery, and from the access entrance point onwards towards the clay extraction site itself, passing places will need to be made from this point of the access to site, to the extraction site. Two passing places have been selected.
- 5.1.5 For the resurfacing of the trackway Cellweb would be used with no excavation, this will retain the present surface underneath the Cellweb there by safe guarding any roots.
- 5.1.6 New surfacing will allow lorries to travel along the track in inclement weather, will be required. Resurfacing would have an effect on the percolation of water and perhaps on local hydrology, although it is likely that the present surface to some extent would be impervious to water. Resurfacing the access track would afford the opportunity to assess the roadway so that it is capable of safely carrying the agreed configuration of vehicles. The width recommended for timber extraction vehicles is 3.4 m, and this width is likely to be sufficient for the vehicles using the access track for soil extraction and for recycling of inert materials, and for disposal of waste purposes, and to enhance the capacity of the surface to accommodate the extra passage of vehicles.

- 5.1.7 There should be little impact on the access track from air and water pollution. It is also unlikely that the increase in lorry movements will have woodland/tree impacts from dust or pollution. This is partly due to the frequency and speed of the lorries. The speed of lorries along the track will be low with a mandatory speed limit of 5 MPH. This also will keep dust to a minimum and any adverse effects on the local wildlife to a minimum. Other dust potential problem then this is covered in the relevant section of the ES, with avoidance and mitigation measures proposed in that section on how dust will be dealt with.
- 5.1.8 There are indirect effects which would include dust and noise from lorry movements. These will be considered in chapters of the Environmental Statement. But within the building Materials Recycling Plant a dust management system will be used. This will remove most of the dust from the air within the plant

## 5.2 ASSESSMENT OF IMPACT

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- 5.2.1 The potential impacts on trees of the access route and passing places can be summarised. It is considered that the direct arboricultural effects of the increased use of the trackway would have very little direct effect on the woodlands that the access route track currently travels through. An integral part of woodland management is the need for extraction of harvested wood. This is recognised within the Woodland Grant scheme which gives grants for maintenance of access tracks to help with the extraction of wood.

## 5.3 NOISE

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- 5.3.1 Noise from the lorry engines will be periodic and by having a 5 MPH speed limit, noise will be kept to a minimum. The noise levels in the area are affected by Gatwick Airport 13 miles to the north west. This location relatively close to Gatwick airport sets the baseline noise levels higher.
- 5.3.2 There is evidence that Planting "noise buffers" composed of trees and shrubs can reduce noise by five to ten decibels for every 30m width of woodland. The woodlands around the forestry track will help to filter and reduce the noise levels and that coupled with the slow speed that the lorries should be travelling at, will reduce noise levels.
- 5.3.3 In a government funded research on anthropogenic noise, the major find was that a strong evidence base does not exist regarding the potential impact of anthropogenic noise on non-marine UK Protected Species and their habitats.



- 5.3.4 The current woodland ride (which will be the proposed access route) has verges on both sides for much of its length. These will be maintained giving an extra buffer on either side of the proposed access route or track. The ecological studies carried out as a part of the planning application, identified the Wood white butterfly (*Leptidea sinapis*) being present at certain points along the Forestry track. This is a butterfly which has a high conservation priority.
- 5.3.5 As a part of the planning application, the conservation of the Wood white would be enhanced. The east to west part of the forestry track would have a management regime to encourage this species. This would include widening of the verges along the forestry track. Removal of evergreen trees on the southern side of forestry track would be carried out. This management would be likely to have beneficial impacts on other invertebrates as well.

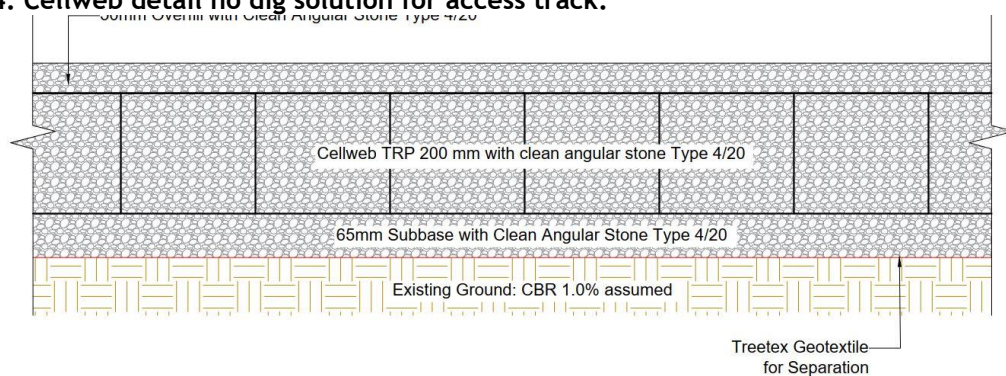
## **5.4 SURFACE OF ACCESS TRACK AND PASSING PLACES ALONG ACCESS TRACK**

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- 5.4.1 The maintenance of overhead clearance so that trees are not damaged by lorries or extraction vehicles will continue with very little or no change from that at present. At the time of survey, just 3 of the total number of trees surveyed had canopies lower than the required 5 meters clearance.
- 5.4.2 The current function of the forestry access track is not intended to change. It remains an access track but with higher usage.
- 5.4.3 The present forestry track will need resurfacing; this has been designed to accommodate the proposed increase in its use by HGVs/ lorries. Cellweb or a similar product would be used. Cellweb is a no dig tree root protection system for roadways, offering a no-dig and no-compaction system when used with sub-base Type 4/20.

- 5.4.4 Passing places have been designed to have a minimal effect on the individual trees and woodland. There is already a verge on both sides. Passing places will be on the south side, helping to create areas which are more favourable to invertebrates on the northside of the forestry track.
- 5.4.5 The passing places can be achieved by using BS 3857:2012 Root Protection areas, placing the passing places where there are no trees, or placing passing places where trees will be felled due to forestry operations. By maintaining protection of trees' RPAs as recommended in BS 5837:2012 on RPAs, and avoiding work within these areas, then trees should not be physiologically affected. Passing places will not be created where the surrounding woodland is part of an area of Ancient Semi-Natural Woodland, (ASNW).
- 5.4.6 Over the entire access route, on the balance of probability, the number of additional tree losses caused by the additional lorry movements, improvements to the roadway and additional passing places, would be minimal. The maximum size vehicle will be a 4 axle 32 tonne GVW rigid tipper, with an overall maximum length of 10 m. Therefore, the passing places will be restricted to 10 m with 5 m tapers at both ends = 20m overall with the 7.5m wide carriageway at the passing place point.

Figure 4. Cellweb detail no dig solution for access track.



<b>Geosynthetic Ltd</b> Hunting Road, International Industrial Estate, Hinckley, Leicestershire, LE11 1SU, England, UK Tel: 01455 511139 Fax: 01455 511140 www.geosyn.co.uk	Project:	Description:	Drawn By:	Scale:	Date:	Checked By:
	Loxwood Clay Pit & Recycling Facility	Cross Section of Cellweb for a Road over a TRP zone	LDR	NTS	10 May 2021	RS
			Ref: TR21-3661_RUR_CEL_	Version: V1	Sheet: 1/1	

- 5.4.7 Over the entire access route, the additional passing places, would account for a total of 147 square metres loss of the verge along the access route. This includes an area near the entrance to the CMRF. This assessment was made using AutoCAD software.

## 5.5 TREES IDENTIFIED AS NEEDING WORK ALONG LORRY ACCESS ROUTE TO SITE.

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- 5.5.1 A number of trees have been identified as requiring tree surgery. These trees and associated works are for trees along the edges of the proposed lorry access route from the wider site in south, to the site in the north. These tree works are as follows;
- 5.5.2 Future tree growth will need to be monitored, and where necessary, the operational clearance over the access track will need to be maintained by pruning. Faster growing deciduous species such as Willow (*Salix spp*) and Birch (*Betula spp*) will need a more aggressive management policy than the slower growing species such as English Oak (*Quercus robur*). The verge management regime at the time of the survey did seem to stop faster growing species from establishing along the woodland rides.
- 5.5.3 The list below represents a worst-case scenario, it is likely that in practice a lot of the trees would not need tree pruning in the first few years of the proposed development.
- T2. An A Category (hereinafter termed Cat) A1 Oak: near to the wider site entrance off the northern layby of Loxwood Road. Management required is to crown lift this tree T2 from over the access and existing parking.
  - T8. An A Cat B1 Oak: which is next to the existing concrete part of the access track. The tree with poor vitality, should have deadwood removed from over the track.
  - T9. A Cat B1 Oak: adjacent to access track, and the area filled with waste. Crown lift foliage over access track.
  - T22. A Cat B1 Oak: Crown lift part of the canopy which overhangs the forestry track.
  - T23. A Cat B1 Oak: Crown lift lower part of the canopy which overhangs the forestry track.
  - T26. A Cat B1 Oak: Crown lift lower foliage which overhangs the forestry track. Check once every two years, as there is a stem crack.
  - T36. A Cat B1 Oak: Crown lift branches over forestry track.
  - T40. A Cat B1 Oak: Crown lift foliage over forestry track.
  - T45. A Cat B1 Oak: Crown lift foliage over forestry track.
  - T47. A Cat B1 Oak: Crown lift foliage over forestry track.
  - G49. A Cat B1 Scots Pine: dead wood near or over forestry track.
  - T51 Turkey Oak: Canopy overhangs forestry track. Check clearance, and crown lift as required.
  - T52 Turkey Oak. Lower canopy overhangs the forestry track, if possible, crown lift.
  - T53 Turkey Oak: Crown lift foliage over forestry track.
  - T54 Turkey Oak: Crown lift foliage over forestry track.
  - G58 Oak: the tree closest to the forestry track overhangs the track, crown lift.

- T59 Oak: reduce lower foliage back away from forestry track to increase clearance adjacent to track.
- G61 Oak: these 2 oak trees are on either side of the forestry track, monitor once in every 2 years.
- T63 Oak: reduce lower foliage back away from forestry track to increase clearance.
- T65 Oak: Crown lift and reduce low branches back to improve clearance over forestry track.
- T68 Oak. Canopy overhangs edge of track- Crown lift if necessary.
- The other trees further along the forestry track will be managed as part of the forestry operations.
- Most of the above trees already have about a 5-meter (m) clearance above the forestry track, so work identified would be to maintain this 5 m clearance above the forestry track.

## 5.6 ARBORICULTURAL IMPACT ASSESSMENT OF IMPACT OF THE SOIL EXTRACTION SITE AND CONSTRUCTION MATERIALS RECYCLING FACILITY

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- 5.6.1 The site comprises semi-mature shaws and trees, along the site's northern and eastern margins, with some replanted ancient woodland near to site. These wooded areas with mature trees act as a green backdrop and natural buffer for the site. The species on site are a mixture of broadleaved native trees, some of these have been self-seeded by natural regeneration, and others have been planted, as in the south of the site. The species comprise native tree and shrub species, including Sessile Oak (*Quercus petraea*) and Hazel (*Corylus avellana*) and Birch (*Betula spp*), giving a varied woodland edge. There are some mature Sessile Oak (*Quercus petraea*) trees. Beyond the site, there are more blocks of mature mixed native broadleaved woodland to north, with ancient woodland to west and south of the site. There is native broadleaved woodland to east of the site, within Pallinghurst Woods. The site forms part of the large block of woodland which includes Hope Rough, to the north, Great Scrubbs to the south, as well as Woodland Furze to south east and Half Furze Field to south west, with Beggars Copse to south, and Pephurst Wood to north of Loxwood Road and Pephurst Farm.
- 5.6.2 The total site area is 8 hectares, 6 hectares of which are to be used for clay extraction and construction materials recycling facility activities. The remainder of the woodland will be kept as a green edge and buffer zone for the site, to separate the proposals from the surrounding woodland.
- 5.6.3 There is a small section of replanted ASNW near to the proposed clay pit extraction site. A minimum ASNW 15 m buffer zone will be maintained throughout the development. This is to protect the ancient woodland and the ancient woodland soils and the ASNW trees' Root Protection Areas (hereinafter termed RPAs). In year 1, cells 1 and 2, will be felled. The soil extracted from these two compartments will be stockpiled on cell 28. The stockpile on cell 28, would disappear in years 2-3. The proposals are for the restoration work to commence in year 2.

- 5.6.4 The proposals are for a clay pit extraction area to cover most of the site, and for a CMRF building in the northwest of the site. There would be a small area for stockpiling of soils and overburden in the west of the site. There would also be a stock storage area to the east. There will be a proposed site weighbridge, as well as a site office and there will also be the proposed staff welfare facilities. These buildings will be of porta-cabin construction, and they will be installed at the northern extent of the operational area. Some areas of the proposed CMRF and the clay extraction area have been recently felled in the last 4 or 7 years. Trees in this area are low valued trees (Category C) and are young individuals of small stature.
- 5.6.5 It is also proposed to have a 15 m buffer along most parts of the western, northern and eastern boundary of the site, by protecting and retaining the existing trees, scrub and in parts by hedge laying the old hedgerow. To the north and north-west of site there are some nearby public footpaths. These footpaths are all outside of the site area, with some views towards the northern boundary of the site. That part of the site has a mature buffer of trees and shrubs. For information on indirect landscape effects, and visual impacts see the Landvision LVIA (2021).
- 5.6.6 The process of excavation, backfilling and restoration would be an ongoing one, over a period of 31 years. The development site for clay extraction, will be progressively excavated, in a phased way, and then infilled with inert waste subsoil, then saved topsoil and restored to woodland. There would be a final period of 2 years of landscape restoration works; including tree planting and wildflower seeding of the last remaining areas to be restored to woodland, wildflower grassland and with woodland rides and verges.

- 5.6.7 The site does have a Forestry Commission approved Woodland Management Plan, and the site and the wider site of the Pallinghurst Woods is part of the English Woodland Grant scheme. There is also a felling licence for the site. The current felling licence is conditional on replanting the woodland. The proposals for the clay extraction also include replanting the woodland with native species. The extent of tree removal is to be phased into 3 phases as shown on figure 5. No attempt has been made in this document to identify the volume of wood in any one compartment or Phase.
- 5.6.8 There is no provision for the stockpiling of subsoil and topsoil separately. This is because, in terms of composition of the clay, there appears to be very little change in the soil profile.

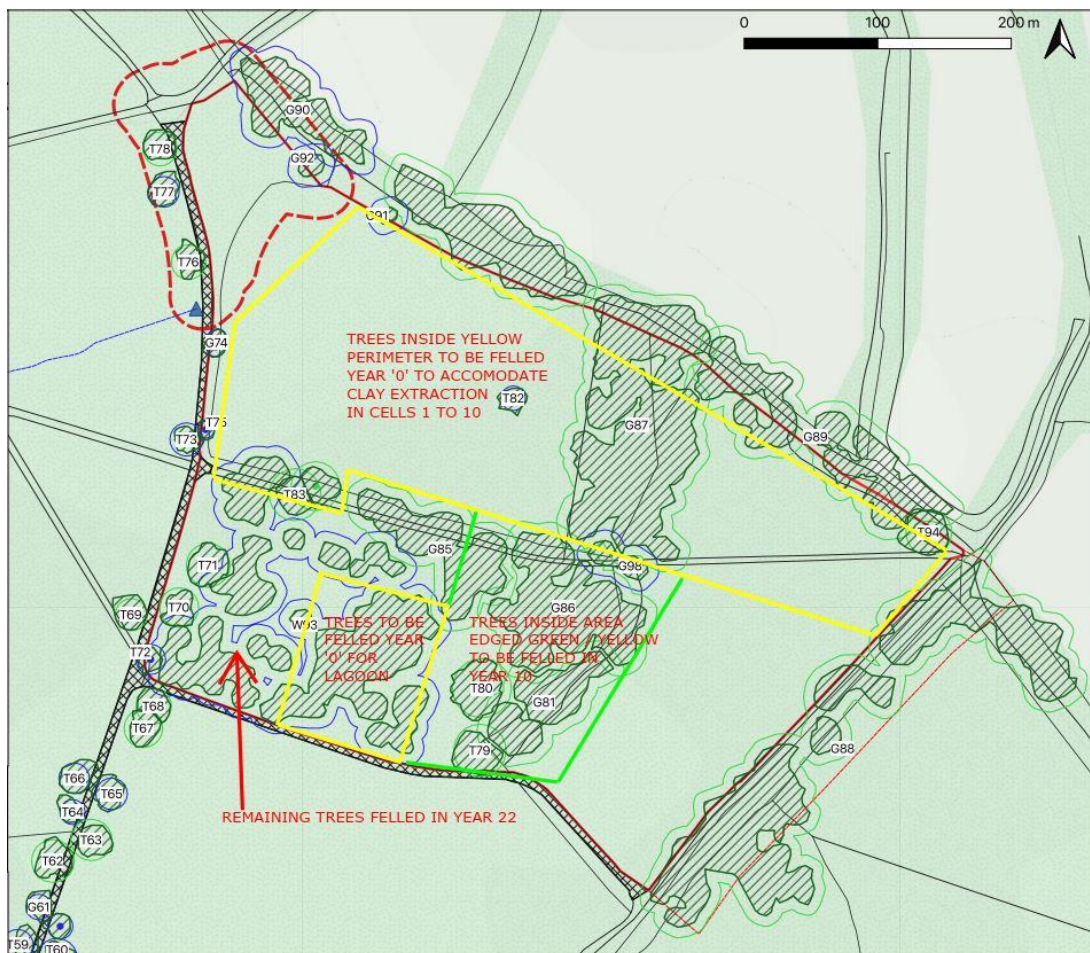


Figure 5. 3 Phase Tree felling areas.

5.6.9 Dust from the construction materials handling activities on site will be kept to a minimum by using a purpose-built (CMRF) building. The CMRF building will be designed to reduce dust from the recycling and handling processes. This will not only help to protect workers from dust inhalation hazards, but this will also be to reduce pollution from the dust, keeping that dust to a minimum, thereby reducing the impact of dust on the surrounding woodland. There is a report on dust and pollution within those sections of the Environmental Statement (ES) which should be read, for more details on this subject.

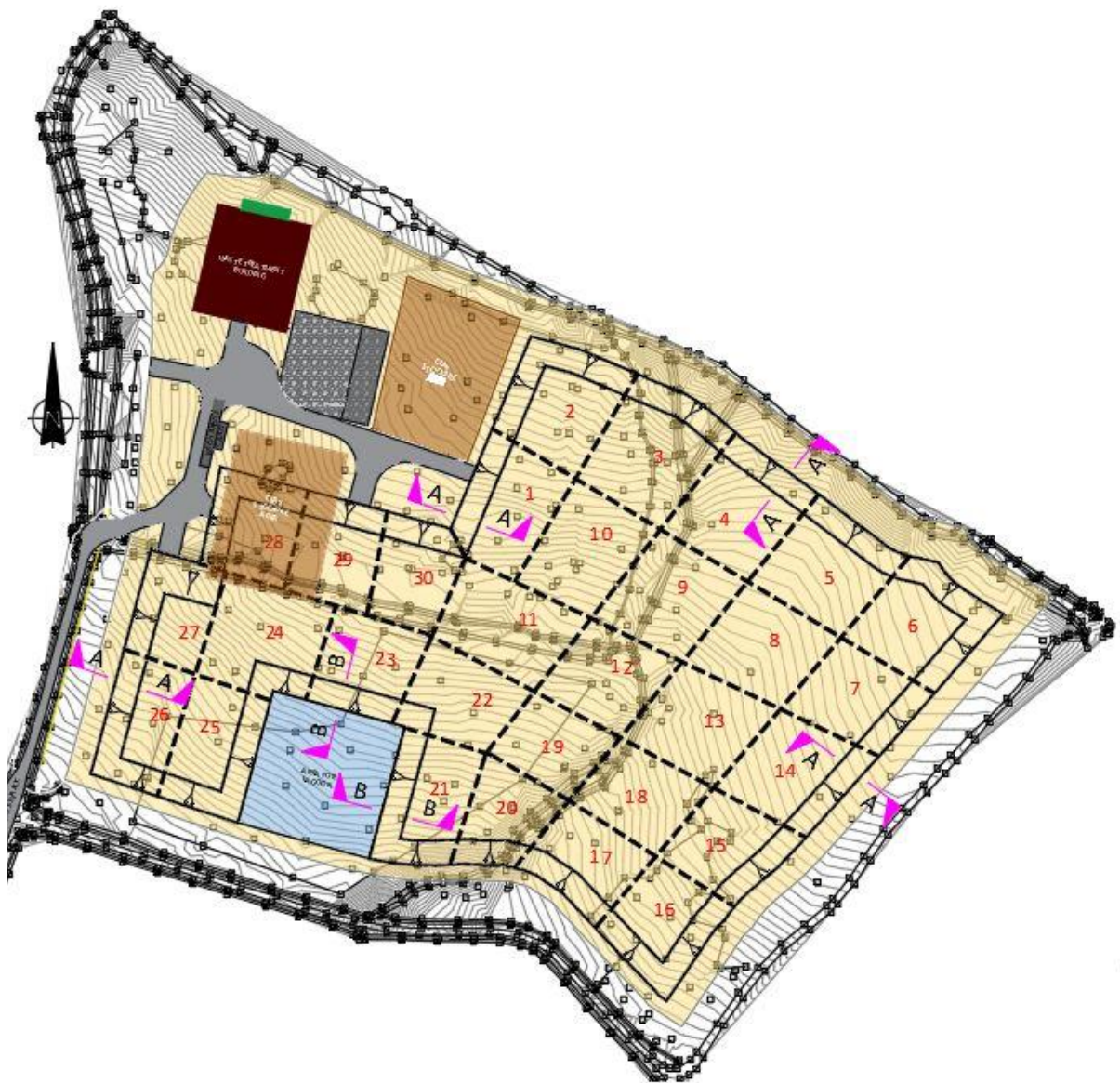


Figure 6 Proposed compartments for extraction.



- 5.6.10 A new access road from the access track into the site will need to be constructed. This is for the purpose of moving vehicles in and out of the clay extraction site. This will be a semi-permanent access road which can be removed at the end of the use of the site as a clay extraction site and restored to woodland. This allows for traffic to run on dedicated routes and avoid damaging the site's soils.
- 5.6.11 The waste handling compound and other buildings on site will be removed at the end of the use of the site as a clay extraction pit and construction materials recycling (CMRF) and infill site. Once those buildings, and the associated roads, have all been removed, then the site's land will be reinstated, and the site restored to woodland, and wildflower grassland mosaic habitats including woodland rides and verges.
- 5.6.12 A short rotation coppice cycle has been proposed for the newly planted woodland areas. East to west woodland rides will be added so that habitats for invertebrates will be enhanced, and other mitigation for landscape, and woodland, ecology will be carried out. This will comprise tree planting and wildflower seeding, as shown on the Landscape Plans for the site and the entrance area to access route, prepared by Landvision (2021; for details of the mitigation and enhancements proposed for the application site and access route, please see those Landscape Plans.
- 5.6.13 The area of the lagoon, to the south of the area will be re wooded after the period of clay pit excavation and restoration.

## 5.7 TREE LOSS

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- 5.7.1 The total site area is 8 ha. Approximately 1.6 ha will be left around the edges of the site, so that these peripheral areas of green can maintain green links to habitats beyond the site. To the north-west of site there is an area of ancient semi-natural woodland, and to the south there is further ancient woodland; both of these ASNWs will be protected throughout the course of the development. The area for the Construction Materials Recycling Facility (CMRF) is situated on an area of woodland which is young. Most of the trees in this area would be category C trees due to the DBH. On the east side of the site, the compartments 5, 6, 8, 7, 13, 14, 18, 16, 17, and 15, are again also areas which have been felled in recent years. This part of the site has been restocked, (See Figure 6. Proposed compartments for extraction).

- 5.7.2 This will mean that a number of Category A individual trees, including tree T71, T80, T83 and perhaps T 70, all of which are mature Oak trees, would be lost.
- 5.7.3 A category groups of trees which are to be lost would be; Groups G 87, G86, G 81 and G 85.
- 5.7.4 As category A trees these trees will have a high arboricultural value. For example; T 83, which is an Oak tree. The condition summary within the tree survey schedule reports the tree to be a “very large and significant sized Oak at compartment boundary, of high individual arboricultural value”.
- 5.7.5 Only one B category tree would be lost this is tree T 82. The only B category group of trees which would be lost is G98. There is one woodland category B group of trees which would be mostly lost due to the development.
- 5.7.6 As can be seen from the above listed trees; there are a number of category A trees and numerous Groups of trees of A category quality which will be lost; his is as well as 1 group of B category trees and 1 B category Woodland.
- 5.7.7 There will be short-term to medium term (2-40 years) loss of trees and woodland and associated woodland flora on the site. After 32-35 years the area should be restocked with trees and native ground flora.
- 5.7.8 The new woodland planting will comprise new tree planting protected by tree tubes, and kept weed-free by regular spraying of herbicides. There will be reseeded woodland and wildflower grassland ground flora along woodland rides and within the mosaic of woodland habitats, of differing structural heights, and with add species diversity. The buffer zones around the site should allow the woodland to recover to some semblance of what it is today.
- 5.7.9 Historically, woodlands were managed, to provide building materials, firewood, and everyday items like brooms and baskets. In the local area around Loxwood clay extraction was also historically carried out, and brick works were a frequent local feature. Secondary infilling of clay pits, following cessation of the clay excavation, and with the infill being recycled construction materials, is a frequent activity in the Low Weald.

## 5.8 MITIGATION

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- 5.8.1 This assessment has considered the impacts of the proposed development on single trees, on groups of trees, and on woodland blocks, based on the construction site, as well as the arboricultural impacts of the operational requirements of the proposed development site and those of the wider site and access route to site.
- 5.8.2 A number of activities on site will mean the immediate loss of trees. There may also be potential harm to other trees and also to the soil and habitats linking and surrounding the woodland. In order to minimise the level of these potential impacts, it will be necessary to carefully manage the relationship between all the retained trees, and those proposed construction processes, the CMRF, its recycling processes, and the clay extraction activities on site. The access route will also require some tree works to be carried out, for safe passage of the lorries and the public.
- 5.8.3 The process for removal of individual trees will be by reference to species and location, with other identification markers, as appropriate.
- 5.8.4 Removal of parts of tree groups and woodland blocks will be specified by the reference area in the tree survey schedule. All trees within the defined area will be removed; it may be necessary to mark out a “cut line” on site, to avoid trees being felled in the buffer zone.
- 5.8.5 Along the access route, in the wider site, a schedule of proposed tree pruning will be produced with annotated plans. The tree pruning will be specified in absolute terms (i.e., in metres above centre of access track.)
- 5.8.6 Before tree operations begin, a specification will be produced. This will be to include operational standards for all types of pruning, and tree felling, and will be according to best practice. This will help to ensure that tree work is undertaken to a consistent, and acceptable standard across the whole development of the site and across the wider site.
- 5.8.7 Minimum requirements will be clearly set out for forestry contractors; referring to qualifications, accreditations, licenses and insurance cover.
- 5.8.8 Before any tree works are carried out, the potential impact on any protected species, (including on any nesting birds), will be clearly identified, and a protocol, for avoidance of any impact, will be included on the works schedule. This is likely to include seasonal constraints, timing of works, and restrictions on the use of some equipment.

- 5.8.9 Forestry contractors will also be given basic “Tool box” talk/s and training on relevant protected species. This will include general site observations, possible restrictions to working methods, identification skills and reporting protocols where protected species are identified.
- 5.8.10 The Toolbox talk/s will be required in order to safeguard protected species on site/ near to site in accordance with Wildlife & Countryside laws. Best practice guidelines will need to be also followed, and the opportunity used to help to educate forestry contractors, before tree work begins.
- 5.8.11 Material produced by tree felling and tree pruning operations should meet the environment agency criteria for virgin timber and will not be classed as waste.
- 5.8.12 The treatment of such arisings will be detailed on the specification for pruning and tree felling. The access points and other restrictions on site operatives and health and safety requirements will all need to be conveyed to, and observed by, the contractor.
- 5.8.13 The tree protection fencing will be based on BS 5837:2012. The protected areas will constitute a construction exclusion zone, within which no unplanned access, nor any operations, would be permitted.
- 5.8.14 The use of materials which could pollute groundwater or soils will be carefully controlled. Items such as use of cement, and the storage of fuels, will require respective Method Statements and operational standards put in place prior to start of works on site.
- 5.8.15 A traffic management system will be used in order to minimise 2 lorries passing on the access track. This will be to mitigate the need to have a wider access track, or the need for more than 3 passing places.
- 5.8.16 Having a site wide speed limit of 5 mph will be to increase site safety, to reduce noise and dust that is likely to be produced by lorry movements. It is also likely to reduce/eradicate wildlife fatalities caused by additional lorry movements.
- 5.8.17 Areas which have been re-planted with topsoil will be protected from vehicle access as “No Go” areas.
- 5.8.18 It is possible that mitigation will be required off site; at the time of writing, no areas had been identified by the client.

## 5.9 TREE PROTECTION

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- 5.9.1 Temporary physical protection measures will be required for the construction phase of the CMRF site, and for the associated roadway/s into site. This will be to prevent contractors from wandering into neighbouring/ adjoining protected woodland and buffer areas, as well as to avoid problems associated with soil compaction/ loss of soil structure.
- 5.9.2 The alignment of tree protection fencing will be based on the recommendations of BS: 583 2012.
- 5.9.3 Ground protection will be used where access is required, where this will be close to a retained tree, or to a group of trees, or woodland block, and where tree protection fencing cannot be installed because of site operations and other site constraints.

## 5.10 RESTORATION

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- 5.10.1 A pre-start meeting will be set up between the applicant's landscape and tree representatives and the District and County landscape Contract Supervising Officers. There will need to be regular dialogue, and regular site landscape meetings; these will be arranged so as to facilitate the smooth running of the tree and landscape contracts on the site, and in due course the phased restoration of the site, and the planting in the entrance area, in the wider site.
- 5.10.2 The restoration of the site will commence in year 2 of the clay extraction and infilling project.
- 5.10.3 The restoration of the woodland will start off with the replating of soil. The source material for replating would be either be from adjacent compartments or from the clay stockpile.
- 5.10.4 When a compartment has been replated with soil, the soil will need to be prepared either in spring or autumn as a seedbed. Seeding will need to be carried out as soon as possible after seedbed preparation, at the correct time of year, in early April or in early September, in suitable weather conditions, and the seed kept moist until it has germinated.

- 5.10.5 The wild flower seed will need to be specified as suited to heavy, wet clay soils and will need to be of local Provenance, if that seed is locally available. During the first season of growth, all the wildflower area seeded, will need to be mown, and the arisings collected; this is to encourage tillering of the plants. A compost heap area in a sunny location beyond the working area could be as agreed with the Landscape Supervising Officer.
- 5.10.6 The seeding will also need to be carried, ideally this is to be at the earliest possible stages in year 2, as the seeding and new wildflower grassland areas will help to stabilise the soils, and this restored surface will be to help to prevent soil erosion from the recently infilled and restored areas. This is to safeguard the clay soils on site, and to safeguard the water quality, by preventing soil erosion from site, and by therefore preventing soil pollution of the water courses in the local area.
- 5.10.7 The wildflowers in wildflower seeding, as specified for the Wood White butterfly, will need to be supplemented by planting of some areas of wildflower plugs, within the wildflower seeded areas. See Landvision Landscape Plans (2021) for details of the species list of wildflower food plants for the Wood White butterfly and for other local butterflies. (See also Invertebrate report and ecology reports' recommendations for restoration of the site for ecology. The Landscape Plans by LandVision (2021) should be used to draw up the landscape contracts and specifications for the site landscape restoration proposals, and those for the wider site including the entrance area near Loxwood Road Layby.
- 5.10.8 Machinery should be kept off the restored areas, which will be "No Go areas".
- 5.10.9 The new woodland areas should be planted using the recommended woodland mixes and planting transplants, and specifications and bills of quantity, based on the sites' tree planting specifications as shown on the landscape restoration plans; for details see the Landscape Plans by Landvision (2021.)
- 5.10.10 All the new trees will need to be kept weed free, throughout establishment and at least for the first 5 years, by maintaining a weed free area of 1 m<sup>2</sup> for each tree. This maintenance is recommended as research shows that keeping trees weed free with a 1 m<sup>2</sup> weed free circle will triple the newly planted trees' growth in the first 15 years.

- 5.10.11 The newly planted trees will need to be highly protected from browsing woodland animals, such as deer, by installation of protective tree tubes (to be Tuley tree tubes or similar approved tree shelters), to be a minimum of 1.2 m high. These will need to be high enough to protect from browsing deer, and of a type to be agreed with the Supervising Landscape Officer. Tree shelters can reduce the losses caused by animals, the cost of herbicide application, and time spent on inspection and maintenance, as well as stresses that associated with the transfer from nursery to planting site. Tree shelters can in fact lead to cost savings by avoiding the need for expensive deer fencing, enabling herbicide applications to be made more efficiently and improving survival.
- 5.10.12 At the Pre-Start Meeting between the applicant and the County/ District Planning landscape Officers; the program of meetings and schedules of works and contracts for landscape restoration will be discussed and updates given and discussed and agreed.
- 5.10.13 Regular “beating up” meetings between the applicant landscape manager and the district or county council supervising officer, should take place in June in all September each year, to agree replacement planting required.
- 5.10.14 Beating up (replacement of dead/dying trees) agreed during beat up inspection visits will be carried out, with County Council and applicant’s Clerk of Works, so that replacement of any dead plants can be agreed. A list of any dead/ dying trees, and a plan of their locations will be agreed by both parties, before beating up replacement planting is carried out.
- 5.10.15 Any plants which die will be replaced within the first tree planting season, during suitable weather conditions. The beating up will need to be in the first bare root planting season, which runs from late Nov- early March, after trees are dormant, and before trees come into leaf.
- 5.10.16 Maintenance of the restored woodland planting will be for the life time of the development (33+ years). Thereafter, the woodland areas will need to be covered by a new Woodland Management Plan and Woodland Grant Scheme Agreement with the Forestry Commission.

## 6. CONCLUSION

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- 6.1.1 This assessment has considered the arboricultural impact of the proposed development on the site's recorded trees, and those of the wider site near to the proposed access track. That is 73 individual trees, 24 Groups of trees, and 1 woodland block.
- 6.1.2 There would be tree loss on the site, in the short to medium term, due to the development proposals. Once the compartments begin to become re-vegetated with wild flora and they are then replanted with trees, the loss of trees and impacts on the woodland ground flora and other habitats would be mitigated.
- 6.1.3 Over the longer term, the development offers restoration of the site to an area of mixed native, deciduous woodland; which, with the help of ecologists, foresters and landscape architect, will become an enhanced woodland area, which will link to surrounding ancient woodland and which will over time mature to become structurally more diverse. There will be some landscape benefits; for example, the aim will be for the woodland areas to retain and to encourage a more diverse selection of native species of trees and ground flora, as well as to encourage a wider selection and mosaics of different habitats. These woodland habitats will be regularly assessed and managed, in accordance with landscape planning conditions.
- 6.1.4 Retention of the green buffer to the site will enable the linking to wider woodland habitats and the conservation of the landscape and visual amenity of the periphery of the site within the wider landscape in NCA 121 Low Weald, in the Low Weald Hills.
- 6.1.5 The site and the wider site will ultimately be returned to mixed, native, deciduous woodland, managed under a short rotation coppice, with more diverse wildflower grassland habitats (from shady to sun lit), with woodland rides and additional habitats including deadwood habitats, and newly extended and managed linked wildflower verges. This will be to benefit local invertebrates, including butterflies such as the Wood White, and to create a more resilient woodland over time.



## APPENDIX 1 Forestry Commission Assessment Guide.

	<b>Subject to be assessed C19:E22</b>	<b>Record here the answer to the question</b>	<b>Record here any mitigation/ compensation measures proposed by the applicant, and what else the Local Planning Authority might require</b>
<b>1</b>	<b>Is the site of the ancient woodland the only possible place for this proposal?</b> Does it have to be on the ancient woodland site (i.e. is it location dependent) or can it go anywhere else?	The site has been redesigned to avoid ancient woodland in the northwest. The site entrance in the south, north of Loxwood Road, crosses through ancient woodland. The three laybys in the south will be located to involve minimal impacts on ancient woodland and to minimise	Avoid ancient woodland and leave 15 metre buffer zone for site periphery- see Landvision Landscape Plans (2021). For laybys & access route minimal disturbance of ancient woodland, planting adj.
<b>2</b>	<b>What size of ancient woodland will be affected?</b> Ideally this will be recorded in hectares. The importance of diversity of habitat and species in small woods must not be underestimated, and also their function as stepping stones for the dispersal of species. Small ancient woodlands may be the remnants of formerly larger areas, and thus have a higher biodiversity importance than might be assumed. Ecological diversity in woodlands is not solely linked to the size of the woodland.	The site proposals avoid ASNW in north west; 0 ha. The site access route crosses ASNW at Pephurst Wood in the south, and Caddick's Copse- but this is an existing woodland ride, and no ancient woodland will be felled- 0 ha. Access route in the south will need some visibility splays.	The laybys are located to avoid ancient woodland. The access route disturbance near Loxwood Road will be restricted to crown lifting and essential tree surgery to remove dead wood from trees & gapping up planting- see Landscape Plans by Landvision (2021) for details of entrance planting. Gapping up of surrounding ancient woodland and management to enhance ancient semi-natural woodland structural diversity.
<b>3</b>	<b>Will an area of woodland be lost?</b> If so what are the likely implications of this? A small loss from a small woodland or veteran tree loss could be more significant in its wider impacts than a large loss from a large woodland. Consider the nature of the woodland that will be affected.	The three laybys will be located to have limited adverse impacts on woodland, with minimal tree loss. They are located within a larger woodland block and the effects will be minimal and can be compensated for by planting and management.	Changes to the laybys and entrance areas will be mitigated by planting; see Landvision Landscape Plans (2021) for details. In addition ride management is recommended for west- east woodland rides to enhance habitats for Wood White butterfly.
<b>4</b>	<b>How well connected is the woodland?</b> Is it isolated or connected to other woodland blocks? Will connectivity be damaged? Consider the retention of connecting habitat such as hedgerows and copses and attempt to maintain and enhance long term protection secured through the planning process.	The woodland is very well connected. Connectivity will be maintained by replanting to compensate for the increased traffic movements and removal of some areas of trees for three laybys/visibility splays in south/ to create access to site in north.	Site in north- If mitigation planting takes place then the green buffer to the site will be maintained, and the loss of connectivity between the site and other woodland blocks will be mitigated for. Phased clearance and extraction will allow restoration of connectivity in northern part of site in early part of the proposals, in first 5 years.
		Protection of the green buffer of the site forms part of the proposals.	Protection and retention of all trees and hedgerows in a 15 metre buffer of the site will ensure that site proposals are mitigated for. Planting and management is shown on Landscape Plans by Landvision (2021). Replanting along bridleway edges in south to compensate for access route increased use. Laybys will be compensated for by planting and management.
<b>5</b>	<b>Will there be damage to the Root Protection Area of the woodland or individual trees?</b> The Root Protection Zone (as specified in British Standard 5837) is there to protect the roots of trees, which often spread out further than their canopy. Protection measures include taking care not to cut tree roots i.e. by trenching or causing soil compaction around trees i.e. through vehicle movements; or contamination from poisons e.g. site stored fuel or chemicals.	Yes, there will be damage to Root Protection Areas of the woodland and to individual trees on site in the north. These trees are identified where information is available and these impacts are assessed. The site will have overall tree and woodland loss due to clearance for the CMRF and clay extraction pits. Tree surgery will also be required to enable the access route to have minimal impact on affected trees. See tree information recorded in the Tree Survey and in this AIA.	Mitigation and compensation measures are detailed in the Landscape Plans by Landvision (2021) which dovetail with the ecology reports by Urban Edge Ecology. This is to conserve and enhance the site and access route woodland areas in the long term, during and after the proposed development of the clay pits, and allied associated development impacts. Dust is to be managed within the CMRF building- see dust report for details.

	<b>Subject to be assessed</b>	<b>Record here the answer to the question</b>	<b>Record here any mitigation/ compensation measures proposed by the applicant, and what else the Local Planning Authority might require</b>
6	<p><b>Has a survey for protected species been included in the application?</b> See Natural England's Standing Advice for <u>Protected Species</u>:</p>	<p>Yes, the sites have been surveyed by Urban Edge Ecology(2020) and the findings of the 2020 work have been used to inform this AIA. For details of the protected species and their requirements, see the findings and recommendations of the ecology reports by Urban Edge Ltd, and the findings of the Invertebrate report and recommendations for conservation of the invertebrates by Andy Jukes of Conops Entomology Ltd (2020). Ancient woodland and veteran trees can be particularly important for certain protected species such as dormice and bats. If protected species are present then additional assessments of noise and light pollution particularly for bats may be necessary.</p> <p>Many species live partly in woodland but also use other adjacent semi-natural habitat for feeding or breeding. Will the development result in the change or reduction of important habitats adjoining the woodland?</p>	<p>There are protected species including a large population of Slow Worm, and woodland invertebrates (such as the rare Wood White butterfly) which will be mitigated for and compensatory measures put in place to protect these species and the woodland habitats for these species, including reintroducing a coppice cycle on the restored site and improving the verges and woodland rides by management for invertebrates. Yes, there will be a net loss of woodland of the site as a result of the site proposals. There will be a reduction in connectivity of woodland habitats as a result of the site proposals. The proposals will increase traffic movements through the woodland with the resultant changes in air quality and disturbance from lorry engine noise and lorry movements. The construction of the CMRF building and site roads will cause loss of natural woodland habitats. there will be an overall reduction in the important habitats for protected species on site. Compensation measures to mitigate for the loss will be put in place- for details see ecology reports by Urban Edge Ltd and Conops Entomology Ltd, (2020/ 2021), this Landvision AIA and Landscape Plans by Landvision (2021).</p>
7	<p><b>Does the development have the potential to affect the woodland through changes to air quality or to ground water (through pollutants or changes in hydrology)? If so, has an assessment been carried out and appropriate mitigation proposed?</b> Impacts from air and water pollution and hydrological changes have the potential to occur at significant distances from the source.</p> <p>Consider a Hydrological Impact Assessment to assess any change in hydrology (quality and quantity of water) and any potential effects. This is of particular importance to ancient gill woodlands as they often contain important communities of lower plants (mosses, liverworts, and lichens). Is there a need for a tailored assessment of pollutants on industrial developments?</p>	<p>A hydrological assessment has been carried out for the site- see that respective reports for its recommendations for conserving water and aquatic environments on and near to site; including water flows and type of runoff, water quality. The proposed operations for clay extraction pits and for construction of roads and CMRF building and other site facilities hydrological impacts have been assessed. There will be some proposal related activities which may affect water flows and water quality, so mitigation measures such as settlement lagoon are proposed, and will need to be put in place. The removal of tree and vegetation cover will result in short and medium term net loss of woodland tree cover, shrub layer loss and ground flora loss on site. The proposals will thus be for phased vegetation removal, and phased re vegetation and re establishment of habitats, to minimise any potential for dispersal of pollutants from the site, including the need to regulate and to minimise any potential soil erosion/ pollutants entering the ghyll streams downstream, to south, east and west of site. See hydrology report for details on recommendations for hydrology on this site.</p>	<p>Phased clearance and phased site restoration to woodland is proposed. This is to minimise and manage any adverse effects. Protection for the ghyll stream to south of site, by controls on use of cement (and a Method Statement on cement use on this site regarding washing out facilities for this.) This is to protect the woodland on the site periphery and the aquatic environments on and beyond the site and in the wider landscape. To conserve water quality and to regulate runoff rates, a settlement Lagoon is proposed to be part of the proposals. A Hydrological Impact Assessment was commissioned by the applicant- for findings and recommendations see that respective report. See also Urban Edge Ecology Ltd reports and Conops Entomology report for conservation of site and wider site ecology recommendations and any further available details.</p>

	<b>Subject to be assessed</b>	<b>Record here the answer to the question</b>	<b>Record here any mitigation/ compensation measures proposed by the applicant, and what else the Local Planning Authority might require</b>
8	<p><b>Will access to the woodland increase?</b> There is the potential for the remaining woodland to be damaged by visitors, new gardens, and domestic pets. Impacts to consider include disturbance to birds, protected species, woodland flora and soil; fly tipping; garden encroachment, and cat predation. Also consider the impact of increased public use near veteran trees.</p>	<p>Potential degradation of the site during construction, and clay extraction, will be due to tree felling and loss, vegetation clearance and loss, soil stripping, thus lowering of the overall woodland quality by fragmenting it, with short term net loss of woodland. And nature conservation quality of the site and its surrounding associated woodland habitats due to proposed lorry movements, mud and soil erosion. Proximity of the public to the proposed access route for lorries may result in additional works to regulate traffic and to ensure safe passage of lorries. For indirect effects- see the LVIA addresses visual impacts and landscape effects of the proposals for the site and access route.</p>	<p>See Landvision LVIA for indirect impacts and effects on the receptors, including the baseline landscape of trees and woodland and see LVIA executive Summary and Conclusions, for the proposed mitigation and enhancements, by Landvision (2021). See also Landscape Plans by LandVision (2021) for mitigation, including planting for softening and screening of the site and site entrance areas. The ecology reports also contain recommendations for mitigation and enhancements which the Landscape Plans incorporate. See those respective ecology reports and their recommendations for restoration of function of woodland for ecology; see Conops Entomology Ltd, and Urban Edge Ecology Ltd (2020, 2021) reports for details.</p>
9	<p><b>What is the current function, and planned function, of the land to be lost to development?</b> Consider a full assessment of the land to be lost for its function in enhancing and or supporting the adjacent ancient woodland. For example, is the proposal located in a network of ancient woodland blocks? Could the development have a knock-on effect on a number of areas of ancient woodland?</p> <p>The application site could include areas of scrub and grassland which contribute to supporting species within the ancient woodland and thus contribute to its biodiversity.</p>	<p>The site area to be cleared is a non ANSW woodland. (See HLC maps in Appendix of LandVision LVIA for details.) In the short and medium terms, there will be an overall net loss of woodland, trees, associated flora and there will be a net loss of non ANSW woodland connectivity to ANSW woodland beyond. This is due to clearance with associated habitat fragmentation to make way for the proposed buildings, roads and activities on site. The proposals for a green buffer on the site periphery, which will be protected and retained, with a 15 metre buffer. This will help to maintain green edges to the site and some function and connectivity to and from the peripheral woodland habitats. The longer term compensatory planting and a net gain for invertebrates due to improvements in management for invertebrates. This mitigation will be put in place to address and try to reduce these adverse impacts on the site's woodland and on the links to the woodlands surrounding the site, which include ancient woodland blocks. The site will be returned to woodland, with long term positive benefits for through management as coppice and with improved woodland ride</p>	<p>Due to location within a network of ancient woodland blocks the site will be restored to woodland as soon as pragmatically possible. Phased restoration is proposed, with cyclical restoration to grassland and woodland; this is to enable connectivity to be re-established as swiftly as possible, and this will be to restore and enhance the function of woodland habitats after use for clay extraction and infilling. A short rotation coppice cycle and woodland ride management to benefit invertebrates, will be gains for the woodland ecology of the site.</p>

	<b>Subject to be assessed</b>	<b>Record here the answer to the question</b>	<b>Record here any mitigation/compensation measures proposed by the applicant, and what else the Local Planning Authority might require</b>
<b>10</b>	<p><b>Does the landscaping scheme include native species, preferably of local provenance?</b> Consider whether the landscaping includes native species preferably of local provenance. Exotic species can escape from gardens into the adjacent woodland and compete with native species. This process will degrade the woodland over time. Is the landscape proposal sympathetic to the surrounding habitats?</p>	<p>Yes. The woodland replanting scheme consists of native species, which occur in the local woodland. The landscape proposal is for woodland restoration on the site, with seeding of areas with local provenance wildflower meadow grassland and woodland rides. The woodland will be in a short coppice rotation and the hedges will be laid, to encourage wildlife. Woodland rides will be enhanced for butterflies (Wood White) and the landscape proposals are thus sympathetic to the surrounding habitats. See Landscape Plans by Landvision for details, (2021)</p>	