



# **West Winch Housing Access Road Arboricultural Impact Assessment**

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## Glossary of Abbreviations and Defined Terms

Abbreviation	Definition
ACoW	Arboricultural Clerk of Works
AIA	Arboricultural Impact Assessment
AMS	Arboricultural Method Statement
ATI	Ancient Tree Inventory
BS 5837	British Standard BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations
CEZ	Construction Exclusion Zone
EIA	Environmental Impact Assessment
NJUG	National Joint Utilities Group Volume 4 Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees’.
NPPF	National Planning Policy Framework
RPA	Root Protection Area
TRPP	Tree Removal and Protection Plan
TCP	Tree Constraints Plan
TPO	Tree Preservation Order
WWHAR	West Winch Housing Access Road



## 1 Introduction

1.1.1 WSP has been instructed by Norfolk County Council to provide arboricultural support for the West Winch Housing Access Road project (hereafter referred to as the 'Proposed Scheme').

1.1.2 The Proposed Scheme is an outline planning application which will provide the following:

- A 3.5km long carriageway to the east of West Winch connecting the A47 with the existing A10, providing access to proposed housing development;
- Modifications to the existing Hardwick Interchange and dualling of the existing A47 between Hardwick Interchange and the housing access road;
- The housing access road will be predominantly single carriageway, with a short section of dual carriageway on the approach to the A47 and feature a total of five roundabouts including;
  - A partially signalised roundabout junction where the housing access road meets the A47;
  - A roundabout on the housing access road providing access to the Hardwick Green (i.e. Hopkins Homes) planned development, plus two roundabout junctions to accommodate connections to further housing development;
  - A roundabout at the southern end of the housing access road, providing a connection to the existing A10 with new signalised crossings nearby;
- Treatment of local roads severed by the housing access road including an overbridge at Rectory Lane to accommodate road and bridleway



users, and closure of Chequers Lane where it crosses the scheme with an at-grade signalised crossing, to maintain east to west access;

- Modifications to the existing A10 to improve safety and support its repurposing as a local traffic route;
- Construction of drainage features, including basins, and associated maintenance access tracks;
- Landscaping, and connections for non-motorised users;
- Utility diversions, including National Grid gas mains;
- Demolition of Hill Cottages on A47 Constitution Hill; and
- Temporary use of land during construction for working areas, haul routes, site compounds, and storage.

1.1.3 The purpose of this arboricultural report is to identify all trees which may be affected by the Proposed Scheme, to assess the impact of the Proposed Scheme upon those trees and to recommend such protection measures as are necessary to ensure the health of retained trees.

1.1.4 The scope and level of detail included within this report is commensurate with that required for the consideration of arboricultural features as part of the Proposed Scheme.

1.1.5 This standalone report (and its associated appendices) is intended to be read as part of the wider Environmental Statement (ES) with particular reference to **Chapter 8 Biodiversity** and **Chapter 9 Landscape and Visual**. Additional supporting information is presented in **Appendices A to E**.

## 1.2 Legislative Framework, Policy and Guidance

Legislative framework

1.2.1 The applicable legislative framework is summarised as follows:

- The Town and Country Planning Act 1990 (**Ref. 1**)



- Town and Country Planning (Tree Preservation) (England) Regulations 2012 (**Ref. 2**)
- Town and Country Planning (Trees) Regulations 1999 (**Ref. 3**)
- Forestry Act 1967 (**Ref. 4**)
- The Hedgerows Regulations 1997 (**Ref. 5**); and
- The Natural Environment and Rural Communities (NERC) Act 2006 (**Ref. 6**)

#### Policy

- National Planning Policy Framework (NPPF) (revised December 2023) (**Ref. 7**);
- King's Lynn & West Norfolk Borough Council Local Development Framework - Core Strategy (adopted 2011) (**Ref. 8**); and
- North Runcton and West Winch Neighbourhood Plan 2016-2026 (adopted 2017) (**Ref. 9**).

#### Guidance

1.2.2 The following guidance documents have been used during the preparation of this report:

- British Standards Institute. BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations. London: BSI (**Ref. 10**);
- Forestry Commission and Natural England, Ancient woodland, ancient trees and veteran trees: protecting them from development (2022) (**Ref. 11**);
- Ancient Tree Forum, Ancient and other veteran trees: further guidance on management (2013) (**Ref. 12**);



- Tree Preservation Orders and trees in conservation areas (2014) (**Ref. 13**).

### 1.3 Consultation, Scope and Methodology

Consultation undertaken to date

1.3.1 At the time of writing, no consultation activities have been undertaken in preparation of this report.

Scope of the assessment

1.3.2 The scope of this assessment has been established with reference to British Standard *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations* (BS 5837 (**Ref. 10**)). The scope of assessment is to evaluate the effects of the Proposed Scheme on arboricultural features and where necessary recommend mitigation.

1.3.3 Information provided complies with the requirements of BS 5837 and includes reference to the following:

- results of a BS 5837 walkover survey;
- an Arboricultural Impact Assessment (AIA); and
- an Outline Arboricultural Method Statement (AMS).

1.3.4 BS 5837 does not provide explicit parameters for measuring the sensitivity of an arboricultural features nor does it provide a methodology for the classification of effects. However, it does provide guidance on how to assess the quality of an arboricultural feature and further recommends an evaluation of impacts, both direct and indirect. Impacts should be defined as an assessment of arboricultural removals and identification of matters to be addressed within an AMS.

1.3.5 The assessment includes specific reference to the effects of tree loss and other potentially damaging activities which could foreseeably occur in the vicinity of retained trees. Further reference is made concerning



recommendations for mitigation, including those matters which require inclusion within an AMS.

- 1.3.6 BS 5837 does not interpret the significance of effect in EIA (Environmental Impact Assessment) terms of the Proposed Scheme's impact on these trees but enables informed decisions to be made regarding the removal and retention of arboricultural features in the context of the development. The EIA significance of effect of the tree removal as an ecological or landscape resource are considered in **Chapter 8 Biodiversity** and **Chapter 9 Landscape and Visual**.

Supporting documents

- 1.3.7 To provide supporting information for the assessment process, the following plans have been prepared:
- **Appendix C:** Tree Constraints Plan (TCP)
  - **Appendix D:** Tree Removals and Protection Plan (TRPP)

#### **Elements Scoped out of the Assessment**

- 1.3.8 Access facilitation pruning requirements necessary to enable construction are excluded from this assessment. The precise spatial requirements associated with construction activities would be determined at detailed design. These include vertical and lateral clearances for machinery operation, temporary sightlines and those required for the erection of temporary hoarding. Pruning requirements associated with these activities will generally only become apparent during detailed design. A draft schedule of pruning works should be compiled during detailed design and finalised following contractor engagement.
- 1.3.9 Arboricultural impacts which may arise during operation phase of the Proposed Scheme are excluded from this assessment. Routine maintenance activities would typically include pruning of branches to maintain visibility splays and access routes.





1.3.10 Impacts associated with installation or diversion of services by statutory undertakers within the Proposed Scheme boundary are excluded from this assessment.

1.3.11 Air quality impacts on trees is excluded from this assessment. Cumulative impacts from external developments associated with the adjoining West Winch Strategic Growth Area's have been excluded from this assessment.

### **Elements Scoped into the Assessment**

#### **Construction Phase**

1.3.12 The following elements are considered to have potential to give rise to arboricultural impacts during construction of the Proposed Scheme and have therefore been considered within this assessment:

- Removal of arboricultural features; and
- Damage to soil and tree roots / canopies of retained trees that may result in deterioration of tree condition and reduces tree longevity e.g. soil stripping.

#### Extent of the study area

1.3.13 The arboricultural study area (hereafter referred to as 'Study Area') covers the extents of the Proposed Scheme boundary plus up to a further 15m. The purpose of this 15m beyond the Proposed Scheme boundary is to ensure compliance with BS 5837 which recommends that all arboricultural features whose Root Protection Areas (RPAs) and crowns may be impacted are identified and surveyed. BS 5837 has a maximum RPA radius of 15m, hence the extent of the Study Area.

#### Method of baseline data collection

1.3.14 Baseline data collection has been undertaken with reference to BS 5837. Details of methods used are presented in **Appendix A**. Baseline collection includes the following sources:

- an arboricultural desk study; and



- a walkover survey of arboricultural features within the Study Area.

### **Desk Study**

1.3.15 A desk study was undertaken on 9 October 2023 to identify specific statutory and non-statutory arboricultural constraints which may apply to arboricultural features within the Study Area. Refer to Section 2 for further discussion of desktop findings. The desk study was undertaken to establish the following statutory and non-statutory arboricultural constraints:

- Tree Preservation Orders (TPOs);
- conservation areas;
- ancient woodland; and
- ancient or veteran trees.

### **Walkover Surveys**

1.3.16 A walkover survey of trees within the Study Area was undertaken between 8 and 10 August 2023. The survey was undertaken to comply with BS 5837 and details of the method used are presented in **Appendix A** inclusive of a veteran/ancient tree survey methodology.

1.3.17 Baseline surveys have been calibrated to topographical survey information from a .DWG entitled '49095NOLS-01A\_08A' (dated 3 May 2023) and Ordnance Survey Mastermap information (dated 20 September 2022).

### **Assessment Methodology**

1.3.18 The arboricultural assessment has been informed by a .DWG entitled 'Scheme Overview Plan 2' (dated 17 October 2023). This design information comprises of a new road carriageway, pavements, earthworks, drainage features, haul roads, site compounds and areas of permanent land strip. Arboricultural features located within the Proposed Scheme are reported to be removed. Arboricultural features to be removed outside the Proposed Scheme footprint are further discussed in Sections 4.2.2 to 4.2.5.



## 2 Desk Study Findings

2.1.1 The desk study confirms the absence of TPOs, conservation areas and ancient woodland within the Study Area.

2.1.2 The Ancient Tree Inventory (ATI) records seven trees as ancient or veteran within the Study Area. Details on these trees are provided below in **Table 3-1** and were uploaded to the ATI in January 2010. No photographs are available in the ATI for these trees.

**Table 2-1 – Veteran and ancient trees recorded in the ATI within the Study Area**

Tree ID	Species	Tree Form	Standing or Fallen	Living status	Stem Girth (m) at 1.3m	Veteran Status	Grid reference
49913	Oak	Pollard	Standing	Alive	6.8m	Ancient tree	TF 6419 1710
49914	Oak	Pollard	Standing	Alive	6.8m	Ancient tree	TF 6420 1715
51607	Oak	Pollard	Standing	Alive	4.3m	Veteran tree	TF 6410 1720
51763	Oak	Pollard	Standing	Alive	4.1m	Veteran tree	TF 6420 1700
51764	Oak	Pollard	Standing	Alive	4.1m	Veteran tree	TF 6430 1701
52254	Oak	Pollard	Standing	Alive	3.5m	Veteran tree	TF 6430 1690
52388	Oak	Pollard	Standing	Alive	3.3m	Veteran tree	TF 6400 1720

2.1.3 Locations of ATI records from **Table 3-1** were site-verified by a qualified arboriculturist during the arboricultural survey based on the veteran tree survey methodology outlined in **Appendix A**. None of the trees at the locations recorded in ATI were verified as ancient or veteran. A summary of site observations were:



- 49913 and 49914 are plotted within woodland edges containing mature oaks with stem girths up to 2.5m. No tree with 6.8m girth was found at the ATI plotted locations.
- 51607 is plotted within woodland containing mature oaks with stem girths up to 3.1m. No tree with 4.2m girth was found at the ATI plotted location.
- 51763 and 52254 are plotted within a cultivated field devoid of trees.
- 51764 is plotted within a location of the A47 verge which is devoid of trees.
- 52388 is plotted within woodland containing semi-mature oaks with stem girths up to 1.8m. No tree with 3.3m girth was found at the ATI plotted location.



### 3 Arboricultural Survey Findings

#### 3.1 General Site Description

3.1.1 The Study Area is located within land to the east of West Winch village and approximately 2 km south of King’s Lynn town centre. The Study Area runs between the A47 (northern extent) and the A10 (southern extent) and intersects two minor roads (Chequers Lane and Rectory Lane).

3.1.2 The Study Area has flat open terrain and partly intersects various agricultural fields. The Study Area margins various residential properties located to the southern half of the Proposed Scheme.

#### 3.2 Walkover Survey Findings

3.2.1 An arboricultural survey schedule detailing information about trees in the Study Area is presented in **Appendix B. Table 4-1** summarises the number of trees surveyed and their tree quality categories. The locations of arboricultural features are shown on the TCP of **Appendix C**.

**Table 3-1 – Summary of tree quality categories**

BS 5837 Category	Quality	Individual Tree	Group	Hedgerow	Woodland	Totals
Category A	High	20	1	0	1	22
Category B	Moderate	42	19	0	1	62
Category C	Low	45	37	19	0	101
Category U	Very Low	8	3	1	0	12
Totals	No data	115	60	20	2	197

3.2.2 Some sections of the Study Area, generally in agricultural land use, contain limited tree cover. Individual trees, hedgerows and tree groups are largely concentrated at field boundary margins with the existing road network i.e. Hardwick Roundabout, Constitution Hill Roundabout, A10, A47, Rectory Lane and Chequers Lane.



- 3.2.3 Approximately 38% of surveyed trees were mature and nearly 43% of surveyed trees were assessed to be either high or moderate quality.
- 3.2.4 The northern extent of the Study Area adjoins Hardwick Roundabout which is margined by mixed age tree species of low quality. 10 moderate quality trees are located approximately 30m northeast of Hardwick Roundabout and form part of a mature linear boundary planting.
- 3.2.5 The northern third of the Study Area contains four high quality trees which are located 70-200m south of Constitution Hill Roundabout. Two of these trees are assessed to be veterans.
- 3.2.6 Contiguous moderate to low quality tree cover flanks the existing A47. Five high quality trees are located to the northern side of the A47 at this location. Two of these trees were assessed to be veteran.
- 3.2.7 Over 10ha of contiguous woodland is located to the eastern extent of the Study Area and adjoins the southern side of the A47. This woodland is a combination of high quality and moderate quality woodland. The high quality woodland appears bound to the west and south by an existing ditch line and is locally referred to as Sheep's Course Wood. Sheep's Course Wood includes a County Wildlife Site which is bound to the west by younger moderate woodland. Four high quality trees are located 0-80m south of Sheep's Course Wood. Two of these trees were assessed to be veteran.
- 3.2.8 The lower half of the Study Area contained seven high quality trees (including one veteran tree) and 22 moderate quality arboricultural features. These arboricultural features are generally located between Rectory Lane and the A10 and provide important screening to various residential properties located in this section of the Proposed Scheme.



## 4 Arboricultural Impact Assessment

### 4.1 Assumptions

4.1.1 This AIA report has been compiled on the basis of the following assumptions:

- All construction and demolition activities will be confined to the Proposed Scheme boundary (as shown by the 'Proposed Scheme boundary' outline of the TCP and TRPP).
- All construction and demolition activities will be excluded from tree protection fencing indicated on the TRPP.
- The reported extent of W102's loss is based upon full tree removal within the Proposed Scheme boundary with the exception of one area as further detailed in Section 4.2.3.
- Full removal of G126, G147, G155, H160, G164, G167, G168 and G169 within the Proposed Scheme boundary is assumed as further detailed in Section 4.2.4.
- Mitigation/protection measures (in addition to tree protective fencing) will be required for retained arboricultural features identified by orange label on the TRPP. Refer to Section 4.3 for discussion on site-specific locations. No adjusted RPAs (to take account of natural root barriers or topography) have been used for the TCP or TRPP.

### 4.2 Removed Arboricultural Features

4.2.1 The Proposed Scheme in relation to arboricultural features is shown in the TRPP of **Appendix D**. The Proposed Scheme will result in varying extents of removal for the following 49 arboricultural features:

- five high quality (T61, T62, T90, T116 and T165);
- nine moderate quality trees (T63, T117, T123, T125, T145, T146, T149, T150 and T166);
- seven low quality trees (T64, T65, T67, T136, T137, T151, T159);



- two very poor quality trees (T66 and T106);
- three moderate quality tree groups (G68, G118 and G148);
- five low quality tree groups (G147, G155, G167, G168 and G169);
- seven low quality hedgerows (H42, H83, H84, H124, H132, H144 and H160);
- one very low quality hedgerow (H133);
- partial removal of one moderate quality woodland (W102);
- partial removal of one moderate quality tree group (G121);
- partial removal of two low quality groups (G126 and G164); and
- partial removal of one low quality hedgerow (H85).

4.2.2 For all tree works, tree clearance contractors should aim to keep arisings in as large pieces as practicable – particularly for mature trees which provide higher deadwood habitat value. It is recommended that all arisings from tree works are stored as near as practicable to areas of tree clearance for continuity of deadwood habitat.

#### Individual trees

4.2.3 All individual trees to be removed are due to their stem location within the Proposed Scheme footprint as presented on the TRPP except T66 (very low quality), T146 (moderate quality) and T159 (low quality). Rationale for these removals are as follows:

- Approximately 30% of T66's RPA would be lost to the Proposed Scheme's earthworks with an assumed 2m wide external working width. This is an unsustainable amount of RPA removal for a tree in poor physiological condition.
- T146 would require removal due to severance of its structural roots caused by the Proposed Scheme's earthworks.





- T159 would require removal due to its stem location within an assumed temporary works area to be soil stripped.

#### Woodland

- 4.2.4 Part of the Proposed Scheme's road alignment intersects contiguous woodland of moderate quality (W102). W102 would require removal within the wider Proposed Scheme boundary with the exception of an area to the north-east extent of W102. It is assumed that a 5m wide tree clearance buffer would be required beyond the Proposed Scheme footprint at this location.
- 4.2.5 At detailed design stage, it is recommended that detailed tree constraints within W102 are more accurately assessed as construction requirements become available to ensure tree loss is minimised. This may require further arboricultural and topographical surveys.

#### Tree groups and hedgerows

- 4.2.6 Tree groups/hedgerows requiring removal are generally based on recorded canopy locations relative to the Proposed Scheme footprint and/or the Proposed Scheme boundary.
- 4.2.7 Tree groups and hedgerows located within the Proposed Scheme footprint would require removal. Eight low quality arboricultural features would require full removal within the wider Proposed Scheme boundary (G126, G147, G155, H160, G164, G167, G168 and G169). It is assumed these arboricultural features would require full removal within the Proposed Scheme boundary to allow assumed temporary working areas that would be soil stripped.
- 4.2.8 Further consideration should be given to fragmented tree group/hedgerows at detailed design stage as construction requirements become available to ensure tree loss is minimised. This may require further arboricultural and topographical surveys.



### 4.3 RPA Incursions

4.3.1 36 arboricultural features require mitigation in addition to tree protection fencing identified on the TRPP as listed below:

- Nine high quality arboricultural features (T58, T59, T94, W101, T105, T107, T111, T112 and G120) inclusive of four veteran trees.
- 12 moderate quality arboricultural features (T13, G18, T19, T35, T48, G78, T86, T134, G156, T187, T188 and T194).
- 15 low quality arboricultural features (G1, G80, T114, G152, T153, G158, G170, G171, G172, G173, G186, T190, G193, T196 and G197).

4.3.2 It is recommended that further consideration should be given to trees discussed below in Sections 4.3.3 to 4.3.9, at detailed design stage once engineering needs and ground level changes become more defined. Subject to confirmation of temporary access requirements at detailed design stage, retained RPAs should form the basis of Construction Exclusion Zones (CEZs) as specified in an AMS.

4.3.3 Works associated with the Proposed Scheme footprint do not directly impact retained RPAs of G1, G156, G173, G186, T187, T188, T190, G193, T194, T196 and G197 however some RPA sections are contained within the Proposed Scheme boundary. It is assumed RPA sections (not enclosed by tree protection fencing) will be protected through the combined use of appropriate ground protection and no ground level changes within retained RPAs.

4.3.4 RPA sections of T13, G18, T19, T35, T86, T105, G152, T153, G158, G171 and G172 appear impacted by the Proposed Scheme where road/path realignments tie in with existing hardsurfaced areas covering RPAs. These arboricultural features will be retained on the assumption retained road/path subbase layers can serve as a protective barrier to retained RPAs and no excavation into unmade ground will be required within retained RPAs.



- 4.3.5 A RPA section of T48 appears impacted by a new agricultural access track. In the first instance it is recommended that, at detailed design stage, this track alignment is fully microsituated outside the RPA of T48. If RPA incursions from the path alignment cannot be avoided/reduced then it is assumed that track located in T48's RPA would be installed using no-dig construction techniques.
- 4.3.6 RPA sections of T58 (veteran tree) and T59 are encroached by the Proposed Scheme associated with a new roundabout. A section of T94 (veteran tree) RPA is encroached by the Proposed Scheme associated with a new road alignment. With mitigation in place the trees should tolerate the RPA encroachment. It is recommended in the first instance that, at detailed design stage, regrading extents/depths associated with the Proposed Scheme are microsituated outside these RPAs wherever possible. Where encroachment of the Proposed Scheme into circular RPAs cannot be avoided, additional ground for tree roots contiguous to the existing RPAs would be provided within a fenced off area.
- 4.3.7 Shallow ground level increases of up to 75mm above existing levels are proposed in the northern RPAs of G78 and G80. Shallow ground level increases of up to 25mm above existing levels are proposed in the eastern RPAs of W101, W102 and G120. It is recommended that all ground level changes within RPAs of retained arboricultural features are supervised under direction of an Arboricultural Clerk of Works (ACoW). At detailed design stage, it is recommended that impacts of RPA incursion within W101, W102 and G120 are more definitely assessed following further arboricultural and topographical surveys.
- 4.3.8 RPA sections of T105, T107 (veteran tree), T111 (veteran tree), T112 and T114 appear impacted by the Proposed Scheme where a road realignment widens to the north east side of the A47. Layby/footway widening to the north east side of the A47, undertaken between September 2022 and July 2023, appears to have disturbed RPAs. It is understood that construction and demolition activities associated with the Proposed Scheme would be confined to extents of existing hard surface. These arboricultural features will be



retained on the assumption retained road/path subbase layers can serve as a protective barrier to retained RPAs and no excavation into unmade ground will be required within retained RPAs.

- 4.3.9 Ground level increases of up to 1m above existing levels are proposed in the western RPA of T134. Additional rooting volume contiguous to the existing RPA has been provided within fenced off areas where encroachment of the Proposed Scheme into T134's circular RPA is unavoidable.

#### 4.4 Pruned Arboricultural Features

- 4.4.1 A comprehensive works specification of pruning should be produced at detailed design stage once engineering requirements become defined regarding temporary working areas. This would likely include arboricultural features identified for partial removal and retained arboricultural features adjacent to new path networks or new roads.

- 4.4.2 All tree works undertaken must comply with *British Standard 3998:2010 – Tree Work Recommendations* (**Ref. 14**) and should therefore be carried out by skilled tree surgery contractors.

#### 4.5 Other Arboricultural Impacts

- 4.5.1 Other identified arboricultural impacts associated with the demolition and construction work for the Proposed Scheme are recorded in **Table 5-1**. These arboricultural impacts are activities which have the potential, if uncontrolled, to cause damage to arboricultural features which are retained.
- 4.5.2 **Table 5-1** also provides details of the arboricultural features which are at risk of damage, the likely cause of damage and the mitigatory measures which are required. Implementation of the recommended mitigation measures will be sufficient to ensure that arboricultural features can be retained without significant loss of value or a notable reduction in health or longevity.



**Table 4-1 – Other identified arboricultural impacts, proposed mitigation and likely effects**

Features	Cause of Impact (construction of)	Potential Impact	Mitigation Measures
All retained features	General contractor spatial working requirements during demolition and construction (below ground impact).	Soil compaction and root damage for contractor spatial working requirements.  Loss of vitality and decline in health. Reduction in quality of trees / potential death of trees.	Establishment of CEZs around retained tree RPAs for duration of demolition and construction as outlined in an AMS.  Mitigation to consider combined use of ground protection, tree protection fencing, 'no dig' construction methods within RPAs of retained trees, no ground level changes within the RPAs of retained trees and precautionary working methods under ACoW supervision.  Permitted development activities should refer to constraints information provided in the TRPP and adopt precautionary working methods in line with NJUG Volume 4 ( <b>Ref. 15</b> ).



Features	Cause of Impact (construction of)	Potential Impact	Mitigation Measures
All retained features	General contractor spatial working requirements during demolition and construction (above ground impact).	Injurious contact with above ground elements of retained trees. Loss of vitality and decline in health. Reduction in quality of trees / potential death of trees.	As above and also pruning to be determined prior to commencing all activities.

4.5.3 Details of the mitigation measures set out in this report are identified on the TRPP and should be viewed in conjunction with the outline AMS. Through implementing appropriate tree protection measures, all retained trees can be kept without detrimental impact on them.

#### 4.6 Arboricultural Method Statement

4.6.1 An outline AMS is included in **Appendix E**. The AMS adopts a precautionary approach to tree protection and addresses activities which have the potential to cause damage to retained trees.

4.6.2 The AMS addresses, in principle, the following matters which are of relevance to the Proposed Scheme:

- arboricultural monitoring;
- tree protection fencing;
- ground protection;
- tree pruning; and
- special construction techniques.

4.6.3 It is recommended that this AMS be viewed as a 'living document'. It should therefore be reviewed, and if necessary updated as and when required. It is



anticipated that a pre-commencement site meeting would be required with the Local Planning Authority Tree Officer to confirm tree protection measures.

#### **4.7 Difficulties and Uncertainties**

4.7.1 Direct access to trees for the arboricultural survey was possible for most arboricultural features within the Study Area. Ivy was not removed for inspection or accurate stem measurements. Where access was not available the features were surveyed from neighbouring land and dimensions were estimated.

4.7.2 An area of trees has not been subject to arboricultural surveys within the Study Area due to post-survey revisions of the Proposed Scheme boundary. Unsurveyed vegetation is highlighted on pages 5 and 6 of the TCP and the TRPP and has been identified using aerial photography. Due to these features being unsurveyed, it is not possible to definitively identify attributes such as tree species, quality category or stem diameter nor can the presence of veteran/ancient trees be entirely discounted.

4.7.3 Six arboricultural features (H52, T53, H54, G55, H56 and T57), previously surveyed in August 2021, were not accessible during arboricultural surveys undertaken in August 2023. It is assumed this baseline survey information is unchanged for the purpose of this report's arboricultural assessment.

4.7.4 At detailed design stage, it is recommended that:

- extents of removal within tree groups/woodlands/hedgerows are more definitively assessed once engineering needs, temporary access requirements and ground level changes become more defined.
- Further consideration should be given to retained trees subject to discussed in Sections 4.3.3 to 4.3.9, once engineering needs, temporary access requirements and ground level changes become more defined.



## 4.8 Summary

4.8.1 A walkover survey of the arboricultural features within the Study Area was undertaken on 8 to 10 August 2023. The arboricultural survey was undertaken in accordance with BS 5837 and arboricultural features were plotted using a combination of topographical survey information, Ordnance Survey Mastermap information and aerial imagery.

4.8.2 A total of 197 arboricultural features were surveyed, consisting of 115 individual trees, 60 tree groups, 20 hedgerows and two woodlands. 22 arboricultural features were assessed to be high quality, 62 features were moderate quality, 101 features were low quality and 12 features were very low quality.

4.8.3 A desk study undertaken in October 2023 confirmed the absence of TPOs, conservation areas and ancient woodland within the Study Area. The desk study identified the presence of seven ancient/veteran trees recorded on the ATI as outlined in Section 2. No trees at these locations recorded in ATI were verified as ancient or veteran however seven arboricultural features were identified as veteran trees (T58, T94, T98, T107, T111, T161 and T162).

4.8.4 The extent of potential tree loss is indicated on the Tree Removal and Protection Plan of **Appendix D**. Overall, the Proposed Development would result in varying extents of removal to 49 arboricultural features including:

- Removal of five high quality individual trees (T61, T62, T90, T116 and T165);
- Removal of nine moderate quality individual trees (T63, T117, T123, T125, T145, T146, T149, T150 and T166), three moderate quality tree groups (G68, G118 and G148);
- Partial removal of one moderate quality woodland (W102) and one moderate quality tree group (G121);
- Removal of seven low quality individual trees (T64, T65, T67, T136, T137, T151, T159), five low quality tree groups (G147, G155, G167,





G168 and G169) and seven low quality hedgerows (H42, H83, H84, H124, H132, H144 and H160).

- Partial removal of two low quality groups (G126 and G164) and one low quality hedgerow (H85).
- Removal of two very poor quality individual trees (T66 and T106) and one very low quality hedgerow (H133).

4.8.5 All other arboricultural features can be retained and protected through demolition and construction. Principles for tree protection are set out in the outline AMS which includes the need for arboricultural supervision, tree protection fencing, ground protection, tree pruning and special construction techniques.

4.8.6 At detailed design stage, it is recommended that:

- extents of removal within tree groups/woodlands are more definitively assessed once temporary access requirements become more defined.
- further consideration should be given to retained trees discussed in Sections 4.3.3 to 4.3.9, once engineering needs, temporary access requirements and ground level changes become more defined.
- unsurveyed vegetation (section 4.7.1) and arboricultural features requiring updated surveys (Section 4.7.2) is surveyed to fully assess associated impacts of the Proposed Scheme.



## 4.9 References

- **Reference 1:** HM Government. (1990) [Town and Country Planning Act 1990](#)
- **Reference 2:** HM Government. (2012) [Town and Country Planning \(Tree Preservation\) \(England\) Regulations 2012](#)
- **Reference 3:** HM Government. (1999) [The Town and Country Planning \(Trees\) Regulations 1999](#)
- **Reference 4:** HM Government. (1967) [Forestry Act 1967](#)
- **Reference 5:** HM Government. (1997) [The Hedgerows Regulations 1997](#)
- **Reference 6:** HM Government. (2006) [The Natural Environment and Rural Communities \(NERC\) Act 2006](#)
- **Reference 7:** HM Government. (2023) [National Planning Policy Framework](#)
- **Reference 8:** King's Lynn & West Norfolk Borough Council. (2006) [Local Development Framework - Core Strategy](#)
- **Reference 9:** HM Government. (2006) [The Natural Environment and Rural Communities \(NERC\) Act 2006](#)
- **Reference 10:** British Standards Institution. (2012) *British Standard BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*. London: BSI
- **Reference 11:** HM Government. (2022) [Ancient woodland, ancient trees and veteran trees: advice for making planning decisions](#)
- **Reference 12:** Lonsdale, D. (2013) [Ancient and other veteran trees: further guidance on management](#)



- **Reference 13:** HM Government. (2014) [Tree Preservation Orders and trees in conservation areas](#)
- **Reference 14:** British Standards Institution. (2010) *British Standard BS 3998:2010 Tree work – Recommendations*. London: BSI
- **Reference 15:** National Joint Utilities Group (NJUG). (2007) [Volume 4: NJUG](#)
- **Reference 16:** King's Lynn & West Norfolk Borough Council. (2023) [Tree Preservation Orders and trees in conservation areas](#)
- **Reference 17:** DEFRA (2023), [MAGIC database](#)
- **Reference 18:** Woodland Trust. (2023) [Ancient Tree Inventory](#)