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Arboricultural Impact Assessment for Streetly Hall Farm, Horseheath, CB21 4QG



**Arboricultural Report Ref: NWS 2022.095.1_Streetly Hall Farm – AD Plant
August 2023**

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Client	Streetly Hall Farm Limited Streetly Hall Farm, Horseheath, CB21 4QG
Site address	Streetly End, West Wickham, Cambridge CB21 4RP
Survey scope	BS 5837:2012 'Trees in relation to demolition, design and construction – Recommendations'
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Declaration of Compliance

The information which I have prepared and provided is true, and has been prepared and provided in accordance with the BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*. I confirm that the opinions expressed within this document are my bona fide professional opinions.

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Executive Summary

Streetly Hall Farm Limited commissioned Norfolk Wildlife Services to undertake an Arboricultural Impact Assessment for a proposed development site at Streetly End, West Wickham, Cambridge CB21 4RP.

It is proposed to construct a new anaerobic digestion plant to receive and process natural waste products. The scheme involves a new site entrance situated on the A1307 and a new access road to the anaerobic digestion plant.

The tree survey and report are in accordance to BS 5837:2012 “Trees in relation to design, demolition and construction- Recommendations”.

There are no trees relevant to the development that are protected by a Tree Preservation Order, and the site is not within a Conservation Area.

The construction of the new site access and visibility splay off the A1307 is not thought to impact the aesthetic or amenity value of the local landscape.

The construction of the proposed access road from the A1307 has the potential to impact trees and will require a no-dig cellular confinement system and barrier fencing during the construction phase of development.

The Tree Asset Plan displays the tree positions, radial spread of roots and canopies of trees, and is provided as a separate document (Ref: NWS 2022.095.1_Streetly Hall Farm - AD Plant TAP).

An Arboricultural Method Statement is required to guide the construction and establish a method of arboricultural supervision and monitoring. The Arboricultural method Statement will ensure there is minimal risk of adverse impact on the trees to be retained.

1. Introduction

1.1 Project brief

Streetly Hall Farm Limited commissioned Norfolk Wildlife Services to undertake an Arboricultural Impact Assessment for a proposed development site at Streetly End, West Wickham, Cambridge CB21 4RP.

It is proposed to construct a new anaerobic digestion plant to receive and process natural waste products. The scheme involves a new site entrance situated on the A1307 and a new access road to the anaerobic digestion (AD) plant.

The tree survey and report are in accordance to BS 5837:2012 “Trees in relation to design, demolition and construction- Recommendations”. The main focus of this report is detailing the impacts the development is expected to have on the trees growing around the site boundary.

1.2 Site location

The proposed development site is situated 10km west of Haverhill on agricultural land adjacent to New Hall Farm, Horsheath. The site is within South Cambridgeshire District Council.

The existing ground levels are considered even throughout the site, with a gradual sloping aspect south to north ranging from approximately 97m above sea level at the proposed entrance off the A1307 to approximately 74m above sea level at the AD plant position.

There is a raised bank that runs adjacent to the A1307 that will require excavating to achieve the sufficient ground levels for the entrance and visibility splay.

1.3 Drawings and associated documents

The following drawings have been supplied by Streetly Hall Farm Limited to assist with the impact assessment and to facilitate the production of a Tree Asset Plan (TAP).

- 27951 - 007 Rev K, 008 Rev B - EMAIL Issue 22.08.2023 - Proposed Site Layout (Without Levels or Contours)
- 27951 - 150 Rev F - Site Location Plan
- 27951 - 007 Rev K EMAIL Issue 17.08.2023 - Proposed Site Layout

The TAP and Tree Protection Plan (TPP) (Ref: NWS 2022.095.1_NWS TAP_Streetly Hall farm – AD Plant) are supplied as a separate document.

1.4 Statutory checks

Under the UK planning system the local planning authority has a statutory duty to consider the protection and planting of trees when granting planning permission for a proposed development.

A Tree Preservation Order (TPO) is an order made to protect trees which bring significant amenity benefit to an area. A TPO can be placed on a single tree or a group of trees if they are under threat from removal due to a development. It is a criminal offence to cut down, top, lop, uproot, willfully damage or willfully destroy a tree protected by that order.

It has been confirmed using the South Cambridgeshire District Council’s interactive map service¹ (22nd August 2023) that no relevant trees are subject to a TPO.

¹ [Search by map - South Cambs District Council \(scambs.gov.uk\)](https://www.scambs.gov.uk)

The development site is not within a Conservation Area.

A search using the Ancient Tree Inventory² did not discover any ancient or veteran trees within the development area.

1.5 Limitations to the survey

No formal assessment of the site soils has taken place as part of this report. The British Standard states that a soil assessment should be carried out by a competent person to establish the structure, clay content and potential for volume change of the soil if tree removal is necessary. A survey of this nature is considered outside the scope of this Arboricultural Impact Assessment. For guidance on soil structure in relation to construction, advice should be sought from an engineering consultant.

1.6 Limitations to the Arboricultural Impact Assessment

This report should be regarded as an initial arboricultural appraisal and should be used to inform the final design layout. Assessments or recommendations relating to tree protection zones, remedial tree works, protective fencing, foundation design, material specification and/or project design are not finalised within this report, and are based on the information supplied by the client at the time of the survey.

This survey is not a tree condition survey and should not be used to identify tree hazard or risk, or be used to provide information for risk indemnity purposes. If any trees are identified as being dangerous then comments shall be made with regards to the removal or retention according to the proposed development. A full inspection for Health and Safety purposes would identify faults and make relevant recommendations on an appropriate schedule of future inspections for faults.

² [Tree Search - Ancient Tree Inventory \(woodlandtrust.org.uk\)](http://woodlandtrust.org.uk)

2. Methodology

2.1 Surveying of trees

A site visit was carried out by James Allitt (Dip Arb Level 4 (ABC) of Norfolk Wildlife Services on 14th December 2022 to collect relevant data. All trees which could be affected by, or have an effect on, the proposal have been inspected and their details are listed in Appendix 1.

Trees were surveyed at ground level and no climbing inspection was undertaken.

The survey was based upon the information collected and the conditions on that day. The survey details quantitative data on the following:

- Tree species
- Tree height
- Stem diameter
- Height and direction of first significant branch
- Crown spread
- Age class
- Brief qualitative assessment on tree condition and future potential

Appendix 3 gives a full explanation of the survey terminology.

2.2 Tree assets

An assessment of the trees present was carried out following the guidance in BS 5837:2012. Trees were categorised as category A, B, C or U. Tree categories are indicated on the Tree Asset Plan (TAP) by the colour of the crown spread. A calculation in meters (m) is made for the theoretical Root Protection Areas (RPA).

A TAP is presented, with the tree numbers on the TAP corresponding to the numbers in the Tree Survey Schedule (TSS).

The TAP was used as a basis for the assessment of the potential impact to trees and the constraints they pose with the proposed layout. They are represented in two areas:

- *Below ground constraints:* The TAP shows the theoretical RPA for the trees as a circle. The RPA informs the closest positions of any future developments in relation to the protection of the minimum rooting area the tree requires to function.
- *Above ground constraints:* The TAP shows the crown spreads to allow their consideration as a direct constraint in design. The branch spreads were measured for this survey as per BS 5837:2012, but these measurements are estimates only and should not be taken as definitive. Where the crown spread exceeds the RPA in dimensions, the crown spread will be taken as the minimum area to protect.

3. Results and Evaluation

3.1 Summary of tree categories within the site

A schedule of results is given in Appendix 1, which contains all the information specified in section 4.4.2.5 of BS 5837:2012.

Data for 7 individual trees and 11 tree groups have been included within this report. Groups G5, G8 and G10 are classified as hedgerows and tree T2 is considered dead. The arboricultural qualities of the trees are considered moderate to high, with numerous trees providing a benefit to the landscape and hold biological interest. No trees were identified as veteran or ancient trees, however, a prominent (tree T4) has veteran features and a significant girth. A summary is listed in Table 1 below.

Table 1: Summary of tree categories

Category	Description	Tree group / numbers	Totals
A	Trees of high quality which should, where possible, be retained throughout any proposed development	T3, T4, T5, T6, T7 G3	5 trees, 1 tree group
B	Trees of moderate quality which should, where possible, be retained throughout any proposed development.	T1 G1, G2, G4, G6, G7, G9, G10, G11	1 tree, 8 tree groups
C	Trees of low quality which should not be considered a constraint to development.	G5, G8	2 tree groups
U	Trees which should be removed for sound management reasons, regardless of proposals.	n/a	0 trees

4. Arboricultural Impact Assessment

4.1 Background

The Arboricultural Impact Assessment sets out the impacts that the proposed new development and site entrances may have on trees and hedgerows, and is assessed using the drawings detailed in section 1.3.

Provisioning adequate space for construction (including scaffolding), landscaping and utility service runs must be considered, and appropriate measures taken to avoid the RPAs of the retained trees. Incursion from construction activities into an RPA will damage the roots through root severance or soil compaction. This will inhibit the tree's ability to take up the amount of water and nutrients needed in order to remain healthy. The impact from incursion into an RPA would be a decline in the tree's health, potentially resulting in premature death.

4.2 Analysis

Access

Group G8 - Proposed site access is from the A1307 and will involve some excavation to achieve the appropriate ground levels. Group G8 is a hedgerow that runs along the edge of the field boundary adjacent to the A1307. The G8 hedgerow has numerous gaps towards the western end where the proposed entrance is planned. It is thought a small amount of vegetation is to be removed, such that will not impact the amenity value and continuity of the hedgerow. Removal of shrubs should be undertaken between September and February to avoid the main bird nesting season.

Construction of the access road – impact to trees

The proposed access road runs north to south across existing agricultural fields and joins onto an existing farm track that is due to be upgraded to allow an increase in delivery vehicles. The working space for the access road is estimated to be of 10m width. The proposed access road runs adjacent to trees and vegetation and has the potential to cause damage if construction is allowed to enter into the RPA of the trees.

- Tree group G6 – It is estimated to be a distance of 20m between the RPA of G6 and the proposed access road. This is considered a sufficient distance so as not to cause an impact to the long-term health of these trees.
- Tree group G7 - It is estimated to be a distance of 24m between the RPA of G7 and the proposed access road. This is considered a sufficient distance so as not to cause an impact to the long-term health of these trees.
- Tree T4 is an over-mature oak that grows adjacent to the existing farm track. The upgraded access road needs to be improved by excavating approximately 300mm to provide a stable sub-surface for the increased traffic. Excavating to this depth increases the risk of impacting the long-term health and stability of tree T4 by potentially damaging important roots. To avoid excavating (and therefore prevent long-term impact to T4) a no-dig cellular confinement system is needed to dissipate the anticipated load. The proposed road shall be specified by an appropriate engineer. More information on specifications can be obtained at [Geosynthetics - Home](#).
- Tree T5 is a mature oak growing within a predominantly hawthorn hedgerow (G5). The edge of the RPA of T5 is measured at approximately 10m from the proposed access road. There is a risk that construction activities may encroach into the RPA of T5 and damage tree roots or

irreparably damage the soil structure leading to a decline in tree health. To prevent damage to the health of T5, protective barrier fencing shall be installed to the edge of the RPA to create a construction exclusion zone (CEZ).

- Hedgerow G5 grows adjacent to the proposed access road and may require a small section to be removed to allow construction of the no-dig cellular confinement system adjacent to tree T4. If removal is necessary, this should be completed between September and February to avoid the main bird nesting season.

Utilities connections

No details of utility runs or drainage have been provided. All underground utilities and drainage shall be designed to avoid entering into the RPA of trees.

Tree works / removal

- Removal of a small shrub within hedgerow G8 is necessary to allow the construction of the proposed new entrance off the A1307.
- A small section of hedgerow G5 may be required to be removed.

5. Conclusions

- Proposed AD plant access is from the A1307. It is anticipated that the loss of 1 or 2 small shrubs from G8 will not impact the aesthetic value or continuity of the hedgerow.
- The upgrading of the farm track has the potential to impact the long-term health of tree T4. A no-dig cellular confinement system is to be designed with the input from an engineer and arboriculturist.
- Tree T5 is at risk from construction activities and shall be protected using adequate barrier fencing to form a CEZ.

6. Recommendations

Issues to be addressed by an Arboricultural Method Statement:

- The positions of the CEZ fencing will be taken from the TSS in Appendix 1 (the positions are also displayed on the TPP) and shall extend to the edge of the calculated RPA radius or the edge of the canopy spread – whichever is the greatest.
- Any work within the RPA of tree T5 will be supervised by the project arboriculturist.
- The no-dig cellular confinement system for the upgrading of the farm track will be designed in conjunction with an engineer and arboriculturist.
- The material storage and contractors parking areas will be identified and constructed away from retained trees and hedges prior to plant and materials being delivered to site.
- A volume of water will be available at all times should a fuel/chemical/cement spill occur.
- Responsibilities and a method of arboricultural supervision and monitoring will be established to ensure there is minimal risk of adverse impact on the trees to be retained.

Signed:



Date:

22.08.2023

Appendix 1: Tree Survey Schedule – NWS 2022.095.1_Streetly Hall farm – AD Plant

Surveyor: J. Allitt

Date: 14.12.2022

Table 2: Tree Survey Sschedule

Ref.	Species	Height (m)	Stem Diam (mm)	Life Stage	Rem. Contrib.	General Observations	Retention Category	Spread	Crown Clearance (m)	Lowest Branch	RPA Radius (m)	RPA Area (m ²)
T1	Pedunculate Oak (<i>Quercus robur</i>)	13.0	420, 420, 300	Early Mature	40+ Years	Good overall Physiological and Structural condition.	B1	N:6 E:6 S:6 W:6	6.0	5(E)	8.0	201
G1	Oak (<i>Quercus sp.</i>) Hawthorn (<i>Crataegus sp.</i>) Field Maple (<i>Acer campestre</i>) Hazel (<i>Corylus avellana</i>)	5.0	200	Early Mature	40+ Years	Fair overall Physiological and Structural condition. Hedgerow with outgrown trees.	B2,3	N:3 E:3 S:3 W:3	1.0	1(S)	2.4	854
G2	Oak (<i>Quercus sp.</i>)	9.0	400	Early Mature	40+ Years	Good overall Physiological and Structural condition.	B1,2	N:5 E:5 S:5 W:5	3.0	3(E)	4.8	286
T2	Oak (<i>Quercus sp.</i>)	9.0	400	Dead	Dead	Dead	Not Recorded	N:4 E:4 S:4 W:4	5.0	4(E)	4.8	72

Ref.	Species	Height (m)	Stem Diam (mm)	Life Stage	Rem. Contrib.	General Observations	Retention Category	Spread	Crown Clearance (m)	Lowest Branch	RPA Radius (m)	RPA Area (m ²)
T3	Oak (<i>Quercus sp.</i>)	12.0	560, 480	Mature	40+ Years	Good overall Physiological and Structural condition.	A1,2	N:8 E:8 S:8 W:8	6.0	5(E)	8.9	249
G3	Mixed Broadleaves (<i>Mixed Broadleaves</i>)	9.0	300	Early Mature	40+ Years	Good overall Physiological and Structural condition.	A2,3	N:4 E:4 S:4 W:4	3.0	2(S)	3.6	9996
G4	Common Ash (<i>Fraxinus excelsior</i>)	15.0	600	Mature	40+ Years	Good overall Physiological and Structural condition.	B2	N:7 E:7 S:7 W:7	5.0	5(N)	7.2	220
T4	Pedunculate Oak (<i>Quercus robur</i>)	16.0	1000	Over Mature	40+ Years	Good overall Physiological and Structural condition.	A1	N:8 E:8 S:8 W:8	5.0	5(W)	12.0	452
T5	Pedunculate Oak (<i>Quercus robur</i>)	12.0	600	Early Mature	40+ Years	Good overall Physiological and Structural condition.	A1,2	N:6 E:6 S:6 W:6	5.0	4(W)	7.2	163
T6	Pedunculate Oak (<i>Quercus robur</i>)	12.0	600	Early Mature	40+ Years	Good overall Physiological and Structural condition.	A1,2	N:6 E:6 S:6 W:6	5.0	4(W)	7.2	163
T7	Pedunculate Oak	12.0	400	Early Mature	40+ Years	Good overall Physiological and	A1,2	N:6 E:6	5.0	4(W)	4.8	72

Ref.	Species	Height (m)	Stem Diam (mm)	Life Stage	Rem. Contrib.	General Observations	Retention Category	Spread	Crown Clearance (m)	Lowest Branch	RPA Radius (m)	RPA Area (m ²)
	<i>(Quercus robur)</i>					Structural condition.		S:6 W:6				
T8	Common Ash <i>(Fraxinus excelsior)</i>	5.0	400	Early Mature	20+ Years	Fair overall Physiological and Structural condition.	C1,2	N:3 E:3 S:3 W:3	1.0	1(S)	4.8	72
G5	Hawthorn <i>(Crataegus sp.)</i>	3.0	100	Semi Mature	40+ Years	Good overall Physiological and Structural condition.	C2,3	N:1 E:1 S:1 W:1	0.0	0(N)	1.2	401
G6	Elder <i>(Sambucus nigra)</i> Hawthorn <i>(Crataegus sp.)</i>	5.0	200	Early Mature	20+ Years	Fair overall Physiological and Structural condition.	B2,3	N:3 E:3 S:3 W:3	1.0	1(S)	2.4	584
G7	Oak <i>(Quercus sp.)</i> Common Ash <i>(Fraxinus excelsior)</i>	9.0	300	Semi Mature	40+ Years	Fair overall Physiological and Structural condition.	B2	N:3 E:3 S:3 W:3	2.0	2(S)	3.6	1972
G8	Oak <i>(Quercus sp.)</i> Hawthorn <i>(Crataegus sp.)</i>	2.0	100	Early Mature	40+ Years	Good overall Physiological and Structural condition.	C2,3	N:1 E:1 S:1 W:1	0.0	0(N)	1.2	680
G9	Mixed Broadleaves	7.0	400	Semi Mature	40+ Years	Good overall Physiological and	B1,2	N:4 E:4	2.0	2(S)	4.8	4954

Ref.	Species	Height (m)	Stem Diam (mm)	Life Stage	Rem. Contrib.	General Observations	Retention Category	Spread	Crown Clearance (m)	Lowest Branch	RPA Radius (m)	RPA Area (m ²)
	(Mixed Broadleaves)					Structural condition.		S:4 W:4				
G10	Hawthorn (<i>Crataegus sp.</i>) Blackthorn (<i>Prunus spinosa</i>)	4.0	300	Early Mature	20+ Years	Good overall Physiological and Structural condition.	B1,2	N:2 E:2 S:2 W:2	1.0	1(N)	3.6	829
G11	Pedunculate Oak (<i>Quercus robur</i>) Common Ash (<i>Fraxinus excelsior</i>)	16.0	700	Mature	40+ Years	Fair Physiological and Structural condition. Prominent trees in landscape.	B1,2	N:6 E:6 S:6 W:6	4.0	4(S)	8.4	1288
G12	Hawthorn (<i>Crataegus sp.</i>)	3.0	100	Semi Mature	40+ Years	Good overall Physiological and Structural condition.	C2,3	N:1 E:1 S:1 W:1	0.0	0(N)	1.2	401

Appendix 2: Photographs



Photo 1: Existing farm track near tree T4.



Photo 2: Route of proposed access track adjacent to T4



Photo 3: Tree group G6



Photo 4: Tree group G7

Appendix 3: Explanations of Tree Survey Schedule headings

Reference # (Ref.): This number identifies the trees and corresponds with the provided plans. Trees are prefixed T, groups G and hedges H. Where stumps are identified the suffix S will be used.

Species: The common and Latin name is given for each tree.

Height: Overall current height of the tree estimated in metres.

Stem Diameter (Stem Diam.): Measured at 1.5m above ground level as per Figure C1a) of BS 5837, or at an appropriate height, as per Figures C1b) to C1f) of BS 5837. Estimated stem diameter recorded in millimetres.

Life Stage: This refers to the age of the individual tree relating to the average life expectancy of each species in a similar environment.

Newly planted (NP) – a tree within 3 years after planting

Semi-mature (SM) – a tree within its first one third of life expectancy

Early-mature (EM) – a tree within its second third of life expectancy

Mature (M) – a tree in its final one third of life expectancy

Over-mature (OM) – a tree having reached its maximum lifespan and is declining in health and size due to old age

Veteran (V) – a tree that is of interest biologically, aesthetically or culturally because of its age, size and condition

Estimated Remaining Contribution (Rem. Contrib.): Has been estimated by subtracting the current age from the life expectancy of a tree in same location and condition. Each tree is given a retention category according to BS 5837:2012: <10 yrs; 10+ yrs; 20+yrs; 40+yrs

General Observations: Various comments relating to the tree's previous and possible future management e.g. the tree's physiological and/or structural condition that may affect their estimated life expectancy; nearby structures and services where trees and their future growth may have an impact; previous pruning history.

Retention Category: Based upon the categories in Table 1 of BS 5837: 2012 regarding tree quality assessment and suitability for retention.

Crown Spread: Estimated in metres and given at cardinal compass points.

Crown Clearance: Existing height of the canopy from ground level, measured in metres.

Lowest Branch: Existing height above ground level of the first significant branch, recorded in metres. Direction of growth may be given as a cardinal compass point, e.g. 3N.

RPA Radius: Calculation of the radius the Root Protection Areas based on the stem diameter(s), to inform the scheme designer of each tree/group's area of sufficient rooting volume that should be retained and protected. See section 4.6 of BS 5837: 2012 for details of the calculation.

RPA Area: A calculation derived from the single stem diameter taken from BS 5837:2012 Annex D, table D.1 Root Protection Areas

Appendix 4: Protective Barriers – Installation Methods

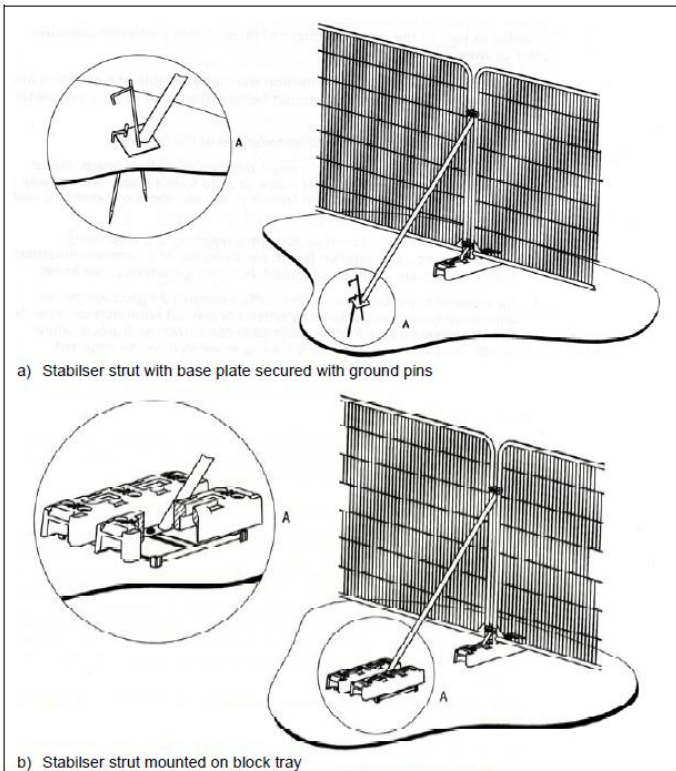


Figure 3: BS5837:2012 Examples of above-ground stabilising systems

