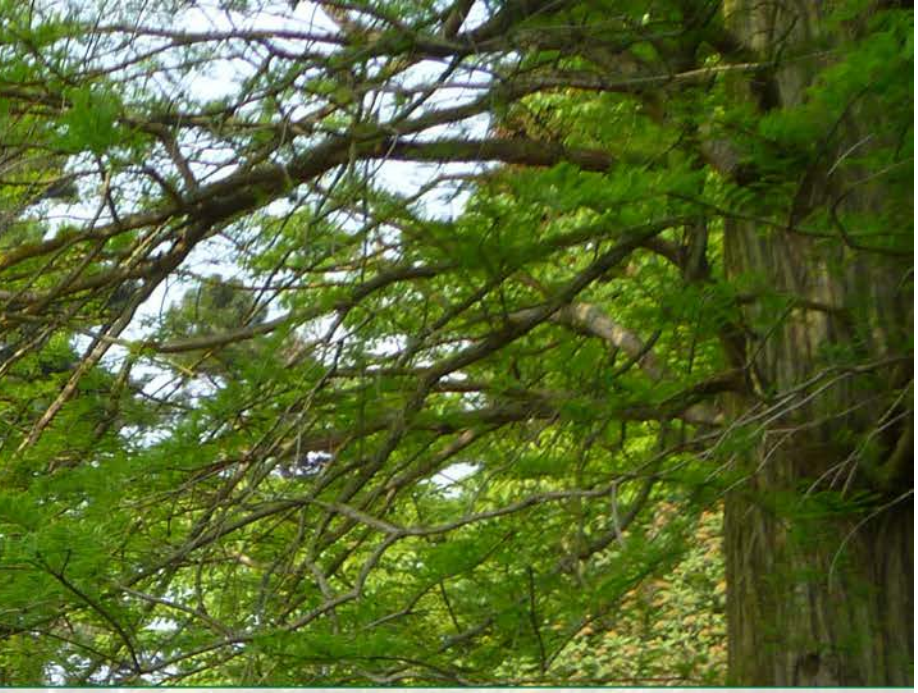
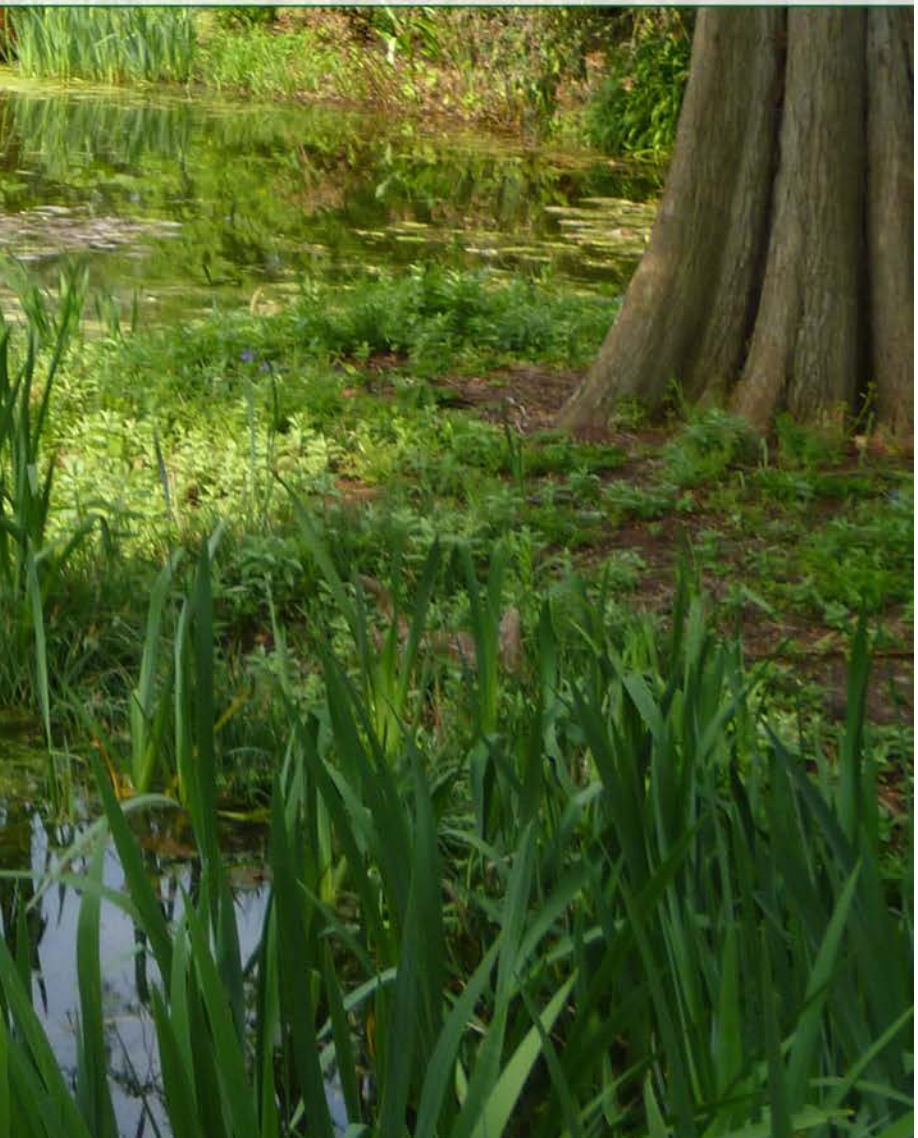


WHARTON
TREE & ECOLOGY CONSULTANTS



ARBORICULTURAL IMPACT ASSESSMENT

Former Goodfellows School
Spalding Common

REF NO.: 120616 0461 AIA V1 005
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Prepared For
Country Court Care Group

Millennium House
Dukesmead
Werrington
Peterborough
PE4 6ZN

Prepared By
Wharton Tree and Ecology Consultants Ltd

Minerva Mill
Station Road
Alcester
Warwickshire
B49 5ET

Telephone: 01789 459458
Fax: 01789 470887
Email: info@whartontrees.co.uk
Web: www.whartontrees.co.uk

QUALITY ASSURANCE

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Remarks	Version 1		
Date	12th June 2016		
Prepared by	Peter Wharton		
Qualifications	*BSc(Hons) FArborA MICFor (Chartered Arboriculturist)*		
Signature			
Checked by	Sebastian Onslow		
Qualifications	*FdSc Arb. TechArborA*		
Signature			
Authorised by	Peter Wharton		
Position	Director		
Signature			
Client number	0461		

SUMMARY

This survey and tree report includes records of 32 individual trees and one group of trees. These comprise of 3no. B category, 28no. C category and 3no. U category. This application considers all trees located on or within influencing distance of the proposed development area.

It has been considered desirable wherever possible that trees and groups of trees should be retained, although care has been exercised over misplaced tree preservation. In terms of the current site layout plan, due to the size and scale of building requirement there is conflict with the trees that cannot be avoided and therefore mitigation proposals are considered.

In total a combination of five C category individual and two U category trees will be removed in order to implement the design proposal or as part of good site management.

The justification for these removals should be referenced to the new opportunities for employment and the requirement for the development proposal. Section 5.1.1 of BS5837:2012 recognises that the competing needs of development mean that trees are only one factor requiring consideration. It also states that misplaced tree retention can be detrimental on a site where it will cause excessive pressure on those trees being retained and could necessitate their removal in the future.

The onsite trees to be retained should be proactively managed to ensure that they enhance the development and the wider environment. Therefore, this impact assessment provides detail of the measures and steps required to retain trees through and post development specifically through adequate supervision, tree protection and construction techniques. In the first instance it is recommended that the tree works are undertaken as specified in the associated Tree Schedule.

It is critical that all protective fencing is installed and erected and the CEZ enforced prior to the commencement of any works on site. Following installation of tree protection a site meeting will be undertaken with the Tree Officer to ensure satisfaction of all parties prior to any on site works commencing.

It is recommended that a suitable competent arboriculturist, undertakes the site supervision and monitoring works.

In order for tree and root protection measures to work effectively all personnel associated with the construction process must be familiar with the Tree Protection Plan.

Due to the trees to be removed being TPOed 6no. new trees will replace those trees on the eastern side of the site. This has been agreed in principle with the Councils' Tree Officer.

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1. INTRODUCTION/BACKGROUND

1.1 Terms of Instruction

1.1.1 This Arboricultural Impact Assessment has been commissioned by Country Court Care Group and is prepared in relation to the proposed development of a care home at the Former Goodfellows School, Spalding Common (see aerial photograph at Appendix 1).

1.1.2 The instruction is to fulfil the initial requirements of South Holland District Council, who require an arboricultural impact assessment to make an informed decision on planning application H16-0003-16.

1.1.3 The document is also intended as a reference point for all site operatives and a copy will remain with the site manager for the duration of the development.

1.1.4 This document may be used as a point of reference if there were to be a dispute over compliance with related planning decisions.

1.2 Scope of Project

1.2.1 The scope of this project is threefold:

I. Undertake a re-survey of trees on the site and within influencing distance of the site without prior reference to the proposed development.

II. Provide a tree constraints plan for the site including root protection areas, canopy spreads and shading arcs if necessary (orientation dependant).

III. Provide an arboricultural impact assessment (AIA) in relation to the design proposal, providing comment in relation to the building orientation. The AIA will assess the trees in relation to the proposals and the potential impacts the trees will have.

1.3 Documents Provided

1.3.1 As background information the following documentation has been provided.

Table 1: Document and Plans Provided

Document Description	Reference No.	Prepared By	Date
Topographical survey (.DWG format)	2019	BluePlan	15th December 2014
Pre Development Tree Condition Survey	-	Amber Arboricultural Consultancy	11th May 2015
Design & Access Statement and Planning Statement	PH/009/15	The Planning Hub	December 2015

Tree Preservation Order	No. 68 2005	South Holland District Council	2005
Site Location Plan	0176 (10)001 Rev A00	LineStyle Architecture	17th December 2015
Proposed Site Plan (.DWG format)	0176 (10)002 Rev A00	LineStyle Architecture	December 2015
Proposed Floor Plans (.PDF format)	0176 (20)001 Rev A01 - 0176 (20)003 Rev A01	LineStyle Architecture	December 2015
Proposed Elevations Plan (.PDF format)	0176 (21)001 Rev A00 - 0176 (21)003 Rev A00	LineStyle Architecture	14th June 2016
Proposed Elevation 3D Visualisation Views (.PDF format)	0176 (21)003 Rev A00 - 0176 (21)005 Rev A00	LineStyle Architecture	15th June 2016
Drainage Constraints and Proposals Plan	2014.5563.SK03B	Construction Design Solutions	March 2016

1.4 Planning Policies/Documents and Statutory Legislation

1.4.1 It is appreciated that the trees could provide a constraint and therefore a detailed tree survey and arboricultural report was commissioned to fulfil the requirements of BS5837:2012 *Trees in Relation to Design, Demolition and Construction: Recommendations*. It considers trees directly on site or within influencing distance of the site.

1.4.2 *National Planning Policy Framework (NPPF):* When determining planning applications, LPA's should aim to conserve and enhance biodiversity. If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused. Opportunities to incorporate biodiversity in and around developments should be encouraged (Paragraph 118).

1.4.3 When determining planning applications, local planning authorities should aim to by applying the following principles:

> *Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland,* ***unless the need for, and benefits of, the development in that location clearly outweigh the loss (paragraph 118).***

1.4.4 The trees proposed for removal within this report are neither considered aged or veteran and therefore the principles for refusal within the NPPF would not be considered applicable.

1.5 Tree Preservation Orders

1.5.1 The Local Planning Authority (LPA) has been contacted to establish whether any trees contained within the survey are protected by either a Tree Preservation Order (TPO) or are within a Conservation Area.

1.5.2 It has been confirmed by South Holland District Council that the site is covered by a TPO. TPO No. 68 of 2005 and entitled South Holland District Council (Spalding) Tree Preservation Order 2005. The TPO protects a total of 23no. individual trees.

1.5.3 A number of trees within the TPO are in either a declining condition or are dead. The condition of the trees and TPO references are provided within the Tree Schedule at Appendix 3.

1.5.4 If full planning is granted, trees to be removed in order to implement the site layout are accepted. However, if only outline consent is granted this does not override the TPO or other statutory legislation.

1.6 Felling Licence

1.6.1 Tree felling is also restricted under the Forestry Act 1967. Under this act, there is an exemption from the need for a felling licence for "*Felling necessary for the prevention of danger or the prevention or abatement of a nuisance (e.g. which may involve threat of danger to a third party).*"

1.6.2 The remedial work recommendations highlighted in this report would fall under this exemption. However, it is strongly recommended that the Forestry Commission is contacted in advance so that it is able to deal with any concerns raised by the general public.

1.6.3 If full planning consent is granted for the current proposal, then any trees which require felling to implement the approved plans are exempt from this statutory protection. It should also be considered that any proposed tree works detailed in the tree schedule are also implemented as part of the planning decision consent.

1.7 Trees and Wildlife

1.7.1 The Wildlife and Countryside Act 1981 as amended, the Countryside and Rights of Way Act 2000 and the Conservation of Species and Habitat Regulations 2010 provides statutory protection of birds, bats and other species that can inhabit trees.

1.7.2 Great care is required to avoid disturbance and consideration should be given to the timing of tree works in order to avoid disturbance. Where the presence of such species is suspected, the project ecologist or Natural England should be contacted for advice.

2. QUALIFICATIONS

2.1.1 The principal author of this report is Peter Wharton *BSc(Hons) Arb. FArborA MICFor (Chartered Arboriculturist)*. Peter is a Fellow of the Arboricultural Association, a Professional member and registered consultant of the Institute of Chartered Foresters and Consulting Arborist Society. He is also a member and

licensed user of Quantified Tree Risk Assessment and is LANTRA certified to undertake Professional Tree Inspections.

2.1.2 Peter is currently a Trustee and Director of the Arboricultural Association (AA) and member of the AAs Media and Communications Committee, also sitting Consultants Working Group and Midlands Regional Branch Committee and was previously a board member of the Midlands Tree Officer Association.

2.1.3 Wharton Tree & Ecology Consultants Ltd is ISO 9001:2008 accredited and is a recognised and approved member of CHAS.

2.1.4 As an arboricultural consultant at Wharton Tree & Ecology Consultants Ltd, Peter specialises in dealing with trees in relation to risk management and planning and development issues.

3. SITE ASSESSMENT

3.1 Site Visit

3.1.1 The tree assessments were undertaken on 4th April 2016 and the trees inspected from ground level. The weather conditions were good, with partial sunshine and a light prevailing wind; visibility was good throughout the site visit.

3.1.2 The owner/managers of the site were informed of my presence on site and prior to undertaking the inspection of trees.

3.2 Site Description

3.2.1 The application site is located to the east of Spalding Common Road (the B1173), which serves as an arterial road into the centre of Spalding, to the north, from the A1175, to the south.

3.2.2 Spalding town centre is approximately 1.7miles to the north of the application site. Spalding Common feeds into the town between the River Welland to the east and the rail line to the west, creating a build-up of linear development to either side of the road, including industrial and commercial premises, farm buildings, a wide range of residential properties, the community hall and the small cluster of former school buildings. The location of the site can be seen in red on the aerial photograph below.

3.2.3 The site forms an elongated, near-triangular parcel of land to the west side of Spalding Common. The aforementioned rail line runs immediately to the west of the site and there is a wide highway verge between the application site and the public highway, which contains several highway trees. To the north of the site is a small copse of trees where the land narrows between the road and the rail line. To the south of the site are the industrial premises of South Lincs Patterns Foundry, where the nearest building to the site, which was formerly a dwelling, forms their associated offices. As can be seen on the photograph below, their access road and car parking areas adjoin the southern edge of the application site.

3.2.4 On the opposite side of Spalding Common to the application site are residential properties of varying styles, size and age, ranging from 1920's semi's, 1930's semi-detached and detached properties and a bungalow. All of these properties are set well back from the public highway and, due to the degree of separation, would be at least 30m from the frontage of the application site.

3.2.5 The application site itself contains the former school buildings and associated additions and extensions, along with the former Headmaster's House, which is a 2-storey red brick property. The buildings are located in the southern part of the site, where the site is wider, with the land to the north being open grassland that was formerly the associated playing field. The former school buildings have a ridge height of approximately 8.1m and the Headmaster's House has a ridge height of 9.3m.

3.2.6 The trees on the site and within close proximity to it are of a varied maturity and quality. An area of woodland is situated along the northern aspect of site with significant landscape value. Further individuals and groups adjacent to the highway provide important amenity to the site and wider rural environment.

4. ARBORICULTURAL ASSESSMENT

4.1 Method of Data Collection

4.1.1 The trees on the site were originally surveyed without reference to site layout as detailed in Clause 4.4.1.1 of BS5837:2012. However, for the purposes of the arboricultural assessment the design proposal for the site has been considered.

4.1.2 The survey recorded trees either as individual specimens or as groups, where these trees were aerodynamically, culturally or visually important as groups. The tree numbers associated with each tree are cross-referenced within the schedule and plans at Appendix 3 and 4 respectively. The complete method of data collection for the tree survey is provided at Appendix 2.

4.2 BS5837:2012 Tree Categorisation

4.2.1 The BS5837:2012 sets out the methodology for surveying trees on potential development sites in order to identify them within a prioritised system of retention categories, as summarised below:

A Category Trees of high quality and value in such a condition as to be able to make a substantial contribution for a minimum of 40 years;

B Category Trees of moderate quality and value in such a condition as to make a significant contribution for a minimum of 20 years;

C Category Trees of low quality and value currently in adequate condition to remain until new planting could be established and expected to remain for a minimum of 10 years, or young trees with a stem diameter less than 150 mm measured at 1.5 meters above ground level; and

U Category Trees in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural or forestry management.

4.2.2 Retention categories A, B and C are sub-divided into sub-categories 1 – 3 as defined below and are provided in detail within Table 1, extract of BS5837:2012 at Appendix 3.

Subcategory 1 Arboricultural value;

Subcategory 2 Landscaping value; and

Subcategory 3 Cultural and conservation value.

4.3 Summary of Data

4.3.1 The overall survey includes records of 32 individual trees and one group. The comments for each tree vary and are given in detail in the BS5837:2012 Tree Schedule along with root protection areas at Appendix 3. The complete site survey is described within the summary of data below.

4.3.2 The location of each tree and their associated constraints including canopy spread, and root protection areas with the proposed development are illustrated on plan numbers DWG 001 Rev A – DWG 002 Rev A at Appendix 4.

4.3.3 There are no A category retention value tree, considered to be of high quality with a minimum of 40 years life remaining.

4.3.4 There are three individual B category retention value trees. The B category trees are T1, T2 and T5, which are a Norway maple, plum and whitebeam respectively. These trees are considered to be of moderate quality with a minimum of 20 years useful life remaining. These trees have been downgraded due to previous pruning and encroachments into their root protection areas and structural condition.

4.3.5 There are 27 individual trees and one group considered to be of C category retention value. These trees are all considered to be of low quality and have a limited useful life remaining, with a minimum 10 years. The C category trees should not be considered a constraint on site in terms of development, however should be retained if possible and appropriate.

4.3.6 The remaining two individual trees are U category retention value considered to have less than 10 useful years remaining. The trees are to be removed due to impaired structural and/or physiological condition with very limited future contribution.

Table 2: *Distribution of Retention Categorisation for the Tree Survey*

Retention Category	Individual Trees	Groups of Trees	Total
A	0	0	**0**
B	3	0	**3**
C	27	1	**28**
U	2	0	**2**
Total	**32**	**1**	**33**

4.3.7 It should be noted that Table 1 of BS5837:2012 only gives recommendations in relation to remaining years. A tree may be considered to have a longer remaining life, however, still be considered to be of a lower category given its maturity, condition or overall impact to the application site.

4.3.8 In line with BS5837:2012, the category A and B trees should be considered as providing a substantial contribution to a site. Therefore, Category A and B trees should be retained and incorporated into the proposed development where possible and feasible.

4.3.9 Generally, category C and U trees are considered to be of low quality or are young specimens, which can be readily replaced, therefore, should not be considered a constraint to future development.

4.3.10 However, it is considered desirable, wherever possible, that a tree should be retained as it ensures continuity of tree cover and provides a mature landscape to the proposed development.

5. ARBORICULTURAL IMPACT APPRAISAL OF TREE LOSS

5.1 Planning Proposal

5.1.1 The proposed development will allow for the provision of 61 bedrooms with associated day-space areas, bathrooms, storage areas, hair salon, gift shop, a café/bar area, cinema room, staff room, managers room, admin and office space, a kitchen area, laundry and a main reception area.

5.1.2 The efficient use of the site and the provision of 3-storey development in parts, will ensure that the developable space on the site is maximised in accordance with national planning policy, but not at the expense of either visual amenity or the amenities of the occupiers of the nearby properties.

5.1.3 It is considered that the amount of development is acceptable for a site of this size and, due to the scale and massing of the building, will not result in an over-development of the site to the detriment of the character and appearance of this dispersed part of the settlement.

5.1.4 The balance of building design, location and new opportunities for training, employability and company start-up has had to be balanced against trees to be retained throughout the site. This balance is considered satisfactory and should not lead to a noticeable long-term loss of trees, with correct implementation of tree protection.

5.1.5 The appraisal considers the whole development and the impact that it has on trees, which are to be retained or removed.

5.1.6 To aid assessment of the impact and implications of development, the trees and their constraints are given on plans DWG 001 Rev and with the proposed development on plans DWG 002 Rev A both at Appendix 4.

5.2 Direct Tree Loss: Proposed New Development

5.2.1 In order to demolish the existing building and construct the new it is proposed that there will be a loss of five trees, which are trees T3, T9, T10, T11 and T12, all C category trees.

5.2.2 T3 is a mature cherry, which requires removal in order to create access into the site from Spalding Common on the southern side of the site. This tree is a declining specimen and of limited longer-term value.

5.2.3 Trees T9, T10, T11 and T12 are all considered to be C category trees. The trees form a single canopy and all have asymmetric growth patterns. The trees appear to have originally been self-set and specifically T10-T12 all have relatively poor growth habits. The trees have not been previously managed and although are protected via the TPO it is considered that removal and replacement would be preferable for both continuity of tree cover in the area and as part of the overall tree management across the site.

5.2.4 The principle of the removal of the trees has been discussed at length with both the Planning Officer and Tree Officer at the Council and it has been considered acceptable with suitable mitigation planting proposed.

5.3 Indirect Tree Loss: General Arboricultural Management

5.3.1 Beyond the tree removal as a direct consequence to development, other tree felling operations will be undertaken in order to make the site more useable and also due to the condition of a number of trees. This would be undertaken and recommended through general management aside from the planning application.

5.3.2 As an indirect loss to development it is recommended that the two individual U category trees are to be removed. These trees are T21 and T28.

5.3.3 The loss of the aforementioned trees has been considered acceptable in order to facilitate the development proposal and with suitable mitigation planting to be confirmed within a detailed landscaping and tree planting proposal the direct loss should be of limited impact to the wider local amenity.

5.3.4 Due to the location of the trees and requirement for the new buildings in terms of size and scale there is no further alternative solution in order to retain the trees on site.

5.3.5 The justification for these removals should be referenced to the new opportunities for employment and requirement for the development proposal. Section 5.1.1 of BS5837:2012 recognises that the competing needs of development mean that trees are only one factor requiring consideration. It also states that misplaced tree retention can be detrimental on a site where it will cause excessive pressure on those trees being retained and could necessitate their removal in the future.

Table 3: *Trees to be removed*

Reason for removal	**Proposed works or reason**	**Tree retention category**				**Total**
		A	**B**	**C**	**U**	
Trees to be removed for proposed the proposed development	Fell for development	0	0	T3, T9, T10, T11 & T12	0	5
Indirect tree loss	Fell for general arboricultural management	0	0	0	T21 & T28	2
Total		0	0	5	2	7 + 1

5.3.6 Full specification of tree removal is provided within the complete tree schedule. All trees, which are directly or indirectly impacted upon by the planning application, are illustrated on plan DWG 003 Rev A, at Appendix 4.

5.4 Remedial Tree Works

5.4.1 A schedule of tree work has been provided within Appendix 3. All tree work will be carried out prior to commencement of construction activities and prior to the erection of the tree protection measures.

5.4.2 It is likely that any new tree planting will require remedial works consisting of formative pruning whilst the trees establish. This is recommended as part of the three - five year tree management programme for the planting, maintenance and aftercare of the new trees. This will need to be finalised later as the required works and should be detailed within a detailed planning condition, if it is considered that new trees will be planted.

5.4.3 All tree pruning should be undertaken to BS3998:2010 '*Tree work – Recommendations'* current arboricultural industry guidelines and best practice; and all relevant Health & Safety standards. Tree work is a specialist task that requires operatives to be appropriately qualified, skilled, and adequately insured. Guidance on selecting an appropriate contractor can be obtained from the Arboricultural Association, who also maintains a directory of Approved Contractors. The Arboricultural Association can be contacted on 01242 522152 or via their website http://www.trees.org.uk.

5.5 Future Alteration to the Tree Works Schedule

5.5.1 Should the recommended work schedule require modifying, for whatever reason, this will be agreed with the appointed Arboricultural Consultant (when applicable), and also approved in writing by South Holland District Council. Under no circumstances will the appointed contractor deviate from the Tree Work Schedule contained in Appendix 3, unless approved in writing by Ceredigion County Council.

6. BELOW GROUND CONSTRAINTS

6.1 Root Protection Area

6.1.1 The below ground constraints are generally summarised as the root protection areas (RPA). The RPA is an area equivalent to a circle with a radius 12 times the diameter of the trees measured at 1.5 metres for single stemmed trees. For trees with more than one stem, one of the two calculation methods below should be used where there are either 2 - 5 stems or 5 or more stems. In all cases, the stem diameter(s) should be measured in accordance with Annex C, and the RPA should be guided from Annex D of BS5837:2012.

6.1.2 The RPA is an area in which no ground works should be undertaken without due care in relation to the retained tree(s) and this is to avoid soil compaction, changes in levels or soil contamination which could alter the trees condition and/or stability. The shape of the RPA and its exact location will depend upon arboricultural considerations and ground conditions.

6.1.3 The RPA for the trees have been calculated as prescribed by BS5837:2012 and are shown as circles for polygons on the Arboricultural Impact Plan at Appendix 4. These plans illustrate the relationship between the RPAs associated with the trees and the proposed development.

6.1.4 Due to the early involvement, it has been possible to work with the constraints associated with the trees as the building locations have evolved and this has

generally enabled buildings to be located outside of the RPAs of those trees to be retained.

6.1.5 In addition to the illustration of RPAs on the plans at Appendix 4, the numerical RPA values are provided within the Tree Schedule at Appendix 3. Within the schedule both RPA radius in metres from the main stem and total area for the RPA as square metres.

6.2 Construction Scaffolding within the RPAs

6.2.1 In order to construct the proposed new building, there will be a requirement to have construction scaffolding within the RPA of T4, T5, T6 and T7 by up to 2m from the elevation. As a result, there will be a requirement for ground protection (Ground-Guards) to be installed as detailed within a Tree Protection Plan. This will be as per the notes set out in BS5837:2012 Clause 6.2.3.3 Note a. It will comprise of either suspended wooden walkway beneath the scaffolding or 100mm of woodchip laid onto geotextile base overlaid with wooden boards. This will significantly reduce the likelihood of ground compaction. All excavation works will have the plant machinery outside of the RPAs.

6.2.2 Due to the details provided for this application there is insufficient information relating to below ground infrastructure available at present to comment as to whether or not there would be adequate space for these to be installed outside of RPAs. This is specifically in relation to the proposed relocation of the domestic gas pipe to the southwest of site. However, there is sufficient space outside of the RPAs for services to be located. If services do enter RPAs the use of hand digging as detailed in the National Joint Utilities Group publication *'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees'* (NJUG 10, Volume 4, 2007) will be undertaken to minimise the impact on the tree roots.

7. ABOVE GROUND CONSTRAINTS

7.1.1 The above ground constraints predominantly refer to the impact of the canopy of any retained tree on the site either by size and form, shadowing and nuisance factors. As a result it is sometimes required that a canopy protection zone is established to ensure it is not harmed during construction.

7.1.2 Where the current and/or ultimate height of a Category A, B or C tree will cause an obstruction to the proposed development, this must be considered as a constraint. This is usually considered in terms of issues relating to shade and light.

7.1.3 An Amenity Clearance Zone (ACZ) is used to consider the impact of the proximity of retained trees to structures. The ACZ is defined as an area surrounding the tree that enables a satisfactory relationship to exist between the property and the tree, and as such is equal to two-thirds of the tree's expected mature height. The ACZ is a combination of factors such as:

- Shading (of buildings and open space)
- Direct damage to structures
- Future pressure for removal
- Seasonal nuisance (e.g. leaf fall blocking gutters, fruit fall creating slippery patches and honey dew dripping on vehicles and surfaces)

7.1.4 Consideration is also given to species characteristics such as:

- Deciduous or evergreen;
- Density of foliage;

7.1.5 Although not part of BS5837, the ACZ also reflects a more intangible factor of how comfortable the inhabitant of the property is likely to feel by the proximity of the tree to the house. It serves to protect retained trees from pressure to be felled or undergo surgery after occupation of the property.

7.1.6 The tree canopies are marked on the attached TCP as a continuous line around each individual tree.

7.2 Impact on Amenity

7.2.1 There will be an overall loss of five individual C category trees and two individual U category trees. The additional planned landscaping and tree planting for the site will mitigate for this loss of tree to ensure enhancement and continuity of tree cover.

7.2.2 It is likely that with or without development trees T3, T9, T10, T11 and T12 would have to be significantly reduced or removed in the short term due to the overall condition of the trees and likelihood of large branch faiure.

7.2.3 The loss of the aforementioned trees has been considered acceptable in order to facilitate the development proposal and with suitable mitigation planting to be confirmed within a detailed landscaping and tree planting proposal the direct loss should be of limited impact to the wider local amenity.

7.2.4 The justification for these removals should be referenced to the new opportunities for employment and requirement for the development proposal. Section 5.1.1 of BS5837:2012 recognises that the competing needs of development mean that trees are only one factor requiring consideration. It also states that misplaced tree retention can be detrimental on a site where it will cause excessive pressure on those trees being retained and could necessitate their removal in the future.

7.3 Future Growth

7.3.1 The future growth of the trees will not have an impact on the proposed new building as the majority of trees have reached full maturity. Boundary trees may require minor future pruning. This can be addressed with minor pruning of the lateral branches, which encroach towards the built structure.

7.4 Leaves, Fruit and Honeydew

7.4.1 Given the proximity of so many trees on and off site, leaf fall will be a problem across the whole of the site in autumn. Where leaf fall will be a problem to the gutters this can be managed through regular clearance and incorporating grates into the gutters so avoiding regular blockages.

7.4.2 Honeydew is most likely to be a significant problem from the lime and maple trees of which there are a number in the area. Given the distance of the proposed built structures from the trees, this is not considered to have a significant impact to the proposal.

8. TREE PROTECTION

8.1 Tree Protective Fencing

8.1.1 The successful retention of those trees that will remain on the site will be dependent upon the quality and maintenance of any protection system that is put in place. An Arboricultural Method Statement should be provided to detail how the necessary tree protection will be implemented. An indicative draft tree protection plan has been provided however this is subject to alteration following a final decision notice and a detailed method statement should be provided as part of a robust planning condition.

8.1.2 Prior to any construction or vehicular movement tree protective measures must be in place. This will be checked prior to the commencement of works by the Arboricultural Clerk of Works (ACoW) and file note prepared and submitted to the council's tree officer.

8.1.3 The construction process is highly unlikely to have a detrimental effect upon the health of the retained trees assuming recommendations made in this report are adhered to at all times by the contractors e.g. the positioning of a stout fence between the retained trees and construction activities is placed prior to commencement of works and remains intact and in position throughout the duration of the works.

8.1.4 These protective measures ensure suitable protection of trees and associated soils. The key method of tree protection is through the use of barriers/fencing.

8.1.5 The tree protection fence/barrier once erected will not be moved or relocated without written approval from the Council. The tree protection area behind the fence/barrier (the Development Exclusion Zone) will be sacrosanct throughout development and no access will be allowed to this area including for example the storage of or moving of materials or machinery. In the Development Exclusion Zone there will be no excavations or increases in soil level without prior written approval from the Council.

8.1.6 The barriers will be made from scaffold in a vertical and horizontal framework, as shown as Figure 3 in BS5837:2012. This is not the default specification as in this instance it is more appropriate to place the fencing on rubber feet with a supporting rear strut. This is due to the continued access required through site and the considerable amount of existing hard standing.

8.1.7 The non-default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 3. The vertical 2m tall welded mesh panels on rubber or concrete feet, the panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from within the fence. The distance between fence couplers should be at least 1m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate secured with ground pins.

8.1.8 A detailed A1 laminated Tree Protection Plan should be located within the site office throughout the course of development. This should include details of the fencing specification and location for which the fence will be erected.

9. MITIGATION TREE PLANTING

9.1 Proposed Tree Planting

9.1.1 A number of trees are be planted to provide instant green space and infrastructure. Trees will be planted following the guidance of BS8545:2014 *Trees: from nursery to independence in the landscape - Recommendations*. The trees, size, location and species will be confirmed and submitted as part of a wider landscape planning condition.

9.1.2 Following discussion with the Councils' Tree Officer and email dated 6th June 2016 it has been agreed that in order to mitigate for the loss of trees T9, T10, T11 and T12 a linear feature of new trees will be planted. This will be within the grassed are to the east of the development area between the building and rear of highway kerb.

9.1.3 To mitigate for the tree loss specifically of the TPOed trees above 6no. new trees will be planted. These will consist of 3no. Turkish hazel and 3no. liquidambar trees.

9.1.4 The planting of a trees which will be semi-mature as detailed within table D.1 of BS8545:2014 *Trees: from nursery to independence in the landscape – Recommendations*. Therefore the trees will have a stem girth at 1m 18-20cm a clear stem of between 1.7-2.0m and an overall planting height of 4-6m. The trees to be planted will be container-grown specimens in 100L pots.

9.1.5 The tree planting location will be defined in part by the location of existing underground infrastructure. The trees would be guyed underground and have a specific 3-5 year maintenance program applied to ensure its successful establishment. This tree as it matures would be a significant feature to the local area with far greater longevity that any of the surrounding trees.

9.1.6 The guidance of BS8545:2014 will be followed in relation to the aftercare of the trees to be planted. The post-planting management and maintenance part of the process should follow the order shown in Figure 8 of the British Standard and will meet the recommendations given in clauses 11.2 to 11.5.

9.1.7 This will include amongst general irrigation, formative pruning:

- A formal assessment of young tree health and development should be carried out annually. This assessment should include foliar appearance (i.e. lack of leaf chlorosis and/or necrosis), leaf size and leaf canopy density, extension growth and incremental girth development. Continual assessment on an ad hoc basis should be carried out throughout the year, to inform maintenance requirements.
- Field testing using both leaf fluorescence and leaf chlorophyll content. These tests should be carried out wherever practicable.

9.1.8 All stakes and ties should be checked at least annually to ensure that the root system remains stable and firm in the ground, and that ties are still effective and not causing any damage to the tree. Any stakes and ties that are found to be not fit for purpose should be adjusted, replaced or removed.

10. CONCLUSIONS

10.1.1 This survey and tree report includes records of 32 individual trees and one group of trees. These comprise of 3no. B category, 28no. C category and 3no. U category. This application considers all trees located on or within influencing distance of the proposed development area.

10.1.2 It has been considered desirable wherever possible that trees and groups of trees should be retained, although care has been exercised over misplaced tree preservation. In terms of the current site layout plan, due to the size and scale of building requirement there is conflict with the trees that cannot be avoided and therefore mitigation proposals are considered.

10.1.3 In total a combination of five C category individual and two U category trees will be removed in order to implement the design proposal or as part of good site management.

10.1.4 The justification for these removals should be referenced to the new opportunities for employment and the requirement for the development proposal. Section 5.1.1 of BS5837:2012 recognises that the competing needs of development mean that trees are only one factor requiring consideration. It also states that misplaced tree retention can be detrimental on a site where it will cause excessive pressure on those trees being retained and could necessitate their removal in the future.

10.1.5 The onsite trees to be retained should be proactively managed to ensure that they enhance the development and the wider environment. Therefore, this impact assessment provides detail of the measures and steps required to retain trees through and post development specifically through adequate supervision, tree protection and construction techniques. In the first instance it is recommended that the tree works are undertaken as specified in the associated Tree Schedule.

10.1.6 It is critical that all protective fencing is installed and erected and the CEZ enforced prior to the commencement of any works on site. Following installation of tree protection a site meeting will be undertaken with the Tree Officer to ensure satisfaction of all parties prior to any on site works commencing.

10.1.7 It is recommended that a suitable competent arboriculturist, undertakes the site supervision and monitoring works.

10.1.8 In order for tree and root protection measures to work effectively all personnel associated with the construction process must be familiar with the Tree Protection Plan.

10.1.9 Due to the trees to be removed being TPOed 6no. new trees will replace those trees on the eastern side of the site. This has been agreed in principle with the Councils' Tree Officer.

11. RECOMMENDATIONS

11.1 Planning Conditions

11.1.1 It is recommended that planning conditions be adhered to any approval for a suitable tree planting scheme and for the production of an Arboricultural Method Statement for implementation of tree protection, installation of special surfacing, pre-commencement meetings and on-going site supervision.

12. REFERENCES

12.1.1 British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendation'

12.1.2 British Standard 3998:2010 *'Tree work – Recommendations'*

12.1.3 BS8545:2014 Trees: from nursery to independence in the landscape - Recommendations

12.1.4 The Forestry Act 1967

12.1.5 The Town and Country Planning Act 1990

12.1.6 The Town and Country Planning (Tree Preservation)(England) Regulations 2012

13. REPORT CAVEATS AND LIMITATIONS

13.1 Caveats and Limitations

13.1.1 The report is for the sole use of the client and its reproduction or use by anyone else is forbidden unless written consent is given by the author.

13.1.2 This is an arboricultural report and as such no reliance should be given to comments relating to buildings, engineering or soil.

13.1.3 This is not an arboricultural health and safety survey, a more detailed survey of internal decay detection etc can be supplied but would be subject to a further fee.

13.1.4 This is a report which should be to accompany a planning application and provides no detail specifically in relation to the health and safety of the trees.

13.1.5 All tree inspections were undertaken from ground level and no climbing inspections were undertaken.

13.1.6 For the purposes of this survey all dimensions of trees and their associated parts are based on estimation unless otherwise stated.

13.1.7 Trees are growing dynamic structures. Whilst reasonable effort has been made to identify defects within the trees inspected, no guarantee can be given as to the absolute safety or otherwise of any individual tree. No tree is ever absolutely safe due to the unpredictable laws and forces of nature. As a result of this, natural failure of intact trees will occur; extreme climatic conditions can cause damage to even apparently healthy trees.

13.1.8 Trees are living organisms whose health, condition and structure can change quickly and without warning. Therefore, the contents of this report are valid for a period of one year from the date of this survey.

13.1.9 On undertaking the recommended works, the arborist/tree surgeon must without delay report any defects that become apparent while climbing or working on the tree/s in question. Those defects must be reported immediately to the relevant project manager, landowner and/or the author of this report to enable the appropriate remedial action.

13.1.10 This is report an arboricultural and therefore does not rely on ecological or archaeological data. If either is commented upon within the report further professional advice should be sought.

Signed



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Peter Wharton *BSc(Hons) Arb. FArborA MICFor (Chartered Arboriculturist)*

APPENDIX 1: AERIAL PHOTOGRAPH

Former Goodfellows School, Spalding Common


Spalding Common
Cradge Bank

APPENDIX 2: SURVEY METHODOLOGY

i. The trees on the site were originally surveyed without reference to site layout as detailed in paragraph 4.4.1.1 of BS5837:2012. However, for the purposes of the arboricultural impact assessment the design proposal for the site has been considered.

ii. The position of each tree was plotted with reference to the supplied ordinance survey plan. Small trees with a stem diameter less the 75mm were generally not surveyed as they would either be easily replaced or relocated.

iii. Each individual tree has been given a tree identification number, the groups and hedges clearly defined for the purpose of this report. Metal tags have not been used for this survey as identification on site does not require this. The tree numbers associated with each tree are cross referenced within the schedule and plans at Appendix 3 and 4 respectfully.

iv. The tree species have been recorded with both common and botanical names.

v. All tree heights have been assessed using a clinometer and where indicated in groups the height of the tallest tree was measured unless otherwise stated. Tree heights are given in metres.

vi. All stem diameters were measured at 1.5 metres above ground level and are given in millimetre units (unless otherwise stated where “gl” is an abbreviation for ground level where diameter was measured just above root flare, “est” is an estimate and “av” is an average).

vii. The canopy spread is recorded in either the four cardinal points or is given as an average diameter for the crown, especially in groups or where the crown is evenly weighted. Canopy spreads are measured in metres.

viii. The height of the ground clearance is given in metres and is an estimate of the height of the first branch above ground level.

ix. In absence of detailed information on the age the following classification has been used:

Yng Young trees age less than 1/3 life expectancy;

Mid Middle age trees 1/3 – 2/3 life expectancy**;**

Mat Mature trees over 2/3 life expectancy**;**

O/mat Over-mature – declining or moribund trees of low vigour; and

Vet Veteran trees – specimens exhibiting features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

x. Age class is indicative and will vary between species.

xi. The structural condition of the trees has been assessed and is summarised as:

Good Few minor defects of little overall significance;

Fair	A significant defect or several small defects; and
Poor	Major defect present or many small defects.

xii. The physiological condition has been recorded to provide an indication of the tree's general health and vitality. The trees have been described thus:

Good	Generally in good health typical of the species;
Fair	Reasonable health with few defects;
Poor	Trees that exhibit significant defects which are irremediable or moribund tree; and
Dead	Tree has died

xiii. Each tree was individually assessed and comments, where appropriate, were recorded for the condition of each tree's roots, main stem and crown.

xiv. General comments have also been made where appropriate, with recommendations when relatively immediate works are given.

xv. Estimated remaining contribution has been categorised as: less than 10 years, 10-20 years, 20-40 years or over 40 years, based upon an assessment of the tree's potential safe useful life expectancy. The remaining contribution in years has not always been directly followed in relation to the retention categories of the trees as trees may have a long remaining life however be of little significance in terms of development.

APPENDIX 3: SCHEDULES

BS5837:2012 Cascade Chart

Complete Tree Schedule

APPENDIX 4: PLANS

Tree Constraints Plan

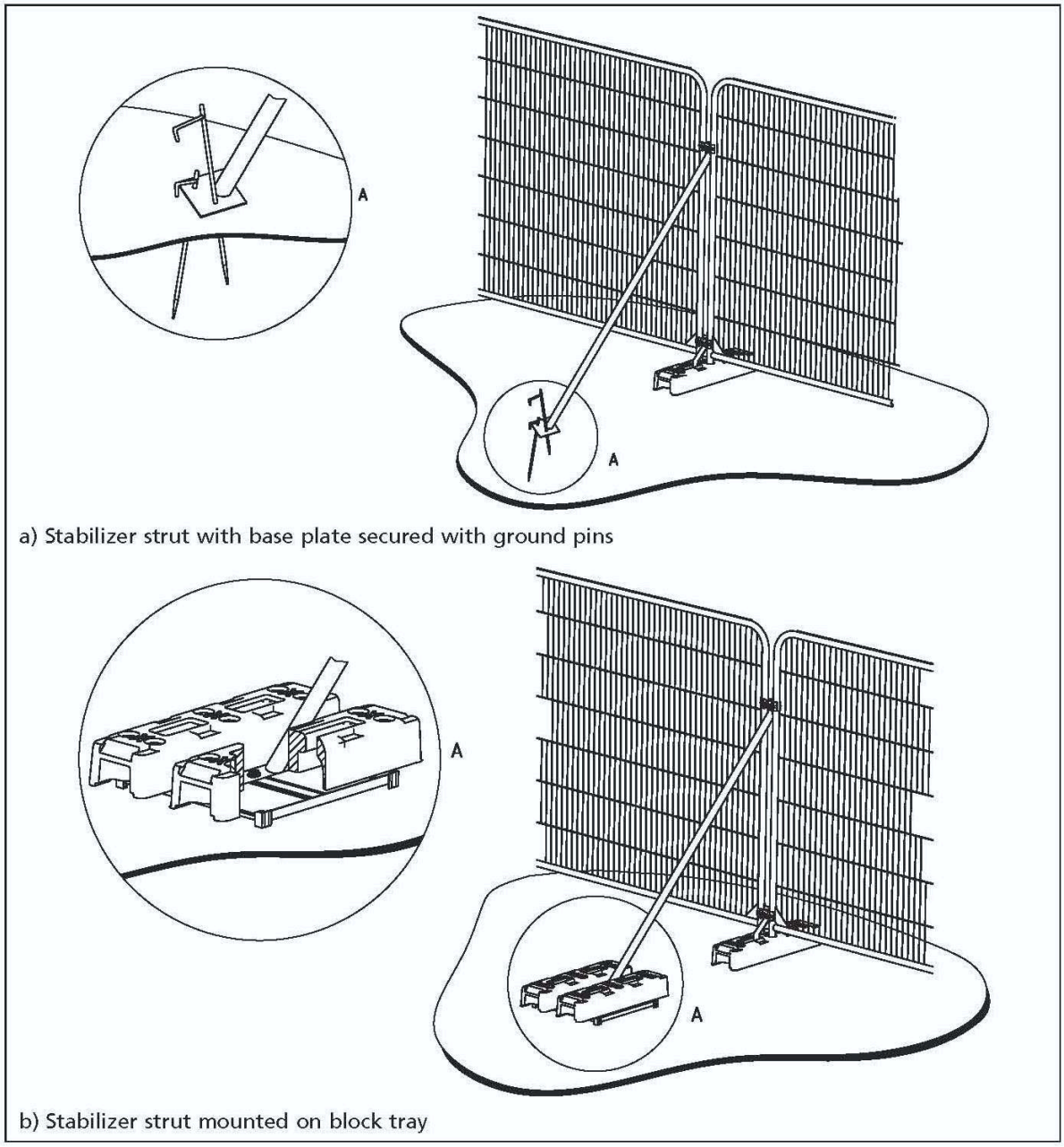
Arboricultural Implications Plan

Tree Retention and Removal Plan

APPENDIX 5: TREE PROTECTION

Fencing Specification

Figure 3 **Examples of above-ground stabilizing systems**





WHARTON

TREE & ECOLOGY CONSULTANTS

Minerva Mill, Station Road, Alcester, Warwickshire, B49 5ET

info@whartontrees.co.uk 01789 459458 www.whartontrees.co.uk

