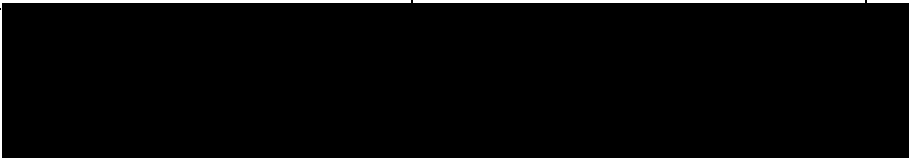
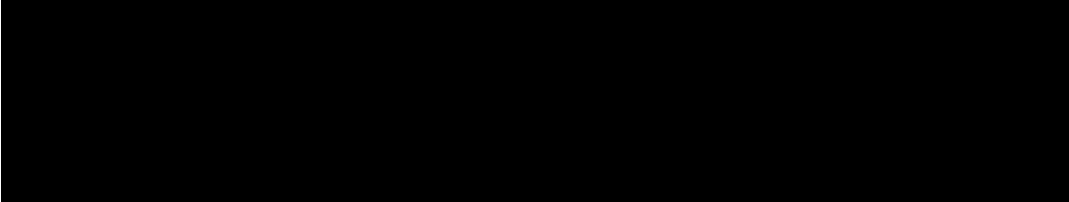




QA

Hinckley Academy and John Cleveland Sixth Form Centre– BS5837 Tree Survey and Arboricultural Impact Assessment

Issue/Revision:	Draft	Final
Date:	August 2021	August 2021
Comments:		
Prepared by:	James Rawlinson	James Rawlinson
Signature:		
Authorised by:	Mitch Cooke	Mitch Cooke
Signature:		
File Reference:	551775jr19Aug21DV01_AIA.docx	551775jr19Aug21FV01_AIA.docx

CONTENTS

1.0	EXECUTIVE SUMMARY	1
2.0	INTRODUCTION	2
	OVERVIEW	2
	SITE DESCRIPTION	2
3.0	TREE SURVEY METHODOLOGY	3
	DESK REVIEW	3
	SITE VISIT	3
	LIMITATIONS	3
4.0	RESULTS OF SURVEY	5
	DESK REVIEW	5
	SITE VISIT	5
5.0	ARBORICULTURAL IMPACT ASSESSMENT	7
	INTRODUCTION	7
	SITE LAYOUT	7
	TREE RETENTION	7
	FACILITATION PRUNING	8
	CONSTRUCTION WITHIN THE RPA'S OF RETAINED TREES	8
	SOFT LANDSCAPING WITH THE RPA'S OF RETAINED TREES	9
	NEW SITE UTILITIES	9
	LANDSCAPE PROPOSALS	9
	ARBORICULTURAL METHOD STATEMENT (AMS)	9
6.0	SUMMARY AND CONCLUSIONS	11

1.0 EXECUTIVE SUMMARY

- 1.1 Greengage Environmental Ltd was commissioned by Tetra Tech to undertake a Tree Survey and prepare an Arboricultural Impact Assessment at the Hinckley Academy and John Cleveland Sixth Form Centre site, within the administrative area of Hinckley and Bosworth Borough Council, to the *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*¹ methodology.
- 1.2 This document presents the findings of the tree survey and has been produced to support a planning submission for the site which seeks to develop parts of the site for new facilities. The full details of this are not known at this stage.
- 1.3 The purpose of this survey is to provide an assessment of the arboricultural value of the trees based on their current quality and to provide recommendations on the proposed layout with respect to tree constraints and tree retention.
- 1.4 A visit was made to the site on 13th August 2021 to survey trees, hedges and vegetation following guidance in BS5837. The crowns and stems were inspected from the ground using the 'Visual Tree Assessment' (VTA) method; no invasive techniques were used at this stage.
- 1.5 During the survey, 79 trees and 13 tree group were identified within the development area. See Table 1.1 below.

Table 1.1 BS5837 Category mix

Category	Individual Trees	Tree Group / Hedge	Total
A	6	1	7
B	34	3	37
C	36	9	45
U	3	0	3
Total	79	13	92

- 1.6 An assessment of the potential below and above ground impacts of the proposed development and recommendations to help avoid, minimise or compensate for these impacts will be outlined within this report once development plans are known.

2.0 INTRODUCTION

OVERVIEW

- 2.1 Greengage was commissioned by Tetra Tech to undertake a BS5837 tree survey and prepare an Arboricultural Impact Assessment (AIA) report for the Hinckley Academy and John Cleveland Sixth Form Centre site, within the administrative area of Hinckley and Bosworth Borough Council.
- 2.2 This document presents the findings of the tree survey and has been produced to support a planning submission for the site which seeks to develop parts of the site for new facilities. The full details of this are not known at this stage.
- 2.3 A site visit was made by Greengage on 13th August 2021 to survey all trees within and adjacent to the site following the approach set out in BS5837.
- 2.4 As required by the British Standard, an Arboricultural Impact Assessment has been undertaken to evaluate the constraints to the development from the existing trees both on and adjacent to the site using information gained from the BS5837 Tree Survey.
- 2.5 The methodology followed to complete the survey and prepare this report is provided in Appendix 1. Full details of the surveyed trees can be found in the Tree Schedule (Appendix 2). The Tree Constraints Plan (Appendix 3) presents the locations, crown spreads, root protection areas (RPAs) and BS5837 Categories of the surveyed trees against proposed layout.

SITE DESCRIPTION

- 2.6 Hinckley Academy and John Cleveland Sixth Form Centre (HAJC6) is a large 11 to 18, 1860 place, co-educational secondary school in the town of Hinckley in Leicestershire, within the Leicestershire County Council (LCC) local authority area.
- 2.7 HAJC6 is located on Butt Lane, Hinckley, LE10 1LE. It is approximately 3 miles from the M69. The school occupies a large site with separate and link buildings across the estate. The school buildings are terraced on various levels and most of the buildings are single storey, with the exception of the sixth form centre, which is part two storey. Most buildings date back to the 1960s excluding Block A, which was built in the early 1900s.
- 2.8 There is a private nursery on site and the school leases some buildings to other providers such as Scouts and Dorothy Goodman School.
- 2.9 In terms of landscaping, the site includes a large number of trees ranging from recently planted through to large mature specimens that have become well established that now form a fundamental part of the visual landscape and greening of the site as a whole.

3.0 TREE SURVEY METHODOLOGY

DESK REVIEW

Tree Legal Protection

- 3.1 Trees within Hinckley Academy and John Cleveland Sixth Form Centre site may be protected under the Town & Country Planning Act² by a Tree Preservation Order (TPO) or by virtue of being within a Conservation Area.
- 3.2 A TPO makes it an offence to wilfully damage or destroy a protected tree and written permission from the Council must be obtained prior to undertaking any works to the tree. Similarly, if any stem on any tree in a Conservation Area is larger than 75mm diameter when measured at 1.5 metres above ground level it is automatically protected and required by law to notify the Council of any proposed works.
- 3.3 To determine whether any of the trees are protected by TPOs a search of the readily available data on the Council's website was undertaken.
- 3.4 Additionally, the Council's website was reviewed to identify any local Conservation Areas that would add additional protection to the trees.

Geological Conditions

- 3.5 A review of the readily available Geology of Britain interactive map by the British Geological Society³ was undertaken to identify the bedrock geology and superficial deposits at the site.

SITE VISIT

- 3.6 A site survey was undertaken on 13th August 2021 to survey trees, hedges and vegetation following guidance in the British Standard.
- 3.7 The crowns and stems were inspected from the ground using the 'Visual Tree Assessment (VTA)' method; no invasive techniques were used at this stage.
- 3.8 The survey followed the methodology outlined in *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*.
- 3.9 The site visit was undertaken in dry weather conditions with trees in the full leaf stage. Full details on the methodology can be found at Appendix 1.

LIMITATIONS

- 3.10 This report includes information on only the trees that were inspected and the condition they were observed in at the time of survey. The condition of trees can change, and as such any findings from this report should be held valid to inform for purposes of development for no longer than 12 months from the survey date. No guarantee can be

given for the structural integrity of any trees on site as a full hazard assessment has not been made.

- 3.11 There were no significant constraints to the assessment; all areas of the site were fully accessible to survey. The survey was completed at a suitable time of year for species identification and condition assessment. Any constraints over winter identification techniques are not applicable in this instance.

4.0 RESULTS OF SURVEY

DESK REVIEW

Tree Legal Protection

- 4.1 From a review of the council's website⁶, no TPO's or Conservation Areas either within or adjacent to the Hinckley Academy and John Cleveland Sixth Form Centre site, were identified that need be considered further within this assessment.

Geological Conditions

- 4.2 The BGS interactive map indicates the underlying geology to be Mercia Mudstone Group (mudstone), with superficial deposits of Wolston Sand and Gravel (sand and gravel) as well as Bosworth Clay Member (clay and silt).
- 4.3 It is recommended that a geotechnical specialist / structural engineer undertake a detailed soil investigation to determine the actual underlying geology and Plasticity Index which may then inform foundation design. The design of any new planting and landscape proposals should be based upon a soil analysis which considers the pH and nutrient composition of localised conditions.

SITE VISIT

- 4.1 In line with the BS5837 guidelines, 79 trees and 13 tree groups, were identified either within or directly adjacent to the John Cleveland Sixth Form Centre site boundary.
- 4.2 Surveyed trees show as a mix of species, life stages and condition with BS5837 assessments ranging from Category A to U.
- 4.3 As shown on the Tree Constraints Plans (TCP's) most of the trees included in the survey are within the central areas of the site adjacent to existing buildings, hard and soft landscaping areas including the school playing fields.
- 4.4 In addition, a number of individual trees and large tree groups are located towards the outer areas of the site, as well as just beyond the site perimeter.
- 4.5 Overall, the site has been landscaped to create a strong visually impacting tree scape, with the original planting plan having resulted in the successful establishment and maturity of a number of key specimens considered to be Category A trees (in with the British Standard). These then including T2, T8, T41, T42, T68 and T73.
- 4.6 Furthermore, the wider historic landscaping planting approach for the site permitter (and just beyond), has allowed for some visually and arboriculturally important groups and small woodland sections to be become established. These include Category B groups (G21 and G26) to the east of the site, (which provide important screening between the school and adjacent land uses), as well Gx and Gx (Category A and B respectively) that

given their stature and height, provide striking visual amenity and landscape value both throughout the site as well beyond to the nearby residential and recreational areas of Hinckley.

- 4.7 That said, there are a number of lower quality trees throughout the site that are either in decline as result of their age or condition or are struggling to establish themselves into the mature form. A number have also seen major arboricultural intervention as a result of their previously failing structures (such as T19, T20 and T50). These though have been left as either tall monoliths or short coppice structures that will (if left) regrow sections to provide greater visual and habitat benefits in these locations.
- 4.8 The Tree Constraints Plan found at Appendix 3 shows the full layout of the existing tree stock with reference to BS5837 Category and survey data.

5.0 ARBORICULTURAL IMPACT ASSESSMENT

INTRODUCTION

- 5.1 The purpose of this Arboricultural Impact Assessment (AIA) is to assess the potential below and above ground impacts to existing trees from the proposed development, and to highlight the need for the pruning, removal or retention and protection of specific trees during construction.
- 5.2 Works associated with development of this type can damage trees, threatening the survival of those that are to be retained. The following actions can have negative impacts upon tree health:
- Soil compaction;
 - Root damage (e.g. severance);
 - Soil coverage with impermeable material;
 - Alterations in ground level;
 - Leaks and spillages from stored materials; and
 - Vehicle and heavy plant collision.
- 5.3 As such, where possible, the RPAs and canopies that are defined in Appendix 3 should be protected and considered throughout works to prevent risks to the health of the trees.

SITE LAYOUT

- 5.4 Existing drawings provided for the assessment of the potential constraints that exist include:
- Existing layout/ topographical survey (drawing ref. TBC)
- 5.5 The TCP can be found at Appendix 3 (to be included once the topographical survey is released).

TREE RETENTION

- 5.6 Any development plans should take full consideration of the arboricultural and visual amenity value of the trees and tree groups within the site, and where possible, retain and enhance the Category A and B trees as well as those better quality Category C trees. As well as specific arboricultural considerations, the screening value of the surveyed trees should also be carefully considered given the obvious benefits they provide to the school grounds as a whole.
- 5.7 Any Category U trees noted in the survey should be removed and replaced as site and development space allows.

FACILITATION PRUNING

- 5.8 Facilitation pruning is the extent and detail of any proposed pruning works to site trees to allow for their retention within the layout and design of the proposed development and its construction. This generally includes details of crown reductions, target pruning and crown rises.
- 5.9 It is anticipated that detailed pruning proposals for retained trees can be drawn up once the construction plans are fully understood. This will then likely be included within a subsequent Arboricultural Method Statement.

CONSTRUCTION WITHIN THE RPA'S OF RETAINED TREES

- 5.10 This document presents the findings of the tree survey and has been produced to support a planning submission for the site which seeks to develop parts of the site for new facilities. The full details of this are not known at this stage.

New Building Construction

- 5.11 Construction of new buildings within the RPAs of retained trees requires careful consideration with respect to the chosen foundation design, which specifically allows for the retention of any roots larger than 25 mm in diameter (BS5837), if it is concluded by the project arboriculturist that they cannot be pruned back. Specifically in most cases strip and trench foundations are not therefore feasible.
- 5.12 With all root pruning options considered, should significant roots remain within the proposed foundation and construction area, then bridging or selective pile or cantilevered sections may need to be incorporated within the design.
- 5.13 Often, in order to inform the design of any special consideration techniques, exploratory digs (such as via air spading) is first undertaken along the proposed foundation line. This then providing details as the extent and size of any significant root spread within the construction area.

New Hard Standing

- 5.14 For new roads or hard standing within the RPA's of trees to be retained, suitable ground protection should be designed by the project engineer and arboriculturist to accommodate the likely loading. This would require the use of proprietary systems such as a "no-dig" three-dimensional cellular confinement, specifically designed for tree root protection. This follows the guidance in BS5837 Section 6.2.3.3.
- 5.15 Any such specification and installation would require approval for use by the arboriculturist in line with a method statement before any works commence.
- 5.16 In line with the required "no dig" methodology, the stated ground protection within all retained trees will not allow for any excavation or alteration in ground levels other than

through the installation of the specified ground protection and road surface, which will remain porous and non-compacting by design.

SOFT LANDSCAPING WITH THE RPA'S OF RETAINED TREES

- 5.17 Of those trees and tree groups to be retained, it is important to note that it is generally poor arboricultural practice to modify the soil levels within an RPA of trees to be retained. Lowering levels can remove the fibrous root network, expose roots, as well as damage the delicate structure of the top soil, which may include mycorrhizal fungi. Increasing levels can result in problems of soil compaction as well as a significant reduction in the ability of the tree to obtain and absorb nutrients, water and perform gaseous exchange.
- 5.18 Any soft landscaping works will need to avoid the use of heavy mechanical cultivation such as rotavating. Any such cultivation operations should be undertaken carefully by hand to minimize damage to tree roots. The introduction of additional new shrubs and small planting within the RPA's of retained trees will not therefore negatively impact their long-term health, if undertaken in this manner.
- 5.19 These aspects will therefore need to be given special consideration with respect to the proposed landscaping, levels design and planting areas as will be subsequently detailed within the detailed site layout and landscaping plans.

NEW SITE UTILITIES

- 5.20 Given the destructive impacts that trench excavation can have on tree roots and the subsequent physiological and structural life of trees, all subterranean utility lines and on-site drainage should be designed to avoid the RPA's of retained trees.
- 5.21 Should such works within the RPA's of retained trees be required, then the relevant best practice as set out in the relevant NJUG guidance⁵ for utilities works adjacent to trees, must be followed.

LANDSCAPE PROPOSALS

- 5.22 This document presents the findings of the tree survey and has been produced to support a planning submission for the site which seeks to develop parts of the site for new facilities. The full details of this are not known at this stage.

ARBORICULTURAL METHOD STATEMENT (AMS)

- 5.23 Subsequent to this AIA, an Arboricultural Method Statement (AMS) may be drawn up detailing how constraints on retained trees identified within the AIA will be addressed throughout the construction phase.
- 5.24 The AMS and Tree Protection Plan (TPP), likely secured through planning condition, will set out how site works should be carried out near trees to avoid accidental damage. In

doing so, the statement details further recommendations for pre-development tree works, including facilitation pruning, ground works for vehicle and pedestrian construction access, as well as restricted access and fencing of crowns and root protection areas (RPAs). The AMS is often drawn up in unison with the Construction Management Plan, to ensure all tree related construction constraints are fully understood.

- 5.25 In drawing on the BS5837 criteria, the AMS also details the technical approach taken to mitigating any potential damage to retained trees from the overall proposed design. As detailed in this AIA, this will include elements such as the mitigated foundation design and new hard surfaces areas with RPA's of retained trees.

6.0 SUMMARY AND CONCLUSIONS

- 6.1 Greengage was commissioned by Tetra Tech to undertake a BS5837 tree survey and prepare a report relating to the arboricultural impact of the proposed development plans at Hinckley Academy and John Cleveland Sixth Form Centre, within the administrative area of Hinckley and Bosworth Borough Council.
- 6.2 Greengage undertook the site visit on 13th August 2021 to survey the trees on and adjacent to the site.
- 6.3 The quality of the surveyed trees varies, with a mix of Category A to U trees, of both individual and grouped arboricultural qualities.
- 6.4 Leading on from the tree survey, the Arboricultural Impact Assessment for the proposed development can be drawn up based on the detailed design for the site.
- 6.5 However, this document presents the findings of the tree survey and has been produced to support a planning submission for the site which seeks to develop parts of the site for new facilities. The full details of this are not known at this stage.
- 6.6 As part of the overall proposed development design and with the need to mitigate any identified loss of site trees, a detailed landscaping plan would need to be drawn up in due course.
- 6.7 Potential works required to be undertaken in and around existing trees to be retained have been described. These will be further considered within a subsequent Arboricultural Method Statement and Tree Protection Plan. This may be secured through planning condition.

APPENDIX 1: TREE SURVEY METHODOLOGY

Trees, tree groups and woodlands have been considered following evaluation into one of four categories (U, A, B, C) based on tree quality as outlined in British Standard 5837 (2012) which has been followed. Categorisation of trees, following the British Standard, gives an indication as to the trees' importance in relation to the site and the local landscape and also, the overall value and quality of the existing tree stock on site. This allows for informed decisions to be made concerning which trees should be removed or retained, should development occur.

For a tree to qualify under any given category it should fall within the scope of that category's definition. In the categories A, B, C which collectively deal with trees that should be a material consideration in the development process, there are three sub-categories which are intended to reflect arboricultural, landscape and cultural values respectively. Category U trees are those which would be lost in the short-term for reasons connected with their poor physiological or structural condition. They are, for this reason, not usually considered in the planning process.

In assigning trees to the A, B or C categories the presence of any serious disease or tree related hazards are taken into account. If the disease is considered fatal and / or irremediable, or likely to require sanitation for the protection of other trees it may be categorised as U, even if they are otherwise of considerable value.

Category (A) – trees whose retention is most desirable and is of high quality and value. These trees are considered to be in such a condition as to be able to make a lasting contribution (a minimum of 40 years) and may comprise:

- Trees which are particularly good examples of their species especially rare or unusual, or essential components of groups or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue);
- Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups); and
- Trees or groups or woodlands of significant conservation, historical, commemorative or other value (e.g. Veteran or wood-pasture trees).

Category (B) – are trees whose retention is considered desirable and are of moderate quality and value. These trees are considered to be in such a condition as to make a significant contribution (a minimum of 20 years) and may comprise:

- Trees that might be included in the high category but because of their numbers or slightly impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage), are downgraded in favour of the best individuals;

- Trees present in numbers such that they form distinct landscape features and attract a higher collective rating than they would as individuals. Individually these trees are not essential components of formal or semi-formal arboricultural features, or trees situated mainly internally to the site and have little visual impact beyond the site; and
- Trees with clearly identifiable conservation or other cultural benefits.

Category (C) – are trees that could be retained and are considered to be of low quality and value. These trees are in an adequate condition to remain until new planting could be established (a minimum of ten years) or are young trees with a stem diameter below 150mm and may comprise:

- Trees not qualifying in higher categories;
- Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value and or trees offering low or only temporary screening benefit; and
- Trees with very limited conservation or other cultural benefits.

Category (U) – trees for removal are those 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 management. Trees within this category are:

- Trees that have a serious irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees;
- Trees that are dead or are showing signs of significant, immediate or irreversible overall decline; and
- Trees infected with pathogens of significance to the health and or/safety of other trees nearby trees or very low quality trees suppressing adjacent trees of better quality.

Species has been recorded by common name and recorded as such in the Tree Schedule. Height has been estimated in metre and stem diameters have been measured at 1.5 metres above ground level and recorded in millimetres (unless otherwise stated). Crown spreads have been measured in half metres and taken to the point of greatest spread unless the crown has presented a pronounced asymmetrical form and therefore measurements have been taken for the four cardinal points. The measurements have always been considered in the following sequence, North, East, South, and West, and therefore appear as such within the Tree Schedule.

In the assessment particular consideration has been given to the following when deciding the most appropriate British Standard Category and Sub-Category allocation:

- a. the health, vigour and condition of each tree;

- b. the presence of any structural defects in each tree and its life expectancy;
- c. the size and form of each tree and its suitability within the context of the proposed scheme; and
- d. the location of each tree relative to existing site features, e.g. its value as a screen or as a skyline feature.

Age class is assessed according to the age class categories referred to in BS 5837.

- Y: Young trees up to five years of age;
- SM: Semi-mature, trees less than 1/3 life expectancy;
- EM: Early mature, trees 1/3 – 2/3 life expectancy;
- M: Mature trees over 2/3 life expectancy;
- OM: Over mature – declining or moribund trees of low vigour; and
- V: Veteran - characteristics have been noted where a tree exhibits certain characteristic features of veteran trees.

The overall condition of the tree, or group of trees, has been referred to as one of the following. A more detailed description of condition has been noted in the Tree Schedule and discussed in the main text of the report.

- Good: A sound tree, trees, needing little, if any, attention;
- Fair: A tree, trees, with minor but rectifiable defects or in the early stages of stress, from which it may recover;
- Poor: A tree, trees, with major structural and physiological defects or stressed such that it would be expensive and inappropriate to retain; and
- Dead: A tree, trees, no longer alive. However, this could also apply to those trees that are dying and will be unlikely to recover, or are / have become dangerous.

Major defects or diseases and relevant observations have also been recorded under Structural Condition. The assessment for structural condition has included inspection of the following defects:

- The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay;
- Soil cracks and any heaving of the soil around the base indicating possible root plate movement;
- Any abrupt bends in branches and limbs resulting from past pruning, as it may be an indication of internal weakness and decay;
- Tight or weak 'V' shaped unions and co-dominant stems;

- Hazard beam formations and other such biomechanical related defects (as described by Claus Mattheck, Body Language of Trees HMSO Research for Amenity Trees No. 4 1994);
- Cavities as a result of limb losses or previous pruning;
- Broken branches;
- Storm damage;
- Canker formations;
- Loose bark;
- Damage to roots;
- Basal, stem or branch / limb cavities;
- Crown die-back;
- Abnormal foliage size and colour;
- Any changes to the timing of normal leaf flush and leaf fall patterns; and
- Other pathological diseases affecting any part of the tree.
- Major defects or diseases and relevant observations have also been recorded. Dead wood has been defined as the following:
 - Twigs and small branch material up to 5cm in diameter;
 - Minor dead wood 5cm to 10cm in diameter; and
 - Major dead wood 10cm in diameter and above.

The survey was completed from ground level only, aerial inspection of trees was not undertaken. Investigations as to the internal condition of a tree have not been undertaken. Further investigations of this type can be made and have been recommended where it has been considered necessary, within the report although these investigations are beyond the scope of this report.

Evaluation of the trees condition given within this assessment applies to the date of survey and cannot be assumed to remain unchanged. It may be necessary to review these within 12 months, in accordance with sound arboricultural practice.

The individual positions of trees and groups of trees recorded in the Tree Schedule have been shown on the Tree Constraints Plan. The positions of trees are based on a topographical / land survey supplied by the client in dwg. format for the purpose of plotting the trees.

The Root Protection Areas (RPA) to be required by the individual and groups of trees are indicated by the Tree Constraints element of the above plans. The Root Protection Areas are formulated as described below.

Below ground constraints to future development is represented by the area surrounding the tree that contains sufficient rooting volume to ensure survival of the tree, which need protecting in order for the tree to be incorporated into any future scheme, without adverse harm to the tree or structural integrity of buildings. This is referred to as the RPA and is shown as a circle of a given radius.

The circle may be modified in shape to maintain a similar total area depending on the presence of surrounding obstacles. Where groups of trees have been assessed, the RPA has been shown based on the maximum sized tree in any one group and so would automatically exceed the RPA's required for many of the individual specimens within the group. The RPA is equivalent to a circle with a radius 12x the stem diameter for single stem trees and 10x the basal diameter for trees with more than one stem arising less than 1.5 meters above ground level.

APPENDIX 2: TREE SCHEDULE

a

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated Years remaining	Grade Category
				N	E	S	W		P	S			
T1	Apple	12	290	4	4	4	4	M	G	G	Multi stem from 1.5 m with a number of lower pruning wounds. Tree growing in grassed soft landscaping area. Well-structured crown structure.	>20	B1
T2	Small leaved lime	16	890	8	8	8	8	M	G	G	Multi stem from 3.5 m. Well-structured tree with no significant defects other than minor to large deadwood. RPA split within grassed soft landscaping area and tarmac carpark. Good example of species.	>40	A1
T3	Pear	7	300	3	5	3	2	M	G	F	Asymmetrically structured crown as a result of dominant T2. Shows fungal pear rust in foliage.	>10	C1
T4	Silver birch	8	190	4	3	3	3	E	G	G	Single stem crown structure with numerous lower pruning wounds, growing in grassed soft landscaping area.	>20	B2
T5	Silver birch	9	240	4	3	2	3	E	F	G	Single stem crown structure with numerous lower pruning wounds, growing in grassed soft landscaping area. Showing some dead wood in the crown and minor basal decay.	>20	B2
T6	Cherry	4	180	3	3	4	4	S	G	F	Well structured tree with wide flattened crown. Minor mower damage to exposed roots.	>10	C2
T7	Pine	17	490	4	2	4	4	M	G	G	Forms part of shared crown area with T7 to T10 so shows an asymmetrical crown as a result.	>20	B2
T8	Pine	18	890	6	6	7	7	M	G	G	Key site landscape tree that visually dominates this area of the site. Good well-structured example of its species. Shows significant recent limb reduction work of large limb over the carpark.	>40	A2
T9	Pine	17	470	2	4	6	6	E	G	F	Forms part of shared crown area with T7 to T10 so shows a very asymmetrical crown as a result.	>10	C2

Project: Hinckley Academy and John Cleveland Sixth Form Centre
 Client: Tetra Tech
 Project Number: 551775
 Greengage Environmental

G: Good
F: Fair
P: Poor
SM: Semi mature
EM: Early mature

b

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated Years remaining	Grade Category
				N	E	S	W		P	S			
											Struggling for growth space as a result of dominant T8		
T10	TBC	17	420	4	4	4	2	E	G	F	Shows an asymmetrical crown as a result of dominant T8. No significant defects.	>20	B2
T11	Yew	5	150	3	2	1	1	S	G	P	Poorly structured and smothered tree from the adjacent dominant T11 crown area.	>10	C1
T12	Cherry	5	250	4	4	4	4	E	G	F	Multistem tree from near ground level, now shows even crown shape, in well-spaced growing area.	>10	C1
T13	Eucalyptus	6	230	1	2	3	2	S	F	P	Tree is formed of the remanent stem of a tree that has been felled to half height, as a result of adjacent building conflict. Now just shows epicormic regrowth.	>10	C1
T14	Norway maple (crimson king)	7	300	4	5	4	4	S	G	G	Shows well-structured crown with minor dead and some lower stem bark damage.	>20	B2
T15	Norway maple	7	300	4	4	3	4	S	G	F	Shows well-structured crown with minor dead and some lower stem bark damage.	>20	B2
T16	Norway maple (crimson king)	7	340	5	5	5	5	E	G	G	Shows well-structured crown with minor dead and some lower stem bark damage.	>20	B2
T17	Norway maple	7	340	5	4	4	4	S	G	F	Shows declining crown health with significant dieback in the upper central crown. Buttress roots heavily disfigured and supressed against the adjacent hardstanding footpath and kerb.	>10	C2

Project: Hinckley Academy and John Cleveland Sixth Form Centre
Client: Tetra Tech
Project Number: 551775
Greengage Environmental

G: Good
F: Fair
P: Poor
SM: Semi mature
EM: Early mature

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated Years remaining	Grade Category
				N	E	S	W		P	S			
T18	Leylandii	11		5	5	5	5	M	G	F	Well-structured shared crown formed from two large stems growing in close proximity to each other. Planted and growing within bricked landscaping strip that is now being pushed out.	>20	B2
T19	Goal willow	2	750	0.5	0.5	0.5	0.5	OM	F	P	Tree is formed of the remanent stem of a tree that has been felled to 2 m, presumably as a result of deteriorating condition. Now just shows epicormic regrowth.	>10	C1
T20	Goal willow	2	750	0.5	0.5	0.5	0.5	OM	F	P	Tree is formed of the remanent stem of a tree that has been felled to 2 m, presumably as a result of deteriorating condition. Now just shows epicormic regrowth.	>10	C1
T21	Ash, sycamore, hawthorn.	14	300					E	G	F	Offsite group of part planted part self-seeded trees of multistem structure with significant overhang of the site boundary. Some on site roots also anticipated.	>20	B2
T22	Hawthorn, ash, elder	4	150					S	G	F	Offsite group that forms an erratically structured and unmanaged hedge structure with minor overhang of the site boundary. Some on site roots also anticipated.	>10	C2
T23	Hawthorn, ash, elder	5	100					S	G	F	On group that forms an erratically structured and unmanaged hedge structure.	>10	C2
T24	Ash	10	250	3	4	4	4				Asymmetrically structured crown as a result of dominant T25.	>10	C2
T25	Beech	10	650	8	8	8	8	M	G	F	Dominant tree within this perimeter hedge row section that shows a wide spread and multistem structured crown area.	>20	B2

d

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated Years remaining	Grade Category
				N	E	S	W		P	S			
T26	Ash, silver birch, sycamore, small leaved lime, english oak	15	400					M	G	F	Offsite group of part planted part self-seeded trees of multistem structure with significant overhang of the site boundary. Some on site roots also anticipated.	>20	B2
T27	Norway maple	9	450	5	5	5	5	E	G	G	Well structured tree with little or no crown pruning history despite its close proximity to the adjacent building which it is now growing over the top of. Sun scorched foliage and exposed buttress roots.	>20	B1
T28	Cherry	4	150	4	4	4	4	S	G	G	Well-structured tree growing on landscape designed embankment section.	>10	C2
T29	Cherry	2	150	2	2	2	2	S	G	G	Well-structured tree with wide flattened crown. Growing on landscape designed embankment section.	>10	C2
T30	Cherry	2	150	2	2	2	2	S	G	G	Well-structured tree with wide flattened crown. Growing on landscape designed embankment section.	>10	C2
T31	Cherry	2	150	2	2	2	2	S	G	G	Well-structured tree with wide flattened crown. Growing on landscape designed embankment section.	>10	C2
T32	Cherry	3	170	3	4	2	2	E	G	F	Well-structured tree with wide flattened crown. Growing from a basal graft which is now showing as disproportionally sized and disfigured.	>10	C1
T33	Ash	9	350	4	4	4	4	E	F	F	Now showing decline tree health with signs of early die back in the upper crown with internal epicormic sprouting.	>10	C1

Project: Hinckley Academy and John Cleveland Sixth Form Centre
Client: Tetra Tech
Project Number: 551775
Greengage Environmental

G: Good
F: Fair
P: Poor
SM: Semi mature
EM: Early mature

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category
				N	E	S	W		P	S			
T34	Ash	9	390	4	5	6	6	E	G	F	Shows a heavily leaning lower stem with a naturally straightening crown area. Notable moderate dead within the lower crown area	>10	C2
T35	Norway maple	8	430	6	6	4	4	E	G	F	Has been pollarded from around 3 m with the crown now formed from regrowth. Shows heavily pruned clearance from the adjacent building.	>10	C2
T36	Ash	9	280	6	6	5	6	E	G	G	The most well structured tree within the local group with a healthy balanced crown.	>20	B2
T37	Ash, sycamore and lower level broad leaved shrub species.	5	100					S	G	F	Partially on site/off site group of mixed lower level broadleaved trees and shrubs growing along the sloping and embanked perimeter of the site.	>10	C2
T38	Leylandii	7	600	3	3	3	3	E	G	G	Tri stem tree with well structural conical crown shape. Well maintained.	>20	B2
T39	Cherry	4	360	1	3	3	3	M	F	P	Clashing with T38 and has seen very heavy and unsympathetic pruning that has left the tree in poor and disfigured structure. Is though showing some strong epicormic growth.	>10	C2
T40	Apple	33	190	2	2	3	3	S	G	G	Well-structured crown formed from regrowth from previous reduction.	>10	C2
T41	TBC	15	790	5	5	5	5	M	G	G	Key site landscape tree that visually dominates this area of the site. Good well-structured example of its species.	>40	A1

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated years remaining	Grade Category
				N	E	S	W		P	S			
T42	Pine	15	630	6	7	7	6	M	G	G	Key site landscape tree that visually dominates this area of the site. Good well-structured example of its species. Does show a twin stem structure within the upper crown that has resulted in a misshapen top, but this does not detract from its quality or categorisation.	>40	A1
T43	Holly	7	200	3	3	3	5	S	G	F	Self-seeded specimen that is growing directly next to the internal perimeter fence and gate.	>10	C1
T44	Weeping willow	9	600	7	7	7	7	M	G	G	Located within the nursery area, for which access was not permitted. Thick foliage cover meant that full inspection could not be made. Could be Category A if the structure is good, but internal limb pruning and regrowth is likely given the close location to the adjacent building- therefore Category B.	>20	B1
T45	Cherry	4	100	3	3	3	3	S	G	G	Located within the nursery area, for which access was not permitted. Structure and health though look good.	>20	B1
T46	Cherry	5	200	4	4	4	4	E	G	G	Well structured tree growing with raised brick landscaping section.	>20	B1
T47	Norway maple	6	460	5	5	5	5	E	G	G	Shows well-structured crown with minor dead. Some minor tear outs noted. Some stem girdling around the base of the stem but does not seem to be impacting the tree at this time.	>20	B1
T48	Norway maple	8	400	3	3	3	3	E	F	F	Shows notable dieback within the crown suggesting that tree is in decline.	>10	C1

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated Years remaining	Grade Category
				N	E	S	W		P	S			
T49	Horse chestnut	9	790	7	5	7	7	M	G	P	Shows an asymmetrical structure as a result of adjacent T50 that has now been felled to a monolith. Numerous decay points and open cavity wounds.	>10	C2
T50	Black poplar	6	1160	0.1	0.1	0.1	0.1	M	P	P	Recently been felled to a 6 m monolith.	>10	C2
T51	Horse chestnut	9	650	5	6	3	4	E	G	P	Shows an asymmetrical structure as a result of adjacent T50 that has now been felled to a monolith. Numerous decay points and open cavity wounds.	>10	C2
T52	Horse chestnut	9	670	3	6	5	3	M	G	P	Shows an asymmetrical structure as a result of adjacent T50 that has now been felled to a monolith. Numerous decay points and open cavity wounds.	>10	C2
T53	Beech	7	520	3	5	6	6	E	G	F	Heavily asymmetrical structure as a result of adjacent T52. Physiologically though is in good condition. Would have little retention value if T52 was removed.	>10	C2
T54	Horse chestnut		790	6	6	6	6	M	G	G	Group of three T54 to T56 growing on the gassed embankment.	>20	B2
T55	Horse chestnut		600	4	2	4	2	M	P	P	Group of three T54 to T56 growing on the gassed embankment. In terminal decline.	<10	U
T56	Horse chestnut		900	7	7	7	7	M	G	P	Group of three T54 to T56 growing on the gassed embankment.	>20	B2
G57	Sycamore, hawthorn,	7	250					E	G	F	Site boundary group of closely planted specimens making up a large informal hedge.	>10	C2

h

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated Years remaining	Grade Category
				N	E	S	W		P	S			
	field maple, ash												
G58	Willow, black poplar, field maple	9	200					E	G	F	Continuation of G57 that is located within the site boundary area.	>10	C2
G59	Black poplar, willow, ash	22	500					M	G	G	Primarily a group of mature black poplar which make a striking landscape feature just beyond the site boundary. Willow and ash species of around 10 m in height likely to be on site side.	>40	A2
G60	Alder	15	350					M	G	G	Group of well structured trees, that follow on from the line of G59 just off the perimeter of the site. Again provide a key visual landscape feature.	>20	B2
G61	Hawthorn, hornbeam, elder, cherry	7	200					E	G	F	Low level line of noted species all growing in close proximity to each other that have developed to form a small wooded unmanaged hedge section.	>10	C2
G62	Hawthorn	6	200	3	3	3	3	E	G	F	Multistem structure from base that is growing within the central field embankment area of un cut habitat grassland.	>10	C2
G63	English oak	6	250	8	8	8	8	E	G	F	Multistem structure from base that is growing within the central field embankment area of un cut habitat grassland.	>10	C2
G64	Field maple, hawthorn	6	250					E	G	F	Multistem structure from base that is growing within the central field embankment area of un cut habitat grassland.	>10	C2
G65	Field maple	5	180	4	4	4	4	E	G	F	Multistem structure from base that is growing within the central field embankment area of un cut habitat grassland.	>10	C2

Project: Hinckley Academy and John Cleveland Sixth Form Centre
Client: Tetra Tech
Project Number: 551775
Greengage Environmental

G: Good
F: Fair
P: Poor
SM: Semi mature
EM: Early mature

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated Years remaining	Grade Category
				N	E	S	W		P	S			
T66	Sycamore	11	450	8	8	8	8	M	G	G	Off-site well-structured tree with approximate 6 m on site crown overhang. Will include encroachment of the RPA on to site.	>20	B2
G67	Leyland cypress, silver birch							E	G	F	Off-site tree that shows notable site crown overhang. Will include encroachment of the RPA on to site.	>10	C2
T68	Purple plum	9	200	4	4	4	4	E	G	F	Off-site tree that shows minor site crown overhang. Will include encroachment of the RPA on to site.	>10	C1
T69	Horse chestnut	16	1000	9	9	9	9	M	G	G	Off-site well-structured tree albeit with included bark twin stem base. Shows approximate 8 m of site crown overhang. Will include encroachment of the RPA on to site.	>40	A1
T70	Sycamore	16	350	7	7	7	7	E	G	F	Off-site tree that shows minor site crown overhang. Will include encroachment of the RPA on to site.	>10	C1
G71	Pine	16	400					M	G	F	Off-site tree that shows minor site crown overhang. Will include encroachment of the RPA on to site.	>10	C1
G72	Pine	18	600					M	G	G	Group of approximately 25 trees in a linear planted group. Present as a striking landscape feature although do show declining specimens and a number of lost limbs and tear outs.	>20	B2
G73	Silver birch, cherry, lime, false acacia, oak.	13	350					E	G	F	Off-site tree that shows notable site crown overhang (5m). Will include encroachment of the RPA on to site.	>20	B2
T74	Silver birch	8	320	4	4	4	4	E	G	G	Well structured tree near to the site entrance of the site, growing in a soft landscaping strip.	>20	B2

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated Years remaining	Grade Category
				N	E	S	W		P	S			
T75	Silver birch	13	440	6	6	6	7	M	G	G	Well structured tree near to the site entrance of the site, growing in a soft landscaping strip. Shows an initially leaning stem although straightens to a well formed crown. Good example of its species.	>40	A2
T76	Walnut	6	180	4	4	4	4	M	F	G	Well Structured amenity tree growing within planting pit and hardstanding area of school entrance.	>10	C1
T77	Lime	16	620	6	6	6	6	M	F	G	Individually standing tree within hardstanding carparking area. Generally well structured, although shows some upper crown thinning and lower level epicormic, possibly as result of ground compaction.	>20	B1
T78	Lime	15	530	5	5	5	3	M	F	G	Part of a linear grouping of same species in this location, growing within soft landscaping strip albeit adjacent to hard standing to the north and south. Generally well structured, although shows some minor and moderate deadwood through the crown that is through typical of the species.	>20	B2
T79	Lime	16	500	5	3	5	3	M	F	G	Part of a linear grouping of same species in this location, growing within soft landscaping strip albeit adjacent to hard standing to the north and south. Generally well structured, although shows some minor and moderate deadwood through the crown that is through typical of the species.	>20	B2
T80	Lime	16	520	5	3	5	3	M	F	G	Part of a linear grouping of same species in this location, growing within soft landscaping strip albeit adjacent to hard standing to the north and south. Generally well structured, although shows some	>20	B2

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated Years remaining	Grade Category
				N	E	S	W		P	S			
											minor and moderate deadwood through the crown that is through typical of the species.		
T81	Lime	16	540	5	3	5	3	M	F	G	Part of a linear grouping of same species in this location, growing within soft landscaping strip albeit adjacent to hard standing to the north and south. Generally well structured, although shows some minor and moderate deadwood through the crown that is through typical of the species.	>20	B2
T82	Lime	8	450	3	3	3	3	M	F	G	Part of a linear grouping of same species in this location, growing within soft landscaping strip albeit adjacent to hard standing to the north and south. Has seen recent crown removed as a result of declining tree health.	>10	C2
T83	Apple	4	150	2	2	2	2	E	F	F	Small well structured amenity tree.	>10	C1
T84	Apple	4	150	2	1	2	4	E	P	P	Tree shown to be in terminal decline.	<10	U
T85	Apple	4	150	1	1	1	1	E	P	P	Tree now dead.	<10	U
T86	Silver birch	9	150	3	3	3	3	E	G	G	Well-structured tree with no significant defects. Part of local group with T84 to T86.	>20	B2
T87	Silver birch	9	150	3	3	3	3	E	G	G	Well-structured tree with no significant defects. Part of local group with T84 to T86.	>20	B2
T88	Silver birch	9	150	3	3	3	3	E	G	G	Well-structured tree with no significant defects. Part of local group with T84 to T86.	>20	B2
T89	False acacia	10	380	6	6	6	6	M	G	F	Visually dominant tree at the point of the site entrance. Difficult to inspect given thick foliage	>20	B1

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Age Class	Condition		General Notes	Estimated Years remaining	Grade Category
				N	E	S	W		P	S			
											cover, but present as an erratically structured multistem crown shape.		
T90	London plane	12	410	4	5	5	5	E	G	G	No notable defects, although shows as an asymmetrical crown structure given its clash with adjacent off site tree group.	>20	B2
T91	Lime	8	450	3	3	3	3	M	F	G	Part of a linear grouping of same species in this location, growing within soft landscaping strip albeit adjacent to hard standing to the north and south. Has seen recent crown removed as a result of declining tree health.	>10	C2
T92	Lime	16	540	8	5	5	3	M	F	G	Part of a linear grouping of same species in this location, growing within soft landscaping strip albeit adjacent to hard standing to the north and south. Generally well structured, although shows some minor and moderate deadwood through the crown that is through typical of the species.	>20	B2

APPENDIX 3: TREE CONSTRAINTS PLAN

APPENDIX 4: LEGISLATION AND POLICY CONTEXT

LEGISLATION

The Town and Country Planning (Tree Preservation) (England) Regulations (2012)⁴

A Tree Preservation Order is an order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity. An Order prohibits, without the local planning authority's written consent, the following works to trees:

- Cutting down
- Topping
- Lopping
- Uprooting
- Wilful damage
- Wilful destruction

Similarly, trees in a Conservation Area that are not protected by an Order are protected by the provisions in section 211 of the Town and Country Planning Act 1990. These provisions require issue of a section 211 notice six weeks before carrying certain work on such trees. This notice period gives the authority an opportunity to consider whether to make an Order on the tree.

PLANNING POLICY

National

National Planning Policy Framework (2019)

The National Planning Policy Framework (NPPF) 2019 sets out the Government's planning policies for England, including how plans and decisions are expected to apply a presumption in favour of sustainable development.

Chapter 15 of the NPPF focuses on conservation and enhancement of the natural environment, stating plans should recognise 'the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland'.

It goes on to state: 'if significant harm to biodiversity 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'. Alongside this, it acknowledges that planning should be refused where irreplaceable habitats such as ancient woodland or veteran trees are lost.

Local (Hinckley and Bosworth Borough Council)

Core Strategy

Policy 20: Green Infrastructure

The implementation of the Green Infrastructure Network as outlined on the Key Diagram is a key priority of the council.

To assist delivery of this plan, the following strategic interventions will be supported:

Southern Zone

- Hinckley Town Centre - Mitigate against the urban 'heat island' effect by increasing the number of street trees to provide shade, cooling and air quality improvements, incorporate flood prevention measures such as flood storage ponds, green roofs and swales where appropriate and utilise existing assets, such as the Big Pit at the junction of Ashby Road and Barwell Lane, to provide wider recreational functions

REFERENCES

-
- ¹ British Standards Institution. (2012). *5837: Trees in relation to design, demolition and construction - Recommendations*. London: BSI.
 - ² Legislation.gov.uk. (2012). *Town and Country Planning Act 1990*. [online] Available at: <https://www.legislation.gov.uk/uksi/2012/605/contents/made> [Accessed 21 Jan 2019].
 - ³ British Geological Society (2019). Geology of Britain [interactive web map]. Available at: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html> [Accessed 21 Jan 2019].
 - ⁴ Legislation.gov.uk. (2012). *Town and Country Planning Act 1990*. [online] Available at: <https://www.legislation.gov.uk/uksi/2012/605/contents/made> [Accessed 21 Jan 2019].
 - ⁵ NJUG. (Issue 2: 16th November 2007). Guidelines for The Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees. (<http://streetworks.org.uk/wp-content/uploads/2016/09/V4-Trees-Issue-2-16-11-2007.pdf>)
 - ⁶ <https://www.hinckley-bosworth.gov.uk/>